

Christchurch City Council

AGENDA

Notice of Meeting:

An ordinary meeting of the Christchurch City Council will be held on:

Date: Thursday 14 March 2019
Time: 9.30am
Venue: Council Chambers, Civic Offices,
53 Hereford Street, Christchurch

Membership

Chairperson	Mayor Lianne Dalziel
Deputy Chairperson	Deputy Mayor Andrew Turner
Members	Councillor Vicki Buck
	Councillor Jimmy Chen
	Councillor Phil Clearwater
	Councillor Pauline Cotter
	Councillor Mike Davidson
	Councillor David East
	Councillor Anne Galloway
	Councillor Jamie Gough
	Councillor Yani Johanson
	Councillor Aaron Keown
	Councillor Glenn Livingstone
	Councillor Raf Manji
	Councillor Tim Scandrett
	Councillor Deon Swiggs
	Councillor Sara Templeton

8 March 2019

Principal Advisor

Dr Karleen Edwards
Chief Executive
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Note: The reports contained within this agenda are for consideration and should not be construed as Council policy unless and until adopted. If you require further information relating to any reports, please contact the person named on the report.

Watch Council meetings live on the web:
<http://councillive.ccc.govt.nz/live-stream>

Strategic Framework

The Council's Vision – Christchurch is a city of opportunity for all.

Open to new ideas, new people and new ways of doing things – a city where anything is possible.

Whiria ngā whenu o ngā papa Honoa ki te maurua tāukiuki

Bind together the strands of each mat
And join together with the seams of respect
and reciprocity.

The partnership with Papatipu Rūnanga
reflects mutual understanding and respect,
and a goal of improving the economic,
cultural, environmental and social
wellbeing for all.

Overarching Principle

Partnership – Our
people are our taonga
– to be treasured and
encouraged. By working
together we can create
a city that uses their
skill and talent, where
we can all participate,
and be valued.

Supporting Principles

Accountability	Collaboration
Affordability	Prudent Financial Management
Agility	Stewardship
Equity	Wellbeing and resilience
Innovation	Trust

Community Outcomes

What we want to achieve together as our city evolves

Strong communities

Strong sense of
community
Active participation in
civic life
Safe and healthy
communities
Celebration of our
identity through arts,
culture, heritage and
sport
Valuing the voices of
children and young
people

Liveable city

Vibrant and thriving
central city, suburban
and rural centres
A well connected and
accessible city
Sufficient supply of, and
access to, a range of
housing
21st century garden city
we are proud to live in

Healthy environment

Healthy waterways
High quality drinking
water
Unique landscapes and
indigenous biodiversity
are valued
Sustainable use of
resources

Prosperous economy

Great place for people,
business and investment
An inclusive, equitable
economy with broad-
based prosperity for all
A productive, adaptive
and resilient economic
base
Modern and robust
city infrastructure and
community facilities

Strategic Priorities

Our focus for improvement over the next three years and beyond

Enabling active citizenship and connected
communities

Maximising opportunities to develop a vibrant,
prosperous and sustainable 21st century city

Climate change
leadership

Informed and proactive
approaches to natural
hazard risks

Increasing active, public
and shared transport
opportunities and use

Safe and sustainable
water supply and
improved waterways

TABLE OF CONTENTS

1.	Apologies.....	6
2.	Declarations of Interest	6
3.	Public Participation.....	6
3.1	Public Forum	6
3.2	Deputations by Appointment	6
4.	Presentation of Petitions	6

COMMUNITY BOARD MONTHLY REPORTS

5.	Waitai/Coastal-Burwood Community Board Report to Council	7
6.	Waimāero/Fendalton-Waimairi-Harewood Community Board Report to Council.....	13
7.	Waipuna/Halswell-Hornby-Riccarton Community Board Report to Council	19
8.	Waikura/Linwood-Central-Heathcote Community Board Report to Council - February 2019.....	25
9.	Waipapa/Papanui-Innes Community Board Report to Council	29
10.	Waihoru/Spreydon-Cashmere Community Board Report to Council.....	33
11.	Te Pātaka o Rākaihautū/Banks Peninsula Community Board Report to Council	41

COMMUNITY BOARD PART A REPORTS

12.	Travis Road & Bower Avenue 40km/hr Variable Speed Limit (School Speed Zone) and Frosts Road Permanent Speed Limit Change	67
13.	50R Wilmers Road - Transfer of Part Owaka 2 Reserve to the Crown.....	83
14.	Improvements to Woolston Village Centre - WL1	95
15.	Curries Road/Tanner Street - Intersection Improvements	171
16.	Redcliffs Transport Project - Redcliffs School Transport Safety Requirements.....	181
17.	Cambridge Green Pouwhenua Artwork Future Treatment Options	205
18.	Gloucester/Worcester Street Park - Proposed Name and Landscape Plan	269
19.	Sumner Road Realignment.....	291
20.	Lyttelton Seafarers Welfare	301

REGULATORY PERFORMANCE COMMITTEE

21.	Proposed Plan Change 1 Woolston Risk Management Area.....	305
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STAFF REPORTS

22.	Hearings Panel report to the Council on the Hereford Street (Manchester - Oxford) Upgrade Project	607
23.	Draft Council Submission on the Productivity Commission Paper on Local Government Funding and Finance	649

24. 2018/19 Metropolitan Discretionary Response Fund application from Living Springs.....	655
25. Chief Executive's Report - February 2019	657

1. Apologies

At the close of the agenda no apologies had been received.

2. Declarations of Interest

Members are reminded of the need to be vigilant and to stand aside from decision making when a conflict arises between their role as an elected representative and any private or other external interest they might have.

3. Public Participation

3.1 Public Forum

A period of up to 30 minutes is available for people to speak for up to five minutes on any issue that is not the subject of a separate hearings process.

3.2 Deputations by Appointment

Deputations may be heard on a matter or matters covered by a report on this agenda and approved by the Chairperson.

There were no deputations by appointment at the time the agenda was prepared

4. Presentation of Petitions

There were no Presentation of Petitions at the time the agenda was prepared.

5. Waitai/Coastal-Burwood Community Board Report to Council

Reference: 19/166532

Presenter(s): Kim Money, Chairperson Waitai/Coastal-Burwood Community Board

1. Purpose of Report

The purpose of this report is to provide the Council with an overview of Part A matters requiring a Council decision and of initiatives and issues considered by the Community Board.

2. Community Board Recommendations

That the Council:

1. [Receive the Community Board report for February 2019.](#)

3. Community Board Decisions Under Delegation

The Coastal-Burwood Community Board held meetings on 4 and 18 February 2019. Decisions made under delegation were, the Board:

- Approved East Shirley Cricket Club's development of a junior cricket pitch on the site of the former bowls club in Burwood Park.
- Approved the installation of two new sports field lighting poles on Queenspark Reserve, and the upgrading of two existing sports field lighting poles by Parklands Rugby Football Club Incorporated on Queenspark Reserve.
- Amended the 2019 Board meeting schedule to replace the approved 15 July 2019 Board meeting with 22 July 2019 in order to avoid meeting during the Council's recess week.
- Approved a grant from its 2018/19 Youth Development Fund to a young person towards the costs of flights for representing Canterbury in the Under 18 Mixed Touch Team at the 2019 New Zealand Touch National Tournament in Rotorua in February 2019.
- Approved the granting of a lease to A-Town Boxing Gym for the Wainoni Park Youth Activity Centre building and land.

4. Part A Recommendations to Council

The following report presenting Part A recommendations from the Board are included in this agenda for Council consideration:

- 4.1 Travis Road & Bower Avenue 40km/hr Variable Speed Limit (School Speed Zone) and Frosts Road Permanent Speed Limit Change.

5. Significant Council Projects in the Board Area

5.1 Christchurch Hot Pools - Sod Turning

A site blessing and sod-turning event was held ahead of work starting on the Christchurch Hot Pools.

Construction of the five-pool facility, which will have steam and sauna activities and dedicated family and relaxation areas, is set to start once building consents are finalised this month. Site establishment and preparation work will begin shortly.

The site was blessed on February 11 by Aroha Reriti Crofts and the first spade placed in the ground by Coastal Ward Councillor David East and Coastal-Burwood Community Board Chair Kim Money.



6. Significant Community Issues, Events and Projects in the Board Area

6.1 Burwood, Avondale and Dallington, Community Events

The group of residents associations and community organisations that comprise the Burwood Avondale and Dallington Group have successfully held a free family movie night in each area - Burwood, Avondale and Dallington. The three suburbs individually planned an event that would suit their capacity and community. Across the three events there were sausages, candy floss, popcorn, refreshments, fundraising, music, a petting zoo, pony rides and a free family movie. Around 600 people turned out to see the movies held at Robin Park, Burwood Park and at Chisnallwood Intermediate.

These were the group's first community events and all were received warmly by attendees. The group are now looking forward to holding a combined riverside festival for all of their communities, "Duck down to the river" (named for a duck race they will be holding on the day) on March 30 2019 at Kerr's Reach.



6.2 3PO presents S.O.S Community Safety Expo

A community-led Community Safety Expo will be held on Saturday 9 March from 11 -3pm at The Old School Te Kura Tawhito, New Brighton. The purpose of the Expo is to provide members of the community with information needed to protect themselves and their property, to foster a community togetherness and individual wellbeing. There will be stalls and information from Civil Defence, Christchurch City Council, Fire and Emergency New Zealand among many others.

6.3 South New Brighton Estuary Edge Report

The Parks Unit has engaged a consultant to identify options for the South New Brighton estuary edge in relation to the erosion that is occurring along the edge of the South New Brighton Reserve.

On Wednesday 20 February, the Coastal-Burwood Community Board and key stakeholders attended a site walk and feedback session which provided an opportunity for feedback to the consultant preparing the report.

The site meeting was welcomed by the Community Board and seen as an excellent way of getting key stakeholder input into the report that is being developed.



6.4 Hawke Street Public Carpark

The condition of the carpark was causing safety concerns to in community. The Board was pleased to see that an area of the carpark has been resealed improving the safety and accessibility of the carpark area.

6.5 **New Brighton Public Toilets**

Following feedback received by the Board from residents about the condition of the Shaw Avenue toilets and other public toilets in New Brighton, the Parks Unit have advised there is no funding in the current Long Term Plan for the Shaw Ave toilets and are working to provide the Board with advice about how these toilets could be addressed in the next Long Term Plan process.

6.6 **I Love New Brighton 2019 held on Waitangi Day**

This event saw 7,000 people attend Thomson Park for a variety of activities and entertainment for families to enjoy. 36 community groups were involved to make this day such a success - plus the many businesses and individuals that supported the event.



6.7 **Parklands at Play**

The annual Parklands @ Play event was held on Sunday 17 February at Parklands reserve. Entertaining performances from local schools, clubs and bands, along with activities provided for the children by local organisations and the Christchurch City Council.

This was a great example of community recreation working in partnership with key local organisations to plan and deliver such a popular and well attended event.



7. Progress Report Against the Community Board Plan

- 7.1 The Board approved the Coastal-Burwood Community Board Plan for 2017-19 on 16 October 2017. The Plan can be found at the following link:
<https://www.ccc.govt.nz/assets/Documents/The-Council/Community-Boards/Coastal-Burwood-Community-Board-Plan-2017-19.pdf>
- 7.2 The Board's ongoing decisions are being included as measures against the Outcomes and Priorities contained in the 2017 – 2019 Community Board Plan.

8. Community Board Matters of Interest

- 8.1 In response to Council Resolution CNCL/2019/00019 requesting that staff brief the Waitai/Coastal-Burwood Community Board on progress on the Southshore South New Brighton Regeneration Strategy prior to reporting to the Council, the Board received a briefing from staff in February. Regenerate Christchurch will be coming to the Board to provide an update on progress on 1 April 2019.
- 8.2 The Board received a public forum from representatives of Spencerville Residents' Association. The Association spoke to their concerns about a proposed subdivision on Spencerville Road, and maintenance work required around the Community centre.
- 8.3 The Board received correspondence and a deputation from the Christchurch Beautifying Association on the projects and work that the Christchurch Beautifying Association do such as the Street/Garden and Community Pride awards. The Association expressed their commitment to working with the Board in a positive partnership relationship and requested the Board consider holding Garden Pride Awards in the ward in 2019. The current Board, and its predecessor, the Burwood-Pegasus Community Board, made decisions to hold the Community Pride Garden Awards and Community Service awards every two years, alternating between the two. Normally the Community Pride Garden Award would be held in 2020.
- 8.4 The Board received responses from Staff to questions raised regarding the Aranui Vacuum Sewer System and asked to be kept updated on the current status of the wastewater capacity constraints faced in the Aranui and Shirley vacuum sewer catchments.

8.5 The Board received an update on road and traffic matters that have recently been raised with and/or considered by the Board. The matters sought to be addressed by the Board were;

- Heavy vehicles on Breezes Road
- Dallington Bridge and the Avonside-Gayhurst-Gloucesterc intersection
- Road renewal projects in the Coastal and Burwood wards
- Pedestrian crossings in the Coastal and Burwood ward

Staff extended the scope of the briefing in order to update the Board on the Traffic Operations Team 2019/2020 Minor Works Programme as it relates to aspirational projects in the Coastal and Burwood wards.

Attachments

There are no attachments to this report.

Signatories

Authors	Ann Furlong - Support Officer Jo Wells - Manager Community Governance, Coastal-Burwood Peter Croucher - Community Board Advisor
Approved By	Matthew McLintock - Manager Community Governance Team John Filsell - Head of Community Support, Governance and Partnerships

6. Waimāero/Fendalton-Waimairi-Harewood Community Board Report to Council

Reference: 19/133898

Presenter(s): Sam MacDonald, Chairperson, Waimāero/Fendalton-Waimairi-Harewood Community Board

1. Purpose of Report

The purpose of this report is to provide the Council with an overview of Part A matters requiring a Council decision and of initiatives and issues considered by the Community Board.

2. Community Board Recommendations

That the Council:

1. [Receive the Waimāero/Fendalton-Waimairi-Harewood Community Board report for February 2019.](#)

3. Community Board Decisions Under Delegation

The Waimāero/Fendalton-Waimairi-Harewood Community Board held meetings on 4 February and 18 February 2019. Decisions made under delegation were:

- Normans Road Proposed - School Bus Parking and 30 Minute Parking Restriction: The Board approved the installation of a school bus parking area (from 8am to 9am and 2pm to 4pm, School Days, on Normans Road, near its intersection with Papanui Road and associated parking of vehicle restrictions.
- Kapuatohe Cottage and Dwelling – Future Use: The Board approved the future use of Kapuatohe Cottage and Kapuatohe Dwelling to be leased out as residential dwellings once restored through funding from the 2018-28 Long Term Plan budgets and delegated to the Manager Property Consultancy the authority to take all necessary steps to negotiate, agree and enter into all necessary documentation on behalf of the Council, as they shall consider necessary or desirable to give effect to the above resolutions.

The Board also requested that consideration be given to the Kapuatohe Cottage and Kapuatohe Dwelling, if tenanted, being open to the public for an agreed period of time, during Heritage Week.

- Fendalton-Waimairi-Harewood Community Board Discretionary Response Fund Applications: The Board approved grants totalling \$16,792 to the Bishopdale Menz shed towards the purchase and installation of a dust extraction system, Fendalton Park Croquet Club towards sewer drainage replacement at Fendalton Park and Burnside Park Rugby Football Club towards relining of the clay sewer line that extends from the Rugby Football Club through to the boundary at Burnside Park.
- Fendalton-Waimairi-Harewood Community Board Youth Development Fund Applications: The Board approved funding totalling \$1,950 to 8 young people to attend events in South Africa, Dallas, Adelaide and Sydney, Auckland and Wellington.

The Board also approved that \$10,000 be transferred from its 2018-19 Discretionary Response Fund to its 2018-19 Youth Development Fund.

4. Part A Recommendations to Council

There are no Part A reports being presented to the Council.

5. Significant Council Projects in the Board Area

5.1 Fendalton Library and Service Centre Closure for Repairs

The Fendalton Library and Service Centre will be closed for repairs on Friday 2 March 2019 and is expected to reopen at the end of July 2019.

During the closure the Fendalton Service Centre will operate out of Shop 6, Fendalton Village, 376 Ilam Road.

A library bus will visit the Fendalton Library Carpark three times a week during the closure period:

- Monday 1:30pm-3:30pm
- Wednesday 9:15am-11:15am
- Friday 3.00pm- 5.00pm

Full library services are available at Orauwata: Bishopdale Library and Community Centre and Papanui Library.

5.2 Jeffreys Reserve Pump Station Suction Tank

During the first two weeks of February a topographical survey was carried out within and around the Jeffreys Pump Station compound. This work was part of the preliminary design phase for the replacement water tank and included potholes and soil and groundwater sampling.

6. Significant Community Issues, Events and Projects in the Board Area

6.1 Culture Galore 2019

Despite the forecast to the contrary, the weather stayed fine and dry for the 17th Culture Galore event on Saturday, 23 February 2019 at Ray Blank Park.

Over 6,000 people enjoyed the colourful and vibrant performances, partook of the tasty ethnic cuisine and had fun at the free children's activities. In addition to the event's regular performances, this year's event included five new groups as well as delicious new food vendors. The park was extremely busy for most of the day with the community enjoying the cultural diversity of our city.



Photo credited to Aaron Campbell





6.2 Community Pride Garden Awards 2019

Judging has been completed for this year's Community Pride Garden Awards 2019. Over 300 award notification cards and 1,002 "Thank you" cards were given out in the Fendalton-Waimairi-Harewood Community Board area. The number of "Thank you" cards issued this year is over double the number of any other ward area in Christchurch.

To date 232 notification cards have been returned in the Fendalton-Waimairi-Harewood Community Board area.

Certificates and 5 trophies will be presented to recipients at the Fendalton-Waimairi-Harewood Community Board Community Pride Garden Awards Ceremony on Wednesday, 27 March 2019 at the Russley Golf Club and Function Centre, 428 Memorial Avenue.

4 of the trophies were gifted to the Fendalton/Waimairi Community Board by Pat Harrow (former Community Board member and Councillor)

- South Island Promotion for Retirement Villages, Hotel & Motel Gardens (Commercial)
- Sweethearts Restaurant Premier Garden (Residential)
- Berryfields Second Place (Residential)
- Christchurch Beautifying Association Third Place (Residential)
- New trophy - Community Board Choice (Residential)

7. Progress Report Against the Community Board Plan

7.1 The Board's ongoing decisions are being included as measures against the Outcomes and Priorities contained in the Board's 2017 -2019 Community Board Plan.

The next update will be presented to the Board in April 2019.

Attachments

There are no attachments to this report.

Signatories

Authors	Margaret Henderson - Community Board Advisor Lisa Gregory - Community Recreation Advisor Bronwyn Frost - Support Officer
Approved By	Matthew McLintock - Manager Community Governance Team John Filsell - Head of Community Support, Governance and Partnerships

7. Waipuna/Halswell-Hornby-Riccarton Community Board Report to Council

Reference: 19/201822
Presenter(s): Mike Mora, Chairperson
Matthew Pratt, Community Governance Manager

1. Purpose of Report

The purpose of this report is to provide the Council with an overview of Part A matters requiring a Council decision and of initiatives and issues considered by the Community Board.

2. Community Board Recommendations

That the Council:

1. [Receive the Waipuna/Halswell-Hornby-Riccarton Community Board report for February 2019.](#)

3. Community Board Decisions Under Delegation

The Waipuna/Halswell-Hornby-Riccarton Community Board held meetings on 13 February 2019 and 26 February 2019. Decisions made under delegation were:

- Approval of intersection controls throughout the Knights Stream Park and Longhurst subdivisions
- Allocations of 2018-19 Discretionary Response Fund funding to three local organisations
- Allocation of 2018-19 Youth Development Fund support to a local recipient
- Hornby Library, Customer Services, and South West Leisure Centre – Kyle Park - Partial Changes to Reserve Classification and Management Plan – Process
- Approval of the following road names:
 - Milns Park (RMA/2016/3384) at 53 and 85 Milns Road
 - Whitburn Avenue
 - Collier Drive
 - Kearns Drive
 - Te Repo Drive
 - Lochhead Avenue
 - Allied Road
 - Mabel Crescent
 - Dunning Way
 - Helen Place

4. Part A Recommendations to Council

The following report presenting Part A recommendations from the Board are included in this agenda for the Council's consideration:

- 4.1 50R Wilmers Road – Transfer of Part of Owaka 2 Reserve to the Crown

5. Significant Council Projects in the Board Area

5.1 Strengthening Community Fund Projects

The Oak Development Trust, a key organisation in the Riccarton area, are offering a range of new programmes alongside existing activities this term. Programmes include line dancing and fitness for refugees and migrants will feature alongside the Men 2 Cook, weekly Friday English classes, children's multicultural dancing, Older Adults gatherings, bi-monthly Common Ground Café, Mainly Music and Nail Care clinic.

5.2 Other partnerships with the community and organisations

- 5.2.1 Local Community Governance staff are partnering with the Hornby Community Care Trust to bring a Hornby Community Activator to Hornby.

The Community Activator will be undertaking 'grassroots' community development work in the Greater Hornby area, beginning with a stocktake of all the local organisations, sports clubs, groups and facilities.

Interviews for the role have been completed and it is anticipated that an appointee will commence by mid-March 2019.

5.3 Community Facilities (updates and future plans)

- 5.3.1 On 30 January 2019, Historic Places Canterbury Chairman, Mark Gerrard, made a deputation to the Council's Social, Community Development and Housing Committee regarding the Yaldhurst Memorial Hall.

The Committee heard that the Hall, which at present is not deemed a heritage building, does potentially contain heritage values that could meet the threshold of being scheduled under the District Plan.

The Committee requested to be provided with information from staff on the Yaldhurst Memorial Hall.

The staff memorandum is to provide a ballpark figure for a potential repair of the Hall and also cover whether any Central Government funding is available to assist with potential repairs.

Additionally, the Council's Heritage Team is progressing a brief assessment on the heritage values of the Hall.

6. Significant Community Issues, Events and Projects in the Board Area

6.1 Community Pride Garden Awards 2019

Judging for this year's Community Pride Garden Awards took place from 19 January to 10 February 2019.

The Christchurch Beautifying Association and Board member Debbie Mora selected award-winning gardens taking into account, effort, overall tidiness and impact of the garden on the street.

Certificates will be presented on Monday 18 March 2019 at a Community Board hosted function which is expected to have a larger attendance than similar events held in recent years.

6.2 Community Service and Youth Service Awards 2019 - Nominations

Nominations for Community Service and Youth Service Awards 2019 open on Friday 15 March and close on Friday 12 April 2019.

6.3 Knights Stream School and Wigram School - Openings

Two new schools opened in term one 2019 in the Halswell Ward at Knights Stream School, 1 Killarney Avenue and at Wigram School (formerly Sockburn School) at 5 the Runway in Wigram.

6.4 Templeton Community – Quarry Submission

Local staff have provided a further submission writing session for the Templeton community in preparation for submitting on the Fulton Hogan resource consent application for the proposed Roydon Quarry.

The generic sessions have been based on providing advice on how to put together an individual submission.

Following Fulton Hogan's lodgement of its application in November 2018, Environment Canterbury and Selwyn District Council made a request for further information.

Fulton Hogan subsequently requested an extension to the 31 January 2019 deadline for information until 28 February 2019 and have since requested to extend the deadline again, with a revised draft clean fill management plan and a visual impact assessment expected by 12 March.

6.5 Riccarton Community - Fitness Opportunities

The Riccarton Community Boot Camp sessions that New Zealand Institute of Sport have been running for the Riccarton community, are being extended in 2019.

Since 2014, the Institute has been running a free boot camp every Tuesday afternoon. Starting in February 2019, a new class will be run every second Saturday morning.

Additionally, Sport Canterbury is running an exercise class for refugee and migrant women at the Riccarton Baptist Church.

6.6 Local Community Events

6.6.1 Culture Galore

The seventeenth Culture Galore event was successfully held at Ray Blank Park on Saturday 23 February 2019 with over 6,000 people attending and participating.

The event had representation from thirty different countries with 23 stage performances and 65 food and information stalls, and lots of activities to entertain those attending.



6.6.2 Hello Hornby

After the success of last year's event, Hello Hornby was again held at Wycla Park on Saturday 9 March 2019 from 12 to 3pm.

Organised by a local committee which brings together over ten different organisations from the greater Hornby area, the event was expected to attract over 2,000 people and showcase all that Hornby has to offer.

6.6.3 Hansons Reserve

A community event, run by the Life Church and La Vida Youth Trust, was successfully held again on Saturday 2 March 2019 at Hansons Reserve for the Upper Riccarton community.

Previously held each year in November/December, the new timing takes advantage of the warm and settled weather.

6.6.4 Connect 2019

Now in its fourth year, Connect 2019 was held on Sunday 10 March 2019 from 4pm to 6pm at Harrington Park.

The community gathering aims to connect new people to the area and welcome them to Riccarton.

With a free BBQ and fun activities, the event provided an opportunity for local people in the community to get to know one another.

7. Progress Report Against the Community Board Plan

- 7.1 Updates are being presented quarterly (April and September 2018 to date) to the Board on its Community Plan 2017-19 to measure progress against the Board's approved outcomes and priorities.

Attachments

There are no attachments to this report.

Signatories

Authors	Cindy Sheppard - Governance Support Officer Matthew Pratt - Manager Community Governance, Halswell-Hornby-Riccarton Peter Dow - Community Board Advisor Noela Letufuga - Support Officer Karla Gunby - Community Development Advisor Emily Toase - Community Recreation Advisor Marie Byrne - Community Development Advisor
Approved By	Matthew McLintock - Manager Community Governance Team John Filsell - Head of Community Support, Governance and Partnerships

8. Waikura/Linwood-Central-Heathcote Community Board Report to Council - February 2019

Reference: 19/173889

Presenter(s): Sally Buck, Chairperson
Arohanui Grace, Community Governance Manager

1. Purpose of Report

The purpose of this report is to provide the Council with an overview of Part A matters requiring a Council decision and of initiatives and issues considered by the Community Board.

2. Community Board Recommendations

That the Council:

1. [Receive the Community Board report for February 2019.](#)

3. Community Board Decisions Under Delegation

The Waikura/Linwood-Central-Heathcote Community Board held meetings on 4 and 20 February 2019. Decisions made under delegation were:

- Parking Restrictions in:
 - Peterborough Street.
 - Ferry Road near Hart Street.
 - Mt Pleasant Road.
 - Gloucester Street at Latimer Square
 - Waltham Road.
 - Major Hornbrook Road at Muritai Terrace, Mt Pleasant.
 - Ocean View Terrace near Awaroa Lane, Sumner.
- Cass Street near Durham Street –Loading Zone.
- Beachville Road, Redcliffs – Accessible Parking
- The Board approved parking restrictions, and the installation of a bus stop for the Improvements to Woolston Village Centre – WL1 Project. The Board received a petition that was received during the consultation period requesting that on street carparks are not removed.
- The Board requested further advice and investigations in regards to the Improvements Woolston Village Centre Project on:
 - Extending 30kmh speed restriction down St Johns Street from Ferry Road to Glenroy Street.
 - Increasing the green cycleway surfacing to make the cycleways more visible to motorists.
 - Larger or additional signage to highlight the off street parking in the Woolston Village, behind the shops and adjacent to the Woolston Library.
 - The phasing of the signalised pedestrian crossing in Woolston Village to lessen the wait time for pedestrians.
 - Confirm the provision for an EV charger within the Woolston Library rebuild project.
- The Board approved parking restrictions, the disestablishment of a bus stop and pedestrian crossings for the Redcliffs Transport Project - Redcliffs School Transport Safety Requirements.

- The Board approved a licence to occupy for a National Institute of Water and Atmospheric Research Limited (NIWA) Electronic Weather Station at Te Huingi Manu Wildlife Refuge.
- The Board approved the attendance of interest Board members to attend 2019 Community Boards Conference in New Plymouth.
- The Board approved Discretionary Response Funding for rock band equipment, advocacy services, setting up a residents' and business association and garden seating.
- The Board approved Youth Development Funding for youth to participate in the Tenzing Hillary Cup, New Zealand Secondary Schools Volleyball Tournament, 2019 Vantage Age Group Track National Championships, New Zealand Deaf Rugby Football Union, and the Rotary Young Leaders Award North America.

4. Part A Recommendations to Council

The following reports presenting Part A recommendations from the Board are included in this agenda for Council consideration:

- 4.1 Improvements to Woolston Village Centre – WL1.
- 4.2 Redcliffs Transport Project - Redcliffs School Transport Safety Requirements.
- 4.3 Gloucester/Worcester Street Park – Proposed Name and Landscape Plan.
- 4.4 Cambridge Green Pou Artwork Future Treatment Options Report.
- 4.5 Curries Road/Tanner Street – Intersection Improvements.

The Board's recommendation for staff to provide as part of their advice to the Infrastructure, Transport and Environment Committee and the Council on the review of the Lime scooter trial, whether or not a fee could be charged to all hire mobility providers who use the public realm under permit, with the revenue being used for footpath repairs and maintenance was considered by the Infrastructure, Transport and Environment Committee at its meeting on 13 February 2019.

5. Significant Council Projects in the Board Area

Brougham Street/Moorhouse Avenue

- 5.1 Staff from the NZ Transport Agency, Christchurch City Council and Beca are working together to develop a 30 year strategy, with the aim of making it easier and safer to get around one of Christchurch's busiest areas. Feedback from the first round of community engagement is currently being analysed. A workshop is to be held on 27 February 2019.

The purpose of the workshop is:

- To outline the list of possible treatments (individual measures and specific interventions) for the Brougham-Moorhouse Single Stage Business Case
 - To discuss the possible options, based on key themes e.g. a package of treatments that give priority to north south movements
 - The information required and assumptions to be made in defining each option e.g. evidence required to assess the treatments/ options.
- 5.2 The Community Board attended a combined briefing with the Papanui Innes Community Board around matter relating to the Downstream Effects Management Plan Briefing the

6. Significant Community Issues, Events and Projects in the Board Area

Public Forum

- 6.1 Ms Nicola Wilkie addressed the Board regarding a proposal to consider a rates reduction for property owners who have grey water disposal systems on their properties. Nicola made separate presentation to the Board's 20 February meeting on her views on waste minimisation and reduction for residents to receive a rates reduction.
- 6.2 Mr Evan Chadwick and Ms Lesley Willoughby addressed the Board regarding Wyon Street being used as a shortcut by motorists and excessive speeding. Mr Chadwick and Ms Willoughby understood that Wyon Street was due to be renewed pre Canterbury Earthquakes and the street has still not been renewed.
- 6.3 Tayla Reece, Linwood Youth Festival Experience (LYFE), with two Linwood College Students updated the Board on their upcoming event to be held on Saturday 9 March 2019, 12-4pm.
- 6.4 It is the season for community events and a number have been held in the Community Board area in the past month including:
 - Garden Party at Edmonds Factory Garden, 17 February
 - Bromley Community Fair at the Bromley Community Centre 23 February
 - Estuary Fest 2019, at McCormacks Bay Reserve, 23 February
 - Roimata Community Fun Day at Radley Park, Saturday 2 March Free entry

7. Progress Report Against the Community Board Plan

- 7.1 **Te Oranga Waikura**, the urban forest and water retention basin on Ferry Road, is the focus for a current place-making and nature play project. Council staff are co-ordinating professional development workshops for local schools, early childhood centres, after school and holiday programme providers on 29th and 30th March to guide their use of the space. Plans are also underway to set up another 'pop-up nature play space' similar to the ones carried out in Parks Week in 2018.
- 7.2 **LYFE (Linwood Youth Festival Experience)** is celebrating 21 years of LYFE on 9 March at Linwood Park from 12 noon to 4pm. It brings together a diverse mix of performance, have a go activities, clubs and organisations that youth are involved with and can benefit from. It also strengthens links between organisations supporting positive youth development in greater Linwood. A crew of local youth aged 12 to 18 years have been working alongside an experienced event manager/youth development worker to bring LYFE to life. Many hours have been spent developing event management skills, making friends and creating an event for youth and the wider community. LYFE is managed by the LYFE Advisory Group which is made up of local youth and community focused organisations including Bromley Community Centre, Woolston Development Project, Strengthening Linwood Youth Trust, 4YP and Sport Canterbury with support from Linwood-Central-Heathcote Community Governance staff.
- 7.3 **The Inaugural Linwood Central Heathcote Community Board Edible Garden Awards 2019** ceremony is to be held on Thursday 7 March 2019. The gardens were assessed on the week of 18 February 2019 by selected members of the Horticultural Society and a Board member.

8. Community Board Matters of Interest

Bromley Odour

- 8.1 The Community Board will hold a seminar with Environment Canterbury and Council staff to receive the results of the Bromley Odour Survey.

Community meeting around city fringe planning and development issues

8.2 Over past months community and residents groups representing the areas immediately outside and bordering the four avenues have raised planning and development issues that they feel have both immediate and long term implications for the amenity, neighbourhood, residential and development values in their area. The groups feel these issues need to be addressed to preserve the values they associate with living close to the inner city in areas that are still essentially residential areas.

Some of the groups involved have formed the Inner City Action Network (ICAN) to pursue these issues on a collective basis. Council staff have met with ICAN representatives and agreed a first step in the form of a Community Board and community workshop on 20 March 2019, to ensure that all those involved have a common understand of the legal and planning issues involved and have a common understanding of the issues from the residents perspectives.

Attachments

There are no attachments to this report.

Signatories

Authors	Arohanui Grace - Manager Community Governance, Linwood-Central-Heathcote Liz Beaven - Community Board Advisor
Approved By	Matthew McLintock - Manager Community Governance Team John Filsell - Head of Community Support, Governance and Partnerships

9. Waipapa/Papanui-Innes Community Board Report to Council

Reference: 19/205760

Presenter(s): Ali Jones, Chairperson

1. Purpose of Report

The purpose of this report is to provide the Council with an overview of Part A matters requiring a Council decision and of initiatives and issues considered by the Community Board.

2. Community Board Recommendations

That the Council:

1. [Receive the Community Board report for February 2019.](#)

3. Community Board Decisions Under Delegation

The Waipapa/Papanui-Innes Community Board held meetings on 8 and 22 February 2019. Decisions made under delegation were:

- The Board laid the Palms Suburban Interchange Upgrade – Stage 1 – Shirley Road Bus Stop and Shelter Upgrade on the table at its meeting on 8 February subject to staff reporting on the removal of the cabbage tree located behind the existing bus shelter, moving the proposed bus shelter back towards the Shirley Intermediate School boundary by 500mm, consulting with Kentucky Fried Chicken (KFC) regarding the right turn from Shirley Road into KFC and the pinch points/congestion issues on Shirley Road should the right turn be retained.

The Board laid the report on the table again at its meeting on 22 February and requested that staff:

- a) Advise the Board on the implications of removing the right hand turn into KFC as far as traffic flow and ‘pinch points’ are concerned and provide a comparison with the proposed mitigation measures.
 - b) Investigate leasing land behind the proposed bus shelter, as far west as the Totara tree, from the Ministry of Education, to accommodate the suggestion of moving the bus shelter back by 500 millimetres
 - c) Advise the Board around the process regarding changes to the proposal as per a) above and whether there is a need to re-consult.
- Approval of the following grants:
 - \$2,500 from its 2018/19 Discretionary Response Fund towards the “Celebrate St Albans Park” opening on Sunday 31 March 2019.
 - \$600 from its 2018/19 Discretionary Response Fund to the Richmond Residents’ and Business Association towards administration costs.
 - \$200 from its 2018/19 Positive Youth Development Fund to Owen Dabkowski towards the costs of representing Canterbury at the U16 National Baseball Tournament in Auckland.

4. Part A Recommendations to Council

There were no Part A recommendations from the Board for Council consideration.

5. Significant Community Issues, Events and Projects in the Board Area

Community Facilities

5.1 Neighbourhood Links (formerly Redwood Plunket Rooms)

Following the exterior painting the interior fit out is now occurring prior to the scheduled opening on Wednesday 27 February 2019.

Staff are currently working with local community organisations around the future community development aspirations for the area which will include the Plunket rooms.

5.2 10 Shirley Road

The park is in a tidy condition, the grass that was re-sown after Downers vacated is now growing and a regular mowing schedule has been implemented. The Parks Team are aiming to place a picnic table on the site.

Events

5.3 Belfast Community Network (BCN) – A Slice of Summer

A final successful community event was held on Saturday 2 February from 1pm. The event was hosted by the Belfast Community Network and supported by Christchurch City Council.

Approximately 450 people attended throughout the afternoon. All activities were very popular and families enjoyed the opportunity to connect while children had fun. Once again the Skate Jam was the highlight and over seventy children received skate instruction (refer following photo).



5.4 Pool Party

Although a slightly colder night, local youth braved the cooler temperatures to enjoy the Jellie Park Disco Pool Party on Friday 15 February. Great music, awesome dance moves and a fantastic bomb competition helped warm everyone up.

The event was supported by the local youth agencies Te Ora Hou, PYDT and Northcity.



Approximately 110 high school age young people attended.

5.5 Neighbourhood Links Centre Opening

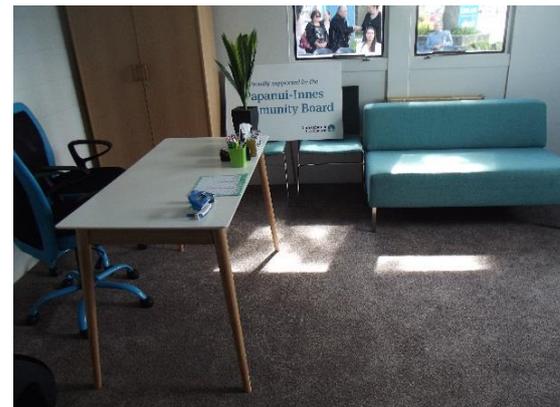
The Neighbourhood Links Centre opening held on Wednesday 27 February 2019 saw the official transformation of the old Redwood Plunket Rooms into a new community-led hub.

The Papanui-Innes Community Board is delighted to support the new initiative and Councillor Mike Davidson (Master of Ceremonies) spoke about the role of the Community Board and Council in funding the repairs to the building. The Deputy Chair, Emma Norrish, delivered a short speech about the history of the building and the number of individuals and non-government organisations (NGOs) that have been involved in the Northcote Project which led to the activation of the building.



Joss Buttriss, the original Northcote Project coordinator, spoke about the development of the delivery of community focused responses within the Northcote Redwood area and introduced the two local volunteers, Angie Durey and Charlotte Clark, who will now work from the new centre and continue to build on the work already well started.

Approximately 30 guests witnessed Te Ora Hou's kaumatua, Mr H, formally bless the building, the reading of a blessing contributed by the Reverend Joanne Latham from St Silas Church and the cutting of the cake by Mike, Emma, Joss, Angie and Charlotte (*above right*).



The Papanui-Innes Community Board expressed their thanks to Geoff Edwards of Resene Paints NZ and Peter Dalman of Finesse Painting and Landscaping for their kind donations of products and time to help refurbish the building.

Attachments

There are no attachments to this report.

Signatories

Author	Christine Lane - Manager Community Governance, Papanui-Innes
Approved By	Matthew McLintock - Manager Community Governance Team John Filsell - Head of Community Support, Governance and Partnerships

10. Waihoru/Spreydon-Cashmere Community Board Report to Council

Reference: 19/200028

Presenter(s): Karolin Potter, Community Board Chairperson
Melanie Coker, Community Board Deputy Chairperson

1. Purpose of Report

The purpose of this report is to provide the Council with an overview of Part A matters requiring a Council decision and of initiatives and issues considered by the Community Board.

2. Community Board Recommendations

That the Council:

1. [Receive the Waihoru/Spreydon-Cashmere Community Board report for February 2019.](#)

3. Community Board Decisions Under Delegation

The Waihoru/Spreydon-Cashmere Community Board held meetings on 5 and 15 February 2019. Decisions made under delegation were:

5 February 2019

- Approving that the stopping of vehicles be prohibited at any time in parts of Grove Road
- Approving that the stopping of vehicles be prohibited at any time in parts of Hazeldean Road
- Approving that the stopping of vehicles be prohibited at any time in parts of Major Aitken Drive
- Revoking the existing parking restriction in parts of Hoon Hay Road
- Approving that the parking of vehicles be restricted to a maximum period of three minutes on school days from 8:15 to 9:15am and from 2:30 to 3:30 pm, in parts of Hoon Hay Road
- Revoking the existing parking restrictions in parts of Spencer Street
- Approving that a marked bus stop be installed in parts of Spencer Street
- Approving that the parking of vehicles be restricted to a maximum period of three minutes on school days from 8:15 to 9:15 and from 14:30 to 15:30, in parts of Spencer Street
- Approving that the parking of vehicles be prohibited at any time on school days from 8:15 to 9:15 am and from 2:30 to 3:30 pm, in parts of Spencer Street
- Approving that the stopping of vehicles be prohibited at any time in parts of Spencer Street
- Revoking the existing parking restriction in the parts of Spencer Street and approving that a Residents Parking Area, restricted to the parking of authorised residents vehicles only displaying the appropriate permit be installed.
- Revoking the existing parking restriction in parts of Poulson Street
- Approving that the stopping of vehicles be prohibited at any time in parts of Poulson Street
- Approving that the stopping of vehicles be prohibited at any time in parts of Cashmere Road

- Approving that the stopping of vehicles be prohibited at any time in parts of Hillsborough Terrace
- Approving that all current parking and stopping restrictions on the northeast side of Kenmure Drive from 45 metres southeast of its intersection with Major Aitken Drive south easterly for 26 metres be revoked.
- Approving that the stopping of vehicles be prohibited at all times on the northeast side of Kenmure Drive from 45 metres southeast of its intersection with Major Aitken Drive south easterly direction for eight metres.
- Approving that a marked bus stop be installed on the northeast side of Kenmure Drive 53 metres southeast of its intersection with Major Aitken Drive south easterly for 14 metres.
- Approving that the stopping of vehicles be prohibited at all times on the northeast side of Kenmure Drive from 67 metres southeast of its intersection with Major Aitken Drive south easterly for four metres
- Declining to make a grant from its 2018/19 Youth Achievement and Development Fund to Tessa May Cockerton-Holmes towards the Summer Course of the English National Ballet School in London.
- Declining to make a grant from its 2018/19 Discretionary Response Fund to West Spreydon School towards the School Hangi 2019.
- Approving a grant of \$500 from its 2018/19 Youth Achievement and Development Scheme to Haydn Llewellyn Armstrong Boul towards participation in the New Zealand Under 18 Ice Hockey World Championship Tournament 2019 in Bulgaria, 14 to 31 March 2019.

15 February 2019

- Adopting the revised criteria and approval process for the Spreydon-Cashmere “Off The Ground “ Fund
- Adopting the revised criteria and approval process for Neighbourhood Week/Let’s Get Together this Summer Funding
- Adopting the revised criteria for the Spreydon-Cashmere Youth Development and Achievement Fund

4. Part A Recommendations to Council

There were no Part A recommendations from the Board to the Council in February 2019.

5. Significant Council Projects in the Board Area

5.1 Barrington Mall entrance/exit improvements

The Barrington Mall entrance/exit on to Barrington Street is an interface between motor vehicles turning both right and left into and out from the mall carpark, vehicles and cyclists travelling along Barrington Street and pedestrians accessing the mall, the adjacent Spreydon Library, bus stops and local shops. There have for some time been concerns about the safety of the entrance/exits and the local residents association, the Spreydon Neighbourhood Network advocated for changes to the configuration of the entrance. A proposal that will remove the right turn out of the carpark together with a number of other safety improvements was developed by staff working with the mall owners and management and residents and approved by the Board and the Council late last year.

The Barrington Mall entrance/exit improvements project has now gone through the detailed design stage and is currently being safety audited. A preferred contractor has been identified

and staff are working through cost share arrangements with Barrington Mall management. Construction is programmed to start early April 2019 and expected to take 4-5 weeks.

5.2 Cashmere, Worsleys and Hoon Hay Roads intersection

The Board is aware of the increase in traffic using the Cashmere/Hoon Hay/Worsleys Roads intersection and has advocated for improvements to be made to the intersection. Construction of the Cashmere/Hoon Hay/Worsleys intersection improvement originally proposed for the 2018/19 financial year was delayed and scheduled to commence in 2019. The Board is pleased to note that the recently released draft Annual Plan maintains funding for the improvements to be made in the 2019/20 financial year.

6. Significant Community Issues, Events and Projects in the Board Area

6.1 LJ and Friends Bike workshop.

The Board recently received a presentation on a youth-run community bike workshop providing services in Spreydon, LJ and Friends. The initiative got underway in August 2017 and now runs workshops on the corner of Cobham and Lyttelton Streets on Sundays 1 -4pm. At the workshops young trainee bike mechanics dismantle and repair donated bicycles, provide tools to community members so that they can repair their own bicycles, and assist with or undertake repairs on site. The presenters explained that the initiative has a vision of training young people in skills, attitude and personal growth and operates in an environment that is fun, relational, developmental, proximal and safe.





6.2 West Spreydon School Community Pool.

West Spreydon Community and School Pool first opened in 1935. This was the result of four years of fund raising by a Baths Committee made up of members from the local community with support from local businesses. The pool was well used for over 82 years by not only the school but also the wider community. Like many school pools across the country the West Spreydon Community and School Pool was closed in 2007.

In 2009 the School Board of Trustees responded to voices within the community and carried out feasibility and strategic planning to re-establish a pool. A pool committee was set up to work towards re-opening the pool which required upgrading and funding. A hugely successful two year funding campaign was held and resulted in the pool being re-opened on the 17th February 2011. Four days later the 22nd February 2011 earthquake struck and extensively damaged pool necessitating its closure.

Over the next six years the pool committee undertook further fundraising to repair the pool again. Repairs were carried out in stages with the Board making a grant towards the repair.

It was proposed that the pool would operate a key system allowing local families to purchase a key at a small charge so that they could access and use the pool outside school hours and during the weekend. On 24 November 2017 the Spreydon-Cashmere Community Board granted \$1,980 towards sponsoring 22 families to receive pool keys to access the pool over the 2018/19 summer months.

Induction sessions were held on 4 November, 5 November and the 3 December with all families attending. Recipient families were identified by Hoon Hay School, Rowley Avenue School, West Spreydon School, Our Lady of Assumption School and Addington School.

The Pool re-opened January 2018. The pool keys were split evenly between the schools and a number of larger families have benefited with access to free swimming over the summer months.



6.3 Somerfield Park Sports Pavilion Community Mural Event

The Somerfield Residents Association was granted Neighbourhood Week funding last year for a novel event. On Sunday 2nd December 2018 Somerfield residents and friends and supporters came together to paint a mural on the wall of the Sports Pavilion at Somerfield Park and to share a Sausage Sizzle. The Association gathered a collection of designs from Somerfield School Students (aged 6/7 years) and held a People's Choice competition / engagement at South Christchurch Library.

Despite the very wet weather there was a good turnout and it was a very successful and enjoyable day. The Pavilion wall was transformed into an amazing bright and colourful mural which helped represent the designs of the Somerfield School Students. Although not completed on the day the mural was progressed following this event through the efforts of a project team and was completed by the end of 2018.



7. Progress Report Against the Community Board Plan

- 7.1 Staff continue to work on the priority actions identified at the last Board workshop on the Community Board Plan and provide the Board with regular updates on progress.
- 7.2 Age-friendly Spreydon-Cashmere.

The Community Board Plan recognises that the development of an Age Friendly Spreydon-Cashmere Action Plan would contribute to a strong community one of the outcomes identified in the Plan.

An Age-friendly Spreydon-Cashmere Steering Group was formed on 21 August 2018 and has met regularly since. At its meeting on 21 February 2019 the agreed to provide a report to the Board and seek an opportunity to meet informally to discuss progress towards an Age Friendly Spreydon-Cashmere Action Plan and the relationship between the Steering Group and the Board going forward.

8. Community Board Matters of Interest

- 8.1 Give Gear Get Great

The Give Gear Get Great sports recycling initiative has been running in the Spreydon-Cashmere area for over two years. The project consists of branded recycling bins being located in libraries, schools and sports stadiums where people can drop off any unwanted or outgrown sports items for recycling into the community. The bins are regularly emptied and the equipment stored to be given out at local community events. At the Hoon Hay Fiesta in November 2018 all of the sports equipment collected over the previous year was given out into the community. Items that are particularly popular with young people are sports shoes that have been outgrown rather than outworn.

The initiative also helps schools that identify students who may need equipment throughout the year. At the end of the school year all recycling bins were collected with a view to targeting additional schools in the new school year.





8.2 Spreydon-Cashmere Board Funds Criteria Revision

The Board held a workshop with local staff in December 2018 to review and update the criteria and eligibility that apply to a number of its funds: “Off the Ground” Fund; “Let's Get Together Next Summer/Neighbourhood Week”; and the “Youth Achievement and Development Scheme”.

The “Off the Ground Fund” was established after the 2011 earthquake to provide the community with access, on a quick turn- around consideration process, to small grants as one-off funding for community volunteer projects with an earthquake recovery focus. The Board accepted the value of extending this fund to community benefit projects beyond those related to disaster recovery. Retaining the “one-off” criteria was favoured. The emphasis of this fund being available for projects creating “a moment of joy” was reiterated.

It was noted that “Neighbourhood Week” /”Let’s Get Together this Summer” funding attracts a proportionately high number of applicants in Spreydon-Cashmere, The workshop identified, however, that a return to a shorter event period could be more likely capture the spirit of the project and less likely to result in applications for already existing or otherwise planned events such as carol singing or Halloween, Guy Fawkes celebrations or their alternatives. This may be reconsidered in the future.

It was agreed that Spreydon- Cashmere Youth Achievement and Development Scheme grants must be applied for by individuals, and that the criteria to demonstrate achievement includes not just reaching exemplary levels of recognition but also the degree of individual effort, talent, and growth reached from any starting point including challenging circumstances. It was clarified that applicants need to reside wholly or principally in the Spreydon- Cashmere Board area to be eligible for a grant.

The revised criteria was approved by the Board at its meeting on 15 February 2019.

Attachments

There are no attachments to this report.

Signatories

Author	Faye Collins - Community Board Advisor
Approved By	Christopher Turner-Bullock - Manager Community Governance, Spreydon-Cashmere Matthew McLintock - Manager Community Governance Team John Filsell - Head of Community Support, Governance and Partnerships

11. Te Pātaka o Rākaihautū/Banks Peninsula Community Board Report to Council

Reference: 19/192522

Pam Richardson, Community Board Chairperson

Presenter(s): Joan Blatchford, Community Governance Manager

Penelope Goldstone, Community Governance Manager

1. Purpose of Report

The purpose of this report is to provide the Council with an overview of Part A matters requiring a Council decision and of initiatives and issues considered by the Community Board.

2. Community Board Recommendations

That the Council:

1. [Receive the Community Board report for February 2019.](#)

3. Community Board Decisions Under Delegation

The Banks Peninsula Community Board held a meeting on 4 February 2019. Decisions made under delegation were:

- **Petition – Lease for Dark Star Café**

Martin Richardson presented a petition regarding the lease for the Dark Star Café in Diamond Harbour seeking the community's support to demand that the Council allow the café building lease to remain in place until such time as new services are built on the Godley House site, so that new owners could continue to serve the community, visitors and tourists after the current lessees endeavour to sell the business in March 2019.

Richard Suggate, resident of Diamond Harbour, spoke to the Board in support of retaining the Dark Star Café. He said the community wants to see a permanent long-term café on the Godley House site and asked that the Board and Council expedite a review of the future use of the site.

The Board noted that the lessees had been offered an extension of their current lease through to June 2021 (under the provisions of the Canterbury Earthquake Order), but had not as yet taken up that offer.

The Board also noted community support for a commercial operation on the Godley House site and questioned whether there was a legislative method that could allow a lease to continue on the site, until its future had been decided through a community engagement and consultation process. The Board noted the need for some urgency around that process due to the commercial imperatives referred to in the petition.

The Board resolved to receive the petition and refer it to Property Consultancy staff for urgent consideration.

- **Submission to Ministry of Transport on Prevention of Pollution from Ships**

The Board resolved to make a submission to the Ministry of Transport on New Zealand's potential accession to the International Maritime Organisation Treaty – Annex VI of the International Convention for the Prevention of Pollution from Ships 1973.

The Board recommended that New Zealand sign the Treaty as this would improve air quality around our ports and harbours, demonstrate New Zealand's commitment to a green, healthy environment and align with international best practice.

- **Pedestrian Improvements – Godley Quay/Voelas Road, Lyttelton**

The Board expressed a wish to find a balance for the parking and stopping restrictions in this area that would focus on improved pedestrian safety, whilst still leaving as many as possible on-street parking spaces available.

The Board resolved to leave the report to lie on the table and ask staff to:

- Bring the report back to the Board with more detail on the no stopping provisions for Option 2;
- Circulate the Safety Audits on the proposal to the Board;
- Arrange a site visit to the area for Board members to gain a better understanding of the site aspects.

- **Additional Parking Space – Oxford Street, Lyttelton**

The Board approved an additional parking space on Oxford Street in Lyttelton to make it easier for residents to find parking.

- **Parking Controls – London Street, Lyttelton**

The Board approved parking restrictions on the north side of London Street in Lyttelton town centre in response to requests from businesses whose customers found it difficult to find a park. The Board also asked staff to look at parking on London Street between Coleridge Terrace and Dublin Street to maximise parking in the area.

- **Reserve Management Committees**

The Board received the minutes from the Robinsons Bay Reserve Management Committee meeting on 15 January 2019.

4. Part A Recommendations to Council

The following reports presenting Part A recommendations from the Board are included in this agenda for Council consideration:

4.1 Lyttelton Seafarers Welfare

The Board's consideration and recommendation of Lyttelton Seafarers Welfare will be considered by the Council at its meeting on 14 March 2019.

4.2 Sumner Road Realignment

The Board's consideration and recommendation of the Sumner Road Realignment will be considered by the Council at its meeting on 14 March 2019.

5. Significant Council Projects in the Board Area

5.1 Lyttelton Design Review Panel

The Lyttelton Design Review Panel, an advisory body of the Banks Peninsula Community Board, provides free, local and independent design advice for developers, property owners and the Council to promote and assist quality design outcomes that embody and contribute to Lyttelton's built character.

In the last year the Panel has provided design advice on two commercial, two residential, two mixed use and one public development, the Lyttelton Museum. More information is available at <https://www.ccc.govt.nz/the-council/plans-strategies-policies-and-bylaws/urbandesign/lyttelton-design-review-panel/>

5.2 Banks Peninsula Gateway Signs

The Board provided feedback on proposals for updating and improving a selection of Banks Peninsula's gateway signs. The Board supported staff making minor changes to the signs regarding freedom camping, and requested that staff seek feedback from stakeholders on the purpose of the signs to inform a broader review and report back to the Board.

5.3 Banks Peninsula Toilets and Buildings

The Board provided feedback on the long term programme for toilet and building renewals on Banks Peninsula. Staff will report back to the Board with additional information regarding toilets and planned capital work on the HMNZS Steadfast building in Cass Bay.

5.4 Britomart Memorial Reserve

The Board provided feedback on the draft landscape plan for Britomart Memorial Reserve in Akaroa prior to public consultation.

6. Significant Community Issues, Events and Projects in the Board Area

6.1 Little River Big Ideas

Staff provided the Board with a progress update on implementation of Little River Big Ideas, a community-led village plan, including:

- Drainage – Planning for drainage work is underway, and staff will facilitate community input as the project proceeds;
- Tennis Courts – Staff are facilitating communication and input between the Project Manager and the community;
- Fitness Equipment – Funding has been allocated for fitness equipment following the Board and community's advocacy.

6.2 Orion New Zealand Limited - Proposed Electricity Upgrade - Lyttelton Tunnel

The Board received a briefing from Orion New Zealand staff on the proposed upgrade of the electricity line through the Lyttelton Road Tunnel.

6.3 Akaroa Cemeteries

Board members noted the work of the recently formed cemeteries group whose members were carrying out maintenance and restoration work in the local cemeteries. Questions were raised as to why the group had been requested by Council staff to stop working in the cemeteries.

The Board requested that an explanation be provided by staff as to why the group had been requested to stop work.

6.4 Commercial Operation in Residential Zone – Rue Balguerrie, Akaroa

It was reported that a commercial business operating in Rue Balguerrie, Akaroa, was creating issues in the local vicinity including parking of buses and the general lack of available parking. The lack of a formed footpath in the area was also noted as a concern.

The Board requested information from staff on whether a commercial business has to have consent to operate in a residential zone, and what conditions are put on such consents.

7. Progress Report Against the Community Board Plan

7.1 The Community Board Plan – Progress Update to 31 December 2018 is **attached**.

8. Community Board Matters of Interest

8.1 Okains Bay

The Board was provided with a progress update on various activities in Okains Bay, including:

- Okains Bay Enhancement Society – Since the Mayor and Councillors visited Okains Bay in August 2018 significant progress has taken place. For example staff facilitated the Society’s identification of priority projects and provided advice on funding opportunities;
- Okains Bay Maori and Colonial Museum – Staff have been working closely with the Museum on funding opportunities.

8.2 Lyttelton Community Visioning

Over the last year, members of local Lyttelton groups and organisations have been meeting to discuss a community vision for the town.

In early-2019 a group met to discuss a “narrative statement,” which is the culmination of these discussions. Those present agreed that it captured the multi-faceted themes of Lyttelton and then moved to discuss actions. The next meeting will discuss actions in more detail.

Lyttelton: the Heart of the Harbour

Where you can explore from the Port to the peaks

Where you can be inspired by the sights and the sounds of artists and makers

Where you can uncover a unique heritage and learn from the past

Where you can feel the pulse of the Port, and the drift and grit of the sea and the shore

Where you can connect with the earth and connect with the people

Where you can plant a seed of hope and grow a future

Where you can find a welcome home

8.3 Corsair Bay Maintenance

Diana Harrison spoke to the Board regarding her view of parks maintenance issues in Corsair Bay. She noted that rubbish is a concern around the bay especially broken glass left behind by groups of people drinking in the area. Ms Harrison tabled photographs she had taken which she believed showed the area in a poorly maintained state. She asked that the Council be made aware of the problems and that a maintenance plan be implemented for the Lyttelton West area.

The Board noted that Ms Harrison had previously attended Board meetings to raise the same issues and that the lack of maintenance in parks appeared to be an ongoing problem in Corsair Bay.

The Board resolved to:

- Refer the issues raised about the ongoing lack of maintenance in Corsair Bay, to staff for investigation and report back to the Board outlining what can be done to address these issues.
- Ask Parks staff to provide a briefing on the current maintenance for Corsair Bay.
- Seek clarification on the policy around consuming alcohol in the Corsair Bay area, and information on whether an alcohol ban can be introduced.

Parks staff have provided the following advice.

Efforts have been made to ensure Corsair Bay is up to an expected standard during the busiest time of the year. Areas are in process of changing from informal (meaning five cuts per annum) to amenity (meaning up to 26 cuts per annum). This includes the terraced area with two picnic tables (see below image).



A damaged drinking fountain, which had been an ongoing issue, has now been repaired (see below image).



A long term (approximately eight years) leak issue below the retaining wall on the beach has now been successfully resolved and remediation of the turfed area is now underway (see below images).



In general Corsair Bay is now in a much improved state with all facilities able to be used by the public (see below image).



Attachments

No.	Title	Page
A ↓	Community Board Plan - Progress Report as at 31 December 2018	48

Signatories

Authors	Penelope Goldstone - Manager Community Governance, Banks Peninsula/Akaroa Joan Blatchford - Manager Community Governance, Banks Peninsula/Lyttelton
Approved By	Penelope Goldstone - Manager Community Governance, Banks Peninsula/Akaroa Joan Blatchford - Manager Community Governance, Banks Peninsula/Lyttelton Matthew McLintock - Manager Community Governance Team John Filsell - Head of Community Support, Governance and Partnerships

BANKS PENINSULA COMMUNITY BOARD PLAN – 6-MONTHLY PROGRESS REPORT to 31 December 2018

Please note that updates in blue are new since the previous progress report to 30 June 2018.

	BANKS PENINSULA COMMUNITY BOARD PLAN	ACTION UPDATE	PRIORITY ACTION FROM JUNE 2018
1	<p>Outcome Our communities are prepared for the impacts and consequences of natural hazards and can respond and recover quickly.</p> <p>What the Board will do Support communities to develop local Community Resilience/ Response Plans.</p> <p>We will measure our success by People feel that they know what to do and where to go for information and support following an emergency.</p>	<p>The Council is developing a city wide comprehensive approach to preparedness and response to natural hazards. Staff from many units across the Council are working together to do this and includes regular input from local Community Governance staff from the wards.</p> <p>As information is developed and made available, this is distributed through local networks to the Peninsula communities. This has included succinct messaging about preparation and what to do in specific emergency situations.</p> <p>In March 2018, the Neighbourhood Action Fund was opened to community groups to apply for funding. Information was distributed to residents and community associations, the Civil Defence Volunteer groups and others across the Peninsula. No Peninsula based groups applied for funding.</p> <p>Staff have facilitated a community meeting in Little River regarding civil defence and community resilience. Discussions are ongoing with Akaroa-based volunteers regarding whether to pursue formal civil defence training.</p>	Nil
2	<p>Outcome Our communities are prepared for the impacts and consequences of natural hazards and can respond and recover quickly.</p> <p>What the Board will do Support and encourage communities to work with the Council and other agencies to plan how to respond to natural hazards.</p> <p>We will measure our success by</p>	<p>In 2017 the Coastal Hazards Report was released. The Board encouraged community members to attend drop-in sessions in November 2017 and provide feedback on how the Banks Peninsula communities may wish to respond to the report’s findings.</p> <p>The Board requested inundation mapping for the whole of Banks Peninsula.</p> <p>The link to the Council’s Civil Defence website, which includes an interactive map of evacuation zones, has been distributed through community networks.</p> <p>In March 2018 staff briefed the Board on the community resilience programme and where Community Boards and their communities fit. This briefing included a discussion on the role of elected members in an</p>	Nil

	BANKS PENINSULA COMMUNITY BOARD PLAN	ACTION UPDATE	PRIORITY ACTION FROM JUNE 2018
	Local communities are involved in response, mitigation and future planning around natural hazards.	<p>emergency with input requested from Board members. Board Members were also asked how they might wish to be involved in local resilience planning. Staff are currently collating this information which will document this Board's members' potential involvement in community planning activities.</p> <p>Banks Peninsula staff continue to be involved in cross city Community Resilience Planning at both steering and working group levels.</p>	
3	<p>Outcome Our communities are prepared for the impacts and consequences of natural hazards and can respond and recover quickly.</p> <p>What the Board will do Understand emergency service arrangements on Banks Peninsula.</p> <p>We will measure our success by The Board is briefed by emergency services.</p>	<p>Fire and Emergency New Zealand briefed the Board in December 2017.</p> <p>Property Consultancy staff spoke with St Johns staff and asked them to come back with their requirements for an ambulance venue in Akaroa, and whether they think there are any Council owned sites that might be suitable.</p> <p>St Johns are considering the BP Meats site acknowledging that the future use of this site is yet to be determined and that any commitment at this stage could only be temporary.</p>	The Board requested that staff investigate options for a St John's ambulance venue in Akaroa.
4	<p>Outcome Local communities are well-connected, and supported by easily accessible community facilities.</p> <p>What the Board will do Support and promote local events.</p> <p>We will measure our success by Community events and gatherings are held and/or supported.</p>	<p>Projects/Events Supported by the Board as Board Projects Neighbourhood Week events (October-March) have been funded annually by the Community Board. These events enable neighbours and communities to connect, enhancing well-being and the feeling of support and connection. In 2017-18, 24 events were funded. <i>In 2018-19, 18 events have been funded with reimbursements for five by December 2018.</i></p> <p>ANZAC Day 2018 services were supported in Lyttelton, Akaroa and Little River. <i>Funding has been allocated for services in 2019.</i></p> <p><i>The Banks Peninsula Community Service Awards is a triennial event. In June 2018 the ceremony took place in Kaituna Valley.</i></p> <p>Community Events Funded by the Board's Discretionary Response Fund and Strengthening Communities Fund</p>	Nil

	BANKS PENINSULA COMMUNITY BOARD PLAN	ACTION UPDATE	PRIORITY ACTION FROM JUNE 2018
		<p>The Board provided a grant to the organisers of the Live at the Point (Diamond Harbour) music series which went from 15 January to 5 March 2018.</p> <p>Other events that were allocated funding include Banks Peninsula Walking Festival (July 2017), Wakaroa Pigeon Bay Art Trail (2018 Easter weekend) and the Port Levy Regatta (2018 Easter weekend).</p> <p>From June to December 2018 the Board approved funding for community events including:</p> <ul style="list-style-type: none"> • Project Lyttelton’s annual fashion shows, outdoor summer movie series, a community garden event, a community grown dinner and Lyttelton SummerFest; • Little River Community Centre’s community dance and the Armistice Day 100th Anniversary, which was held in Akaroa; • Governors Bay Fete and Music Festival; • Diamond Harbour “Live and the Point” music series; • FrenchFest; • Seaweeek; • Ceilidh and open day. <p>Staff Support and Advice In 2018 staff completed a fundraising application to the Department of Arts, Culture and Heritage and secured \$2,000 for the Museum Trust towards a Waitangi Day event.</p> <p>The young people from the Lyttelton Youth Group helped organise the reopening of the Lyttelton Skate Park in May 2018, with support and advice from staff.</p> <p>Support with focus, direction and advice has resulted in a weekly youth group that evolved through discussions between Project Lyttelton after concerns raised by the community about the lack of activities for young people from Year 8 and over. Numbers have successfully grown with the focus being to create a safe place for young people to meet and socialise that will assist with developing life skills and confidence. There are now</p>	

	BANKS PENINSULA COMMUNITY BOARD PLAN	ACTION UPDATE	PRIORITY ACTION FROM JUNE 2018
		<p>three programmes in place including a newly formed girls group and two appointed Youth Leaders. Development work continues to support Project Lyttelton.</p>	
5	<p>Outcome Local communities are well-connected, and supported by easily accessible community facilities.</p> <p>What the Board will do Provide funding and/or support to community-led initiatives.</p> <p>We will measure our success by Community funding is allocated to identified priorities.</p>	<p>2017-18 Financial Year (July 2017 to June 2018) In August 2017, \$146,654 of Strengthening Communities Funding (SCF) was allocated by the Board to 20 organisations across Banks Peninsula. One recipient received multi-year funding. By 30 June 2018, the Board had allocated \$46,425 of Discretionary Response Funding (DRF) to 32 projects, including four Community Board initiatives and 10 youth development grants to young people.</p> <p>2018-19 Financial Year To Date (July to December 2018) In August 2018, \$134,760 was allocated to 19 organisations (including the multi-year funding recipient) for the Board's annual contestable fund. In addition, by December 2018 (half year), \$42,243 had been allocated to 11 projects. These include three Community Board initiatives and one youth development grant to a young person.</p> <p>All funding is assessed in reference to the Council's Community Outcomes, Strategies and Policies and the Board's Outcomes.</p> <p>Applications were granted for provision of community connection spaces, information gathering and dissemination for residents and tourists, community services, events and local programmes, recognising volunteers, arts, heritage, environment, for youth activities and to individual young people via the Youth Development Fund.</p> <p>In the 2017-18 year at least 11 applications addressed provision of facilities directly. During the first half of the 2018-19 year (July to December 2018), these numbered nine and included funding towards community spaces, pools and playgrounds.</p> <p>Community Facility Upgrades</p> <ul style="list-style-type: none"> • Little Akaloa Community Hall – Significant upgrade completed • Kaituna Hall – Significant external and internal upgrade completed 	Nil

	BANKS PENINSULA COMMUNITY BOARD PLAN	ACTION UPDATE	PRIORITY ACTION FROM JUNE 2018
		<ul style="list-style-type: none"> Le Bons Bay Hall – Maintenance work completed and budget for roof work allocated for 2019 <p>Community Facility Activation</p> <ul style="list-style-type: none"> Birdling’s Flat – Staff supported the establishment of a committee to activate the community facility 	
6	<p>Outcome Local communities are well-connected, and supported by easily accessible community facilities.</p> <p>What the Board will do Advocate for Council facilities and services to be provided appropriate to local needs.</p> <p>We will measure our success by Council facilities and services meet local need.</p>	<p>The Community Support, Governance and Partnerships Unit is working on a strategy for community facilities, their location, condition and use. Banks Peninsula staff are involved because these are very important community hubs for our communities and there are over 15 spread over the Peninsula communities.</p> <p>Project Lyttelton have received <i>Resilience Partnership</i> funding to activate the Lyttelton Recreation Centre. Council staff are working with Project Lyttelton to identify the best mechanism to allow the transition of management of the Centre to Project Lyttelton to enable further activation. To date activation of the Recreation Centre has included welcoming a number of new tenants to the Centre which has brought new and different people through the Centre, as well as working with the existing 15 tenants. Project Lyttelton have also conducted research to identify community ideas for how the Centre could be used and activated going forward (survey, interviews and open day). The Chair of Project Lyttelton has briefed the Board on the project.</p> <p><i>Measurable progress has been made within the areas of community engagement, increased access and usage and strategic planning. Figures indicate a 15% usage increase between September and October 2018 with August 2018 peaking at over 700 visitors. Work is in progress to finalise a workable management agreement.</i></p> <p>The Allandale Hall repairs have been completed and an official opening ceremony was held in mid-2018.</p>	Nil

	BANKS PENINSULA COMMUNITY BOARD PLAN	ACTION UPDATE	PRIORITY ACTION FROM JUNE 2018
		<p>The Board successfully advocated for funding to remain in the Long Term Plan for the Naval Point Development Plan. Consultation on this project is upcoming.</p> <p>Akaroa and Little River libraries continue to provide a valuable range of services for local citizens with two hours of Council staffing now provided at Little River on a Saturday morning. This replaces the volunteers who were opening the library on a Saturday with minimal services available.</p> <p>The Board provided funding to support the upgrade of the Okuti Recreation and Sports Club Hall, which is Council-owned but community managed.</p> <p>In mid-2018 the Board granted a lease to the Governors Bay Heritage Trust over part of the land and buildings on Cholmondeley Reserve for the purpose of operating a museum and to help provide an income for the Trust.</p> <p>The Board has participated in the ongoing Property Review Process and recommended to Council the retention of a number of properties for strategic purposes.</p> <p>Staff provided support and advice around capacity building, fundraising and community partnerships to the Okains Bay, Pigeon Bay and Little River communities.</p> <p>The Board advocated for renewal of the Le Bons Bay Hall roof, but the Council did not include this in the Long Term Plan.</p> <p>Repairs to the Akaroa Service Centre have been completed and it was reopened in August.</p> <p>Staff facilitated development of a feasibility study for an Okains Bay facility and made an application to the Tourism Infrastructure Fund for public facilities on Banks Peninsula.</p> <p>Staff provided capacity building, fundraising and community partnership support for the following:</p>	

	BANKS PENINSULA COMMUNITY BOARD PLAN	ACTION UPDATE	PRIORITY ACTION FROM JUNE 2018
		<ul style="list-style-type: none"> Okains Bay Maori and Colonial Museum Trust; Okains Enhancement Steering Group for the development of a Village Plan and their aspiration for a Community Hall; Birdlings Flat Community Centre Activation; Pigeons Bay Settler Committee for the development of a Village Plan. <p>Staff facilitated the following actions from the Little River Village Plan:</p> <ul style="list-style-type: none"> Drainage improvements; Tennis courts renewal; Playground renewal; Planning for safety and tourism signage; New fitness equipment at Awa-iti Reserve. 	
7	<p>Outcome Local communities are well-connected, and supported by easily accessible community facilities.</p> <p>What the Board will do Advocate for improved technology infrastructure.</p> <p>We will measure our success by Infrastructure is in place to facilitate use of technology.</p>	<p>The Board have requested Skype-type communications in its three boardrooms.</p>	<p>The Board signalled it would like to advocate through the Long Term Plan for funds for Skype for Business and video conference equipment for the Akaroa, Lyttelton, and Little River board rooms.</p> <p><i>This equipment has been installed in the Akaroa Community Boardroom and Lyttelton staff meeting room.</i></p>
8	<p>Outcome Core infrastructure is provided, well maintained and future-proofed.</p> <p>What the Board will do Advocate that appropriate service levels are set.</p> <p>We will measure our success by Appropriate infrastructure service levels are set.</p>	<p>In November 2017 the Board was briefed on city-wide priorities and service levels for roads. The Board noted that the priorities and issues for Banks Peninsula can be quite different, and requested that staff report back to the Board with more detailed information for Banks Peninsula.</p> <p><i>The Board's Akaroa Issues Working Party continues to provide advice on maintenance of roads, reserves, cemeteries and structures such as wharves, slipways and seawalls in Akaroa.</i></p>	<p>The Board requested that staff urgently engage with New Zealand Transport Agency staff on the state of road in Banks Peninsula, in response to recent deaths, accidents, and road maintenance complaints from residents and businesses.</p>

	BANKS PENINSULA COMMUNITY BOARD PLAN	ACTION UPDATE	PRIORITY ACTION FROM JUNE 2018
			The Board advocated strongly through the Long Term Plan process for action on Banks Peninsula roads, which along with community submissions, resulted in the Council establishing the Banks Peninsula Roading Maintenance Working Party.
9	<p>Outcome Core infrastructure is provided, well maintained and future-proofed.</p> <p>What the Board will do Advocate for service level reporting and monitoring to come to the Board.</p> <p>We will measure our success by Service level reports are provided to the Board 6-monthly.</p>	The Board requested reporting and monitoring on infrastructure service levels. Please see above for an update on this action.	Nil
10	<p>Outcome Core infrastructure is provided, well maintained and future-proofed.</p> <p>What the Board will do Identify priorities for new or upgraded infrastructure in conjunction with staff.</p> <p>We will measure our success by Priority infrastructure projects are included in the Council's budget (Annual/Long Term Plan).</p>	<p>The Okains Bay community and the Board successfully advocated for \$30,000 for a study to investigate the feasibility and cost of providing potable water in Okains Bay.</p> <p>In 2018 the Board approved infrastructure projects including kerb build-outs, a new bus stop location and no stopping restrictions to create safer sightlines for pedestrians.</p> <p>The Board provided funding to the Ataahua Reserve Management Committee to support their project to have a constant water supply.</p> <p>The Board strongly advocated for priority Banks Peninsula infrastructure projects to be included in the Council's Long Term Plan, including marine structures, roads, footpaths, cemeteries, tracks, playgrounds, community facilities, wastewater and drinking water systems.</p>	The Board requested a briefing from Roading staff and the New Zealand Transport Agency regarding service level reporting and monitoring on the state of roads in Banks Peninsula to inform its Long Term Plan submission.

	BANKS PENINSULA COMMUNITY BOARD PLAN	ACTION UPDATE	PRIORITY ACTION FROM JUNE 2018
		<p>The Board was successful in its submission to the Long Term Plan for the Council to build a new water supply scheme for Okains Bay so that it meets the Drinking Water Standards for New Zealand.</p> <p>The Board's advocacy, along with community submissions, resulted in the Council establishing the Banks Peninsula Roding Maintenance Working Party.</p>	
11	<p>Outcome Core infrastructure is provided, well maintained and future-proofed.</p> <p>What the Board will do Advocate for a change in Council procurement processes to facilitate use of local contractors.</p> <p>We will measure our success by Local contracts are awarded.</p>	<p>The Council is reviewing its Procurement Policy and staff have made the Head of Procurement and Contracts aware of the Board's interest in the ability for local contractors to successfully compete for Council work.</p>	<p>The Board requested that the draft Procurement Policy is considered by all Community Boards for recommendation prior to Council approval.</p>
12	<p>Outcome The cultural, natural and built heritage of Banks Peninsula is acknowledged, valued and enhanced.</p> <p>What the Board will do Support staff and our communities to work together to identify cultural, natural and built heritage values/sites/places of significance.</p> <p>We will measure our success by Hosting an annual workshop for community members, staff and the Board to discuss and identify locally significant heritage and cultural values, sites and places of significance.</p>	<p>The Board provided support for the Council's Heritage Strategy Development and community workshops to identify principles and values.</p> <p>The Board approved funding for the 2018 Wakaroa Pigeon Bay Art Trail.</p> <p>The Board's Akaroa Museum Advisory Committee, Akaroa Design and Appearance Committee and the Lyttelton Design Review Panel continue to provide design and heritage advice to the Council.</p> <p>The Board provided feedback on the Council's Heritage Strategy, Arts Strategy and Cemeteries Bylaw and Handbook.</p> <p>Funding allocations from July to December 2018 that contribute to this outcome include whanau engagement (Te Hapu o Ngati Wheke), a community arts programme (Akaroa), photography (Diamond Harbour), Loons Club (Lyttelton), FrenchFest (Akaroa), Little River information, choir</p>	<p>Nil</p>

	BANKS PENINSULA COMMUNITY BOARD PLAN	ACTION UPDATE	PRIORITY ACTION FROM JUNE 2018
		(Akaroa), SummerFest (Lyttelton), Reserve Management Committees, Live at the Point music series (Diamond Harbour), Governors Bay Fete and Music Festival and ANZAC services (including the Armistice Day 100 th Anniversary in Akaroa).	
13	<p>Outcome The cultural, natural and built heritage of Banks Peninsula is acknowledged, valued and enhanced.</p> <p>What the Board will do Consider alternative uses for heritage buildings in conjunction with staff.</p> <p>We will measure our success by Currently empty heritage buildings are utilised.</p>	<p>There is a process in place which has identified unused heritage buildings. Information was shared with the Board and the Council has invited applications from individuals, groups and organisations interested in using and/or helping to fund the restoration of select Council-owned unused heritage buildings, including Yew Cottage.</p> <p>The Council will next undertake a similar process for the remaining unused heritage buildings.</p>	The Board requested that staff include Development Christchurch Limited's feedback and community responses in a report on the future use of heritage buildings.
14	<p>Outcome The cultural, natural and built heritage of Banks Peninsula is acknowledged, valued and enhanced.</p> <p>What the Board will do Develop relationships with key stakeholders involved in cultural and natural heritage, including Papatipu Rūnanga.</p> <p>We will measure our success by Community Board representatives regularly attend meetings of cultural and natural heritage organisations on Banks Peninsula.</p>	<p>There was Governance staff representation on a trip to Ripapa island and Quail Island to acknowledge and consider how to enhance and promote the cultural, natural and built heritage of each place in conjunction with the Department of Conservation, Council Heritage Staff and Quail Island Restoration Trust.</p> <p>Governance staff are working with the Council's Heritage Team to explore the idea of a Maritime History Trail and how this may be incorporated into a Christchurch NZ web-based platform for trails.</p> <p>Community Boards have been gifted, from Te Rūnanga o Ngāi Tūāhuriri, a Māori name reflecting their respective areas.</p> <p>Staff training will be provided in Te Reo and Tikanga for members to assist in their relationships with the Rūnanga.</p>	Nil
15	<p>Outcome</p>	The Lyttelton Urban Design Review Panel has been very active over the last few months with some significant buildings being considered. As the Panel	Nil

	BANKS PENINSULA COMMUNITY BOARD PLAN	ACTION UPDATE	PRIORITY ACTION FROM JUNE 2018
	<p>The cultural, natural and built heritage of Banks Peninsula is acknowledged, valued and enhanced.</p> <p>What the Board will do Advocate for the continuation of the Lyttelton Design Review Panel following an 18 month trial period and share the lessons with other local panels/committees.</p> <p>We will measure our success by Lyttelton Design Review Panel continues to be involved in local planning decisions.</p>	<p>was set up as a trial, a review is now underway along with a review of the Akaroa Design and Appearance Committee.</p>	
16	<p>Outcome Visitors to Banks Peninsula enhance the local economy and sustain our natural, social and heritage environments.</p> <p>What the Board will do Work with communities and local organisations to identify outcomes of a Banks Peninsula Visitor Plan.</p> <p>We will measure our success by Visitor Plan outcomes identified.</p>	<p>Staff made an application to the Tourism Infrastructure Fund for public facilities on Banks Peninsula.</p> <p>Staff facilitated planning for safety and tourism signage in Little River.</p>	
17	<p>Outcome Visitors to Banks Peninsula enhance the local economy and sustain our natural, social and heritage environments.</p> <p>What the Board will do Advocate for development of a Banks Peninsula Visitor Plan under the Christchurch Visitor Strategy.</p>	<p>The Board was briefed by Lyttelton Port Company on plans for a new cruise ship berth in Lyttelton. Construction has begun on the berth, which will be the first custom-built cruise facility in New Zealand and will be able to accommodate some of the largest cruise liners from around the world.</p> <p>The Board successfully advocated for a review of the Freedom Camping Bylaw as it relates specifically to Akaroa, following deputations from the community. The updated Bylaw, which restricts freedom camping in Akaroa, was in place for Summer 2018-19.</p>	<p>The Board requested that staff organise a seminar to start a Banks Peninsula Visitor Plan after a date has been confirmed for the return of cruise ships to Lyttelton.</p> <p>Council staff are working with Christchurch NZ on visitor planning for Banks Peninsula.</p>

	BANKS PENINSULA COMMUNITY BOARD PLAN	ACTION UPDATE	PRIORITY ACTION FROM JUNE 2018
	<p>We will measure our success by Banks Peninsula Visitor Plan developed.</p>		
18	<p>Outcome Visitors to Banks Peninsula enhance the local economy and sustain our natural, social and heritage environments.</p> <p>What the Board will do Work with Akaroa District Promotions, Lyttelton Harbour Information Centre and Lyttelton Harbour Business Association to identify ways to take advantage of and be resilient to any changes to the cruise ship industry in Akaroa and Lyttelton.</p> <p>We will measure our success by Cruise ship passengers and locals have a good experience.</p>	<p>Funding allocations in the Board's 2017-18 year for initiatives encouraging visitors to and supporting visitors in Banks Peninsula include allocations to Little River Information Station website development, Lyttelton Review, Stoddart Cottage's Activating the Spaces project, Project Lyttelton activities and events, Akaroa District Promotions, Getting to the Point – Diamond Harbour Plan, Lyttelton Historical Museum rebuild and Akaroa Harvest Festival.</p> <p>From July to December 2018 the Board granted funding for initiatives encouraging visitors to and supporting visitors in Banks Peninsula, including Lyttelton Seafarers, Loons Club (Lyttelton), Governors Bay Fete and Music Festival and ANZAC services, which this year included the Armistice Day 100th Anniversary in Akaroa.</p> <p>Prior to Summer 2018-19, the Board worked with staff to develop an action plan for managing cruise ships in Akaroa.</p>	Nil
19	<p>Outcome Visitors to Banks Peninsula enhance the local economy and sustain our natural, social and heritage environments.</p> <p>What the Board will do Develop relationships with organisations providing services to visitors.</p> <p>We will measure our success by Community Board representatives regularly attend meetings of visitor service organisations on Banks Peninsula.</p>	<p>A Board member attends the Akaroa District Promotions, Lyttelton Historical Museum Board, Lyttelton Harbour Information Centre, Okains Bay Maori and Colonial Museum Trust, Orton Bradley Park, Stoddart Cottage Trust, Banks Peninsula Conservation Trust, Friends of The Gaiety, Grubb Cottage Trust and Little River Rail Trail Trust monthly meetings.</p> <p>Reserve Management Committees (RMCs) (15 across the Peninsula) are sub-committees of the Community Board. These committees work on local projects which enhance the natural environment, provide camping facilities in some areas and venues for community activities and events for local and wider tourism/recreation. A Board member is assigned to each RMC as a liaison person.</p> <p>In February 2018 the Board approved funding to the Little River Information Centre for copy for the visitor information website.</p>	Nil

	BANKS PENINSULA COMMUNITY BOARD PLAN	ACTION UPDATE	PRIORITY ACTION FROM JUNE 2018
20	<p>Outcome Visitors to Banks Peninsula enhance the local economy and sustain our natural, social and heritage environments.</p> <p>What the Board will do Advocate for inclusion of Banks Peninsula in Christchurch NZ's work.</p> <p>We will measure our success by Banks Peninsula is included in Christchurch NZ's promotional activities and strategic planning.</p>	<p>Council staff are working with Christchurch NZ on visitor planning for Banks Peninsula.</p>	Nil
21	<p>Outcome Banks Peninsula is a viable place to live and work.</p> <p>What the Board will do Support initiatives identified by staff and Development Christchurch Limited to catalyse commercial investment in Lyttelton's town centre.</p> <p>We will measure our success by More commercial investment in Lyttelton Town Centre.</p>	<p>The Board received a briefing from Development Christchurch Limited (DCL) in November 2017, and provided feedback on the early stages of DCL's investigation into how to catalyse commercial investment in Lyttelton. DCL have reported back to the Council on this.</p> <p>The Board received a briefing on the implementation of Action N2 of the Lyttelton Master Plan (the installation of a demountable fence at the Lyttelton pool to enable the community to access and use the flat, grassed area immediately next to the pool during that part of the year that the pool is not in operation) after earlier identifying this as a priority action. The fence is now in place.</p>	
22	<p>Outcome Banks Peninsula is a viable place to live and work.</p> <p>What the Board will do</p>	<p>The Board allocated funding to groups and projects to further this goal, including Stoddart Cottage's Activating the Spaces project, Project Lyttelton activities and events and the annual "Live at the Point" summer music series in Diamond Harbour.</p>	Nil

	BANKS PENINSULA COMMUNITY BOARD PLAN	ACTION UPDATE	PRIORITY ACTION FROM JUNE 2018
	<p>Provide funding and/or support to local Social Enterprise initiatives.</p> <p>We will measure our success by Community funding is allocated to identified priorities.</p>		
23	<p>Outcome Banks Peninsula is a viable place to live and work.</p> <p>What the Board will do Support local Business Associations.</p> <p>We will measure our success by Community Board representatives regularly attend meetings of local Business Associations.</p>	<p>The Diamond Harbour community have been supported to update and progress actions identified in their 2013 community-led plan "Getting to the Point." In 2016-17 the Diamond Harbour Community Association (DHCA) worked with the wider community and Council staff to update the community-led plan:</p> <ul style="list-style-type: none"> • Recommitting to projects where there was continued enthusiasm; • Consolidating groups of actions together within subject area themes. The projects range from business development; community information and events; arts and culture, and infrastructure improvements. <p>Landscape and traffic planning expertise has been provided as part of one of these actions which aimed to identify how to make the village centre a vibrant prosperous place with good transport (including pedestrian) connections. After seeking community feedback the updated plan was adopted by the DHCA (March 2017), endorsed by the Community Board (September 2017) and presented to Council (November 2017).</p> <p>The Little River community have been supported to develop a community plan. "Little River, Big Ideas" outlines a range of important issues that the community faces as well as its aspirations for the future. As a plan of action, its "Big ideas" contain a range of activities that can be delivered by people working together in Little River, as well as projects that will draw upon the support of other agencies.</p>	Nil
24	<p>Outcome Banks Peninsula is a viable place to live and work.</p>	<p>The Community Board and the tenants of the Bruce Terrace social housing units have been involved with about the rebuild of this housing which is underway.</p>	Nil

	BANKS PENINSULA COMMUNITY BOARD PLAN	ACTION UPDATE	PRIORITY ACTION FROM JUNE 2018
	<p>What the Board will do Advocate for provision of appropriate and affordable social housing.</p> <p>We will measure our success by Banks Peninsula is included in the Council and Ōtautahi Community Housing Trust's long term planning for social housing.</p>		
25	<p>Outcome The Banks Peninsula environment is well-managed, sustained and enhanced.</p> <p>What the Board will do Support Reserve Management Committees to undertake work and make decisions on projects in conjunction with staff.</p> <p>We will measure our success by Reserve Management Committees' priority projects are included in the Council's budget (Annual/Long Term Plan).</p>	<p>Allandale Reserve Management Committee (ARMC) have met with a Landscape Architect to begin the process of preparing an updated Development Plan.</p> <p>The Board advocated for ARMC to receive the full amount of money from the lease of the Transport Yard, as desired. The Council have agreed to allocate the full \$14,500 per annum to ARMC for the length of the lease.</p> <p>ARMC have been supported in their negotiations with the Council's Project Manager around the repair of the Allandale Hall, in the planning of the Re-Opening Ceremony, internal fit-out of the Hall, septic tank issues and lease/Memorandum of Understanding.</p> <p>The Board and staff worked with the Cass Bay Reserve Management Committee to identify drainage issues, and facilitated commitment of Council and volunteer resources to resolve this issue.</p> <p>The Board received a briefing on the Parks Programme in November 2017, and provided feedback on prioritisation.</p> <p>During 2017 staff worked closely with each Reserve Management Committee (RMC) to identify priority projects. The Board successfully advocated for RMCs priority projects to be included in the Council's Long</p>	<p>The Board signalled that it would like to request funding for RMCs for administration costs in its Long Term Plan submission.</p> <p>The Council did not grant this funding, so the Community Board decided to provide funding to RMCs for administrative costs.</p>

	BANKS PENINSULA COMMUNITY BOARD PLAN	ACTION UPDATE	PRIORITY ACTION FROM JUNE 2018
		<p>Term Plan for 2018/28, including \$130,000 for RMC capital projects. Staff are currently working with RMCs to plan projects.</p> <p>The Board also successfully advocated for the establishment of a Banks Peninsula Parks Ranger position.</p> <p>The Board worked with staff and the Lyttelton Reserve Management Committee to refine aspects of the Draft Urumau Reserve Development Plan. The Development Plan was approved in mid-2018.</p> <p>A project to review the structure and financial management of RMCs is pending. Governance and community development support and advice for RMCs is ongoing as needed.</p>	
26	<p>Outcome The Banks Peninsula environment is well-managed, sustained and enhanced.</p> <p>What the Board will do Advocate that appropriate environmental service levels are set.</p> <p>We will measure our success by Appropriate environmental service levels are set.</p>	<p>The Board advocated for appropriate environmental service levels at three workshops with Councillors in 2017.</p> <p>The Board provided information and feedback to contribute to the compilation of a Tree and Urban Forest Plan.</p> <p>The Board advocated strongly for improved parks maintenance standards on Banks Peninsula in its Long Term Plan submission. The Council allocated funding for a new position, a Banks Peninsula Parks Ranger.</p> <p>In November 2018 Parks staff briefed the Board on parks maintenance on Banks Peninsula and agreed that:</p> <ul style="list-style-type: none"> • Contractors will attend Board meetings; • Staff will investigate mapping maintenance areas under contract to identify responsibilities and gaps in service; • Parks staff will monitor contracts closely and report to the Board bi-monthly; • Community Boards will be involved in a review of parks maintenance contracts. 	

	BANKS PENINSULA COMMUNITY BOARD PLAN	ACTION UPDATE	PRIORITY ACTION FROM JUNE 2018
27	<p>Outcome The Banks Peninsula environment is well-managed, sustained and enhanced.</p> <p>What the Board will do Advocate for service level reporting and monitoring to come to the Community Board.</p> <p>We will measure our success by Service level reports are provided to the Community Board 6-monthly.</p>	<p>The Board requested reporting and monitoring on environmental service levels. Please refer above for updated actions.</p>	
28	<p>Outcome The Banks Peninsula environment is well-managed, sustained and enhanced.</p> <p>What the Board will do Provide funding and/or support to projects that enhance the natural environment.</p> <p>We will measure our success by Funding is allocated to identified environmental priorities.</p>	<p>Diamond Harbour Reserve Management Committee (RMC) and the Board successfully advocated for \$20,000 from the Council for a track-building project. Diamond Harbour Community Association and the Board successfully advocated for \$10,000 from the Council for a second track-building project.</p> <p>Funding was provided to the Takamatua Ratepayers Association to support their stream sediment control project.</p> <p>The Board successfully advocated for \$50,000 from the Council for Banks Peninsula Reserve Management Plans. A generic reserve management plan will be produced, which will be used as an overarching framework that applies to all RMCs. Information specific to individual reserves will be added to ensure they are comprehensive. This project began in early-2018 and is ongoing.</p> <p>The Board strongly advocated for priority Banks Peninsula environmental projects to be included in the Council's Long Term Plan for 2018/28 at three workshops with Councillors in 2017. These projects include renewal and development of parks and tracks as well as protection of biodiversity.</p> <p>The community continues to partner with the Council to plan the Head to Head Walkway around Lyttelton Harbour. Recently volunteers in Diamond</p>	

	BANKS PENINSULA COMMUNITY BOARD PLAN	ACTION UPDATE	PRIORITY ACTION FROM JUNE 2018
		<p>Harbour have partnered with the Council to develop and maintain part of the Walkway.</p> <p>The Board allocated funding to support the coordination of 15 Reserve Management Committees across the Peninsula.</p>	
29	<p>Outcome The Banks Peninsula environment is well-managed, sustained and enhanced.</p> <p>What the Board will do Develop a strategy for working with Papatipu Rūnanga, who as kaitiaki are committed to protecting the health of the land, water, mahinga kai and biodiversity.</p> <p>We will measure our success by Strategy for working with Papatipu Rūnanga is developed.</p>	<p>Governance staff met with the Council’s Cultural Advisers (October 2017) to ascertain the most appropriate way of embarking on this. The Council’s Cultural Advisers suggested that an approach be made directly to Te Kāhui Kahukura.</p> <p>The Board has had a workshop session with staff on Kaupapa Maori Cultural Development. The Board has learnt suitable waiata for use when visiting local marae.</p> <p>The Board had a very successful hui at the marae at the invitation of Te Hapū o Ngāti Wheke.</p>	
30	<p>Outcome The Banks Peninsula environment is well-managed, sustained and enhanced.</p> <p>What the Board will do Continue to build relationships with environmental organisations and participate in environmental planning forums.</p> <p>We will measure our success by Community Board representatives regularly attend meetings of environmental organisations on Banks Peninsula.</p>	<p>The Board appointed a representative to the Whaka-Ora, Healthy Harbour Working Group, which contributed to the development of the Whakaraupō/Lyttelton Harbour Catchment Management Plan. Staff also provided feedback on the Plan.</p> <p>In February 2018 the Board endorsed, and recommended that the Council adopt, the Whaka-Ora Healthy Harbour, Ki Uta Ki Tai, Whakaraupō/Lyttelton Harbour Catchment Plan. Implementation of the Plan is now underway.</p>	<p>The Board requested a briefing or memo from Council staff (Parks and Planning) regarding progress on “Sites of Ecological Significance.”</p>

Report from Coastal-Burwood Community Board – 18 February 2019

12. Travis Road & Bower Avenue 40km/hr Variable Speed Limit (School Speed Zone) and Frosts Road Permanent Speed Limit Change

Reference: 19/178555

Presenter(s): Wayne Gallot, Traffic Engineer

1. Coastal-Burwood Community Board Recommendation to Council

(Original staff recommendation accepted without change)

Part A

That the Council:

1. Approve, pursuant to Part 4 Section 27 of the Christchurch City Council Traffic and Parking Bylaw 2017, and Land Transport Rule: Setting of Speed Limits 2017, that speed limits on Travis Road, Bower Avenue and Frosts Road be revoked and set as indicated in the drawing TG133450 as attached to the agenda for this meeting and listed below in Clauses 1a – 1d including resultant changes made to the Christchurch City Council Register of Speed Limits and associated Speed Limit Maps;
 - a. Revoke the existing permanent speed limit of 70 kilometres per hour on Frosts Road, commencing at its intersection with Travis Road and extending in a northerly direction to a point 100 metres south of Beach Road.
 - b. Approve that the permanent speed limit on Frosts Road, commencing at its intersection with Travis Road and extending in a northerly direction to a point 100 metres south of Beach Road, be set at 50 kilometres per hour.
 - c. Approve that a 40 kilometres per hour variable speed limit (school speed zone) be set on Travis Road, commencing at a point 110 metres east of Frosts Road and extending in an easterly direction for a distance of 600 metres, as it meets the requirements of the New Zealand Gazette Notice (21/04/2011, Number 55, page 1284) including the times of operation.
 - d. Approve that a 40 kilometres per hour variable speed limit (school speed zone) be set on Bower Avenue, commencing at a point 100 metres north of Travis Road and extending in a northerly direction for a distance of 385 metres, as it meets the requirements of the New Zealand Gazette Notice (21/04/2011, Number 55, page 1284) including the times of operation.
2. Approve the speed limit changes listed in Clauses 1a – 1d above come into force following the date of Council approval, installation of all required infrastructure (signage and/or markings) and removal of obsolete infrastructure (as indicated in drawing TG133450), and the required notice being provided to NZTA and NZ Police in accordance with Section 2.7(6) of Land Transport Rule: Setting of Speed Limits 2017.

Linda Stewart/Tim Sintes

Carried

Attachments

No.	Report Title	Page
1	Travis Road & Bower Avenue 40km/hr Variable Speed Limit (School Speed Zone) and Frosts Road Permanent Speed Limit Change	69

No.	Title	Page
A ↓	Travis Rd - Bower Ave School Speed Zone and Frosts Rd Speed Limit Change Plan (tg133450)	76
B ↓	Travis Rd - Bower Ave School Speed Zone and Frosts Rd Speed Limit Change Submissions Table (PUBLIC)	77

Travis Road & Bower Avenue 40km/hr Variable Speed Limit (School Speed Zone) and Frosts Road Permanent Speed Limit Change

Reference: 19/88882

Presenter(s): Wayne Gallot (Traffic Engineer) & Tessa Zant (Senior Engagement Advisor)

1. Purpose and Origin of Report

Purpose of Report

- 1.1 The purpose of this report is for the Coastal-Burwood Community Board to endorse the installation of two new 40 km/h variable speed limit (school speed zone) on Travis Road and Bower Avenue, and the setting of a permanent 50 km/h speed limit on Frosts Road.

Origin of Report

- 1.2 This report is staff generated in response to formal requests received from Avonside Girls High School (AGHS) and Shirley Boys High School (SBHS) to have the school speed zones installed on Travis Road and Bower Avenue. The proposed 50 km/h permanent speed limit on Frosts Road is also in response to requests from AGHS, SBHS and community Police.

2. Significance

- 2.1 The decisions in this report are of low significance in relation to the Christchurch City Council's Significance and Engagement Policy.
 - 2.1.1 The community engagement and consultation outlined in this report reflect the assessment.

3. Staff Recommendations

That the Waitai/Coastal-Burwood Community Board recommends that the Council:

1. Approve, pursuant to Part 4 Section 27 of the Christchurch City Council Traffic and Parking Bylaw 2017, and Land Transport Rule: Setting of Speed Limits 2017, that speed limits on Travis Road, Bower Avenue and Frosts Road be revoked and set as identified in **Attachment A** (HPRM 19/95764) and listed below in Clauses 1a – 1d including resultant changes made to the Christchurch City Council Register of Speed Limits and associated Speed Limit Maps;
 - a. Revoke the existing permanent speed limit of 70 kilometres per hour on Frosts Road, commencing at its intersection with Travis Road and extending in a northerly direction to a point 100 metres south of Beach Road.
 - b. Approve that the permanent speed limit on Frosts Road, commencing at its intersection with Travis Road and extending in a northerly direction to a point 100 metres south of Beach Road, be set at 50 kilometres per hour.
 - c. Approve that a 40 kilometres per hour variable speed limit (school speed zone) be set on Travis Road, commencing at a point 110 metres east of Frosts Road and extending in an easterly direction for a distance of 600 metres, as it meets the requirements of the New Zealand Gazette Notice (21/04/2011, Number 55, page 1284) including the times of operation.
 - d. Approve that a 40 kilometres per hour variable speed limit (school speed zone) be set on Bower Avenue, commencing at a point 100 metres north of Travis Road and extending in a northerly direction for a distance of 385 metres, as it meets the requirements of the

New Zealand Gazette Notice (21/04/2011, Number 55, page 1284) including the times of operation.

2. Approve the speed limit changes listed in Clauses 1a – 1d above come into force following the date of Council approval, installation of all required infrastructure (signage and/or markings) and removal of obsolete infrastructure (as indicated in **Attachment A**), and the required notice being provided to NZTA and NZ Police in accordance with Section 2.7(6) of Land Transport Rule: Setting of Speed Limits 2017.

4. Key Points

- 4.1 This report does not support any specific levels of service identified in the [Council's Long Term Plan \(2018 - 2028\)](#).
- 4.2 The following feasible options have been considered:
 - Option 1 – Establish 40 km/h variable speed limits (school speed zones) on Travis Road and Bower Avenue, and reduce the permanent speed limit to 50 km/h on Frosts Road in accordance with **Attachment A** (preferred option)
 - Option 2 – Do nothing
- 4.3 Option Summary - Advantages and Disadvantages (Preferred Option)
 - 4.3.1 The advantages of this option include:
 - The proposed 50 km/h permanent speed limit on Frosts Road will help to reduce operational speeds, and therefore improve safety.
 - The proposed 50 km/h permanent speed limit on Frosts Road will support the safe operation of a new signalised pedestrian crossing proposed by NZTA.
 - The proposed 50 km/h permanent speed limit on Frosts Road provides increased consistency with existing speed limits on Travis Road, Beach Road and Mairehau Road, and therefore helps to improve credibility of speed limits locally and nationally.
 - The proposed 40 km/h variable speed limit (school speed zones) on Travis Road and Bower Avenue will reduce operational speeds on these roads, and therefore improve safety, during peak school travel times.
 - The electronic speed zone signs enhance driver awareness of the likely presence of children.
 - 4.3.2 The disadvantages of this option include:
 - Increased amount of signage on Travis Road and Bower Avenue, as well as side roads, within the proposed school speed zones.

5. Context/Background

Context

- 5.1 New school facilities are currently being built for Avonside Girls High School (AGHS) and Shirley Boys High School (SBHS) on land that was formally part of QE II Park. The new schools will become operational at the beginning of the second term of this year (29 April 2019).
- 5.2 The new schools have direct frontage to both Travis Road and Bower Avenue. Increased numbers of all road users (including vehicles, cyclists and pedestrians) associated with the new schools are anticipated on Travis Road, Bower Avenue and Frosts Road.

Background

- 5.3 During the consenting processes to establish the new schools on the QE II Park site, Council staff worked closely with external agencies including the Ministry of Education (MoE) and the New Zealand Transport Agency (NZTA) to identify and consider transport infrastructure changes that would be necessary to support development of the schools whilst minimising impacts on transport level of service. Part of that process, and Council staff participation, included an NZTA-led “Safer Journeys to School” working group.
- 5.4 In addition to a number of road layout improvements for Travis Road and Bower Avenue that were identified through that process (and have now largely been completed), Council committed to consider the installation of a school speed zone on Travis Road that was to be fully funded by MoE. To that end, MoE has provided Council a financial contribution of \$55,000 to cover the costs of a school speed zone on Travis Road.
- 5.5 In response to concerns raised about pedestrian safety crossing Frosts Road, Council staff have been working with NZTA to develop an NZTA proposal for a signalised pedestrian crossing north of the Anzac-Frosts-Travis roundabout. That project is being funded and progressed by NZTA, separate to this Council proposal for the school speed zones and the Frosts Road speed limit change.
- 5.6 Council also has an ongoing commitment to improve road safety. Reducing excessive vehicle speeds, where appropriate, outside schools during peak arrival and departure periods improves safety for children. Council has a programme of installing 40 km/h variable speed limits (school speed zones) outside schools according to a prioritisation process. This process, including the methodology behind it, was endorsed on 25 August 2011 by the Council as the most appropriate method of improving road safety outside certain schools, where no other traffic control devices are practical or feasible.
- 5.7 Council staff have continued a close working relationship with AGHS and SBHS following the consenting process, to identify and consider various transport safety and travel planning matters. Local community Police have also been involved in that process, which led to formal requests being received by Council for the installation of school speed zones on Travis Road and Bower Avenue as well as a request to consider a reduced speed limit on Frosts Road.
- 5.8 Prior to finalising the current proposal, technical advice and preliminary feedback was obtained from NZTA (in their regulatory capacity). The current proposal, including the school speed zone sign locations and also the reduced speed limit on Frosts Road, is supported by NZTA.

6. Option 1 - Establish 40 km/h variable speed limits (school speed zones) on Travis Road and Bower Avenue, and reduce the permanent speed limit to 50 km/h on Frosts Road (preferred)

Option Description

- 6.1 Install the 40 km/h variable speed limits (school speed zones) on Travis Road and Bower Avenue, and reduce the permanent speed limit on Frosts Road to 50 km/h, as shown in **Attachment A**.
- 6.2 Electronic signs are proposed to be installed at the start of each zone on the north side of Travis Road to the east of Frosts Road, on the south side of Travis Road to the west of Bower Avenue, on the west side of Bower Avenue to the north of Travis Road and on the east side of Bower Avenue to the north of Marriotts Road. Signs installed on the opposite side of the road, will advise road users that they are exiting the school speed zone. Signs identifying the start and end of the school speed zones will be installed on all side roads (Atlantis Street, Blue Gum Place, Wattle Drive, Saltaire Street, Marriotts Road and Ascot Avenue). Appropriate warning 'children' and 'school' signs will also be installed as required in accordance with legislative requirements and national guidelines. Localised footpath widening is proposed outside No.219/221 Bower Avenue to ensure that an adequate footpath width is maintained past the proposed electronic school speed zone sign in this location.
- 6.3 As required by the conditions listed in the New Zealand Gazette (see the Legal Implications Section below), the school speed zones will operate on school days for no more than 35 minutes in the morning, and 20 minutes in the afternoon. The proposed operating times will be aligned to the schools' start and end times, once these are confirmed.
- 6.4 Existing signage on Frosts Road associated with the current 70 km/h speed limit will be removed, or possibly relabelled and repositioned to act as repeater (reminder) 50 km/h speed limit signage. Additional infrastructure (eg signage and markings) to support the reduced speed limit may be considered in future once the schools become operational.

Significance

- 6.5 The level of significance of this option is low consistent with Section 2 of this report.

Impact on Mana Whenua

- 6.6 This option does not involve a significant decision in relation to ancestral land or a body of water or other elements of intrinsic value, therefore this decision does not specifically impact Ngāi Tahu, their culture and traditions.

Community Views and Preferences

- 6.7 AGHS and SBHS communities and local residents are specifically affected by this option due to the improved safety provide by changes to the speed limits on neighbouring roads.
- 6.8 Consultation on the proposal ran from 20 December 2018 to 28 January 2019.
- 6.9 An email notification was sent to key and local stakeholders, residents of the affected roads were door knocked, and absentee owners were sent a letter. A message also went out in the QEII newsletter which has a reach of approx. 700.

Consultation Feedback

- 6.10 In total 47 submissions were received and most were in support. See **Attachment B** (19/101657) for a list of all submissions.
- 6.11 Of the 38 comments about the school speed zone, 35 were in support, one wanted a smaller zone, one was not in support and one was about an out of scope matter.

- 6.11.1 Of those in support of the School Speed Zone 15 wanted additional restrictions, such as a lower speed, permanent speed change, and extension of the School Speed Zone.
- 6.12 Of the 42 comments about the speed reduction on Frosts Road, 27 were in support, 13 were not in support and two commented about an out of scope matter.
- 6.12.1 Those opposed to the proposal mentioned the lack of driveways, wide cycleway / footpath, existing crossing points and pupils using other routes, as reasons to maintain the current 70kmph speed limit.
- 6.13 Feedback was received on a range of out of scope issues, including the intersection of Frosts and Travis Road and parking generated by the schools. A new crossing on Frosts road should address some of these concerns and parking around the schools will be monitored once they are operational.

Alignment with Council Plans and Policies

- 6.14 This option is consistent with Council's Plans and Policies

Financial Implications

- 6.15 Cost of Implementation – approximately \$80,000.
- 6.16 Maintenance / Ongoing Costs – covered under the area maintenance contract and effects will be minimal to the overall asset.
- 6.17 Funding source – allocated funding in the 2018/2019 Traffic Operations capital expenditure budget (including the \$55,000 financial contribution received from MoE).

Legal Implications

- 6.18 Implementation of variable speed limit school speed zones, including installation of any associated signs and/or markings, must comply with Land Transport Rule: Setting of Speed Limits 2017, the New Zealand Gazette notice (21/04/2011, Number 55, page 1284) and NZTA Traffic Note 37 revision 2 (May 2011).
- 6.19 The interpretation Act 1999 provides for the New Gazette notice (21/04/2011, Number 55, page 128) and NZTA Traffic Note 37 to have continued effect, despite those documents being established under (and referring to) the now repealed Land Transport Rule: Setting of Speed Limits 2003.
- 6.20 The Council's Traffic and Parking Bylaw 2017 allows the Council to set and change speed limits on roads in Christchurch in accordance with the Land Transport Rule: Setting Speed Limits 2017 and the Land Transport Act 1998.
- 6.21 In accordance with the Christchurch City Council Delegations Register, Council has not delegated its powers under the above legislative framework.
- 6.22 The installation of any signs and/or markings must also comply with Land Transport Rule: Traffic Control Devices 2004.

Risks and Mitigations

- 6.23 None identified.

Implementation

- 6.24 Implementation dependencies - dependant on Community Board endorsement and Council approval for eth proposed speed limit changes.
- 6.25 Implementation timeframe – Installed by 30 April 2019 (start of second school term)

Option Summary - Advantages and Disadvantages

6.26 The advantages of this option include:

- The proposed 50 km/h permanent speed limit on Frosts Road will help to reduce operational speeds, and therefore improve safety.
- The proposed 50 km/h permanent speed limit on Frosts Road will support the safe operation of a new signalised pedestrian crossing proposed by NZTA.
- The proposed 50 km/h permanent speed limit on Frosts Road provides increased consistency with existing speed limits on Travis Road, Beach Road and Mairehau Road, and therefore helps to improve credibility of speed limits locally and nationally.
- The proposed 40 km/h variable speed limit (school speed zones) on Travis Road and Bower Avenue will reduce operational speeds on these roads, and therefore improve safety, during peak school travel times.
- The electronic speed zone signs enhance driver awareness of the likely presence of children.

6.27 The disadvantages of this option include:

- Increased amount of signage on Travis Road and Bower Avenue, as well as side roads, within the proposed school speed zones.

7. Option 2 – Do nothing

Option Description

7.1 Retain existing 70 km/h speed limit on Frosts Road and do not install the proposed 40 km/h variable speed limit school speed zones on Travis Road or Bower Avenue.

Significance

7.2 The level of significance of this option is low consistent with Section 2 of this report.

Impact on Mana Whenua

7.3 This option does not involve a significant decision in relation to ancestral land or a body of water or other elements of intrinsic value, therefore this decision does not specifically impact Ngāi Tahu, their culture and traditions.

Community Views and Preferences

7.4 As a road safety project, this option was not consulted on. Refer to Section 6.7 for community views and preferences relating to the preferred option, which includes feedback that does not support the preferred option.

Alignment with Council Plans and Policies

7.5 This option is consistent with Council's Plans and Policies.

Financial Implications

7.6 Cost of Implementation – cost of staff time investigating the proposal and preparing report.

7.7 Maintenance / Ongoing Costs – not applicable

7.8 Funding source – not applicable

Legal Implications

7.9 Not applicable.

Risks and Mitigations

7.10 None identified.

Implementation

7.11 Implementation dependencies - not applicable

7.12 Implementation timeframe – not applicable

Option Summary - Advantages and Disadvantages

7.13 The advantages of this option include:

- No additional cost to Council.

7.14 The disadvantages of this option include:

- It does not address the safety concerns and preferences of the schools, community and other stakeholders.

Attachments

No.	Title	Page
A	Travis Rd - Bower Ave School Speed Zone and Frosts Rd Speed Limit Change Plan (tg133450)	
B	Travis Rd - Bower Ave School Speed Zone and Frosts Rd Speed Limit Change Submissions Table (PUBLIC)	

Confirmation of Statutory Compliance

Compliance with Statutory Decision-making Requirements (ss 76 - 81 Local Government Act 2002).

(a) This report contains:

- sufficient information about all reasonably practicable options identified and assessed in terms of their advantages and disadvantages; and
- adequate consideration of the views and preferences of affected and interested persons bearing in mind any proposed or previous community engagement.

(b) The information reflects the level of significance of the matters covered by the report, as determined in accordance with the Council's significance and engagement policy.

Signatories

Authors	Wayne Gallot - Traffic Engineer Tessa Zant - Senior Engagement Advisor
Approved By	Ryan Rolston - Team Leader Traffic Operations Steffan Thomas - Manager Operations (Transport)



Submissions received on the QEII School Speed Zone and speed reduction on Frost Road

Sub ID	Any comments on the school speed zones	Any comments on Frosts Road speed reduction	Name or organisation
20650	Fine	I don't believe this is necessary and given there is no residential homes on that section of road the 70km/hr limit should remain. Make it 50 just before getting to the roundabout if required for a pedestrian crossing but not the whole section as that is unnecessary.	Ben Robinson
20651		The Frosts Road/Travis Road roundabout is extremely dangerous for pedestrians to cross, as the bushes in the middle of the roundabout block pedestrians view of approaching cars. Once school pupils are crossing this intersection daily, a pedestrian only phase such as lights will be necessary to prevent serious accidents. There is insufficient time for pedestrians to cross safely as cars approach at speed off Anzac Drive. With the bushes so high they are obscured until the last minute.	Rosalin Stewart
20652		Support the speed reduction on Frosts Road. Concerned about the current cycle paths requiring the crossing of multiple lanes on Frosts Rd full of motorists focused on entering and leaving the roundabout. Those cycling from Anzac Drive or Travis Rd toward Mairehau Rd past the Queenspark/Beach intersection are being directed by the cycle paths into an area on Mairehau Rd toward Burwood Hospital where there are many busy intersections and very little protection for cyclists (it consists of a white line) and little cycling space.	Emma Jamieson
20655	Definitely need to reduce the speed limits on Travis, Bower Ave & frosts road with flashing speed signs and speed cameras	Down to 50 km hr	Judith Keen
20657	School speed zones at areas of direct entry and exits. Including school bus areas. These are not primary school children.	There is no need for speed reduction on this stretch of road.	Gill Hubert
20658	Support this proposal.	This is a totally rural road i.e. no residential properties fronting onto this part of Frosts Road. I see no need to or any benefit from reducing the current speed limit.	Anthony Fleete
20661	It's a school area so it should the same as all other school areas 40km	Reduced speed limits or speed bumps	Nichola Lond
20663	Please make the speed zones as low as possible. I believe the school zone should begin 200 metres BEFORE the Travis Road roundabout (at Frosts Road, Travis Road and Anzac Drive) NOT after, as there will be a large number of students coming from those streets. Because this roundabout is part of a ring-route and consistently travelled by large trucks at high speeds, it poses a huge danger to those students crossing/walking/biking here. The amount of traffic will increase dramatically when the schools start and if the zones are not made safe and someone is killed, it will be a tragedy that could have been easily prevented.	The first half of Frosts Road (coming from Travis Road) should be 40kms not 50kms (as above the school zone should begin 200 metres before Frosts Road meets the Travis Road roundabout) because there will be children exiting straight on to Frosts Road, then it can become 50kms as it leads into Mairehau Road.	Vicki Edwards-Brown
20664		I support the permanent 50km an hour speeds down frosts road. A lot of children will be coming to school via this way. I also would have bought that the frosts road roundabout would be changed into traffic lights. This is not a safe place to cross as an adult, I don't think kids will be able to do so that safely either. Please look into this	Annabelle Dennett
20666	I agree with the proposed zones. The safety of the approx. 2000 students and other during school starting and finishing periods is paramount.	I agree with the reduction to 50kph. This is a main approach to the school zone and will likely have students biking along it to and from school.	Robert Jugovac
20667	Agree with this as long as the 40km is only during certain hours of the day. Completely disagree to slow down traffic for the whole day.	Disagree 100%. Reducing the speed limit here will cause frustration for drivers who are used to that speed limit. Implementing a crossing there is also pointless as there is already the crossing at the roundabout which works perfectly well. Why would anyone need to cross mid-way down frosts road when the only thing there is the golf course. Frosts road should stay 70km, even with school kids around it is unlikely they are going to be needing to cross in this higher speed section and the footpath is wide enough that kids won't spill on to the street anyway	Michael Banks
20668	As long as we have those lit up signs indicating the 40k limit is in effect fine as long as they remember to turn it off after the allotted time has elapsed	No need to reduce speed limit on Frosts Road so much! 60kph would be fine, it's not like the kids going to this school are little with no road sense they're teenagers	Marie Roberts

20669	I like the idea of reducing the speed zones in line with keeping the students safe. My main concern would be the roundabout intersection at Frosts Rd & QE2 Drive. I have two teenagers attending the new school next year and would love to see lights instead of a roundabout for easier management for the kids to cross the road on bikes or walking.	I like the idea of reducing Frosts Rd from 70kmph to 50kmph during the school times.	Hannah Nixon
20670	Reduced speed in school times makes sense.	Disagree this is needed. there is a dedicated cycle lane/footpath so speed on frosts should be kept at 70kph	Chris Evans
20672	1. Would like to offer to make 40km/h speed zone on Travis Road permanent as very often kids going to and leaving schools outside the proposed 20-35 minutes time frames. 2. Would like to offer to prohibit car parking on resident (south) side of Travis Road (between Anzac Ave and Bower Ave) from 8am till 5pm on working days. Large number of non-resident cars parked along the south side of the road completely block view for motorists trying to join the Travis Road traffic from local properties and creates dangerous situations.	Completely support.	Konstantin Kazantsev
20674		Speed reduction is a great idea! However we as a family have a big problem with the overgrown bushes on the roundabout on Frosts Road / Travis road My children like to visit their grandparents and need to walk their bikes across frosts road onto Travis road bike way however it is very difficult to see the traffic going through the roundabout from Anzac drive onto frosts road! We would love to see the bushes removed from the roundabout to allow safer viewing of vehicles from all directions	Fiona McNicholl
20676	The speed zones are great but someone will be killed if traffic lights aren't installed. My family have tried crossing from Travis Road over Anzac Drive and it is very dangerous, both our children acknowledged how scary it was at the time and I don't think the reduction of speed will stop a school child being killed.		Nadeane Spriggs
20677	Speed zones are a must to keep our children safe so I am all for this to happen and we get a 40 zone outside the school entrances	I think Frost Rd speed limit has to be lowered. People go way to fast down there as it is and when it has a load of kids trying to get to school it will be very dangerous.	Sharon Richards
20678	I would like to see the school speed zones lower than the 40km. 30km or even 20km would be even better for this area during school times. You have young, inexperienced drivers and lots of movement in this area causing distraction for all drivers. The speed limit in this area should be lowered, not just at school times. As this becomes a hive of activity for the area, it would be best to always have a reduced speed for safety.	Yes, please reduce speed to 50km on Frost Rd. Permanently.	T. Scott
20680	A very good idea, but would you consider the parking in nearby streets at the same time as with all the building that is going on at the moment we have had a insight what is going to be like with the Students that will be parking in their cars, Saltire St becomes a one way with parking on both sides of the road making it a hazard to everyone. I have seen some close calls .Please feel free to call me. All residents near me feel the same.		John Jackson
20681	I think all the suggested changes should be implemented as suggested. However Travis Road, East of Frosts Rd should have an increased speed zone. Both sides of this road have wide pedestrian and bike zones and are clearly separated from the motorised traffic. The traffic always pushes the 60kmh limit of 50kmh anyway, and would make it clear that the divide to the school zone from the frosts road round-about applies (and fits with the 70kmh zone to the South of the roundabout too)	I actually think that the road need to have separate, wide cycle and pedestrian lanes - as there is room on both sides for this to happen. This would also have the added benefit of increased cycle/pedestrian access to the yet-to-be developed QEII master plan area and East Travis Wetland.	Michael Skinner
20686	happy for the lower speed limits on travis and bower but don't think it's necessary for frosts rd.		Andrea Skinley
20705		There is no need to reduce the speed limit on frosts road. There is a perfectly wide sidewalk which is a good distance from the road, which means that there is no risk to pedestrians. If parents are concerned about their children getting to school, then they can instruct their children to walk/cycle via bower ave.	Dominique DuPreez
20707			Ursula Klein

20713	The 40 km speed limit is appropriate	The very short 70 km speed limit on Frosts Rd is dangerous in that it encourages drivers to speed when re-entering the 50km limit at the Bower Ave Corner. It should be 50kms as it is on QE11 drive. This makes a consistent speed ratio. Pedestrians and cyclists have a nervous time crossing the road.	Parklands recovery group
20719	I totally agree with these being put in place. Also Breezes Road from Aranui High to Avondale Road should have these restrictions put in place also as it has been proven via an email from council to us that the traffic/trucks through this area exceed the 50km speed limit also. If you are going to do it for one area you need to consider all areas where schools and also playgrounds are situated	Totally agree as there will be children cycling on this road	Jude Brown
20723	Support	Support	Cody Cooper
20725	I agree with the electronic school speed reductions	I agree with reducing Frosts Road to 50km per hour	Scott Williams
20822	Stephen here to give my thoughts about the new speed restrictions pertaining to the new high schools in QE 2 Park. I live in a unit [REDACTED]. I have concerns about the increasing busyness & the safety of the teenagers at the new schools. The thoughts of possible injuries or deaths horrifies me & all safety measures are welcome. At present a number of drivers speed along Travis Road & around that sharp corner past the BP garage. The proposed speed restrictions are very welcome. I have noted elsewhere how effective the 40 School Zone signs are. It's a bit hard to make out from the map dropped in my letter box but I think that electronic signs both sides of the school grounds in Travis Rd are very important & of course the static signs. Can I also mention parking in Blue Gum Place. I think that yellow line no parking is necessary on one side of the street is necessary because of the narrowness of the street. At the moment the temporary parking on both sides of the street by construction workers is tolerable but on a longer term base the restricted movement on the street road would be a real problem.		Stephen Best
20832	You would also likely reduce a lot of drop off / pick up traffic if you put in place traffic light pedestrian crossings or underground tunnels at the roundabout for students to walk and cycle over/through - allowing students to walk from quite a distance away and not having to cross these roads that parents are definitely concerned about (& will likely remain concerned about even with speed limits reduced) will cut down the amount of drop offs to the school gates.		Tanya Drury
20833	Totally agree with the reduced speed limit, Plus Speed cameras.	Totally agree on reduced speed limit, plus cameras	Esther Hart
20835	Fully support school zone speed zones on Travis Rd and Bower Ave. Please ensure the signs are positioned in such a way as to not be missed amongst other signs. Perhaps a reminder sign part way down Travis Rd in each direction would help, as drivers often speed up too soon within the zone when they are long (witnessed daily outside Rangī Ruru on Rossall).	I thought this road was already 50 km/h, or used to be before the EQs. I fully support the reduced speed, but this will need enforcement as, like Travis Rd to the west of the Anzac roundabout, most drivers will go 60+ regardless of posted speed limit. Perhaps bigger signs with a suburb name underneath would help make it more noticeable?	Fiona Bennetts
20836	I would like to see Travis road between Atlantis and Bower Ave made 30 km during school hours or even better all the time. The CCC have made the CBD safer by doing this why not around school and our kids.	Good idea. Also need to put lights in on the corner of Frost rd, Travis and Anzac dr. It's very hard and dangerous to cross at this roundabout. Please make this top priority before someone is hit. And it's a NZTA road so make them pay.	James Halliday
20839	Spokes supports lower limits in school zones. A 30 km/h limit should be considered.	Spokes supports the 50 km/h limit on Frosts Road as it will signal drivers that they are entering a more congested area and need to reduce speed and increase their awareness.	Spokes Canterbury
20840	Fine with this	Opposed. Keep at 70kph Travis Rd from QE11 Drive through to Travis Road/Frosts Rd roundabout also needs to be increased to 70kph	Scott Saunders
20841		Allowing 70kph as the limit to continue on Anzac Dr between the river and Travis Rd is appalling those intersections at the roundabouts need lights and slower limits. This is an extreme Safety issue - kids will die because of these stupid decisions. CCC needs to work with NZLTA on these matters urgently!!!!	Eastern Vision
20842	I have a problem with the driveway from the school that is directly opposite my driveway. That driveway is also side by side with the drive from qe2 doctors. The doctors driveway is supposed to	not at this time	Garry Robinson

	not be used it is breaching the consent given to them at the beginning. Tell the doctors to stop using that driveway is impacts on mine and the schools new driveway.		
20845	We strongly support the proposed change to introduce school speed zones for Bower Ave and Travis Rd. We expect that a minimum of 2500 people will attend the new site daily. They will arrive and leave via buses, cars, bikes, scooters and walking. It is imperative that the safety of all road users is taken into consideration and it is reasonable and indeed common sense for school speed zones to operate. Precedent has been set across numerous other schools in Christchurch which have speed zones in place. It is recognised that this will slow the traffic flow for both of these roads, however given the significant increase in traffic that can be expected it is a reasonable compromise that this occurs for the time periods proposed in the interests of the safety and well-being of all road users.	We also strongly support the permanent reduced speed zone for Frosts Road. As from the beginning of term 2 2019 there will be a significant increase in the traffic in the area at the beginning and end of the school day. Frosts Rd is likely to be a major feeder road for access to the school and there is a need to manage safely the traffic at the roundabout with Travis Rd and coupled with the new controlled pedestrian crossing it is important to manage the volume and speed of the traffic safely and to ensure that the traffic will stop in time to enable pedestrians to cross Frosts Road. We would be concerned for the safety of all road users if the speed zone is not reduced given the additional complexity of managing the increased volume in traffic associated with those attending and leaving the schools.	Avonside Girls High School Board of Trustess
20846	This will help keep students arriving and leaving school safer, though 30km a better limit. Also extend the time to 35 minutes at end of school time. Instead of just a small strip of green on the cycle way the entire strip from near Frosts Road to Bower Ave Roundabout needs to be green. On both sides of the road. Plus a pedestrian and cyclist crossing with lights to stop traffic.	An excellent idea, this will reduce the hazard of fast moving traffic. This will help keep cyclists and pedestrians safer, most of whom will be students. At present many cars do not slow down to 50km till past Beach Road and Mairehau Road intersection. Also have you considered how students are going to safely negotiate the busy roundabout at this location?	Stephanie Zeier
20849		There is no vehicle access proposed on Frosts Road. The existing (disused) access is to become a pedestrian and cycle access, and therefore links to the existing shared path. The existing right turn median on Frosts Road should be removed and the vehicle access removed. The existing 70kmh speed limit therefore has no reason to be altered.	Richard Houghton
20850	It's ridiculous to lower the speed limit, Frosts Rd especially. It has a huge cycle path down the side next to the golf course, so there is no need for kids to even be on the road. Travis Road also has large cycle paths down each side, so again no need for a speed reduction. Bower Ave is the only one that doesn't have large cycle lanes, so why not work on that instead of inconveniencing the local residents. The students are surely old enough and able to use cycle lanes and cross streets to get to school on their own without meddling with the speed limits, and creating confusion and inconvenience.	No need as it has a huge cycle path along the golf course side of the road, there is no need for the students to even be on the road. I can't believe it's even been suggested.	Neil Barrie
20851	Agree with the speed zones around the combined schools. There may also be a need to add further yellow lines around nearby streets - like the recent addition of yellow lines around Ascot Ave, Marriotts Rd & Bower Ave. There are approx 80 staff carparks on-site for approx 200 staff and no student parking for a combined school of maximum 2,500 (not all of these kids will be 16 and have cars). This also needs to be addressed.	Agree with this reduction. What is happening with the old golf driving range entrance/exit onto Frosts Rd? I hope this will be closed to cars if it's not already.	Shireen Spaull
20853	Yes, I agree with the 40km school zone	Please reduce to 50km	Suze Booth
20854		I don't agree with the speed reduction proposal for Frosts Road. I believe that 50km/h would not be consistent with the national guidelines for this type of road with its risk profile. By law the CCC need to follow the new NZTA One Network Road Classification (ONRC) system. Using the NZTA ONRC map we can see this road is classified as an arterial road with 11,500 vehicle movements meaning it's a high use road. The arterial road designation means it's a key road for the movement of traffic and/or freight critical to social and economic wellbeing. A risk profile for this road shows it to be very low risk. Active users are completely separated, there's no residential properties along the road, & there's no need to cross the road except at each end. Future pupils at the schools can also avoid this road using Ascot Ave. Under the ONRC system the CCC are required to be focused on the customer & maintain the road to suit its purpose & designation (arterial). Here's a quote from the NZTA speed management guide	Julian Dendle

		<p>"It is necessary to manage speeds appropriate to its primary use. I. e a high volume road needs to be able to move traffic efficiently and safely and therefore reducing the speed limit along this type of road is not appropriate. It is more appropriate to provide an environment (be it a higher speed one) that provides a safe system environment where there is a low probability of a fatal or serious crash occurring".</p> <p>The council would have been more credible if they had proposed a limit of 60km/h.</p>	
20855	<p>I support the need for school speed zones but I would like to see them include the Travis/Rookwood-Bower Ave roundabout as I believe there will be a huge amount of student movement there and that would also support the children traveling to Rawhiti School. For safety and ease of residential use these speeds could be all day for these suggested portions of the road which would be easier to install than the flashing 40km signs. This area has high use all day with the Gymnastics, Medical Centre, schools and retail stores and it is becoming harder to walk through the area at most times of the day. School half days, early Wednesday finishing and changes with senior time tables would make a permanent speed reduction sensible.</p>	<p>I support the reduction of speed on Frost Road to 50km. This is to ensure that cars coming off the roundabout are at a speed that allows better reactions to cyclists and pedestrians crossing the road.</p>	Elissa Smith
20860	<p>The Christchurch North East Secondary Education Committee (NESE) consults widely and advocates on behalf of our members on secondary education related issues in North East Christchurch. NESE was established in 2009. NESE's Management Committee members are all volunteers from our local community. We currently represent 646 subscribing families and individuals.</p> <p>We support the proposal in general with a two minor amendments for improved functionality. We consider that the school zone signs outside the BP Service Station will not be sufficiently visible. It is a busy roundabout. There is already a lot of distracting signage in that location. Drivers have their eyes on the road with the roundabout traffic, pedestrians crossing, as well as vehicles entering & exiting the service station. That is how the road functions now at busy times - before adding 2500 students and teachers to the congestion with the new schools.</p> <p>We feel the sign on Travis Road by the BP would be serve a better purpose on the other side of the roundabout. This would mean repositioning the sign to Rockwood Road, as well as moving the proposed sign near 219 Bower Ave, only 100m, to 185 Bower Ave.</p> <p>We are all locals who regularly drive through this intersection. We feel that this change would significantly improve the effectiveness of the school zone.</p> <p>Atlas Street is red zoned except for the church on one side and one residential driveway on the other side. The position of the Atlas Street school speed zone sign is not ideal. Nobody will see it where it is shown on the map, as all drives are between the proposed sign position and the intersection. This sign needs to be much closer to the intersection than usual to be viewed by drivers from these addresses. Otherwise there is simply no point having a sign there.</p>	<p>It has been the local community's preference for Frosts Road to return to 50Kmph for a long time. We strongly support this proposal.</p> <p>We recommend it would be timely for the roundabout shrubs at the intersection of Anzac Ave, Frosts Road & Travis Road to be reduced in height to 1 meter, in conjunction with this work, and maintained at this lower height into the future. There have been an increasing number of near misses at this roundabout involving slower vehicles & cyclists since the shrubs became taller than 1.5m high. This is due to poor visibility at this intersection combined with the 70kmph speed.</p> <p>Anzac Avenue will continue to have a 70kmph speed limit. Travis Road west of the intersection is 50kmph. However, traffic including large trucks regularly travel at 70kmph on this section of Travis road. Increasing visibility at this roundabout would actively prevent further serious injuries, especially to cyclists. Cyclists and pedestrians using this intersection need your action on this matter now to keep them safe at this intersection. We ask for your attention and consideration of this additional safely measure.</p>	Christchurch North East Secondary Education Committee Inc. (NESE)
20675 and 20656	<p>Logical step, safety for pedestrians, cyclists and also drivers.</p> <p>However, believe there is a bigger issue in regards to health and safety than the speed limit, which is the quality of roads and cycle lanes.</p> <p>Take New Brighton Road and Bower Ave for instance, which are both main thoroughfares to the school and for a large amount of the North/East community. Due to the condition of the roads vehicles have to drive all over their lane to avoid pot holes, uneven surfaces, bumps, extremely poor non/exist levelling of road and poor chip sealing.</p> <p>No cycle way and risk with the above on a health and safety incident, to cyclist, pedestrian and actually even a driver. The only way this can be rectified is with correct grading, releveling, surfacing of road and then labelling of cycle ways on the road. Some work has recently been conducted on Bower Ave with chip sealing which is unfortunately worse than the prior state condition making more of a hazard and H&S issue.</p>	<p>Logical step.</p> <p>However, believe there is a bigger issue in regards to health and safety than the speed limit, which is the quality of roads and cycle lanes.</p> <p>Take New Brighton Road and Bower Ave for instance, which are both main thoroughfares to the school and for a large amount of the North/East community. Due to the condition of the roads vehicles have to drive all over their lane to avoid pot holes, uneven surfaces, bumps, extremely poor non/exist levelling of road and poor chip sealing.</p> <p>No cycle way and risk with the above on a health and safety incident, to cyclist, pedestrian and actually even a driver. The only way this can be rectified is with correct grading, releveling, surfacing of road and then labelling of cycle ways on the road. Some work has recently been conducted on Bower Ave with chip sealing which is unfortunately worse than the prior state condition making more of a hazard and H&S issue.</p>	Amanda Geary

Report from Halswell-Hornby-Riccarton Community Board – 13 February 2019

13. 50R Wilmers Road - Transfer of Part Owaka 2 Reserve to the Crown

Reference: 19/157499

Presenter(s): Sarah Stuart, Property Consultant

1. Halswell-Hornby-Riccarton Community Board Recommendation to Council

Original Staff Recommendation accepted without change

Part A

That the Council resolve to:

1. Dispose of the part of reserve land highlighted green on the plan in the agenda report as Attachment A (subject to survey) for roading purposes to the Minister for Land Information, as a transfer of an existing public work under Section 50 of the Public Works Act 1981:
 - a. Being Part Lot 2 DP 447519, held in title 564911 as Local Purpose (Access) Reserve.
2. Delegate authority to the Property Consultancy Manager to do all things necessary at his sole discretion to give effect to this resolution and transactions.

Attachments

No.	Report Title	Page
1	50R Wilmers Road - Transfer of Part Owaka 2 Reserve to the Crown	84

No.	Title	Page
A ↓	50R Wilmers Road Owaka Reserve - Required Land	91
B ↓	NZTA - CSM2 - Design Plans	92
C ↓	CCC - Process of Disposal and Legalisation	94

50R Wilmers Road - Transfer of Part Owaka 2 Reserve to the Crown

Reference: 18/1269590

Contact: Sarah Stuart sarah.stuart@ccc.govt.nz

941 8191

1. Purpose and Origin of Report

Purpose of Report

- 1.1 The purpose of this report is to seek the recommendation of the Waipuna/Halswell-Hornby-Riccarton Community Board to the Council to resolve to:
 - Dispose of part of the Owaka 2 Local Purpose (Access) Reserve to the Minister of Land Information as the transfer of an existing public work under Section 50 of the Public Works Act 1981 (PWA).

Origin of Report

- 1.2 This report is initiated by staff in response to a request from The Property Group on behalf of the New Zealand Transport Agency (NZTA) to enter into a Memorandum of Agreement pursuant to the PWA. The affected land is required by the Crown for roading purposes under Section 50 PWA for the extension of the Christchurch Southern Motorway Stage 2 (CSM2) (refer **Attachment A**).
- 1.3 Staff do not have a delegation to make a decision regarding the disposal because the land is held as a reserve under the Reserves Act 1977.

2. Significance

- 2.1 The decisions in this report are of low significance in relation to the Christchurch City Council's Significance and Engagement Policy (SEP).
 - 2.1.1 The level of significance was determined by applying the Council's SEP, taking into consideration (amongst other things) the number of people affected and/or with an interest, the level of community interest already apparent for the issue, possible environmental, social and cultural impacts, possible costs/risks to the Council, ratepayers and wider community of carrying out the decision, and whether the impact of the decision can be reversed.
 - 2.1.2 The significance is low because the effect of the decision is localised and has little impact on the community and the environment. Whilst the reserve area is reduced, its function for access is not compromised and the transfer of the land to the Crown will enable construction of CSM2 with continued cycleway provision. There is no risk to the Council, nor any impact on its ability to function. The decision is not practically reversible.
 - 2.1.3 The community engagement and consultation outlined in this report reflect the assessment and the legal requirements.

3. Staff Recommendations

That the Waipuna/Halswell-Hornby-Riccarton Community Board recommend that the Council resolve to:

1. Dispose of the part of reserve land highlighted green on the plan in the agenda report as Attachment A (subject to survey) for roading purposes to the Minister for Land Information, as a transfer of an existing public work under Section 50 of the Public Works Act 1981:
 - a. Being Part Lot 2 DP 447519, held in title 564911 as Local Purpose (Access) Reserve.
2. Delegate authority to the Property Consultancy Manager to do all things necessary at his sole discretion to give effect to this resolution and transactions.

4. Key Points

4.1 This report supports the [Council's Long Term Plan \(2015 - 2025\)](#):

4.1.1 Activity: Road Operations

- Level of Service: 10.0.1 Provide journey reliability on specific strategic routes

4.2 The following options have been considered:

- Option 1 – Agree to dispose of the required land (preferred).
- Option 2 – Do not agree to dispose of the required land.

4.3 Option Summary - Advantages and Disadvantages (Option 1)

4.3.1 The advantages of this option include:

- The Crown can acquire the land by agreement rather than by compulsion under the PWA.
- Represents a collaborative approach consistent with the Council's goals for reliability on strategic routes and continuity of cycleways.
- Enables the construction of the CSM2 which will:
 - reduce traffic and congestion in the built up areas of Hornby and Templeton creating a more pleasant environment for residents.
 - improve safety and reduce fatal and serious crashes by 40 per cent.
 - reduce commuter travel time.
 - improve provisions for walking, cycling, and public transport.
 - improve access, connectivity, and freight efficiency.

4.3.2 The disadvantages of this option include:

- A net reduction of 107m² in the overall area of reserve land. This will have no impact on the utility and operation of the reserve land. The compensation payable to the Council by the Crown, reflects this reduction.
- The cost of staff time, noting that legal costs will be reimbursed by the Crown.

4.4 **Option analysis**

4.4.1 Option 1 is the recommended option because it allows a more straight-forward and co-operative process aligned to the Council's goals for reliability on strategic routes and continuity of cycleways. Option 2 is not considered to be a viable alternative because whilst the end result is essentially the same - the required land is acquired by the Crown

(through compulsory powers) – the process is more fraught and has the potential to impact on construction timeframes.

5. Context/Background

Land required by the Crown

- 5.1 The Crown requires part of the parcel of Council owned land at 50R Wilmers Road for the construction of the Halswell Junction Road on-ramp and realignment of the cycleway as part of the greater CSM2 project.
- 5.2 The required land is subject to the Reserves Act 1977 and comprises:
 - 107m² approximately, being part Lot 2 DP 447519, held in title 564911 as Local Purpose (Access) Reserve.
 - This is an irregular shaped strip and a long narrow parcel running along the Halswell Junction Road frontage to be used for road widening in conjunction with a new interchange (roundabout).
 - The required land is shown as highlighted in green below (as also shown in Attachment A).



- The existing fence (lined in red) will be replaced along the new boundary (lined in purple).
- 5.3 The required land will be used to construct the Halswell Junction Road on-ramp with the cycleway realigned to ensure continuity. Cycleway realignment is necessary because the on-ramp will be built over part of the existing cycleway.
 - 5.4 The Owaka 2 reserve has the potential to be developed as part of a network of access linkages between Council greenspaces and drainage reserves and residential areas/transport routes. Such development would easily link into the existing cycleway and the underpass providing a

pedestrian/cycle link between Warren Park and other parks to the north, and Knights Stream Park to the south.

- 5.5 There is no impact on the current or likely future uses of the reserve from this proposal.
- 5.6 Design plans are provided in **Attachment B**.
- 5.7 The Board is asked to recommend that the Council resolve to dispose of this parcel of reserve land for roading purposes to the Minister of Lands as a transfer of an existing public work under section 50 of the PWA.

Compensation

- 5.8 The parties have agreed to base the compensation payable on the rate assessed for the recent PWA transfer of the Owaka Basin Reserve land at 412R Halswell Junction Road. The compensation to be paid to the Council by the Crown is \$6,500, based on a rate of \$60/m².
- 5.9 The Crown will reimburse the Council's reasonable legal costs.

Process

- 5.10 The formal process for the disposal of the land and its change of status to legal road, is provided in **Attachment C**.
- 5.11 The Crown will obtain all ministerial consents required and attend to the legalisation process.

6. Option 1 – Agree to dispose of the required land

Option Description

- 6.1 Agree to transfer the required land to NZTA under section 50 of the PWA.

Significance

- 6.2 The level of significance of this option is low consistent with section 2 of this report.
- 6.3 Engagement requirements for this level of significance are appropriate.

Impact on Mana Whenua

- 6.4 This option does not involve a significant decision in relation to ancestral land or a body of water or other elements of intrinsic value, therefore this decision does not specifically impact Ngāi Tahu, their culture and traditions.

Community Views and Preferences

- 6.5 These have not been specifically sought but are presumed to be similar to those taken into account by NZTA as part of the designation process for the adjacent land also required for CSM2.

Alignment with Council Plans and Policies

- 6.6 This option is consistent with the Council's Plans and Policies
 - 6.6.1 Inconsistency – Not applicable
 - 6.6.2 Reason for inconsistency – Not applicable
 - 6.6.3 Amendment necessary – Not applicable

Financial Implications

- 6.7 Cost of Implementation – Cost of staff time. The Council will receive \$6,500 plus GST (if any) as compensation, and reasonable legal costs will be reimbursed.

- 6.8 Maintenance/Ongoing Costs – The disposal of a small part of the reserve will have little impact on costs which will continue to be part of ongoing operational expenses from existing Parks budgets.
- 6.9 Funding source – Not applicable

Legal Implications

- 6.10 The required process associated with this transaction is outlined in **Attachment C**.
- 6.11 Section 50 of the PWA enables the Council to dispose of land to the Minister for Land Information for a public work, whether of the same kind or not, if reasonable provisions for satisfying the requirements of the public interest in that work will continue to exist (s50(1) PWA).
- 6.12 The agreement relating to the sale and purchase of a public work pursuant to section 50 of the PWA may contain such provisions as the Minister and the local authority think fit (s50(2) PWA).
- 6.13 The provisions of the PWA as to the disposal of land held for a public work do not apply (section 50(3) PWA).
- 6.14 Consent from the Minister of Conservation is required to revoke the reserve status (s24 Reserves Act 1977) and to enable the Minister for Land Information to set the reserve land apart for a public work (s52 PWA).
- 6.15 There is no need to revoke the reserve status under the usual reserve revocation process as sections 50 and 52 of the PWA have the effect of removing it.

Risks and Mitigations

- 6.16 The risk that the Minister of Conservation declines to revoke the reserve status and to allow the land to be set apart for a public work.
- 6.17 Risk to the CSM2 project caused by the Minister of Conservation's declination. This risk is borne by NZTA. There will be no change to the status quo for the Council and therefore no associated risk.
- 6.18 Residual risk rating: the rating of the risk is low

Implementation

- 6.19 Implementation dependencies - dependant on the consent of the:
- Minister of Conservation to revoke the reserve status
 - Minister for Land information to set the land apart for a public work and then declare it to be road.
- 6.20 Implementation timeframe – 18 to 24 months. The land will be surveyed when construction is complete and then declared road. Weather permitting, the motorway is expected to be completed and open to traffic late summer/autumn 2020.

Option Summary - Advantages and Disadvantages

- 6.21 The advantages of this option include:
- The Crown can acquire the land by agreement rather than by compulsion under the PWA.
 - Represents a collaborative approach consistent with Council's goals for reliability on strategic routes and continuity of cycleways.
 - Enables the construction of the CSM2 which will:

- reduce traffic and congestion in the built up areas of Hornby and Templeton creating a more pleasant environment for residents
- improve safety and reduce fatal and serious crashes by 40 per cent
- reduce commuter travel time
- improve provisions for walking, cycling, and public transport
- improve access, connectivity, and freight efficiency

6.22 The disadvantages of this option include:

- A net reduction of 107m² in the overall area of reserve land. This will have no impact on the utility and operation of the reserve land. The compensation payable to the Council by the Crown, reflects this reduction.
- The cost of staff time, noting that legal costs will be reimbursed by the Crown.

7. Option 2– Do not agree to dispose of the required land

7.1 Option Description

7.2 Do not agree to transfer the required land to NZTA under section 50 of the PWA.

7.3 Significance

7.4 See paragraphs 6.2 and 6.3 above.

7.5 Impact on Mana Whenua

7.6 See paragraph 6.4 above.

7.7 Community Views and Preferences

7.8 See paragraph 6.5 above.

7.9 Alignment with Council Plans and Policies

7.10 See paragraphs 6.7 to 6.9 above.

7.11 Financial Implications

7.12 Cost of Implementation – Cost of staff time. The Council will receive compensation determined by independent registered valuation. Reasonable legal costs will be reimbursed.

7.13 Maintenance/Ongoing Costs – see paragraph 6.8 above.

7.14 Funding source – Not applicable

7.15 Legal Implications

7.16 See paragraphs 6.10 to 6.15 above.

7.17 Risks and Mitigations

7.18 See paragraphs 6.16 to 6.18 above.

7.19 Implementation

7.20 Implementation dependencies - dependant on:

- NZTA following the process for compulsory acquisition as outlined in the PWA
- Consent of Minister of Conservation to revoke the reserve status

- Consent Minister for Land information to set the land apart for a public work and then declare it to be road.

7.21 Implementation timeframe – One to two years to work through the above processes.

7.22 **Option Summary - Advantages and Disadvantages**

7.23 The advantages of this option include:

- No advantages are identified. NZTA’s power to compulsorily acquire the land means the end result will be the same i.e. the required land will be transferred to the Crown.

7.24 The disadvantages of this option include:

- Represents an uncooperative approach inconsistent with the Council’s goals for reliability on strategic routes and continuity of cycleways.
- Potential delays to the completion of CSM2 due to the need for the Crown to work through the process of compulsory acquisition.

Attachments

No.	Title	Page
A	50R Wilmers Road Owaka Reserve - Required Land	
B	NZTA - CSM2 - Design Plans	
C	CCC - Process of Disposal and Legalisation	

Confirmation of Statutory Compliance

<p>Compliance with Statutory Decision-making Requirements (ss 76 - 81 Local Government Act 2002).</p> <p>(a) This report contains:</p> <ul style="list-style-type: none"> (i) sufficient information about all reasonably practicable options identified and assessed in terms of their advantages and disadvantages; and (ii) adequate consideration of the views and preferences of affected and interested persons bearing in mind any proposed or previous community engagement. <p>(b) The information reflects the level of significance of the matters covered by the report, as determined in accordance with the Council's significance and engagement policy.</p>

Signatories

Author	Sarah Stuart - Property Consultant
Approved By	Angus Smith - Manager Property Consultancy Bruce Rendall - Head of Facilities, Property & Planning Andrew Rutledge - Head of Parks

REQUIRED LAND

The land requirement of approximately 107m² is shown shaded green. The current fenceline depicted in red will be replaced along the new boundary.



Process of disposal and legalisation

- 1.1 The agreement is entered into by the parties acting pursuant to section 50 PWA. This enables a local authority to dispose of an existing public work to another Minister or local authority for an alternative public work.
- 1.2 The resolution of the Council to dispose of the Required Land will provide the authority for the Council to sign the Memorandum of Agreement pursuant to the PWA.
- 1.3 The Council, in the signed agreement, consents to the Required Land being declared road for the purposes of section 114 PWA. The Council resolution to dispose of the land under section 50 PWA, and the signed agreement, will be provided by the Crown to the Minister of Conservation for her consent under section 52(2) of the PWA.
- 1.4 The Minister of Conservation's consent and all other relevant documents are then provided by the Crown to the Minister for Land Information for his approval to publish a gazette under section 20 PWA declaring the reserve to be set apart for another public work and then declared to be a road.
- 1.5 The provisions of the PWA as to the disposal of land held for a public work do not apply (section 50(3) PWA).

Report from Linwood-Central-Heathcote Community Board – 4 February 2019

14. Improvements to Woolston Village Centre - WL1

Reference: 19/136267

Kelly Griffiths, Project Manager

Presenter(s): Bill Homewood, Traffic Engineer

Philippa Upton, Engagement Advisor

1. Linwood-Central-Heathcote Community Board Consideration

1. The Board received and took into consideration deputations from Mesdames Neave and Brewer and the tabled petition from Mr Bane.
2. The Board requested additional items to the Woolston Village Improvements including extending the speed restriction down St Johns Street, better marking of the cycleway for better visibility to motorists, and better signage for off street parking and staff to investigate the current phasing of the Woolston Village signalised pedestrian crossing and if EV chargers were considered when the Woolston Library was rebuilt.

2. Linwood-Central-Heathcote Community Board Decisions Under Delegation

Part C

That the Council:

1. Approves all intersection traffic controls at the intersection of Ferry Road with Portman Street be revoked.
2. Approves all intersection traffic controls at the intersection of Ferry Road with Oak Street be revoked.
3. Approves all intersection traffic controls at the intersection of Ferry Road with Catherine Street be revoked.
4. Approves all intersection traffic controls at the intersection of Ferry Road with St Johns Street be revoked.
5. Approves all intersection traffic controls at the intersection of Ferry Road with Maronan Street be revoked.
6. Approves that all existing parking and stopping restrictions on the northeast side of Ferry Road, commencing at its intersection with Portman Street and extending in a northwesterly direction for a distance of 16 metres be revoked.
7. Approves that all existing parking and stopping restrictions on the northeast side of Ferry Road, commencing at its intersection with Portman Street and extending in a southeasterly direction to its intersection with St Johns Street be revoked.
8. Approves that all existing parking and stopping restrictions on the northeast side of Ferry Road, commencing at its intersection with St Johns Street and extending in a southeasterly direction for a distance of 145 metres be revoked. Note 1 applies.
9. Approves that all existing parking and stopping restrictions on the southwest side of Ferry Road, commencing at its intersection with Oak Street and extending in a northwesterly direction for a distance of 82 metres be revoked.

10. Approves that all existing parking and stopping restrictions on the southwest side of Ferry Road, commencing at its intersection with Oak Street and extending in a southeasterly direction to its intersection with Catherine Street be revoked.
11. Approves that all existing parking and stopping restrictions on the southwest side of Ferry Road, commencing at its intersection with Catherine Street and extending in a southeasterly direction to its intersection with Maronan Street be revoked.
12. Approves that all existing parking and stopping restrictions on the southwest side of Ferry Road, commencing at its intersection with Maronan Street and extending in a southeasterly direction for a distance of 71 metres be revoked.
13. Approves that all existing parking and stopping restrictions on the northwest side of Portman Street, commencing at its intersection with Ferry Road and extending in a northeasterly direction for a distance of 68 metres be revoked. Note 1 applies.
14. Approves that all existing parking and stopping restrictions on the southeast side of Portman Street, commencing at its intersection with Ferry Road and extending in a northeasterly direction for a distance of 70 metres be revoked. Note 1 applies.
15. Approves that all existing parking and stopping restrictions on the northwest side of St Johns Street, commencing at its intersection with Ferry Road and extending in a northeasterly direction for a distance of 29.5 metres be revoked. Note 1 applies.
16. Approves that all existing parking and stopping restrictions on the southeast side of St Johns Street, commencing at its intersection with Ferry Road and extending in a northeasterly direction for a distance of 81 metres be revoked. Note 1 applies.
17. Approves that all existing parking and stopping restrictions on the northwest side of Oak Street, commencing at its intersection with Ferry Road and extending in a southwesterly direction to its intersection with Heathcote Street be revoked.
18. Approves that all existing parking and stopping restrictions on the southeast side of Oak Street, commencing at its intersection with Ferry Road and extending in a southwesterly direction to its intersection with Heathcote Street be revoked.
19. Approves that all existing parking and stopping restrictions on the northwest side of Catherine Street, commencing at its intersection with Ferry Road and extending in a southwesterly direction for a distance of 45 metres be revoked. Note 1 applies.
20. Approves that all existing parking and stopping restrictions on the southeast side of Catherine Street, commencing at its intersection with Ferry Road and extending in a southwesterly direction for a distance of 150 metres be revoked. Note 1 applies.
21. Approves that all existing parking and stopping restrictions on the northwest side of Maronan Street, commencing at its intersection with Ferry Road and extending in a southwesterly direction for a distance of 30 metres be revoked. Note 1 applies.
22. Approves that all existing parking and stopping restrictions on the southeast side of Maronan Street, commencing at its intersection with Ferry Road and extending in a southwesterly direction for a distance of 13 metres be revoked. Note 1 applies.
23. Approves the lane marking changes, kerb alignment changes, pedestrian refuge islands, landscaping, tree planting and road surface changes, on Ferry Road, Portman Street, Oak Street, St Johns Street, Catherine Street and Maronan Street, as detailed in Attachment A.
24. Approves that the stopping of vehicles be prohibited at any time on the northeast side of Ferry Road commencing at its intersection with Portman Street and extending in a northwesterly direction for a distance of 116 metres, as detailed on Attachment A.

25. Approves that the stopping of vehicles be prohibited at any time on the northeast side of Ferry Road commencing at its intersection with Portman Street and extending in a southeasterly direction for a distance of 75.5 metres, as detailed on Attachment A. Note 2 applies.
26. Approves that the parking of vehicles be restricted to a maximum period of 15 minutes on the northeast side of Ferry Road commencing at point 75.5 metres southeast of its intersection with Portman Street and extending in a southeasterly direction for a distance of 16.5 metres, as detailed on Attachment A. Note 2 applies.
27. Approves that the stopping of vehicles be prohibited at any time on the northeast side of Ferry Road commencing at a point 92 metres southeast of its intersection with Portman Street and extending in a southeasterly direction for a distance of 10 metres, as detailed on Attachment A. Note 2 applies.
28. Approves that a Bus Stop be created on the northeast side of Ferry Road commencing at point 102 metres southeast of its intersection with Portman Street and extending in a southeasterly direction for a distance of 14 metres, as detailed on Attachment A. Note 2 applies.
29. Approves that the stopping of vehicles be prohibited at any time on the northeast side of Ferry Road commencing at point 116 metres southeast of its intersection with Portman Street and extending in a southeasterly direction for a distance of 52.5 metres, as detailed on Attachment A. Note 2 applies.
30. Approves that the parking of vehicles be restricted to a maximum period of ten minutes on the northeast side of Ferry Road commencing at point 168.5 metres southeast of its intersection with Portman Street and extending in a southeasterly direction for a distance of 23 metres, as detailed on Attachment A. Note 2 applies.
31. Approves that the stopping of vehicles be prohibited at any time on the northeast side of Ferry Road commencing at point 191.5 metres southeast of its intersection with Portman Street and extending in a southeasterly direction to its intersection with St Johns Street, as detailed on Attachment A. Note 2 applies.
32. Approves that the stopping of vehicles be prohibited at any time on the northeast side of Ferry Road commencing at its intersection with St Johns Street and extending in a southeasterly direction for a distance of 77 metres, as detailed on Attachment A. Note 2 applies.
33. Approves that a Bus Stop be created on the northeast side of Ferry Road commencing at point 77 metres southeast of its intersection with St Johns Street and extending in a southeasterly direction for a distance of 14 metres, as detailed on Attachment A. Note 2 applies.
34. Approves that the stopping of vehicles be prohibited at any time on the northeast side of Ferry Road commencing at a point 91 metres southeast of its intersection with St Johns Street and extending in a southeasterly direction for a distance of 55.5 metres, as detailed on Attachment A. Note 2 applies.
35. Approves that the stopping of vehicles be prohibited at any time on the southwest side of Ferry Road commencing at its intersection with Oak Street and extending in a northwesterly direction for a distance of 15 metres, as detailed on Attachment A. Note 2 applies.
36. Approves that the parking of vehicles be restricted to a maximum period of 60 minutes on the southwest side of Ferry Road commencing at point 15 metres northwest of its

- intersection with Oak Street and extending in a northwesterly direction for a distance of 16.5 metres, as detailed on Attachment A. Note 2 applies
37. Approves that the stopping of vehicles be prohibited at any time on the southwest side of Ferry Road commencing at a point 31.5 metres northwest of its intersection with Oak Street and extending in a northwesterly direction for a distance of 50 metres, as detailed on Attachment A. Note 2 applies.
 38. Approves that the stopping of vehicles be prohibited at any time on the southwest side of Ferry Road commencing at its intersection with Oak Street and extending in a southeasterly direction for a distance of seven metres, as detailed on Attachment A.
 39. Approves that a Bus Stop be created on the southwest side of Ferry Road commencing at point seven metres southeast of its intersection with Oak Street and extending in a southeasterly direction for a distance of 14 metres, as detailed on Attachment A.
 40. Approves that the stopping of vehicles be prohibited at any time on the southwest side of Ferry Road commencing at a point 21 metres southeast of its intersection with Oak Street and extending in a southeasterly direction for a distance of 14 metres, as detailed on Attachment A.
 41. Approves that the parking of vehicles be restricted to a maximum period of 60 minutes on the southwest side of Ferry Road commencing at point 35 metres southeast of its intersection with Oak Street and extending in a southeasterly direction for a distance of 46 metres, as detailed on Attachment A.
 42. Approves that the stopping of vehicles be prohibited at any time on the southwest side of Ferry Road commencing at a point 81 metres southeast of its intersection with Oak Street and extending in a southeasterly direction for a distance of 16 metres, as detailed on Attachment A.
 43. Approves that the parking of vehicles be restricted to a maximum period of 60 minutes on the southwest side of Ferry Road commencing at point 97 metres southeast of its intersection with Oak Street and extending in a southeasterly direction for a distance of 53.5 metres, as detailed on Attachment A.
 44. Approves that the stopping of vehicles be prohibited at any time on the southwest side of Ferry Road commencing at a point 150.5 metres southeast of its intersection with Oak Street and extending in a southeasterly direction for a distance of 13.5 metres, as detailed on Attachment A.
 45. Approves that the parking of vehicles be restricted to a maximum period of 60 minutes on the southwest side of Ferry Road commencing at point 164 metres southeast of its intersection with Oak Street and extending in a southeasterly direction for a distance of 26 metres, as detailed on Attachment A.
 46. Approves that the stopping of vehicles be prohibited at any time on the southwest side of Ferry Road commencing at a point 190 metres southeast of its intersection with Oak Street and extending in a southeasterly direction to its intersection with Catherine Street, as detailed on Attachment A.
 47. Approves that the stopping of vehicles be prohibited at any time on the southwest side of Ferry Road commencing at its intersection with Catherine Street and extending in a southeasterly direction for a distance of four metres, as detailed on Attachment A.
 48. Approves that a Bus Stop be created on the southwest side of Ferry Road commencing at point four metres southeast of its intersection with Catherine Street and extending in a southeasterly direction for a distance of 14 metres, as detailed on Attachment A.

49. Approves that the stopping of vehicles be prohibited at any time on the southwest side of Ferry Road commencing at a point 17.5 metres southeast of its intersection with Catherine Street and extending in a southeasterly direction to its intersection with Maronan Street, as detailed on Attachment A.
50. Approves that the stopping of vehicles be prohibited at any time on the southwest side of Ferry Road commencing at its intersection with Maronan Street and extending in a southeasterly direction for a distance of 13 metres, as detailed on Attachment A.
51. Approves that the parking of vehicles be restricted to a maximum period of 60 minutes on the southwest side of Ferry Road commencing at point 13 metres southeast of its intersection with Maronan Street and extending in a southeasterly direction for a distance of 18.5 metres, as detailed on Attachment A.
52. Approves that the stopping of vehicles be prohibited at any time on the southwest side of Ferry Road commencing at a point 31.5 metres southeast of its intersection with Maronan Street and extending in a southeasterly direction for a distance of 24 metres, as detailed on Attachment A.
53. Approves that the parking of vehicles be restricted to a maximum period of three minutes on the southwest side of Ferry Road, commencing at a distance of 55.5 metres southeast of its intersection with Maronan Street and extending in a southeasterly direction for a distance of 16.5 metres, as detailed on Attachment A. This restriction is to apply between the times of 8.15am and 9.15am and 2.30pm and 3.30pm on school days only.
54. Approves that the stopping of vehicles be prohibited at any time on the northwest side of Portman Street commencing at its intersection with Ferry Road and extending in a northeasterly direction for a distance of 15.5 metres, as detailed on Attachment A. Note 2 applies.
55. Approves that the stopping of vehicles be restricted to a maximum period of 120 minutes on the northwest side of Portman Street commencing at a point 15.5 metres northeast of its intersection with Ferry Road and extending in a northeasterly direction for a distance of 53 metres, as detailed on Attachment A. Note 2 applies.
56. Approves that the stopping of vehicles be prohibited at any time on the southeast side of Portman Street commencing at its intersection with Ferry Road and extending in a northeasterly direction for a distance of 16 metres, as detailed on Attachment A. Note 2 applies.
57. Approves that the parking of vehicles be restricted to a maximum period of 120 minutes on the southeast side of Portman Street commencing at a point 16 metres northeast of its intersection with Ferry Road and extending in a northeasterly direction for a distance of 53 metres, as detailed on Attachment A. Note 2 applies.
58. Approves that the stopping of vehicles be prohibited at any time on the northwest side of St Johns Street commencing at its intersection with Ferry Road and extending in a northeasterly direction for a distance of 16 metres, as detailed on Attachment A. Note 2 applies.
59. Approves that the parking of vehicles be restricted to a maximum period of five minutes on the northwest side of St Johns Street commencing at a point 16 metres northeast of its intersection with Ferry Road and extending in a northeasterly direction for a distance of 14 metres, as detailed on Attachment A. Note 2 applies.
60. Approves that the stopping of vehicles be prohibited at any time on the southeast side of St Johns Street commencing at its intersection with Ferry Road and extending in a

- northeasterly direction for a distance of 25 metres, as detailed on Attachment A. Note 2 applies.
61. Approves that the parking of vehicles be restricted to a maximum period of 30 minutes on the southeast side of St Johns Street commencing at a point 25 metres northeast of its intersection with Ferry Road and extending in a northeasterly direction for a distance of 56 metres, as detailed on Attachment A. Note 2 applies.
 62. Approves that the stopping of vehicles be prohibited at any time on the northwest side of Oak Street commencing at its intersection with Ferry Road and extending in a southwesterly direction to its intersection with Heathcote Street, as detailed on Attachment A. Note 2 applies.
 63. Approves that the stopping of vehicles be prohibited at any time on the southeast side of Oak Street commencing at its intersection with Ferry Road and extending in a southwesterly direction to its intersection with Heathcote Street, as detailed on Attachment A. Note 2 applies.
 64. Approves that the stopping of vehicles be prohibited at any time on the northwest side of Catherine Street commencing at its intersection with Ferry Road and extending in a southwesterly direction for a distance of 20 metres, as detailed on Attachment A. Note 2 applies.
 65. Approves that the parking of vehicles be restricted to a maximum period of 120 minutes on the northwest side of Catherine Street commencing at a point 20 metres southwest of its intersection with Ferry Road and extending in a southwesterly direction for a distance of 25 metres, as detailed on Attachment A. Note 2 applies.
 66. Approves that the stopping of vehicles be prohibited at any time on the southeast side of Catherine Street commencing at its intersection with Ferry Road and extending in a southwesterly direction for a distance of 150 metres, as detailed on Attachment A. Note 2 applies.
 67. Approves that the stopping of vehicles be prohibited at any time on the northwest side of Maronan Street commencing at its intersection with Ferry Road and extending in a southwesterly direction for a distance of 12 metres, as detailed on Attachment A. Note 2 applies.
 68. Approves that the parking of vehicles be restricted to a maximum period of 120 minutes on the northwest side of Maronan Street commencing at a point 12 metres southwest of its intersection with Ferry Road and extending in a southwesterly direction for a distance of 18 metres, as detailed on Attachment A. Note 2 applies.
 69. Approves that the stopping of vehicles be prohibited at any time on the southeast side of Maronan Street commencing at its intersection with Ferry Road and extending in a southwesterly direction for a distance of 13 metres, as detailed on Attachment A. Note 2 applies.
 70. Approves that a Stop control be placed against the Portman Street approach to its intersection with Ferry Road, as detailed on Attachment A.
 71. Approves that a Stop control be placed against the Oak Street approach to its intersection with Ferry Road, as detailed on Attachment A.
 72. Approves that a Give Way control be placed against the St John Street approach to its intersection with Ferry Road, as detailed on Attachment A.
 73. Approves the installation of a bus shelter at the following locations:
 - a. 729 Ferry Road (Attachment A),

- b. 650 Ferry Road (Attachment A), and
 - c. 608 Ferry Road (Attachment A).
74. Approves that the pathway on the northeast side of Ferry Road, commencing at its intersection with St Johns Street and extending in a southeasterly direction for a distance of 51 metres, be resolved as a bi-directional shared pedestrian/cycle path. This shared path is authorised under clause 21 of the Christchurch City Council Traffic and Parking Bylaw 2017, as detailed on Attachment A.
75. Approves that the pathway on the southwest side of Ferry Road, commencing at its intersection with Maronan Street and extending in a northwesterly direction for a distance of 28 metres, be resolved as a bi-directional shared pedestrian/cycle path. This shared path is authorised under clause 21 of the Christchurch City Council Traffic and Parking Bylaw 2017, as detailed on Attachment A.
76. Approves that the section of road reserve situated between the north-western boundary of 689 Ferry Road and south-eastern boundary of 687 Ferry Road, be resolved as a bi-directional shared pedestrian/cycle path. This shared path is authorised under clause 21 of the Christchurch City Council Traffic and Parking Bylaw 2017. As detailed on **Attachment A**.
77. Approves the removal of nine trees as identified on **Attachment A**.
78. Approve that these resolutions take effect when parking signage and/or road markings that evidence the restrictions is/are in place (or removed in the case of revocations).
79. Request staff to increase the green cycleway surfacing on the Woolston Village cycleways when implementing the Woolston Village Improvements Project – WL1 to make the cycle ways more visible to motorists.
80. Request staff to investigate extending the 30kmh speed restriction down St Johns Street from Ferry Road to Glenroy Street.
81. Request staff to investigate larger or additional signage to highlight the off street parking in the Woolston Village, behind the shops and adjacent to the Woolston Library.
82. Request staff to investigate the phasing of the signalised pedestrian crossing in Woolston Village to lessen the wait time for pedestrians.
83. Request staff to advise if there was provision for an EV charger within the Woolston Library rebuild project.

3. Linwood-Central-Heathcote Community Board Recommendation to Council

Original Staff Recommendation Accepted without Change

Part A

For the purposes of the following resolutions:

- (a) An intersection is defined by the position of kerbs on each intersecting roadway; and
- (b) The resolution is to take effect from the commencement of physical road works associated with the project as detailed in this report; and
- (c) If the resolution states "Note 1 applies", any distance specified in the resolution relates the kerb line location referenced as exists on the road immediately prior to the Community Board meeting of the 3rd December 2018; and
- (d) If the resolution states "Note 2 Applies", any distance specified in the resolution relates the approved kerb line location on the road resulting from the resolution as approved on

4 February 2019 for resolutions 1 – 13, and at the Council 14 March 2019 meeting for resolutions 14 – 91.

That the Council:

1. Approves the improvements to Woolston Village Centre (WL1) preferred option for detailed design and construction as shown in Attachment A.
2. Relying on its powers under the Christchurch City Council Traffic and Parking Bylaw 2017 and Part 21 of the Local Government Act 1974.
 - a. Approves that all traffic controls except the speed limit on Ferry Road, commencing at a point 16 metres west of its intersection with Portman Street and extending in a southeasterly direction to a point 71 metres east of its intersection with St Johns Street be revoked.
 - b. Approves that a Special Vehicle Lane for the use of south-eastbound cycles only, be established on the northeast side of Ferry Road, commencing at its intersection with Portman Street and extending in a northwesterly direction for a distance of 20 metres, as detailed on Attachment A. This Special Vehicle Lane is authorised under clause 18 of the Christchurch City Council Traffic and Parking Bylaw 2017.
 - c. Approves that a Special Vehicle Lane for the use of south-eastbound cycles only, be established on the northeast side of Ferry Road, commencing at its intersection with Portman Street and extending in a southeasterly direction to its intersection with St Johns Street, as detailed on Attachment A. This Special Vehicle Lane is authorised under clause 18 of the Christchurch City Council Traffic and Parking Bylaw 2017.
 - d. Approves that a Special Vehicle Lane for the use of south-eastbound cycles only, be established on the northeast side of Ferry Road, commencing at its intersection with St Johns Street and extending in a southeasterly direction for a distance of 146 metres, as detailed on Attachment A. This Special Vehicle Lane is authorised under clause 18 of the Christchurch City Council Traffic and Parking Bylaw 2017.
 - e. Approves that a Special Vehicle Lane for the use of north-westbound cycles only, be established on the southwest side of Ferry Road, commencing at its intersection with Oak Street and extending in a northwesterly direction for a distance of 82 metres, as detailed on Attachment A. This Special Vehicle Lane is authorised under clause 18 of the Christchurch City Council Traffic and Parking Bylaw 2017.
 - f. Approves that a Special Vehicle Lane for the use of north-westbound cycles only, be established on the southwest side of Ferry Road, commencing at its intersection with Oak Street and extending in a southeasterly direction to its intersection with Catherine Street, as detailed on Attachment A. This Special Vehicle Lane is authorised under clause 18 of the Christchurch City Council Traffic and Parking Bylaw 2017.
 - g. Approves that a Special Vehicle Lane for the use of north-westbound cycles only, be established on the southwest side of Ferry Road, commencing at its intersection with Catherine Street and extending in a southeasterly direction to its intersection with Maronan Street, as detailed on Attachment A. This Special Vehicle Lane is authorised under clause 18 of the Christchurch City Council Traffic and Parking Bylaw 2017.
 - h. Approves that a Special Vehicle Lane for the use of north-westbound cycles only, be established on the southwest side of Ferry Road, commencing at its intersection with Maronan Street and extending in a southeasterly direction for a distance of 71 metres, as detailed on Attachment A. This Special Vehicle Lane is authorised under clause 18 of the Christchurch City Council Traffic and Parking Bylaw 2017.

- i. Approves that a signalised pedestrian crossing be duly established and marked in accordance with sections 6 and 8.5 (3) of the Land Transport Rule: Traffic Devices 2004, on Ferry Road, located at a point 28 metres southeast of its intersection with Oak Street, as detailed in Attachment A. Note 2 applies.
 - j. Approves that a signalised pedestrian and cycle crossing be duly established and marked in accordance with sections 6 of the Land Transport Rule: Traffic Devices 2004, on Ferry Road, located at a point 22 metres southeast of its intersection with Catherine Street, as detailed in Attachment A. Note 2 applies.
3. In pursuance of the powers vested in it by Section 8.3(1) of the Land Transport Rule- Traffic Control Devices 2004 (Rule 54002), and pursuant to the powers vested in it by the Local Government Act 1974 and 2002, the Christchurch City Council hereby authorises the head teacher of St Anne’s Catholic School to appoint appropriately trained persons to act as school patrols at the Ferry Road school crossing point as shown on Attachment A, located at a point more or less 36 metres southeast of its intersection with Maronan Street.

Attachments

No.	Report Title	Page
1	Improvements to Woolston Village Centre - WL1	104

No.	Title	Page
A 	Plan for Approval	126
B 	Woolston Village 2018 Consultation Leaflet	127
C 	Woolston Village Parking Comparison Plan	139
D 	Woolston Village 2018 Project Team Responses	140
E 	Woolston Village 2016 Consultation Leaflet	145
F 	Woolston Village 2016 Consultation Submissions	148

Improvements to Woolston Village Centre - WL1

Reference: 18/786011

Kelly Griffiths, Project Manager

Presenter(s): Bill Homewood, Traffic Engineer

Philippa Upton, Engagement Advisor

1. Purpose and Origin of Report

Purpose of Report

- 1.1 The purpose of this report is to recommend to the Waikura/Linwood-Central-Heathcote Community Board that they approve the improvements to Woolston Village Centre WL1, which are part of the Ferry Road Master Plan, to proceed to detailed design and construction.

Origin of Report

- 1.2 This report is staff generated following completion of public consultation for the improvements to Woolston Village Centre WL1 project.

2. Significance

- 2.1 The decisions in this report are of medium significance in relation to the Christchurch City Council's Significance and Engagement Policy.
 - 2.1.1 The level of significance was determined by the number of businesses, property owners and the local community affected by the changes proposed in the project area, as well as the wider effects on the transport network on Ferry Road for drivers, pedestrians, cyclists and bus users.
 - 2.1.2 The community engagement and consultation outlined in this report reflect the assessment of medium significance.

3. Staff Recommendations

For the purposes of the following resolutions:

- (a) An intersection is defined by the position of kerbs on each intersecting roadway; and
- (b) The resolution is to take effect from the commencement of physical road works associated with the project as detailed in this report; and
- (c) If the resolution states "Note 1 applies", any distance specified in the resolution relates the kerb line location referenced as exists on the road immediately prior to the Community Board meeting of the 3rd December 2018; and
- (d) If the resolution states "Note 2 Applies", any distance specified in the resolution relates the approved kerb line location on the road resulting from the resolution as approved on 4 February 2019 for resolutions 1 – 13, and at the following Council meeting for resolutions 14 – 91.

That the Waikura/Linwood-Central-Heathcote Community Board recommend to Council that it:

1. Approves the improvements to Woolston Village Centre (WL1) preferred option for detailed design and construction as shown in Attachment A.
2. Relying on its powers under the Christchurch City Council Traffic and Parking Bylaw 2017 and Part 21 of the Local Government Act 1974.

- a. Approves that all traffic controls except the speed limit on Ferry Road, commencing at a point 16 metres west of its intersection with Portman Street and extending in a southeasterly direction to a point 71 metres east of its intersection with St Johns Street be revoked.
- b. Approves that a Special Vehicle Lane for the use of south-eastbound cycles only, be established on the northeast side of Ferry Road, commencing at its intersection with Portman Street and extending in a northwesterly direction for a distance of 20 metres, as detailed on Attachment A. This Special Vehicle Lane is authorised under clause 18 of the Christchurch City Council Traffic and Parking Bylaw 2017.
- c. Approves that a Special Vehicle Lane for the use of south-eastbound cycles only, be established on the northeast side of Ferry Road, commencing at its intersection with Portman Street and extending in a southeasterly direction to its intersection with St Johns Street, as detailed on Attachment A. This Special Vehicle Lane is authorised under clause 18 of the Christchurch City Council Traffic and Parking Bylaw 2017.
- d. Approves that a Special Vehicle Lane for the use of south-eastbound cycles only, be established on the northeast side of Ferry Road, commencing at its intersection with St Johns Street and extending in a southeasterly direction for a distance of 146 metres, as detailed on Attachment A. This Special Vehicle Lane is authorised under clause 18 of the Christchurch City Council Traffic and Parking Bylaw 2017.
- e. Approves that a Special Vehicle Lane for the use of north-westbound cycles only, be established on the southwest side of Ferry Road, commencing at its intersection with Oak Street and extending in a northwesterly direction for a distance of 82 metres, as detailed on Attachment A. This Special Vehicle Lane is authorised under clause 18 of the Christchurch City Council Traffic and Parking Bylaw 2017.
- f. Approves that a Special Vehicle Lane for the use of north-westbound cycles only, be established on the southwest side of Ferry Road, commencing at its intersection with Oak Street and extending in a southeasterly direction to its intersection with Catherine Street, as detailed on Attachment A. This Special Vehicle Lane is authorised under clause 18 of the Christchurch City Council Traffic and Parking Bylaw 2017.
- g. Approves that a Special Vehicle Lane for the use of north-westbound cycles only, be established on the southwest side of Ferry Road, commencing at its intersection with Catherine Street and extending in a southeasterly direction to its intersection with Maronan Street, as detailed on Attachment A. This Special Vehicle Lane is authorised under clause 18 of the Christchurch City Council Traffic and Parking Bylaw 2017.
- h. Approves that a Special Vehicle Lane for the use of north-westbound cycles only, be established on the southwest side of Ferry Road, commencing at its intersection with Maronan Street and extending in a southeasterly direction for a distance of 71 metres, as detailed on Attachment A. This Special Vehicle Lane is authorised under clause 18 of the Christchurch City Council Traffic and Parking Bylaw 2017.
- i. Approves that a signalised pedestrian crossing be duly established and marked in accordance with sections 6 and 8.5 (3) of the Land Transport Rule: Traffic Devices 2004, on Ferry Road, located at a point 28 metres southeast of its intersection with Oak Street, as detailed in Attachment A. Note 2 applies.
- j. Approves that a signalised pedestrian and cycle crossing be duly established and marked in accordance with sections 6 of the Land Transport Rule: Traffic Devices 2004, on Ferry Road, located at a point 22 metres southeast of its intersection with Catherine Street, as detailed in Attachment A. Note 2 applies.

3. In pursuance of the powers vested in it by Section 8.3(1) of the Land Transport Rule- Traffic Control Devices 2004 (Rule 54002), and pursuant to the powers vested in it by the Local Government Act 1974 and 2002, the Christchurch City Council hereby authorises the head teacher of St Anne's Catholic School to appoint appropriately trained persons to act as school patrols at the Ferry Road school crossing point as shown on Attachment A, located at a point more or less 36 metres southeast of its intersection with Maronan Street.

That the Waikura/Linwood-Central-Heathcote Community Board:

4. Approves all intersection traffic controls at the intersection of Ferry Road with Portman Street be revoked.
5. Approves all intersection traffic controls at the intersection of Ferry Road with Oak Street be revoked.
6. Approves all intersection traffic controls at the intersection of Ferry Road with Catherine Street be revoked.
7. Approves all intersection traffic controls at the intersection of Ferry Road with St Johns Street be revoked.
8. Approves all intersection traffic controls at the intersection of Ferry Road with Maronan Street be revoked.
9. Approves that all existing parking and stopping restrictions on the northeast side of Ferry Road, commencing at its intersection with Portman Street and extending in a northwesterly direction for a distance of 16 metres be revoked.
10. Approves that all existing parking and stopping restrictions on the northeast side of Ferry Road, commencing at its intersection with Portman Street and extending in a southeasterly direction to its intersection with St Johns Street be revoked.
11. Approves that all existing parking and stopping restrictions on the northeast side of Ferry Road, commencing at its intersection with St Johns Street and extending in a southeasterly direction for a distance of 145 metres be revoked. Note 1 applies.
12. Approves that all existing parking and stopping restrictions on the southwest side of Ferry Road, commencing at its intersection with Oak Street and extending in a northwesterly direction for a distance of 82 metres be revoked.
13. Approves that all existing parking and stopping restrictions on the southwest side of Ferry Road, commencing at its intersection with Oak Street and extending in a southeasterly direction to its intersection with Catherine Street be revoked.
14. Approves that all existing parking and stopping restrictions on the southwest side of Ferry Road, commencing at its intersection with Catherine Street and extending in a southeasterly direction to its intersection with Maronan Street be revoked.
15. Approves that all existing parking and stopping restrictions on the southwest side of Ferry Road, commencing at its intersection with Maronan Street and extending in a southeasterly direction for a distance of 71 metres be revoked.
16. Approves that all existing parking and stopping restrictions on the northwest side of Portman Street, commencing at its intersection with Ferry Road and extending in a northeasterly direction for a distance of 68 metres be revoked. Note 1 applies.
17. Approves that all existing parking and stopping restrictions on the southeast side of Portman Street, commencing at its intersection with Ferry Road and extending in a northeasterly direction for a distance of 70 metres be revoked. Note 1 applies.

18. Approves that all existing parking and stopping restrictions on the northwest side of St Johns Street, commencing at its intersection with Ferry Road and extending in a northeasterly direction for a distance of 29.5 metres be revoked. Note 1 applies.
19. Approves that all existing parking and stopping restrictions on the southeast side of St Johns Street, commencing at its intersection with Ferry Road and extending in a northeasterly direction for a distance of 81 metres be revoked. Note 1 applies.
20. Approves that all existing parking and stopping restrictions on the northwest side of Oak Street, commencing at its intersection with Ferry Road and extending in a southwesterly direction to its intersection with Heathcote Street be revoked.
21. Approves that all existing parking and stopping restrictions on the southeast side of Oak Street, commencing at its intersection with Ferry Road and extending in a southwesterly direction to its intersection with Heathcote Street be revoked.
22. Approves that all existing parking and stopping restrictions on the northwest side of Catherine Street, commencing at its intersection with Ferry Road and extending in a southwesterly direction for a distance of 45 metres be revoked. Note 1 applies.
23. Approves that all existing parking and stopping restrictions on the southeast side of Catherine Street, commencing at its intersection with Ferry Road and extending in a southwesterly direction for a distance of 150 metres be revoked. Note 1 applies.
24. Approves that all existing parking and stopping restrictions on the northwest side of Maronan Street, commencing at its intersection with Ferry Road and extending in a southwesterly direction for a distance of 30 metres be revoked. Note 1 applies.
25. Approves that all existing parking and stopping restrictions on the southeast side of Maronan Street, commencing at its intersection with Ferry Road and extending in a southwesterly direction for a distance of 13 metres be revoked. Note 1 applies.
26. Approves the lane marking changes, kerb alignment changes, pedestrian refuge islands, landscaping, tree planting and road surface changes, on Ferry Road, Portman Street, Oak Street, St Johns Street, Catherine Street and Maronan Street, as detailed in Attachment A.
27. Approves that the stopping of vehicles be prohibited at any time on the northeast side of Ferry Road commencing at its intersection with Portman Street and extending in a northwesterly direction for a distance of 116 metres, as detailed on Attachment A.
28. Approves that the stopping of vehicles be prohibited at any time on the northeast side of Ferry Road commencing at its intersection with Portman Street and extending in a southeasterly direction for a distance of 75.5 metres, as detailed on Attachment A. Note 2 applies.
29. Approves that the parking of vehicles be restricted to a maximum period of 15 minutes on the northeast side of Ferry Road commencing at point 75.5 metres southeast of its intersection with Portman Street and extending in a southeasterly direction for a distance of 16.5 metres, as detailed on Attachment A. Note 2 applies.
30. Approves that the stopping of vehicles be prohibited at any time on the northeast side of Ferry Road commencing at a point 92 metres southeast of its intersection with Portman Street and extending in a southeasterly direction for a distance of 10 metres, as detailed on Attachment A. Note 2 applies.
31. Approves that a Bus Stop be created on the northeast side of Ferry Road commencing at point 102 metres southeast of its intersection with Portman Street and extending in a southeasterly direction for a distance of 14 metres, as detailed on Attachment A. Note 2 applies.

32. Approves that the stopping of vehicles be prohibited at any time on the northeast side of Ferry Road commencing at point 116 metres southeast of its intersection with Portman Street and extending in a southeasterly direction for a distance of 52.5 metres, as detailed on Attachment A. Note 2 applies.
33. Approves that the parking of vehicles be restricted to a maximum period of ten minutes on the northeast side of Ferry Road commencing at point 168.5 metres southeast of its intersection with Portman Street and extending in a southeasterly direction for a distance of 23 metres, as detailed on Attachment A. Note 2 applies.
34. Approves that the stopping of vehicles be prohibited at any time on the northeast side of Ferry Road commencing at point 191.5 metres southeast of its intersection with Portman Street and extending in a southeasterly direction to its intersection with St Johns Street, as detailed on Attachment A. Note 2 applies.
35. Approves that the stopping of vehicles be prohibited at any time on the northeast side of Ferry Road commencing at its intersection with St Johns Street and extending in a southeasterly direction for a distance of 77 metres, as detailed on Attachment A. Note 2 applies.
36. Approves that a Bus Stop be created on the northeast side of Ferry Road commencing at point 77 metres southeast of its intersection with St Johns Street and extending in a southeasterly direction for a distance of 14 metres, as detailed on Attachment A. Note 2 applies.
37. Approves that the stopping of vehicles be prohibited at any time on the northeast side of Ferry Road commencing at a point 91 metres southeast of its intersection with St Johns Street and extending in a southeasterly direction for a distance of 55.5 metres, as detailed on Attachment A. Note 2 applies.
38. Approves that the stopping of vehicles be prohibited at any time on the southwest side of Ferry Road commencing at its intersection with Oak Street and extending in a northwesterly direction for a distance of 15 metres, as detailed on Attachment A. Note 2 applies.
39. Approves that the parking of vehicles be restricted to a maximum period of 60 minutes on the southwest side of Ferry Road commencing at point 15 metres northwest of its intersection with Oak Street and extending in a northwesterly direction for a distance of 16.5 metres, as detailed on Attachment A. Note 2 applies
40. Approves that the stopping of vehicles be prohibited at any time on the southwest side of Ferry Road commencing at a point 31.5 metres northwest of its intersection with Oak Street and extending in a northwesterly direction for a distance of 50 metres, as detailed on Attachment A. Note 2 applies.
41. Approves that the stopping of vehicles be prohibited at any time on the southwest side of Ferry Road commencing at its intersection with Oak Street and extending in a southeasterly direction for a distance of seven metres, as detailed on Attachment A.
42. Approves that a Bus Stop be created on the southwest side of Ferry Road commencing at point seven metres southeast of its intersection with Oak Street and extending in a southeasterly direction for a distance of 14 metres, as detailed on Attachment A.
43. Approves that the stopping of vehicles be prohibited at any time on the southwest side of Ferry Road commencing at a point 21 metres southeast of its intersection with Oak Street and extending in a southeasterly direction for a distance of 14 metres, as detailed on Attachment A.
44. Approves that the parking of vehicles be restricted to a maximum period of 60 minutes on the southwest side of Ferry Road commencing at point 35 metres southeast of its intersection with

- Oak Street and extending in a southeasterly direction for a distance of 46 metres, as detailed on Attachment A.
45. Approves that the stopping of vehicles be prohibited at any time on the southwest side of Ferry Road commencing at a point 81 metres southeast of its intersection with Oak Street and extending in a southeasterly direction for a distance of 16 metres, as detailed on Attachment A.
 46. Approves that the parking of vehicles be restricted to a maximum period of 60 minutes on the southwest side of Ferry Road commencing at point 97 metres southeast of its intersection with Oak Street and extending in a southeasterly direction for a distance of 53.5 metres, as detailed on Attachment A.
 47. Approves that the stopping of vehicles be prohibited at any time on the southwest side of Ferry Road commencing at a point 150.5 metres southeast of its intersection with Oak Street and extending in a southeasterly direction for a distance of 13.5 metres, as detailed on Attachment A.
 48. Approves that the parking of vehicles be restricted to a maximum period of 60 minutes on the southwest side of Ferry Road commencing at point 164 metres southeast of its intersection with Oak Street and extending in a southeasterly direction for a distance of 26 metres, as detailed on Attachment A.
 49. Approves that the stopping of vehicles be prohibited at any time on the southwest side of Ferry Road commencing at a point 190 metres southeast of its intersection with Oak Street and extending in a southeasterly direction to its intersection with Catherine Street, as detailed on Attachment A.
 50. Approves that the stopping of vehicles be prohibited at any time on the southwest side of Ferry Road commencing at its intersection with Catherine Street and extending in a southeasterly direction for a distance of four metres, as detailed on Attachment A.
 51. Approves that a Bus Stop be created on the southwest side of Ferry Road commencing at point four metres southeast of its intersection with Catherine Street and extending in a southeasterly direction for a distance of 14 metres, as detailed on Attachment A.
 52. Approves that the stopping of vehicles be prohibited at any time on the southwest side of Ferry Road commencing at a point 17.5 metres southeast of its intersection with Catherine Street and extending in a southeasterly direction to its intersection with Maronan Street, as detailed on Attachment A.
 53. Approves that the stopping of vehicles be prohibited at any time on the southwest side of Ferry Road commencing at its intersection with Maronan Street and extending in a southeasterly direction for a distance of 13 metres, as detailed on Attachment A.
 54. Approves that the parking of vehicles be restricted to a maximum period of 60 minutes on the southwest side of Ferry Road commencing at point 13 metres southeast of its intersection with Maronan Street and extending in a southeasterly direction for a distance of 18.5 metres, as detailed on Attachment A.
 55. Approves that the stopping of vehicles be prohibited at any time on the southwest side of Ferry Road commencing at a point 31.5 metres southeast of its intersection with Maronan Street and extending in a southeasterly direction for a distance of 24 metres, as detailed on Attachment A.
 56. Approves that the parking of vehicles be restricted to a maximum period of three minutes on the southwest side of Ferry Road, commencing at a distance of 55.5 metres southeast of its intersection with Maronan Street and extending in a southeasterly direction for a distance of

- 16.5 metres, as detailed on Attachment A. This restriction is to apply between the times of 8.15am and 9.15am and 2.30pm and 3.30pm on school days only.
57. Approves that the stopping of vehicles be prohibited at any time on the northwest side of Portman Street commencing at its intersection with Ferry Road and extending in a northeasterly direction for a distance of 15.5 metres, as detailed on Attachment A. Note 2 applies.
 58. Approves that the stopping of vehicles be restricted to a maximum period of 120 minutes on the northwest side of Portman Street commencing at a point 15.5 metres northeast of its intersection with Ferry Road and extending in a northeasterly direction for a distance of 53 metres, as detailed on Attachment A. Note 2 applies.
 59. Approves that the stopping of vehicles be prohibited at any time on the southeast side of Portman Street commencing at its intersection with Ferry Road and extending in a northeasterly direction for a distance of 16 metres, as detailed on Attachment A. Note 2 applies.
 60. Approves that the parking of vehicles be restricted to a maximum period of 120 minutes on the southeast side of Portman Street commencing at a point 16 metres northeast of its intersection with Ferry Road and extending in a northeasterly direction for a distance of 53 metres, as detailed on Attachment A. Note 2 applies.
 61. Approves that the stopping of vehicles be prohibited at any time on the northwest side of St Johns Street commencing at its intersection with Ferry Road and extending in a northeasterly direction for a distance of 16 metres, as detailed on Attachment A. Note 2 applies.
 62. Approves that the parking of vehicles be restricted to a maximum period of five minutes on the northwest side of St Johns Street commencing at a point 16 metres northeast of its intersection with Ferry Road and extending in a northeasterly direction for a distance of 14 metres, as detailed on Attachment A. Note 2 applies.
 63. Approves that the stopping of vehicles be prohibited at any time on the southeast side of St Johns Street commencing at its intersection with Ferry Road and extending in a northeasterly direction for a distance of 25 metres, as detailed on Attachment A. Note 2 applies.
 64. Approves that the parking of vehicles be restricted to a maximum period of 30 minutes on the southeast side of St Johns Street commencing at a point 25 metres northeast of its intersection with Ferry Road and extending in a northeasterly direction for a distance of 56 metres, as detailed on Attachment A. Note 2 applies.
 65. Approves that the stopping of vehicles be prohibited at any time on the northwest side of Oak Street commencing at its intersection with Ferry Road and extending in a southwesterly direction to its intersection with Heathcote Street, as detailed on Attachment A. Note 2 applies.
 66. Approves that the stopping of vehicles be prohibited at any time on the southeast side of Oak Street commencing at its intersection with Ferry Road and extending in a southwesterly direction to its intersection with Heathcote Street, as detailed on Attachment A. Note 2 applies.
 67. Approves that the stopping of vehicles be prohibited at any time on the northwest side of Catherine Street commencing at its intersection with Ferry Road and extending in a southwesterly direction for a distance of 20 metres, as detailed on Attachment A. Note 2 applies.
 68. Approves that the parking of vehicles be restricted to a maximum period of 120 minutes on the northwest side of Catherine Street commencing at a point 20 metres southwest of its intersection with Ferry Road and extending in a southwesterly direction for a distance of 25 metres, as detailed on Attachment A. Note 2 applies.

69. Approves that the stopping of vehicles be prohibited at any time on the southeast side of Catherine Street commencing at its intersection with Ferry Road and extending in a southwesterly direction for a distance of 150 metres, as detailed on Attachment A. Note 2 applies.
70. Approves that the stopping of vehicles be prohibited at any time on the northwest side of Maronan Street commencing at its intersection with Ferry Road and extending in a southwesterly direction for a distance of 12 metres, as detailed on Attachment A. Note 2 applies.
71. Approves that the parking of vehicles be restricted to a maximum period of 120 minutes on the northwest side of Maronan Street commencing at a point 12 metres southwest of its intersection with Ferry Road and extending in a southwesterly direction for a distance of 18 metres, as detailed on Attachment A. Note 2 applies.
72. Approves that the stopping of vehicles be prohibited at any time on the southeast side of Maronan Street commencing at its intersection with Ferry Road and extending in a southwesterly direction for a distance of 13 metres, as detailed on Attachment A. Note 2 applies.
73. Approves that a Stop control be placed against the Portman Street approach to its intersection with Ferry Road, as detailed on Attachment A.
74. Approves that a Stop control be placed against the Oak Street approach to its intersection with Ferry Road, as detailed on Attachment A.
75. Approves that a Give Way control be placed against the St John Street approach to its intersection with Ferry Road, as detailed on Attachment A.
76. Approves the installation of a bus shelter at the following locations:
 - a. 729 Ferry Road (Attachment A),
 - b. 650 Ferry Road (Attachment A), and
 - c. 608 Ferry Road (Attachment A).
77. Approves that the pathway on the northeast side of Ferry Road, commencing at its intersection with St Johns Street and extending in a southeasterly direction for a distance of 51 metres, be resolved as a bi-directional shared pedestrian/cycle path. This shared path is authorised under clause 21 of the Christchurch City Council Traffic and Parking Bylaw 2017, as detailed on Attachment A.
78. Approves that the pathway on the southwest side of Ferry Road, commencing at its intersection with Maronan Street and extending in a northwesterly direction for a distance of 28 metres, be resolved as a bi-directional shared pedestrian/cycle path. This shared path is authorised under clause 21 of the Christchurch City Council Traffic and Parking Bylaw 2017, as detailed on Attachment A.
79. Approves that the section of road reserve situated between the north-western boundary of 689 Ferry Road and south-eastern boundary of 687 Ferry Road, be resolved as a bi-directional shared pedestrian/cycle path. This shared path is authorised under clause 21 of the Christchurch City Council Traffic and Parking Bylaw 2017. As detailed on Attachment A.
80. Approves the removal of nine trees as identified on Attachment A.
81. Approve that these resolutions take effect when parking signage and/or road markings that evidence the restrictions is/are in place (or removed in the case of revocations).

4. Key Points

4.1 This report supports the [Council's Long Term Plan \(2018 - 2028\)](#):

4.1.1 Activity: Active Travel

- Level of Service: 10.5.2.0 Improve the perception that Christchurch is a cycling friendly city - =53%
- Level of Service: 16.0.10.0 Improve the perception that Christchurch is a walking friendly city = 84%

4.2 The following feasible options have been considered:

- Option 1 – The Preferred Option
- Option 2 – Original Consulted Option 2016
- Option 3 – Do Nothing

4.3 Option Summary - Advantages and Disadvantages of the Preferred Option

4.3.1 The advantages of this option include:

- A pedestrian focused environment
- A trial speed limit of 30km/h for one year with the possibility of a permanent 30km/h speed reduction.
- New gateways to identify the start and end of the village.
- Upgraded crossing facilities.
- Improved passenger transport facilities.
- Improved safety at St Anne's school.
- Wider cycle lanes.
- Wider footpaths.
- Increased landscaping.
- Links Woolston Village with the Major Cycleway Route network.
- Smallest impact on parking of all schemes considered.

4.3.2 The disadvantages of this option include:

- Loss of 11 parking spaces.
- Potential for some minor delays to traffic due to the slower speed environment.

5. Context/Background

Ferry Road Master Plan

5.1 Council adopted the Ferry Road Master Plan in 2014. This was developed to support the recovery of suburban centres along Ferry Road from Fitzgerald Avenue to the Ferrymead Bridge, and to improve the safety and amenity of this road corridor. The Master Plan forms part of the Council's Suburban Centres Programme and was prepared in response to the damage caused in suburban centres from the 2010 and 2011 earthquakes. The Master Plan was prepared in consultation with the Ferry Road community and is divided into individual projects focusing on specific areas along Ferry Road.

- 5.2 The improvements to Woolston Village Centre project (WL1) aims to improve the streetscape along Ferry Road through Woolston Village. The aim is to enhance Woolston's appeal as a destination, highlight the distinctive industrial character of the village centre and balance the needs of all users.
- 5.3 Public consultation on a draft proposal for improvements to Woolston Village Centre took place in May and June 2016.
- 5.4 In response to the 2016 proposal there was strong support for enhancing and beautifying the village. However, significant concern was raised about the negative effects the proposed removal of 56 on-street parking spaces would have on the viability of businesses and the local community.
- 5.5 More details of the 2016 proposal and the community views and preferences can be found in Section 7 of this report.
- 5.6 A workshop was held with the Community Board to discuss next steps. At this it was agreed to proceed with investigating a revised proposal, taking into account the feedback received. Revised project objectives were agreed by the Community Board and Project Sponsor.
- 5.7 At the same time, it was discovered that the old tram tracks and kerb-to-kerb concrete foundations are still in place in this section of Ferry Road. The kerb-to-kerb concrete limits the use of certain treatments in the scheme e.g. landscaped medians.
- 5.8 During investigations for the new scheme a number of different options were considered, taking into account consultation feedback received, physical limitations such as the tram tracks and concrete, and budget constraints.
- 5.9 Public consultation on the revised proposal was open for four weeks from Tuesday 5 June until Tuesday 3 July 2018.

6. Option 1 – Preferred Option

Option Description

- 6.1 The preferred option aims to create a pedestrian focused environment, while improving access to the village centre for all modes of transport and creating a village feel. The details of the plan can be seen in Attachment A.
- 6.2 The pedestrian environment will be improved through the use of wider footpaths at key locations, such as the busy shopping area between Portman Street and Oak Street. The wider footpaths will allow pedestrian movements, as well as encouraging pedestrians to stop and meet.
- 6.3 The number of pedestrian crossing points will increase from four to five, and will include two signalised crossings and three pedestrian refuges.
- 6.4 The existing signalised crossing currently outside New World supermarket's loading area will be relocated to link with the car park at the rear of the Woolston Community Library and increase the accessibility to these spaces. The existing pedestrian refuges will also be upgraded to meet current design standards.
- 6.5 Public transport is a vital component of the transport options in Woolston, and the public transport provision will be upgraded as part of this proposal. The bus stops will be brought into the village centre to reprioritise their use, and will be paired with signalised crossings to improve their accessibility.
- 6.6 Cycle infrastructure will be upgraded with wider cycle lanes provided through the village centre. The scheme also incorporates a signalised cycle crossing on Ferry Road to the east of

Maronan Street, which will link the village centre and allow cyclists to move between the major cycle routes to the north and south of Woolston, as well as helping to provide safe cycle access to the shops, churches and school.

- 6.7 Gateways will be created at either end of the scheme to clearly identify the extent of the village. The gateways use a combination of vertical elements and changes in material pallet, through landscaping and road narrowings to signal the arrival into the village and to prompt drivers to reduce vehicle speeds.
- 6.8 A 30km/h design speed is one of the project objectives. It is proposed to trial a 30 km/h speed limit along Ferry Road between Portman Street and St Anne's School. Reducing vehicle speeds is seen as being essential to allow safe pedestrian crossing movements, particularly for those who cross using the flush median, and contribute to the village feel.
- 6.9 The landscape design includes replacing and increasing the amount of street furniture. There will be eight new seats and nine new rubbish bins. In addition, there will be five cycle stands which can accommodate six cycles each, creating a total of 30 cycle parking spaces throughout the scheme. The preferred option includes new paving along the footpaths and at pedestrian crossing points and approximately 36 new trees.

Significance

- 6.10 The level of significance of this option is medium and consistent with Section 2 of this report.
- 6.11 Engagement activities for this level of significance includes:
 - 6.11.1 'Have Your Say' community consultation with both online and hard copy documentation and feedback forms.
 - 6.11.2 Social media and communications coverage.
 - 6.11.3 Public information sessions and meetings with affected stakeholders and community representatives.

Impact on Mana Whenua

- 6.12 This option does not involve a significant decision in relation to ancestral land or a body of water or other elements of intrinsic value, therefore this decision does not specifically impact Ngāi Tahu, their culture and traditions.

Community Views and Preferences

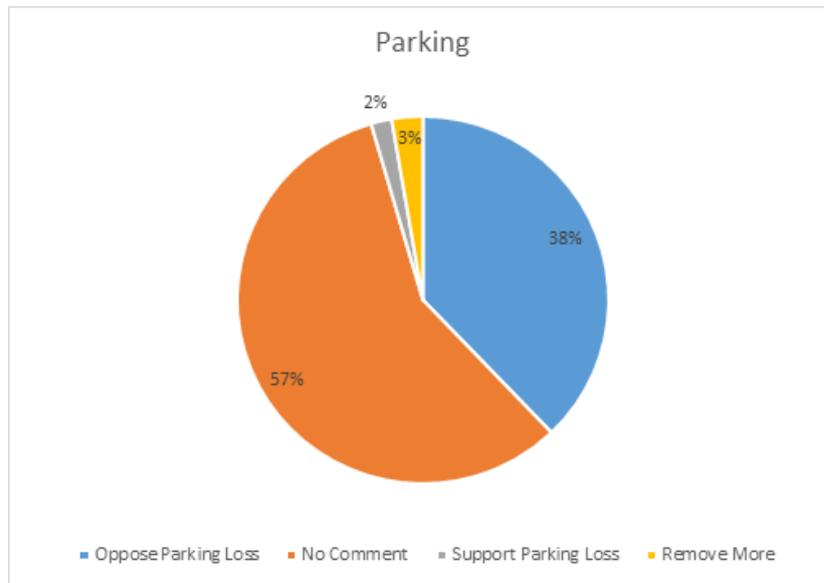
- 6.13 Those affected by this proposal include businesses in Woolston Village and residents in the local community, as well as members of the wider community traveling through or visiting Woolston for work or leisure. This includes drivers, pedestrians, bus users and cyclists.
- 6.14 Staff introduced the proposal to directly affected businesses and key stakeholders before public consultation started at an information evening at St Johns Church on 30 May 2018, which was attended by fifteen people including three Community Board members. Separate pre-consultation meetings were also held with Foodstuffs Ltd, St Anne's School and Church, and the MP for the Port Hills who is based in Woolston.
- 6.15 Public consultation on the revised proposal was open for four weeks from Tuesday 5 June until Tuesday 3 July 2018.
- 6.16 Council 'Have Your Say' leaflets and feedback forms were available online and approximately 800 copies were hand-delivered or posted to businesses, residents, schools and preschools, community groups, absentee landowners and stakeholders. Attachment B shows the 2018 consultation leaflet and feedback form.

- 6.17 A drop-in consultation information session attended by ten people was held in St Johns Church on 13 June 2018, and ongoing communication and meetings with businesses and property owners took place during and beyond the consultation period. The project team also presented the revised proposal at a well-attended Greater Linwood Community Forum at Te Waka Unua School.
- 6.18 There were 114 responses to the revised proposal. Forty-four submitters (38%) indicated support including Woolston Plunket, Environment Canterbury, Holy Smoke Building owners, Three Boys Brewery and St Anne's School. Forty-two submitters (37%) indicated support with suggestions including NZ Heavy Haulage Association, Canterbury District Health Board and St Anne's Catholic Church. Twenty-five submitters (22%) did not support the proposal including SPOKES Canterbury, Woolston businesses such as Woolston Pharmacy, Rangiora Holdings as owner representing 12 shops in the village centre, and Woolston Dairy at 701 Ferry Road. The remaining three submitters provided concerns or suggestions only, including Foodstuffs representatives.



- 6.19 Key positive comments included commendations for a revised plan that better balances the need for revitalisation and a sense of place, with parking provision. There was support for improving the village for locals and visitors, including walking space and seating for pedestrians, and facilities for cyclists and bus users. Several noted that improving the village will make it more attractive for prospective residents and existing business committed to being in the area. There was support for a general tidy up and enhancement – a number of those keen to see landscaping and trees improved also providing alternative suggestions.
- 6.20 Key issues raised during consultation were
- Parking removal (in particular the proposal for one parking space outside the pharmacy)
 - Requests for alternative tree and landscaping species
- 6.21 Approximately 40% of submitters requested all or some of the existing parking spaces be retained, and a petition document received as a submission included 1038 signatures requested: 'We, the undersigned, do not agree with the proposal to remove 14 car parks from

the Woolston village and ask that these car parks be retained'. The petition is presented to the Community Board along with this report.



6.22 Sixty-seven submitters gave Woolston as their address, and seven were from nearby suburbs of Linwood, Redcliffs, Sumner and Clifton Hill. The remaining 40 were from other Christchurch suburbs. Of those from Woolston, 26 indicated support, 27 indicated support with suggestions and 14 did not support the proposal.

Parking issues

6.23 Key parking-related comments included the need for access for elderly and mobility impaired drivers, in particular close to the pharmacy and adjacent businesses. There was also some concern about the proposed loss of parking outside St Anne's School, although this concern was not raised by the school.

Project team response to parking issues

South side of Ferry Road parking

6.24 As part of the proposal and in response to submissions to the 2016 concept plan, there is an increased number of car parks on the south side between Oak and Catherine Streets, as detailed in Attachment C - Parking Comparison Plan. This is because although most businesses on the south side have private off-street car parking at the rear, drivers may not be aware of this and some people find these car parks difficult to access.

North side of Ferry Road parking

6.25 In response to requests for more on-street car parking outside the pharmacy and adjacent shops, parking outside 683 – 687 Ferry Road has been increased from one space to three spaces.

6.26 There is a considerable amount of easily accessible private off-street parking on the north side of Ferry Road for those visiting private businesses. Some businesses on this side of the road do not have parking on-site. A number of on-street car parks in this location have been retained. The Council car park behind the Woolston Community Library also provides 32 spaces.

St Anne's School & Church parking

6.27 Feedback also identified some concerns with the loss of parking around St Anne's School. Since consultation, two additional parking spaces have been included on the south side of

Ferry Road outside number 670, which is opposite the church and school. Recent discussions with St Anne's Church have removed three parking spaces outside 733 Ferry Road to allow for a bus stop location that meets the needs of both the project and the church. This means that between Maronan Street and the eastern boundary of St Anne's School, the number of car parks has decreased by two - from the existing 17 to the now proposed 15.

- 6.28 Feedback from St Anne's School requested removing the P3 parking restrictions to the west of the kea crossing outside 733 and 664 – 666 Ferry Road. These parks are now proposed to have P60 restrictions.
- 6.29 There was little comment and no formal opposition for the relocation of the bus stops at Portman Street to central Woolston.
- 6.30 The overall parking provision proposed in the village is now 56 spaces, which is a decrease of 11 spaces when compared to the existing number of on-street parks in this section of Ferry Road. Recent parking survey information shows that demand can be met in the remaining on-street and off-street car parks.

Other improvements for parking and access in the village centre

- 6.31 Signs have now been installed to direct drivers to the car park behind the Woolston Community Library from Ferry Road via Portman Street.
- 6.32 The Council car park behind the Community Library has 32 spaces. This is four more spaces than previously provided, including two designated mobility parks which are only a short distance from the pharmacy and shopping area, and a well-lit, level shared path from the car park provides easy access to Ferry Road for pedestrians.
- 6.33 The signal-controlled pedestrian crossing has been moved closer to the Woolston Community Library car park so that people can park here and safely cross to the businesses on the south side of Ferry Road.
- 6.34 **Summary of proposed parking changes following consultation feedback**
- Two further short-term car parks will be retained outside the pharmacy and adjacent shops, now three car parks in total.
 - Three car parks removed from outside 733 Ferry Road due to changes to the bus stop location.
 - Two further car parks included outside 670 Ferry Road.
 - P60 parking restrictions outside 733 and 664 – 666 Ferry Road
- 6.35 Following discussion with adjacent business owners seven parking spaces proposed on the north side of Ferry Road will have time restrictions:
- Four parking spaces outside the dairy at 701 Ferry Road will be restricted to ten minutes.
 - Three parking spaces outside the pharmacy and adjacent shops will be restricted to fifteen minutes.

Trees and landscaping

- 6.36 Approximately 20% of submitters commented on the proposed trees, 5% in support of the proposal and 7% requesting more natives/evergreens instead of the deciduous trees proposed as part of the Master Plan. Key opposition comments stated a preference to prioritise wider footpaths and trees over parking retention.

Project team response to suggestions for trees and landscaping

- 6.37 The Woolston Village improvements project is part of the Ferry Road Master Plan which was developed with the community through workshops and consultation in 2014. This resulted in a plan for trees with a red and white colour theme, a maximum height of 8 metres, and seasonal variety and interest (deciduous).
- 6.38 The tree selection has been reviewed in response to requests from a number of submitters that native and evergreen trees be considered for Woolston. New Zealand Kauri trees will now replace the Upright Hornbeams at the village entrances and the English Oaks at St Johns Church. Native plants will also be incorporated into the under-planting. Magnolia Kobus will be retained as the main street tree.
- 6.39 The set of four Pin Oak trees at the west end of the village will now all be removed and will be replaced with Magnolia Kobus. This is in response to concerns raised by the NZ Heavy Haulage Association regarding the ability for oversized vehicles to move through this section of road. Magnolia kobus are smaller than Pin Oaks and replacing the trees on the south side of the road will enable the new trees to be moved back slightly from the kerb thereby further increasing the road space.
- 6.40 New Zealand Kauri (*Agathis australis*) is a slow growing, evergreen conifer which makes an attractive specimen tree. It has a narrow, pyramid form which lasts for more than fifty years.
- 6.41 Changes to the layout outside 669 Ferry Road - the old ANZ bank building - and proposed layout changes at 683 Ferry Road have meant the privately owned space for two racks of six cycle stands and two seats proposed for these locations is no longer available. Staff are continuing to work with the property owners to find available space for the cycle stands on their property.
- 6.42 More detailed response to and including other issues raised such as requests for rubbish and recycling bins, the 30km/h speed limit and cycle provisions are available in Attachment D – Issues/Suggestions and Project Team Response.
- 6.43 Full submissions with names only can be viewed online at <https://ccc.govt.nz.cwp.govt.nz/the-council/consultations-and-submissions/haveyoursay/show/151>
- 6.44 Changes to the 2018 consulted plan that have resulted in this final plan for Community Board and Council approval are:
- Two further short-term car parks will be retained outside the pharmacy and adjacent shops, now three car parks in total. These parks will be restricted to 15-minute parking.
 - Three car parks removed from outside 733 Ferry Road due to changes to the bus stop location. The bus stop and shelter outside 729 Ferry Road has been relocated to outside 733 Ferry Road.
 - Two further car parks included outside 670 Ferry Road.
 - P60 parking restrictions outside 664 – 666 Ferry Road
 - Four parking spaces outside the dairy at 701 Ferry Road will be restricted to ten-minute parking.
 - Moving the 30/50 speed limit threshold to the eastern boundary of the St Anne's school.
 - The shared path on the south side of Ferry Road has been extended onto Maronan Street, so cyclists do not have to cycle on Ferry Road to use the signalised crossing if travelling from the major cycleway on the other side of the Heathcote River.

- Extension of the cycle lane on St Johns Street so it extends past the existing indented parking to help guide cyclists around the short term parking.
- The island outside New World has been shortened in length to allow right turns into the Salvation Army access (636 Ferry Road), however this will still restrict right turns into New World super market, as outlined in their resource consent.
- The island outside New World has been narrowed slightly to improve the alignment for vehicles and cyclists.
- The island in the road outside 622 Ferry Road has been shortened in length to allow right turning into the access for the bakery.
- The island outside St Anne's Church and St Anne's School has been relocated slightly to the east to make it easier to turn right into the adjacent driveways.
- In response to requests for more native and evergreen trees, we are now proposing to plant six NZ Kauri instead of the two English Oaks outside St Johns Church. This change in conjunction with the proposed street upgrades and existing activity at the St Johns/Catherine Street intersection makes this area the more natural gateway for the eastern entrance of the Woolston Village.
- The two tress proposed outside St Anne's School have been removed, as this location is no longer the eastern gateway.
- The set of four Pin Oak trees at the west end of the village will now all be removed and will be replaced with Magnolia Kobus.
- The rack of six cycle stands and two seats proposed outside 669 Ferry Road, and the rack of six cycle stands proposed outside 683 Ferry Road have been removed.
- To make room for the additional two parking spaces outside the pharmacy and adjacent shops, two small existing trees will be removed along with the two proposed trees along the kerb. To balance this and create a more vegetated and defined feel to the public space we are now proposing to replace the two small existing trees with three Autumn Blaze maple trees.
- An extra rubbish bin has been added outside 630 Ferry Road due to the volume of food shops and take-away outlets along this stretch of Ferry Road.
- One extra street light will be added on both Catherine and Maronan streets.

Parallel consultation - shared path proposal

- 6.45 Sixty-eight submitters were in support of the proposed shared path from Ferry Road to the Woolston Community Library car park, which was presented in the same consultation document. Twenty-nine didn't support and 18 didn't answer the question.
- 6.46 The shared path has been installed as part of the construction of the Community Library. The resolution to formalise this change to a shared path status is included in this report.

Next steps

- 6.47 Thirty-three submitters would like to be kept informed about how we will be including reminders of Woolston's cultural history and meaning in the detailed design and following our work with Matapopore.
- 6.48 The Community Board has been sent the full submissions including contact details, ahead of the meeting. Submitters have been sent a letter with a summary of consultation, and a link to

the plan including full submissions with names only, the final proposal and details of the meeting and how to request speaking rights.

Alignment with Council Plans and Policies

- 6.49 This option is consistent with Council's Plans and Policies – Christchurch Transport Strategic Plan, which designates Woolston Village as a 'Walkable Centre' and also forms part of the 'Local Cycle Network'.

Financial Implications

- 6.50 Cost of Implementation – The estimated total project cost to implement WL1 is \$3,174,939.
- 6.51 There is a shortfall in funding of \$507,472 which is proposed to be met from funds currently sitting at program level in the Suburban Master Plan – Ferry Road programme. A budget change will be processed according to financial delegations and process. The tender will not be let until the budget is available.
- 6.52 Maintenance / Ongoing Costs – There will be an increase in maintenance costs due to the regular maintenance required on the new green cycle lane surfacing, new landscaping and trees, and new street furniture, e.g. rubbish bins. Following the first years defects liability period, this has been calculated as an increase of approximately \$9,870 per annum, which will be included in the annual maintenance schedule.
- 6.53 Funding source – Funding of \$2,667,467 has been allocated in the Council's Long Term Plan to implement the Improvements to Woolston Village Centre – WL1 (named Ferry Road Master Plan - Project WL1 in the Long Term Plan) with the balance from Suburban Master Plan – Ferry Road programme as above. Ongoing costs will be funded from the budgeted annual maintenance schedule.

Legal Implications

- 6.54 There is not a legal context, issue or implication relevant to this decision.
- 6.55 This report has not been reviewed and approved by the Legal Services Unit.

Risks and Mitigations

- 6.56 There are no significant risks with this option.

Implementation

- 6.57 Implementation dependencies – The following consents may be required:
- National Environmental Standards (NES) consent from CCC for management of contamination of the road e.g. coal tar & contaminated soil.
 - Stormwater Authorisation under the Interim Global Stormwater Consent, Environment Canterbury may also require a construction stormwater consent.
 - Removal and works around trees may be able to be covered under the CCC Global Tree consent.
- 6.58 Requires Council approval of traffic controls by resolution including cycle lanes and traffic signals.
- 6.59 Implementation timeframe – Council approval is scheduled for March 2019. After detailed design and tender, construction is currently anticipated to commence in January 2020 and take approximately five months.

Option Summary - Advantages and Disadvantages

- 6.60 The advantages of this option include:

- A pedestrian focused environment
- A trial speed limit of 30km/h for one year with the possibility of a permanent 30km/h speed reduction
- New gateways to identify the start and end of the village
- Upgraded crossing facilities.
- Improved passenger transport facilities.
- Improved safety at St Anne's school.
- Wider cycle lanes.
- Wider footpaths.
- Increased landscaping.
- Links Woolston Village with the Major Cycleway Route network.
- Smallest impact on parking of all schemes considered.

6.61 The disadvantages of this option include:

- Loss of 11 parking spaces.
- Potential for some minor delays to traffic due to the slower speed environment.

7. Option 2 – Original Consulted Option 2016

Option Description

7.1 The original option went to public consultation in 2016, however it was not taken to the Community Board for approval due to the significant community concerns about the proposed loss of parking.

7.2 This option included:

- A pedestrian focused environment, with wider footpath and four new pedestrian refuge islands.
- New gateways to identify the start and end of the village.
- A trial speed limit of 30km/h for one year with the possibility of a permanent 30km/h speed reduction.
- A paved flush median along the centre of the road, with some raised landscaped sections.
- Wider cycle lanes.
- Updated street furniture and landscaping, including new seating and tree planting.
- A reduction in parking from 77 to 21 spaces.

Significance

7.3 The level of significance of this option is medium and consistent with Section 2 of this report.

7.4 Engagement activities for this level of significance includes:

7.4.1 'Have Your Say' community consultation with both online and hard copy documentation and feedback forms.

7.4.2 Social media and communications coverage.

- 7.4.3 Public information sessions and meetings with affected stakeholders and community representatives.

Impact on Mana Whenua

- 7.5 This option does not involve a significant decision in relation to ancestral land or a body of water or other elements of intrinsic value, therefore this decision does not specifically impact Ngāi Tahu, their culture and traditions.

Community Views and Preferences

- 7.6 Those affected by this proposal include businesses in Woolston Village and residents in the local community, as well as the wider community traveling through or visiting the centre for business or leisure. This includes drivers, pedestrians, bus users and cyclists.
- 7.7 Also see Context/Background Section 5 of this report and Attachment E - 2016 Consultation Leaflet.
- 7.8 168 written submissions were received. A significant number of the submissions received indicated their opposition because of concerns that the negative effects of parking removal, and to a lesser extent speed reduction, would outweigh the benefits of the proposal. There was a strong sense from these submitters that Woolston's business centre currently relies on passing traffic and easy access. The full submissions can be viewed in Attachment F.
- 7.9 Those indicating support focused on the wider travel choice and pedestrian benefits of the proposal, and supported the improvements to the village streetscape as a way of attracting people to visit and spend time in Woolston.
- 7.10 Ninety-four submitters (56%) - approximately half of whom were local residents, businesses or property owners indicated they generally opposed the scheme, focusing on concerns about business and community viability due to the proposed parking loss.
- 7.11 A petition with 770 signatures, largely from residents, business or property owners in Woolston and surrounding areas, was presented the Community Board on 19 September 2016, with these key points: highlighting the need to support the beautification of Woolston Village, opposing the removing of car parking between St Johns Street and Portman Street, and noting that most shops in Woolston Village are not 'browsing shops' but 'purchase and leave'.
- 7.12 72 submitters (43%) indicated they generally supported the scheme, wanting to see the benefits of improvements to Woolston despite some having reservations about aspects of the proposal that were mainly parking related.

Alignment with Council Plans and Policies

- 7.13 This option is consistent with Council's Plans and Policies – Christchurch Transport Strategic Plan, which designates Woolston Village as a 'Walkable Centre' and also forms part of the 'Local Cycle Network'.

Financial Implications 7.14 Cost of Implementation – The total estimated project cost for the original consulted option for WL1 in 2016 was originally estimated to be \$2,200,000. This does not take into account the additional costs to construction as a result of the tram track and concrete foundation. These additional costs are anticipated to be in the order of \$1,500,000.

- 7.15 Maintenance / Ongoing Costs – There will be an increase in maintenance costs due to the regular maintenance required on the new green cycle lane surfacing, new landscaping and trees, and new street furniture, e.g. rubbish bins.

- 7.16 Funding source – Funding of \$2,667,467 has been allocated in the Council’s Long Term Plan to implement the Improvements to Woolston Village Centre – WL1 (named Ferry Road Master Plan - Project WL1 in the Long Term Plan).

Legal Implications

- 7.17 There was not a legal context, issue or implication relevant to this decision.
- 7.18 This report has not been reviewed and approved by the Legal Services Unit.
- Risks and Mitigations 7.19 There are no significant risks with this option.

Implementation

- 7.20 Implementation dependencies – The following consents may be required:
- National Environmental Standards (NES) consent from CCC for management of contamination of the road e.g. coal tar & contaminated soil.
 - Stormwater Authorisation under the Interim Global Stormwater Consent, Environment Canterbury may also require a construction stormwater consent.
 - Removal and works around trees may be able to be covered under the CCC Global Tree consent.
- 7.21 Would require Council approval of traffic controls by resolution including cycle lanes and traffic signals.

Option Summary - Advantages and Disadvantages

- 7.22 The advantages of this option include:
- A pedestrian focused environment, with wider footpath and four new pedestrian refuge islands
 - New gateways to identify the start and end of the village
 - A trial speed limit of 30km/h for one year with the possibility of a permanent 30km/h speed reduction
 - Improved safety outside the school
 - A paved flush median along the centre of the road, with some raised landscaped sections
 - Wider cycle lanes
 - Updated street furniture and landscaping, including new seating and tree planting
- 7.23 The disadvantages of this option include:
- A reduction in parking from 77 to 21 spaces
 - Potential for some minor delays to vehicle due to the slower speed environment

8. Option 3 – Do Nothing

Option Description

- 8.1 Do nothing

Significance

- 8.2 The level of significance of this option is low and is consistent with Section 2 of this report.
- 8.3 There are no engagement requirements for this option.

Impact on Mana Whenua

- 8.4 This option does not involve a significant decision in relation to ancestral land or a body of water or other elements of intrinsic value, therefore this decision does not specifically impact Ngāi Tahu, their culture and traditions.

Community Views and Preferences

- 8.5 This option does not implement the aims or objectives of the Ferry Road Master Plan, which was adopted by Council following extensive consultation with the local community.

Alignment with Council Plans and Policies

- 8.6 This option is inconsistent with Council's Plans and Policies
- 8.6.1 Inconsistency – Doing nothing does not fulfil the Christchurch Transport Strategic Plan, which designated Woolston Village as a 'Walkable Centre' and as forming part of the 'Local Cycle Network'.
- 8.6.2 Inconsistency – Doing nothing does not fulfil the aims and objectives of the Ferry Road Master Plan, which has been approved by Council for implementation.
- 8.6.3 Reason for inconsistency – Doing nothing offers no improvements to Woolston Village.

Financial Implications

- 8.7 Cost of Implementation – There are no financial implications.
- 8.8 Maintenance / Ongoing Costs – There is no increase in maintenance costs. The required footpath resurfacing would need to be funded from the existing footpath maintenance budget.
- 8.9 Funding source – Funding is not required.

Legal Implications

- 8.10 There is not a legal context, issue or implication relevant to this decision.
- 8.11 This report has not been reviewed and approved by the Legal Services Unit.

Risks and Mitigations

- 8.12 Non applicable

Implementation

- 8.13 Implementation dependencies – Non applicable

Option Summary - Advantages and Disadvantages

- 8.14 The advantages of this option include:
- Maintains existing level of car parking
- 8.15 The disadvantages of this option include:
- Does not implement the aims or objectives of the Ferry Road Master Plan, which was adopted by Council following extensive consultation with the local community
 - Does not provide a pedestrian focused environment
 - Does not upgrade the crossing facilities
 - Does not improve safety at St Anne's School
 - Does not improve the amenity values of the village.

Attachments

No.	Title	Page
A	Plan for Approval	
B	Woolston Village 2018 Consultation Leaflet	
C	Woolston Village Parking Comparison Plan	
D	Woolston Village 2018 Project Team Responses	
E	Woolston Village 2016 Consultation Leaflet	
F	Woolston Village 2016 Consultation Submissions	

Confirmation of Statutory Compliance

Compliance with Statutory Decision-making Requirements (ss 76 - 81 Local Government Act 2002).

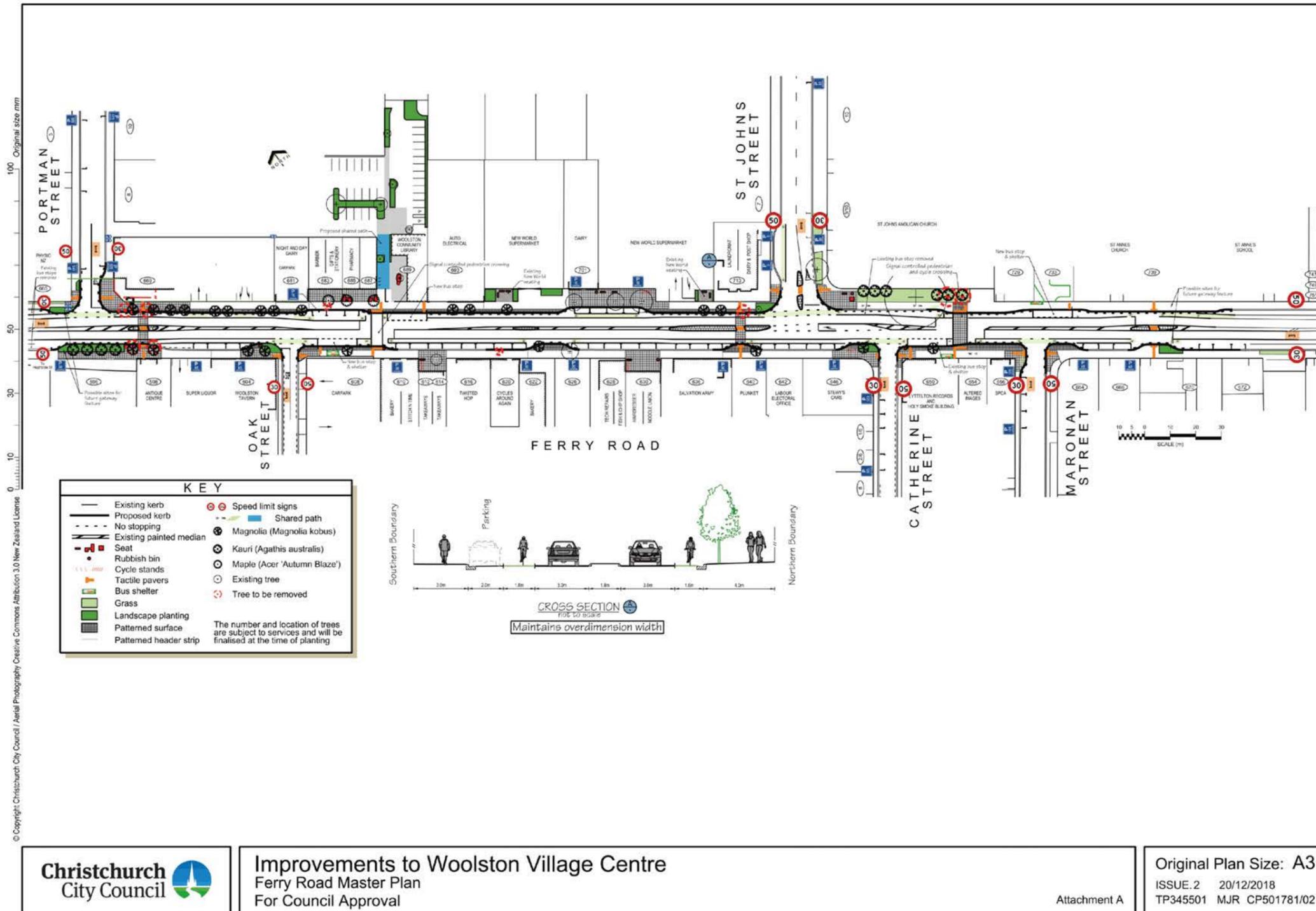
(a) This report contains:

- (i) sufficient information about all reasonably practicable options identified and assessed in terms of their advantages and disadvantages; and
- (ii) adequate consideration of the views and preferences of affected and interested persons bearing in mind any proposed or previous community engagement.

(b) The information reflects the level of significance of the matters covered by the report, as determined in accordance with the Council's significance and engagement policy.

Signatories

Authors	Kelly Griffiths - Project Manager Sharon O'Neill - Team Leader Project Management Transport Philippa Upton - Engagement Advisor William Homewood - Traffic Engineer - Investigation & Design
Approved By	Steffan Thomas - Manager Operations (Transport) Peter Langbein - Finance Business Partner David Adamson - General Manager City Services



HAVE YOUR SAY

Improvements to Woolston Village Centre

We're getting back to you with a revised proposal
and we'd like to hear your views

Open until Tuesday 3 July

ccc.govt.nz/haveyoursay



Improvements to Woolston Village Centre

The renewal of Woolston village centre is a significant Council streetscape project from the 2014 Ferry Road Suburban Master Plan. It aims to transform and revitalise Ferry Road through the village, and reinforce its growing vibrancy.

The improvements will complement Woolston's distinctive character while improving the way the village looks and feels, so that visits are more pleasant and enjoyable, and more people are attracted to spend time in the centre.

The upgrade will include new trees and plants, new footpaths, additional street furniture, and car parking.

In 2016 we consulted on a plan to upgrade Woolston Village. There was strong support for many of the ideas, but concerns were raised about the extent of parking loss proposed, and how this would affect local businesses and the community.

In response, we considered a number of alternative designs to get the best overall outcome. We aim to create an attractive and distinctive street that also takes into account the needs of people passing through and stopping in the village. This has led to the development of a revised draft plan for you to consider.

This plan retains more parking spaces than the previous proposal, while also including features to support Woolston's special character as a village and destination. It also includes safety improvements for people walking, biking and using the bus on this busy section of road.

Planned timeline



Please make sure your
feedback reaches us by 5.00pm
Tuesday 3 July



What we are proposing

The proposal extends along Ferry Road from Portman Street to St Anne's School.

The new plan aims to:

- Improve the appearance of the centre while retaining the unique industrial character
- Create a regular row of trees and landscaping as a distinct and attractive part of the street
- Create a centre with a distinct sense of place – a look and feel that people recognise and enjoy
- Create individual spaces in the streetscape that are attractive places to walk through, stop and stay

A place for walking

The plan includes:

- Wider footpaths and improved crossing facilities in the village
- Two signal controlled crossings outside the community library and St Johns Church
- Three upgraded crossings with pedestrian refuges and handrails
- Upgraded street lighting

A place to park

- 55 on-street car park spaces on this section of Ferry Road (this is a reduction from 69 existing car parks and an increase from 21 in the previous plan)
- 32 off-street public car park spaces behind the library with improved pedestrian access and signage to direct vehicles
- Time-restricted parking to allow for higher turnover



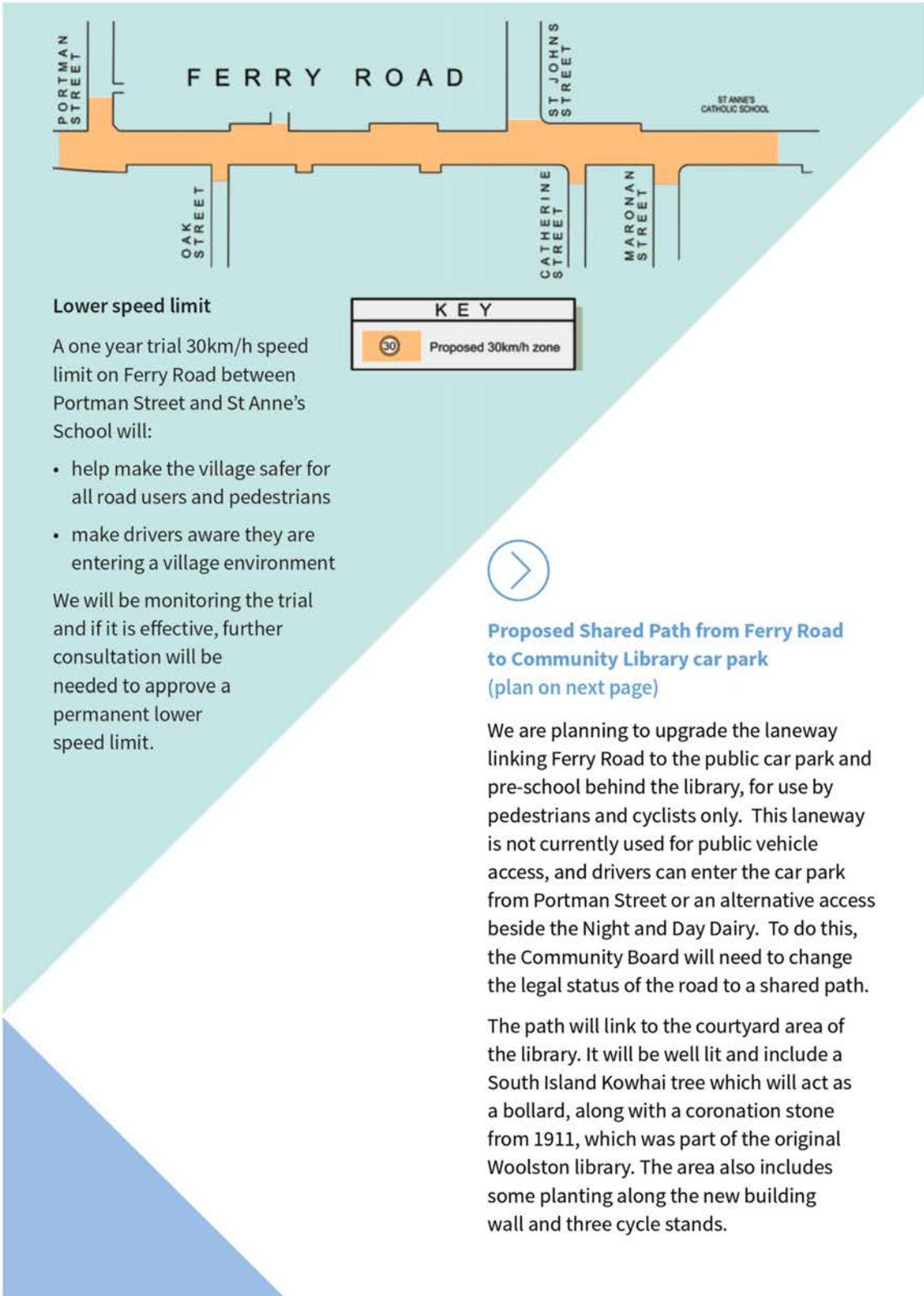
Catching the bus

- Two pairs of bus stops in the village located next to the two signal-controlled crossing points
- Two new bus stops in central Woolston replace those at Portman Street
- The bus stop outside St Johns Church moved to 729 Ferry Road
- The bus stops near the corner of Catherine Street moved slightly to the east
- Passengers waiting for the bus outside the library can use the covered area, and we are proposing purpose built shelters for all other stops

Going by bike

- Wider cycle lanes though the village
- Thirty-six cycle parking stands spread throughout the village

The signal-controlled crossing outside St Johns Church allows people on bikes to cross safely to reach the church and school, and link the major cycle routes to the north and south.



Lower speed limit

A one year trial 30km/h speed limit on Ferry Road between Portman Street and St Anne's School will:

- help make the village safer for all road users and pedestrians
- make drivers aware they are entering a village environment

We will be monitoring the trial and if it is effective, further consultation will be needed to approve a permanent lower speed limit.

KEY

30 Proposed 30km/h zone

Proposed Shared Path from Ferry Road to Community Library car park (plan on next page)

We are planning to upgrade the laneway linking Ferry Road to the public car park and pre-school behind the library, for use by pedestrians and cyclists only. This laneway is not currently used for public vehicle access, and drivers can enter the car park from Portman Street or an alternative access beside the Night and Day Dairy. To do this, the Community Board will need to change the legal status of the road to a shared path.

The path will link to the courtyard area of the library. It will be well lit and include a South Island Kowhai tree which will act as a bollard, along with a coronation stone from 1911, which was part of the original Woolston library. The area also includes some planting along the new building wall and three cycle stands.



Gateways to the village

Gateway features of trees, paving and kerb build-outs at Portman Street and St Anne's School to define the village entrances.

Oak planted to replace trees to be removed in poor condition near the existing large Oak tree at St Johns Church.

Upright Hornbeam at the village entrances. This upright tree with bright autumn colour reaches approximately 12m in height.

Pin Oak replacement of two Pin Oak trees near Portman Street to allow a change to the kerb. This will retain the existing set of four Pin Oak trees.

Magnolia Kobus the main street tree. This vase shaped tree grows approx 7m tall, produces star-shaped white flowers in the spring/summer and is hardy to withstand the local Woolston conditions near the coast.

More planting

- Approximately 30 new trees, spaced to create a regular canopy where possible (7 existing trees may be removed due to poor condition or road re-alignment). The number and location of trees are subject to underground services.
- New garden beds in a mixture of low native and exotic species in red and white.



Oak



Upright Hornbeam



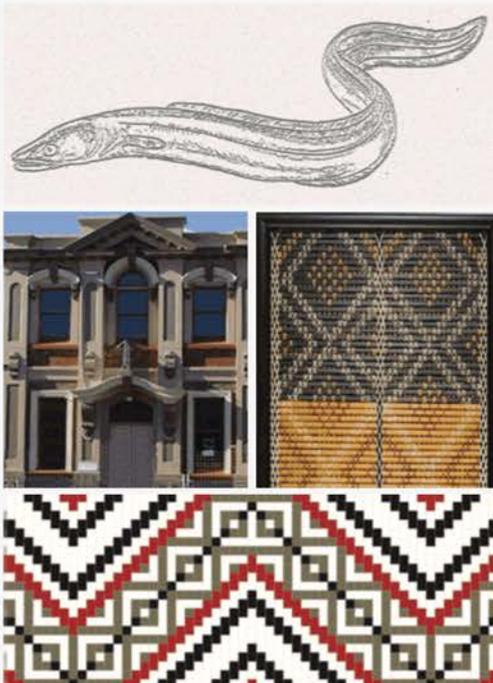
Pin Oak



Magnolia Kobus



Above: example images



Above: concept images

Seating and paving

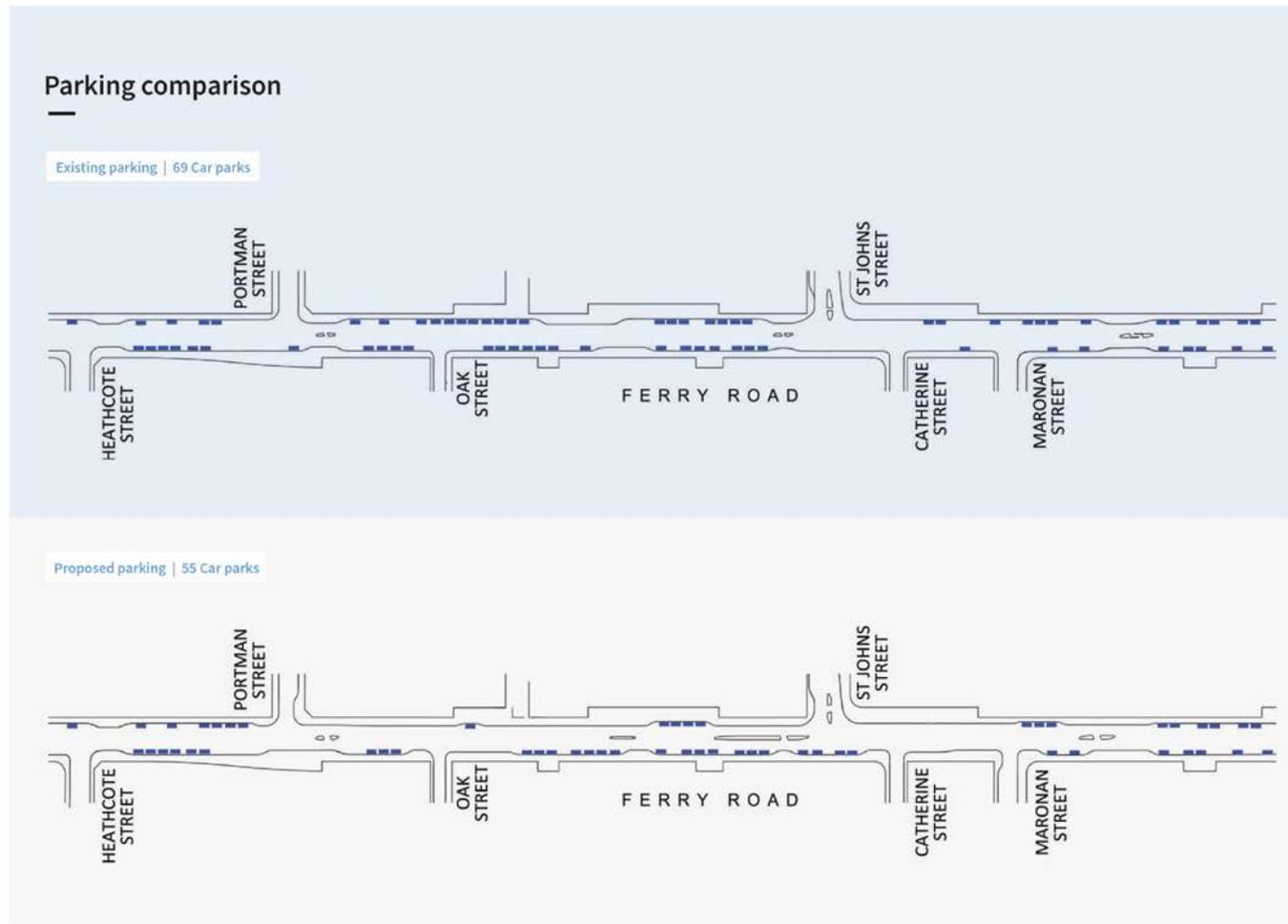
- Replacement of existing seats with a combination of seating with back and arm supports, and larger square seating to allow flexible use and socialising
- Use of building setback areas to create 'mini-plazas' with seats and landscaping
- Furniture selected to reflect the industrial character of Woolston using a mixture of materials including iron, wood and steel
- A mixture of grey paving with a contrasting lighter colour, selected to reflect the industrial character of Woolston

Remembering Woolston's past

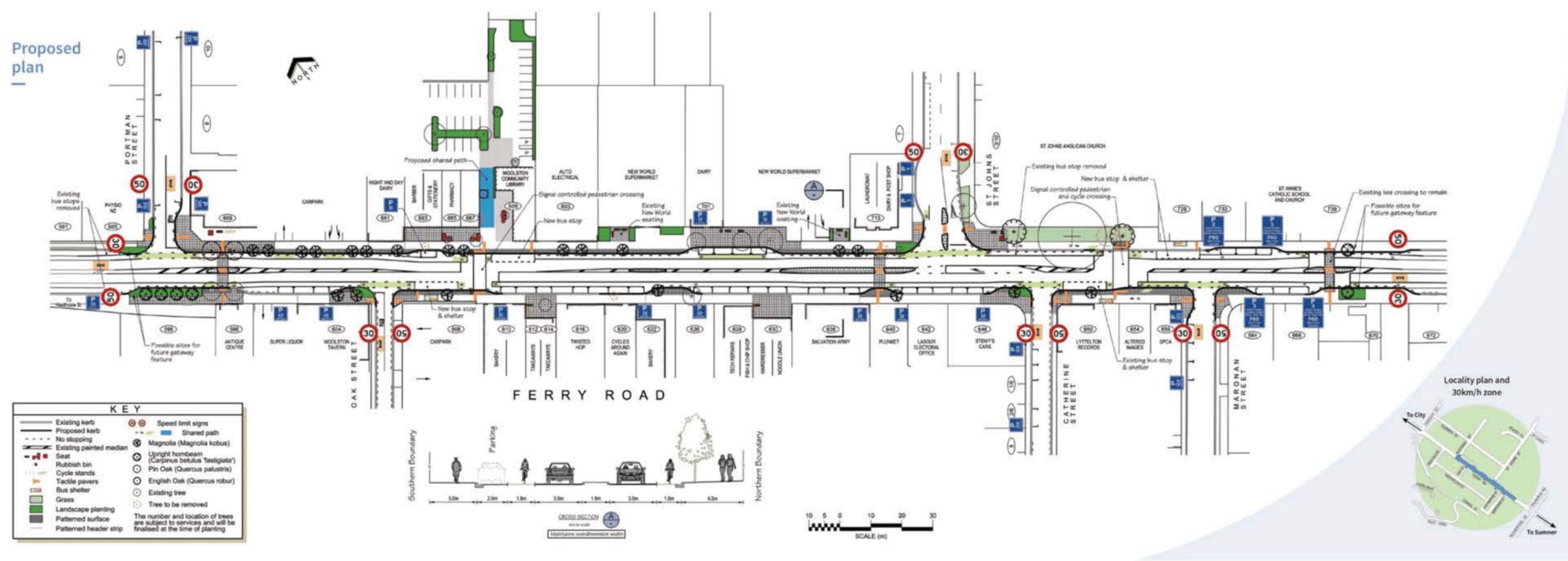
Woolston has a long established industrial heritage and strong cultural connections to the Heathcote River. We are proposing to celebrate these through the use of etched paving stones, which could include images of historic buildings, the natural environment, and Māori culture and history.

Matapopore Charitable Trust is an organisation established by Ngāi Tūāhuriri to work with Christchurch City Council to provide cultural advice on Ngāi Tahu values, narratives and aspirations for Council projects.

Matapopore will be working with the Council and the community to bring to life the cultural stories of this landscape and weave these stories through the projects identified in the Ferry Road Master Plan. This work in progress will be finalised later in the design stage, and we will get back to interested submitters to let them know how this will be done in Woolston village.



Proposed
plan





Drop-in session

Come and talk to staff about the proposal

Wednesday 13 June

4.30pm to 6.30pm

St Johns Church Lounge
Corner of Ferry Road and St Johns Street

There will be a short staff presentation starting
at 4.45pm, and again at 5.45pm.

Engagement Team

-  03 941 8808
-  philippa.upton@ccc.govt.nz
-  53 Hereford Street, Christchurch
-  PO Box 73016, Christchurch 8154
-  ccc.govt.nz/haveyoursay

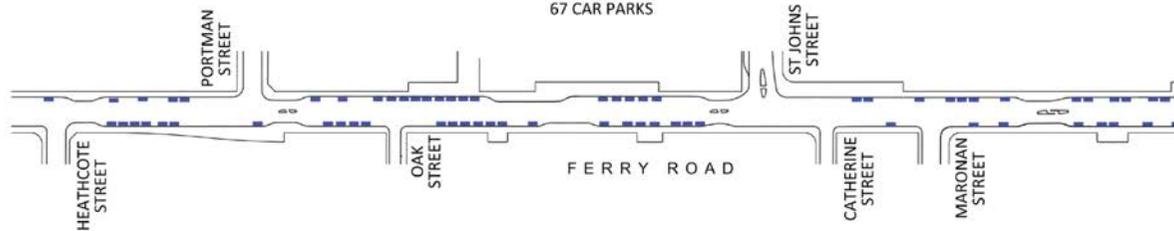




PARKING COMPARISON

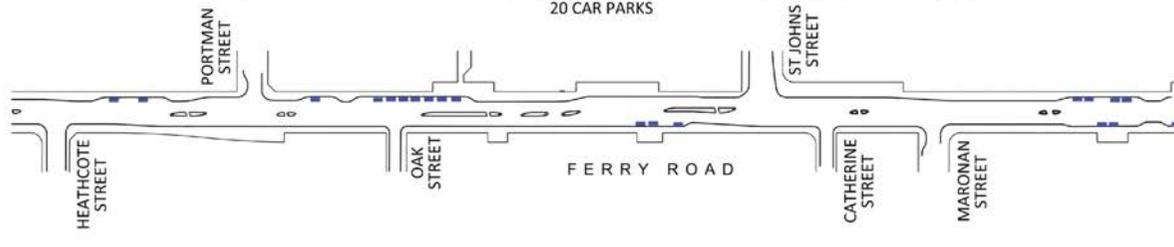
EXISTING PARKING

67 CAR PARKS



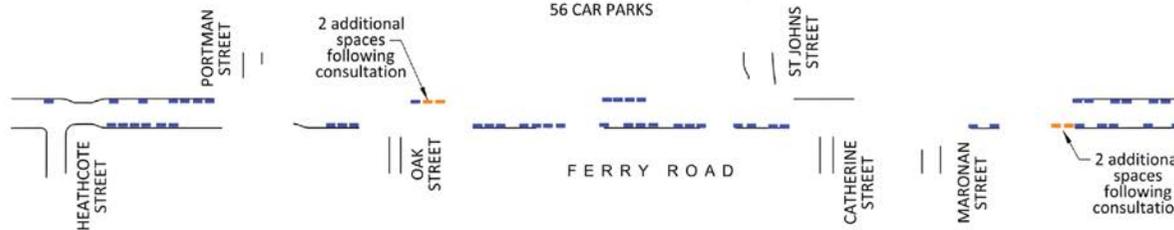
PREVIOUSLY PROPOSED PARKING 2016

20 CAR PARKS



PROPOSED PARKING 2018

56 CAR PARKS



Woolston Village Centre improvements	
Issues/suggestions and project team response	
Key issues and suggestions	Project team response
Concerns about parking loss, in particular outside the pharmacy and adjacent shops	<p>Parking outside the pharmacy We acknowledge community concerns expressed through consultation feedback about the need for additional parking outside the pharmacy in particular. In response to this feedback we have increased parking outside the pharmacy from the previously proposed one space to three spaces.</p> <p>General parking concerns South side of Ferry Road As part of the proposal and in response to submissions to the 2016 concept plan, we have increased the number of car parks on the south side between Oak and Catherine Streets, as detailed on the attached parking comparison plan. This is because although most businesses on the south side have private off-street car parking at the back, drivers may not be aware of this and some people find the car parks difficult to access.</p> <p>North side of Ferry Road There is a considerable amount of easily accessible private off-street parking on the north side of Ferry Road for those visiting private businesses, such as the car park at 669 - 681 Ferry Road (42 parks) and New World (114 parks). We are also aware that some businesses on this side of the road don't have parking on-site and we have retained some on-street car parking in these locations. We have taken into account the improved layout and security of the redeveloped Council car park behind the Woolston Community Library that has 32 car parks. Signs have now been installed to direct drivers to this car park from Ferry Road via Portman Street.</p> <p>St Anne's School & Church Feedback also identified some concerns with the loss of parking around St Anne's School. Since consultation, two additional parking spaces have been included on the south side of Ferry Road outside number 670, which is opposite the church and school. Recent discussions with St Anne's Church have removed three parking spaces outside 733 Ferry Road to allow for a bus stop location that meets the needs of both the project and the church. This means that between Maronan Street and the eastern boundary of St Anne's School, the number of car parks has decreased by two - from the existing 17 to the now proposed 15.</p> <p>Overall parking provision in the centre This brings the total proposed parking spaces to 56, which is a decrease of 11 spaces when compared to the existing number of on-street parks in this section of Ferry Road. Recent parking survey information shows that demand can be met in the remaining on-street and off-street car parks.</p> <p>Note: The consultation leaflet shows there are currently 69 existing car parks in this section of Ferry Road. This does not take into account that two car parks outside New World on Ferry Road have already been removed as part of the supermarket development, bringing the number of proposed parking spaces down to 67, and those removed as part of the proposal consulted on from 14 to 12. We apologise for any confusion this may have caused.</p> <p>Other improvements for parking and access The signal-controlled pedestrian crossing has been moved closer to the Council-owned car park at the rear of the Woolston Community Library so that people can park here and safely cross to the businesses on the south side of Ferry Road. For mobility access there are two car parks to the rear of the library, which are only a short distance from the pharmacy and wider shopping area. These spaces are fully accessible and linked to the village by a new level footpath.</p> <p>Summary of proposed parking changes following consultation feedback</p> <ul style="list-style-type: none"> • Two further short-term car parks will be retained outside the pharmacy and adjacent shops, now three car parks in total • Three car parks removed from outside 733 Ferry Road to relocate the bus stop to this location • Two further car park included outside 670 Ferry Road opposite the church and school • Following discussion with adjacent business owners seven parking spaces proposed on the north side of Ferry Road will have time restrictions: <ul style="list-style-type: none"> ○ four parking spaces outside the dairy at 701 Ferry Road will be restricted to ten minutes ○ three parking spaces outside the pharmacy and adjacent shops will be restricted to fifteen minutes • Signs have now been installed to direct drivers to the car park behind the Woolston Community Library from Ferry Road via Portman Street

<p>Concern about loss of parking outside St Anne's School</p>	<p>Two additional parking spaces have been included since the consultation on the south side of Ferry Road outside number 670, which is opposite the church and school. Recent discussions with St Anne's Church have removed three parking spaces outside 733 Ferry Road to allow for a bus stop location that meets the needs of both the project and the Church.</p> <p>This means that between Maronan Street and the eastern boundary of St Anne's School, the amount of available parking has decreased by two parking spaces, from the existing 17 to the now proposed 15.</p>
<p>Trees and landscaping</p>	<p>Trees</p> <p>The Woolston Village improvements project is part of the Ferry Road Master Plan which was developed with the community through workshops and consultation in 2014. This resulted in a plan for trees with:</p> <ul style="list-style-type: none"> • red and white colour theme • maximum 8 metres height • seasonal variety and interest (deciduous) <p>When selecting trees we also needed to make sure we took into account that:</p> <ul style="list-style-type: none"> • Ferry Road is an over-dimension route requiring 11 metres of clear space of for wide vehicles • Woolston is a dry site with a windy coastal environment <p>Deciduous trees provide interest through seasonal change, and access to sunlight in winter while providing shade in summer. Although evergreen trees don't lose their leaves all at once, they drop leaves all year long and limit sun in winter.</p> <p>However, we have reviewed the tree selection in response to requests from a number of submitters that native and evergreen trees be considered for Woolston. New Zealand Kauri trees will now replace the Upright Hornbeams at the village entrances and the English Oaks at St Johns Church. Native plants will also be incorporated into the under-planting. Magnolia Kobus will be retained as the main street tree, as the leafy nature and fragrant star-shaped flowers in spring/summer will create a strong feature in the village as well as meeting the constraints of the site described above.</p> <p>New Zealand Kauri (<i>Agathis australis</i>) is a slow growing, evergreen conifer which makes an attractive specimen tree. It has a narrow, pyramidal form which lasts for more than fifty years.</p> <p>To make room for the additional two parking spaces outside the pharmacy and adjacent shops, two small existing trees will be removed along with the two proposed trees along the kerb. To balance this and create a greener, defined feel to the public space we are now proposing to replace the two small existing trees with three Autumn Blaze maple trees.</p>

	<div style="display: flex; justify-content: space-around; align-items: center;">    </div> <p style="text-align: center;"> <i>Figure 1 New Zealand Kauri tree</i> <i>Figure 2 Autumn Blaze maple tree</i> <i>Figure 3 Autumn Blaze maple tree in autumn</i> </p> <p>Footpath Width In designing Woolston Village we are planning for future users including visitors and locals, as well as meeting the needs of existing users including the young and the elderly. We know the community wants Woolston to be an attractive place that is welcoming to use, to visit and to stop and stay. We are designing an inclusive environment which enables people of all ages and ability to move around safely regardless of their choice of transport, age or physical ability. Widening the footpath on the north side of the road will help us achieve our aims to benefit everyone in the community in the following ways:</p> <ul style="list-style-type: none"> • Ease of movement, especially for people with push chairs, wheelchairs and mobility scooters • Plenty of room for people to stop and chat while others can still move around them • Room for business signage, cafe seating and other outdoor use • Space for trees which will improve the look and feel of the centre
Other issues and suggestions	
Placement of trees will limit visibility for vehicles and pedestrians	Trees are located based on road visibility guidelines and plantings are kept to a maximum of 600mm in height. Trees will have lower branches removed as they get larger, maintaining 2.5m of clear space to allow visibility below the canopy.
30 km/h speed limit	<p>The one year trial 30 km/h speed limit on Ferry Road between Portman Street and St Anne's School will help make the village safer for all road users and pedestrians. The lower speed limit reduces the likelihood of a crash and the severity if one does happen. Drivers will be aware they are entering a village environment, and will be travelling at a speed that will make the centre more inviting and accessible for pedestrians and cyclists.</p> <p>This short section of reduced speed limit is unlikely to have any noticeable effect on vehicle travel times in Ferry Road and for most people there will be no or minimal delay to their total journey, given the waiting times already expected at traffic lights and pedestrian crossings. During peak travel times traffic is likely to be travelling at 30 km/h or less.</p>
Why not extend it the 30kph speed limit to Hargood and Rutherford Streets?	Reduced speed limits are typically used in areas with high pedestrian movements, this is why it is not proposed to extend the 30 km/h speed limit outside of the village centre.

Mobility parking	Two mobility parking spaces have been included in the Council-owned car park to the rear of the Woolston Community Library. This is seen as the best location in this area for mobility parking because there is room for people who use mobility aids such as wheelchairs or crutches. It is not possible to provide enough space for mobility parks on Ferry Road without users encroaching into the cycle or vehicle lane when getting into or out of the car. The spaces to the rear of the library are centrally located and approximately 30 metres from the pharmacy.
Accommodating the over-dimension route	The plan has been designed to allow over-dimensioned vehicles to continue to use this section of Ferry Road. This includes vehicles and loads up to 11 metres wide.
Charging stations for electric cars and bikes	At this stage there is no plan for any council-funded charging stations in this section of Ferry Road.
Tidying footpaths and making them safer	All footpaths in the project area will be resurfaced and relevelled during construction.
Request to install traffic signals at Ferry Road/St Johns Street intersection	Traffic signals can only be justified at an intersection if they resolve a significant safety or efficiency issue. In the past five years there have been two recorded crashes at this intersection, both involving cyclists. The updated design of the intersection aims to reduce the potential for this type of crash, and signalling the intersection would be unlikely to offer any further significant benefit to cyclist or vehicle safety. This intersection is not on the Christchurch City Council's list of the 100 most dangerous intersection in the city, and unnecessarily signalling the intersection could result in more accidents than currently experienced through additional queuing and delays.
Request for recycling bins	The request has been forwarded to the appropriate area within Council. At the moment Council is not installing public recycling bins in the suburbs because of the costs involved and issues with contamination when rubbish is mixed with recycling.
Will there be vehicle access on the shared path next to the Woolston Community Library?	The shared path is already in place and is for pedestrians and cyclists only, there is no vehicle access.
Request for higher provision for cyclists	Ferry Road is designated as part of the local cycle network. As such, the cycle lanes have been upgraded so that they are between 1.6 and 1.8 metres wide. Where parked vehicles are present the lanes will be a minimum of 1.8 metres so that cyclists can safely cycle past a car where the doors may be open. The 1.8 metre cycle lane width allows more opportunities for cyclists to overtake other cyclists. In some locations the cycle lanes are 1.6 metres wide when the cycle lane is against the kerb. This narrower width is sufficient for a safe cycling environment when there is no adjacent parking. The cycle lanes comply with the guidance in the NZTA Cycle Network Guidance and in the Christchurch Cycle Design Guide.
Opposition to cycle facilities	The existing cycle lanes on Ferry Road are too narrow, at between 1.1 and 1.6 metres wide. This is not sufficient to allow cyclists to use the cycle lane safely, particularly when cycling adjacent to parked cars where doors may be opened. The wider cycle lanes, which are now between 1.6 metres wide and 1.8 metres wide, provide a safe facility for cyclists. No changes to the cycle lanes are proposed following consultation.
How long will the construction be?	Construction will take approximately six months.
Has a parking survey been carried out in Woolston Village since the new supermarket has been open?	A June 2017 parking survey informed the design.
The proposed island in front of 622 Ferry Road will cause traffic flow issues as well as issues for business owners and their customers entering and exiting their private driveways.	The island does not block any driveways, except the New World service yard which is restricted to left in - left out as part of their resource consent. The island has been reduced in length to make it easier for vehicles to turn right into 622 Ferry Road.
Concern about is the proposed island outside New World supermarket, if a car was driving east towards town they would not be able to turn right into the supermarket carpark.	New World car park access onto Ferry Road was secured as part of their resource consent. During the consenting process a compromise was reached between the developer and Council, permitting access onto Ferry Road if an island was constructed to stop right turns in and out of the supermarket carpark, and encouraging drivers to use the St Johns Street access instead. The island was planned as part of the development of the site but has not yet been constructed.

Concern about exiting the New World carpark onto Ferry Road if turning right. This can be a dangerous area and very hard to see oncoming cars, especially bicycles.	Once the island outside the New World carpark is constructed right turns will not be possible (see above).
Will the deep-dish gutters on Oak Street be upgraded?	There is a separate upgrade project for Oak Street which is currently funded in the Long Term Plan in 2021, 2022 and 2023. There will be separate consultation for this project.
What are the plans for landscaping and parking between Portman and Heathcote Streets?	There will be no change to the existing landscaping between Heathcote and Portman Streets. Moving the bus stop from the current location near Portman Street means the number of car parks between Heathcote and Portman Streets will increase by two spaces on the north side and be reduced by one space on the south side of Ferry Road. There will be no time restrictions on these car parks.
Will it be difficult for the bus to turn into the stop outside the new library with signal pole on the footpath?	The bus stop has been designed to allow buses to pull in and out, based on the largest size bus currently in service and checked with vehicle tracking.
People are not aware of the car park behind the new library, it needs signage.	Signs have now been installed to direct drivers to the car park behind the Woolston Community Library from Ferry Road via Portman Street.
Could a safe crossing point on St John Street to link the Church and aged housing developments and the super market be considered?	The request has been forwarded to the appropriate area within Council and will be investigated.
Will wheel chair access be provided on the shared path linking Ferry Road and the carpark behind the new library?	Wheel chair access has been provided.
There are no give way lines on the Maronan and Catherine Street intersections.	The request has been forwarded to the appropriate area within Council and will be investigated.
Will the Catherine Street pedestrian bridge be rebuilt?	The Ferry Road Master Plan includes Heathcote Street Pocket Park and Pedestrian Bridge as a separate project. Further consultation on this is planned for early 2019.
Will there be a rubbish bin outside 630 and 630a Ferry Road?	An additional rubbish bin has been included outside 630 and 630a Ferry Road.
Have you surveyed the amount of pedestrians and cyclists using the shopping area?	Surveys to see how people use the village centre have been undertaken and identified up to 130 pedestrians crossing the road in a single hour period. Shopper surveys show that 31% of people using the centre typically walk, 6% cycle and 7% take the bus. These figures include people visiting the centre as well as people travelling through.
Why is the school not getting a School Speed Zone or an upgraded crossing?	A 40 km/h school speed zone would not be needed in a full-time 30 km/h zone. The proposal includes changes to the crossing layout to make it more accessible and easier for school children to use. The only suitable upgrade would be to include a signalised crossing, which is not needed as a new set of signals to the west that can be used to access the school is being provided.

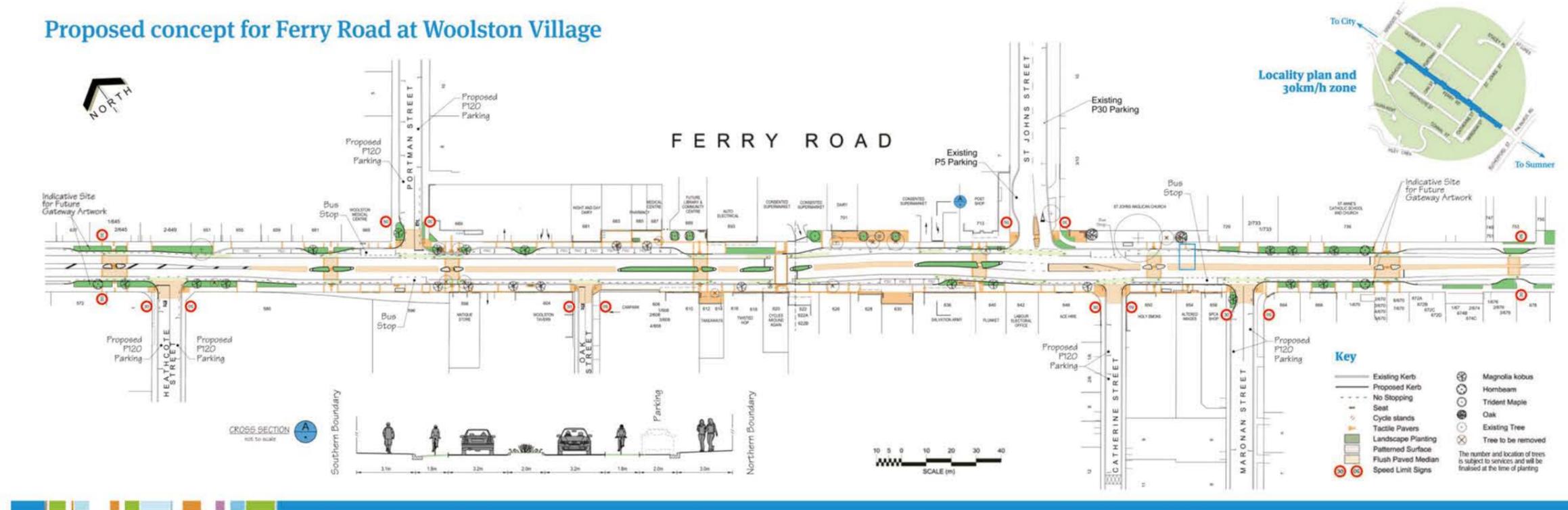
FERRY ROAD SUBURBAN MASTER PLAN PROJECT

*Ferry Road Movement
and Streetscape Improvements
at Woolston Village*



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Proposed concept for Ferry Road at Woolston Village



Proposed concept for Ferry Road at Woolston Village

We want to know what you think about plans to enhance Woolston Village by creating a more inviting public space and making this section of Ferry Road safer for pedestrians, cyclists and motorists.

Community feedback as part of the 2014 Ferry Road Master Plan highlighted the need for improvements around Woolston Village. Based on what local residents told us, the Council is proposing a series of street enhancements that highlight the distinctive industrial character of the village centre, balance the needs of road users and attract more people to visit and spend time in Woolston Village.

Summary of improvements

Key changes and improvements proposed as part of the Woolston Village upgrade include:

- Creating a pedestrian-focused environment, with extra crossing points at key locations and paving that guides people to public spaces.
- Installing a flush paved median strip along the centre of the road to help identify the suburban centre and reduce vehicle speeds.
- Introducing cycle lanes and additional cycle parking.
- Introducing a 30km/h speed zone.
- Directing motorists to alternative nearby parking sites to make the area safer for pedestrians and cyclists, and make space for more landscaping. This would reduce the number of parking spaces on this section of Ferry Road from 77 to 21, as well as five parking spaces from side streets.
- Enhancing the look and feel of the area by planting trees of various sizes and improving landscape planting. The aim is to make the street appear narrower and achieve a "village feel".
- Upgrading street furniture like seats, rubbish bins and cycle stands, and improving street lighting.
- Creating "gateways" that clearly show where the village begins and ends.

Key points we have thought about

The Ferry Road Master Plan indicated public support for enhancements to Woolston Village, which will encourage people to visit and improve road safety along this busy stretch of Ferry Road. The proposal outlined in this document considers existing strategic plans for the city and is based on research of the key issues – however, we need to know what you think about our proposal before we go any further.

PEDESTRIANS

Improved street crossings, pedestrian islands and wider footpaths will make it safer and more pleasant for pedestrians to visit the village.

CYCLISTS

Painted cycle lanes and advanced cycle stop boxes at the traffic lights will make the road safer for cyclists.

SPEED REDUCTION AND ROAD LANES

Narrowing the road and introducing a 30km/h speed zone aims to encourage motorists to slow down through the busy village and make it safer for all road users.

LIGHTING, FURNITURE AND LANDSCAPING

Street lighting will be improved, new seats, rubbish bins and cycle stands installed and a variety of trees and plants will help make the area a more appealing place to visit and spend time. The materials and planting palette will reflect the character and heritage of the village. The plan proposes 16 trees to be removed and replaced with 35 new trees, however the number and location of trees is subject to the placement of underground services and will be finalised at the time of planting.



HISTORIC AND CULTURAL CONTEXT

Based on feedback through the 2014 Ferry Road Master Plan consultation process, the design for the new Woolston Village project draws heavily on the industrial heritage of the area. The colour and tones of the landscaping and street furniture have also been chosen to reflect the Port Hills and heritage aspects. References to the area's early Maori history will also be incorporated in final plans.

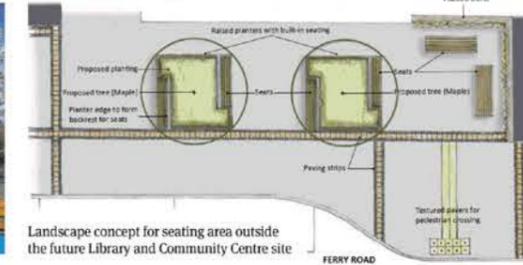
PARKING

The proposed redirection of motorists to off-street parking and side roads aims to make the area safer for everyone and improve the way it looks and feels. We commissioned an independent parking survey which confirmed that the parking proposed for removal could be accommodated either on side roads or through existing off-street spaces (e.g. on Heathcote, Catherine, and Portman Streets). Clear signage would direct motorists to parking areas on side roads. Remaining on-street parking on Ferry Road will be a mix of P30 and P60 spaces, and P30 and P120 spaces on side roads to encourage parking turnover.

Trees

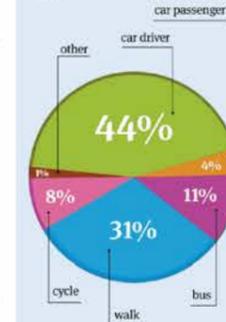


Landscape concept



Shopper survey

A survey of 204 shoppers in Woolston Village in February 2016 helped us understand how people get to the shops and their general habits.



How people currently get to Woolston Village

The survey showed how frequently each of these groups visited Woolston. Seventy six per cent of walkers visited the shopping area two to three times a week, which is the definition of a regular visitor, as did 75 per cent of cyclists and 67 per cent of bus users. This is compared to 52 per cent of drivers and 38 per cent of car passengers.

Most of the people surveyed were in the area briefly to visit the shops with 75 per cent staying less than 30 minutes.

People driving cars indicated that parking was important, however 60 per cent of drivers had no preference between on-street parking and off-street parking. Seventy per cent of drivers indicated that parking restrictions were important. The peak occupancy of parking spaces on Ferry Road during the survey was 56 per cent, with typical occupancy of parking spaces being below 50 per cent.

Parking



Timeline



HAVE YOUR SAY

This concept plan attempts to address the public call for improvements to the village through the Ferry Road Master Plan, while balancing the requirements of a safer and more attractive environment with the need for parking near businesses. It is anticipated that the proposed improvements will attract more people to spend time in the village and therefore benefit commercial activities.

It is important that you tell us what you think of the concept plan before we go any further.

Please make sure your comments reach us by 5pm on Wednesday 8 June.

If you give us your contact details on the submission form, we will send you the final plan and a summary of consultation feedback before the decision is made. We will also let you know the date and time of the meeting where this plan will be considered by the Hagley/Ferrymead Community Board.

COME AND TALK TO US

The project team will be available to discuss this project and answer any questions at the St John's Church Hall on Wednesday 25 May. Please come to visit us here any time between 3.30pm and 6.30pm, and there will be a short presentation at 5pm.

CONTACT

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FURTHER INFORMATION
ccc.govt.nz/woolston



#	I/We generally support this proposal	Ferry Road Movement and Streetscape Improvements at Woolston Village
1	N	<p>Full Comments</p> <p>Please note: Information provided in submissions numbered in red has been included where relevant (eg additional information has been added to the relevant submission, but repeat submissions removed), and this has resulted in the final submission count provided in the summary. The petition has been received and will be tabled as additional information.</p> <p>Having reviewed the concept plan I can see merit in improving the streetscape. The image of living in Woolston is improving with completion of new subdivisions off St Lukes Street (St Adela Place, St Thomas Place, St Peters, St Florian, etc.) bringing in many new families that frequent the village.</p> <p>However, I think that removal of more than 50 car parks is an extreme measure. The Twisted Hop brings many visitors to the village yet only provide 7 car parks. On a Thursday evening, Friday night and weekends the majority of on-street car parks are visitors to this establishment.</p> <p>I do not agree with the removal of 12 car parks between Catherine Street and Oak Street. If the majority of visitors are only in the village for 30 minutes, then perhaps these 12 car parks could be changed to P30. I feel that there would be a drop in patronage to the smaller businesses and takeaway outlets on this side of the street due to a removal of parking. These businesses rely on patronage from Woolston, Heathcote, Ferrymead/Brookhaven and residents of Lyttelton looking for somewhere convenient to go. I know that Port workers on afternoon and evening shifts will come into Woolston to grab a quick bite to eat or run their errands - it's quick for them to head down the Tunnel Road into Woolston and then head back to work - looking for car parks on side streets during peak hours will just be incentive to shop elsewhere. There are many workers in the area who pull up outside the bakery in their trade vehicles wanting to buy "smoko" or lunch. Many of these businesses are run by sole operators and immigrants wanting to earn a living for their family. Poor access to their shop frontage would translate to a decline in their profits.</p> <p>http://www.stuff.co.nz/the-press/christchurch-life/avenues/features/8741130/The-changing-face-of-Woolston - "Iron signs bracket both ends of Woolston village, which bustles with hungry people as the clock strikes noon. Queues out the door of the Woolston Bakery encourage some fluoro-clad workers to look elsewhere for lunch. There's KB's Bakery down the road, but also Mediterranean, Cambodian, Indian, Nepalese, Japanese and Pacific Island food from which to choose."</p> <p>Parking has been completely removed from outside the dairy - these car parks are convenient for customers to the dairy and also those businesses on the opposite side of the street. Supermarket car parking is for visitors to that business and should not be relied on to provide overflow parking for other businesses in the area. The Supermarket would have every right to tow vehicles that weren't visiting their premises.</p> <p>Since the concept plan was developed the site of Ace Hire is up for lease. I suggest that the Council look at purchasing this land to make up the loss of on-street car parking. It could be developed as an open green space and car park.</p> <p>I also think that restricting the speed limit to 30kph in this area will create a bottleneck in traffic during peak hours. This is one of the main routes to and from Heathcote, Mt Pleasant, Redcliffs and Sumner and Lyttelton.</p> <p>I look forward to seeing a revitalised Woolston Village.</p>
2	N	Updating Woolston street would appear a good idea but it is the main road for people coming from Redcliffs and Sumner into Christchurch and when it is the main road into the city going 30 mph seems a step backwards. Is there a way to build a village off the main road, like Ferrymead, so that cars can still travel at a reasonable speed and Woolston can grow and be an attractive place to shop.
3	N	The business's in this area need the parking. They will lose business if people are forced to park on side streets. There is all ready not enough parks in this area. Thank you.
4	Y	Looks great, I agree with the pub owner, nice to finally see a retailer in the paper not to hung up on parking - cars don't spend money. Great plan - good job
5	Y	This is brilliant and it will bring Woolston shops up to a standard more comparable to the tannery. As a local resident I walk up to the shops multiple times a week and I am also extremely familiar with finding carparks and the traffic flow. I think a speed limit is a positive idea as the traffic is usually slowed anyway and it might help to slow any aggressive drivers. There is also an excellent path along the river that should be signposted from the shops. Thank you!

6	N	I feel that all these changes will slow down the traffic but people will not stop if there is no parking. It will be like New Brighton, a drive though, no one shops there anymore and it is dying a slow death. I have lived in Woolston for 10 year up to last year and its the little shops that have kept things going. A lot of small businesses have only got their shops rebuilt and have stuck with us. These little shops need people to stop frequently. People do not walk to get to takeaways, bakery items or dairys they will keep going in their cars to the next stop where it is easily accessible. My four kids still go to St Anne's School so I am in the area every day. I agree that the speed needs to be slowed down as lots of people speed through making it very dangerous during school drop off and pick up times. Our area is struggling to get children in the preschools (especially the Woolston Community preschool where my daughter goes), St Anne's school have struggled with numbers also. We need Woolston to thrive and grow but dont need people to drive through forgetting about us because there are no parks for people to stop. Love all the trees but not as keen on the median strip through the middle narrowing the roads.
7	Y	I agree with the changes suggested, for footpaths and walkways and the lower speed limit.
8	Y	My son goes to St Annas school I think this is going to make it safer for him coming and going from the school
9	N	The range of shops there doesn't justify this kind of spending. The side streets aren't wide enough to support people parking on them. If I can't get a park close to what shop I want I don't go there. Take away the ferry road parking and I won't shop there. Most of the shops along there are take away, so unless you intend to put in New shops/resteraunts leave it alone. It's not like you are browsing menus.
10	Y	Looks great! And would be much safer for kids going to and from St.Annes school. A+
11	Y	I endorse the plans for the redevelopment of Woolston(Ferry RD)
12	Y	I regularly cycle through this area. At the moment, the Woolston village is the most dangerous part of Ferry Road for cyclists. The proposed changes to the speed limit and the increased visibility (and consistent line) of cycle lanes is critical to improving the design. In a more general sense, the more of these areas we have around the city, the more people will know how to navigate them. Traffic calming in one zone can be generalised to other nearby sites, and the more of these, the more impact they will have.
13	Y	I fully support this planned project. It looks great. It'll be very beneficial to the Woolston community and the people who pass through this part of the city. As a cycle commuter, I'm in full support of cycle lanes as oppose to Car Parks. It'll definitely brings in more people. It'll also enhance the Woolston Community Pre-school which needs more exposure to attract more kids and therefore receive more funding. It plays a huge role in the Woolston community. It'd be also good if the roads of side streets (Portmans St, St Johns St, Catherine St, etc) that comes off Ferry Road would be resealed. The only thing I'd oppose is probably the Woolston Tavern, the bottle Store, and Liquor Shop in the shopping center attracting wrong crowds, opening late, and causing dramas late at night.
14	Y	The plan looks like a vast improvement on the current set-up. Clear signage to direct people to the new parking areas at the entrances to the village would be useful, as would signage pointing people to any pedestrian cut-throughs from Heathcote Street. I live in Sumner and commute through Woolston, I do not believe the restriction of parks nor the lower speed limit will have much noticeable effect.
15	Y	Is it possible to improve the monitoring of the P5 parking area outside the post office on John St The Post Boxes will remain, and it is essential that box holders have parking to enable speedy access. I find people are parking there and going shopping for much longer than 5 minutes. If parking is reduced on ferry Rd as proposed, then the problems on the side streets will get worse unless parking times are enforced. Thank you [REDACTED]
16	N	I am owner of [REDACTED], I appreciated to the upgrade proposal of ferry road, but as the retailer like us business during the day ,and most of our customer are express lunch which mean they want easy stop and quick moving again because they not have much time to find nearby parking and walk with their 30 mins lunch break. to have most and nearly all on street carpark remove which mean no easy to non parking choice for my customer ,if this plane go ahead maybe no good to our business. could we please ask for your attention to keep all current parking or even add more to blossom the retailer like us. Your sincerely: [REDACTED]
17	N	Dear Sir or madam: [REDACTED] I wish to request to keep all current on street parking ,as the small business like us no parking mean no business, mainly our customer are stop and go so would be nice if we could have a P10 parking on road side. thanks you for your help.

		Best Regards: [REDACTED]
18	N	Hi Dear: [REDACTED] I wish to keep all on road parking maybe (P10). because where I work mainly for customer takaways lunch break, so if all parking remove, will mean maybe less business, so I could lost my job if no business,Please keep all on road paring . From: [REDACTED]
19	N	Hi Dear: [REDACTED] I wish to keep all on road parking maybe (P10). because where I work mainly for customer takaways lunch break, so if all parking remove, will mean maybe less business, so I could lost my job if no business,Please keep all on road paring . From: [REDACTED]
20	Y	I love the idea of Woolston shopping centre being more of an attractive village, being more pedestrian and cyclist friendly, having more trees and seating. It's fine to have slower traffic for a short section through the village. Great plan!
21	Y	Hi there Great news that Woolston is getting a revamp, I think the reduction of parks is a bad idea though. At the moment the biggest reason i stop is the on street parking, convenience to pop in and out of a shop without hunting for a park. If you can meet half way with the parks then the new concept has my vote.
22	Y	I completely support the proposed changes outlined in the Ferry Road at Woolston Village project consultation plans it will do alot for businesses around the area and it would encourage people who shop at "the tannery" as well.
23	Y	These look great but I would like to encourage the details people to get the details right with the road width and cycle lane widths please. I bike down Matipo St from Blenheim Rd and find it one of the most dangerous stretches of road I use. Where the traffic islands exist, they narrow the road but don't slow the traffic down. So as a cyclist I get squished into a narrower space with parked cars in front that I have to come back out around, and with cars squeezing past in between me and the traffic island and then me and the parked cars. This isn't the only place in ChCh this squishing happens - there are some much newer sections that have a similar outcome. Often where pedestrian crossings have the concrete islands sticking out from the footpath (like the ones planned in Woolston) and a cycle way plus road way squished in between the bump and the island, all it does is make the space smaller and push cars and bikes closer together. I know the theory is that the car slows down, but they don't. They just push on through. It's especially bad with cars being wider than they used to be on average. So if engineers are working on some average car width, please make sure that it's the average car width on ChCh roads, not some 1995 engineering spec! This is a long winded way to say, please check that the space for road plus cycle way is wide enough to fit both cars, small trucks, and cycles easily. It's no fun gripping the handle bars and praying as I go through bits of road that were designed with the best intent, but with a poor grasp on reality.
24	N	1.Without parking people will not stop and use the proposed shopping area. 2.The side streets are already congested, Portman Street has cars parked on both sides so usually there is only room for one car to safely use the road. 3.There aren't many family friendly shops in the area and with the banks, post office and Doctors departing what is left to encourage people to stop. There will be a chemist, hairdresser, bike shop, second hand shop, garage and supermarket plus numerous takeaway bars and liquor outlets. As the banks, doctors , post office etc are moving to either Eastgate or Ferrymead it will be more convenient for many to go where they are situated. 4. It doesn't matter how "pretty" you make the area if the amenities and parking aren't there people WILL NOT stop. 5.Maybe you would be better to concentrate on making the area cleaner, eg channels kept clean and rubbish picked up and repair the footpaths and roads to a decent standard.

25	N	<p>I object to the removal of the parking outside the Dairy, Bakery and other small businesses in that area. Not all people are young and fit, some of us have mobility problems necessitating easy access to those places we need to go. Most of those who use those parking spaces take more more than five mins to make their purchases before leaving again. Restricting the numbers of parking spaces will only asseverate and already large problem in that area.</p> <p>As it is, the New World Supermarket makes it quite clear that its parking is for its customers only - thus denying short term parking to those who want to go to the Bakery, a fast food outlet or a Dairy in the area. It's called choice, and soon, some will have no choice but to go elsewhere - to the detriment of the many small shop owners and their staff.</p> <p>I'm all for greening up an area, but not at the expense of losing short term car parking near shops who depend on those passing through Wollston, for their livelihoods.</p>
26	N	<p>Adding to my submission please. [REDACTED]</p> <p>1,please remove the median strip in front of our shop because we cannot turn right into our drive way completely block.</p> <p>2,Please remove the cycle way on ferry road, make Linwood Ave more cycle friendly instead, it too pack full on ferry road to have cycle lane ,replace more express parking please .</p> <p>3,speed limit 30kph way too slow will hold up the traffic and a lot of car maybe avoid to go pass Woolston, my suggestion is at least 40kph or keep it 50kph.</p> <p>4, please keep all the 30min parking possible add more, because all the small retail like us on ferry road mainly survive on the express on road parking, maybe P10 or P30.</p> <p>thanks you and I hope my massage could be heard.</p> <p>have nice day.</p>
27	Y	<p>Yes I think some improvements need doing of upgrading woolston, but I'm really confused as a parent of Te Waka Unua School we got told from yous last year that reducing the speed limit around the school would cause major disruption to the flow of the people getting to work but you want to make the whole of woolston 30km all the time!!! I don't get how you can not think about these kids and their families I walk across the designated crossing 4 times a day and it is so dangerous ever time. People do not slow down in school hours or see us on the crossing I kids was hit last year. Please put in a flashing sign near the school so people will slow near our school first please. Hoon hay school has one and we need one.</p>
28	Y	<p>We do like your propose Village concept for Ferry Road. A 30kph speed limit is welcome, I see from your plans the controlled crossing will still remain in place opposite 620 Ferry Road. Together with pattered surface crossing point. Adjacent to the Community Library is a small road it looks like you are going to bollard off this exit onto Ferry Road, Is this an adopted road? Exiting the New World Supermarket appears to be left turn only? A rear exit from this Supermarket onto Glenroy Street will see increased traffic on to St Johns Street. Could I suggest a pedestrian crossing on St Johns Street around the Scout hut area so as to cross safely, from the on street parking and bus route on this road. Will traffic lights be required at the Junction off St Johns and Ferry Road? Turning right on to Ferry Road from this exit appears close to the paved crossing (640 Ferry Road) and could create a traffic shoke point here. The off street car parking needs to be clearly sign posted. This could be an issue as lots of advertising boards could distract from the village look we wish to achieve. The Square 669 Ferry Road is well supported commercially and is a very busy access and egress pinch point I hope the speed restrictions will avoid any accidents here. I see no plans on your proposals to improve the street lighting?</p>
29	Y	<p>Generally support with this suggestion. It should be a dual carriageway in both directions through the Village still retaining 30 km limit. Reasons: 1) In the summer there are long queues of vehicles, that includes weekend with beach goers. 2) With further development of Ferrymeade it will increase both private as well as commercial traffic</p>
30	Y	<p>Denuding street car parks on Ferry Road East of St Johns Road seems inconsistent with retained car parking East of Portman Street. Especially as the road width is the same in both locations. I would ask you to review this aspect as road parking is so valuable. Even the road speed is reduced to 30km so it is hard to fathom that it is a safety issue.</p>
31	Y	<p>Looks good to us. It will give the area a more relaxed feeling</p>
32	N	<p>We agree of the beautification of trees and seating spaces but it's not going to be good to reduce parking and lowering the speed limit as this road is a thoroughfare and will discourage users from wanting to pass through. We generally pass and park and graab food on the way home or into city. Please review Village plans to allow drivers and people to do their quick stops. In addition it's a shame that the Post Office and Bank is closing down in the area. It was a good reason to stop come via Ferry Road to go to the Post Office and Supermarket.</p>
33	Y	<p>Certainly looks more pedestrian friendly. The "crossing" bays will improve things no end. ? One of the parks on each side could be a disability car park.</p>
34	N	<p>[REDACTED] with old gutter in front of houses on my side of street. Where as it is, the Cuoncil trees beside me fill the road, my Section and Gutters with Leaves. Also parked cars drop rubbish in gutters now "who going to keep it tidy and clean as it's not now. I'm nearly 80 so can't do as I've always done clean up the mess? And with cars either side of streeet hard to drive out onto road. (no room for visitors to park. I walk and driv to centre and i work volunteer in Centre at [REDACTED].</p>
35	Y	
36	Y	<p>I think it would lift the people of Woolston by having, a lovely village, there aer some very proud people, living around there and trees, etc, would be lovely especial, with a drive through to Sumner. I am a older person, who is very proud of my home, and garden. St Johns Street, badly needs a safe crossing, for the elderly, also mothers, with children. Thank you for thinking of us people</p>

37	Y	Should we have security cameras?
38	Y	The amphitheatre-style seating arrangement in the future library space provides space for an entertainment / gap filler / performance opportunities. Perhaps leaving out one of the planter boxes and tree/seating you'll open up that space to allow for this to be available in the future. I'm thinking along lines of when buskers etc came into town. It could be a place for pop-up art / music - bringing a little soul into the central Woolston Village. I'd love to see LED fairy lights all through that huge tree outside St Johns Church by bus stop - what a nice warm welcome we'd give people arriving to the village.
39	Y	I am in an over 60's Village in St Johns Street and am wondering if there is to be a pedestrian crossing for the elderly as there are many elderly people living in St Johns Street. Otherwise I think the proposed concept for Woolston Village looks delightful. I mean a crossing from St Johns Street to the Supermarket
40	Y	Just wondering if there are enough car parks? Also, with the numbers of pedestrians visiting Woolston, surely there is a place for a Post Shop in the plan.
41	N	I do not remove on street car parks. Can be limit 30 min or 60 min. I believe many customers from car drive.
42	Y	
43	Y	
44	Y	
45	N	I am a local resident of 20+ years and a business owner of 20 years in the Woolston Village. I am strongly against the plans for reducing car parking on Ferry Road. My business is Big Ed's Takeaways and we rely on customers being able to stop near by for 10 minutes to pick up their food. While many customers may be walking around in the day time they tend to spend only a few dollars. Our biggest day time spenders are factory workers and businesses from the surrounding areas who drive in. We do approximately 80% of our business after 5pm at night when customers do not want to walk in the dark or cold to get their takeaways. Our evening customers are families from Woolston and surrounding areas right into the Sumner and Lyttleton suburbs. Our customers already complain of the lack of parking near our shop and the new plan reduces this greatly. I have talked with our regular customers and they have said that they would just drive to the next preferred fish and chip shop if there are no convenient car parks. Convenience is key! The new plan shows 3 car parks for approximately 13 daytime businesses 5 of which will be open at night time. We need more parking for the businesses to survive and also for the safety and convenience of our customers. We provide room for one wheelchair park behind our shop but there is no room for any more parking. I am also opposed to the planned 30km speed limit as I believe it will encourage people to avoid ferry road and take Linwood Avenue or Porthills Road which will also be bad for local businesses. I would support a reduced speed during school drop off and pick off times as my daughter attends St Annes school. [REDACTED] and I will happily discuss this further
46	Y	Overall I support the concept of developing the Woolston Village. The focus on 'village' with human scale, tree planting, and restrictions on cars is important to me. Overall I support the concept of developing the Woolston Village. The focus on 'village' with human scale, tree planting, and restrictions on cars is important to me. I am concerned about: 1. The withdrawal of parking spaces will reduce patronage of the area. Parking in side streets will not be an adequate solution. 2. The current architectural quality of the retail facilities and the bald functional nature of many of the retail outlets which do not promote 'village' atmosphere. 3. The ribbon nature of the 'village' - how can depth be added particularly in relation to Heathcote Street and the river. 4. While lighting is part of the plan, I see little evidence of human scale low level lighting in the planning documents. 5. I fully support the emphasis on cycling, but note I would approach this village along Maronan St along which it is proposed to have parked cars. I foresee issues with car doors being opened in my path as a cyclist. Thank you for the opportunity to comment.
47	Y	More car parking needed
48	y	Sounds Wonderful!
49	Y	It would be great to make it easier for pedestrians and cyclists. Currently it can be difficult to cross the road due to traffic.
50	N	With reduced parking how will customers be able to support local businesses. And school pick up and drop off, has the potential to become very dangerous
51	N	I have been a Woolston resident for 35 years, my family business [REDACTED] is in the Woolston Village and my daughter attends St Annes school. I use the doctors, the pharmacy, dairies, hairdresser and supermarket in the village. I am strongly opposed to the new plans for reduced parking in the Woolston village. It would impact our business immensely by leaving only 3 car parks for all the businesses combined in our part of the road. Our business relies on convenient parking so customers can stop for 10 minutes get their food and go. Most of our customers come to us after 5pm and the offered solutions of parking around the corner on a side street a few minutes away will be unsafe and unpractical. I believe our business would not survive with the new changes. Customers will just stop at the next convenient Takeaway shop with car parks. This will affect the other 3 takeaway shops in this part of the road also. It is already hard to find parking to get to the businesses I currently use, even down the side streets and I often have to come back another day to go to the pharmacy or hairdresser because I cant find a park. I would be less likely to use them with reduced parking. Parking outside St Annes school is already an issue and it looks like that will be reduced by half. I pick my daughter up only on rainy days or once a week when she has sport straight after school and I believe less parking will encourage unsafe and illegal parking. The side streets are already used for pick up drop offs so there is not extra parking there. I am also against the proposed 30km speed limit in the village as I think it will encourage people to use the other alternatives which will again affect businesses in the area. Ferry Road is a main route to the Lyttleton and Sumner Suburbs and a good percentage of our customers are passing through Woolston on their way home from work. I am would be very supportive of a reduced speed during pick up / drop off times though.
52	N	That's crazy. It's so difficult getting parking as it is. It's so cruel to businesses and school

53	N	Reducing the number of parking spaces is an unfair move on small businesses in the village. How is growth encouraged when the customers have no where to park? I am also concerned that removing those parking spaces will drive people away from the village entirely. I think they will continue on to Ferrymead or somewhere else if parking is not easily available. I also believe that removing those spaces will encourage shoppers to park near or outside of St Anne's school, where parking is already at a premium. It will mean parents will struggle even more to get a park close to the school and will mean more pedestrian traffic crossing Ferry Rd which, as we know, is not a very safe practice round here!
54	N	Parking at the moment is ridiculous and there will be 50 or so less parks! As pretty as the plans look, who the hell is going to stop to shop there or shop there when there is nowhere to park??? How are parents supposed to pick up children from St Annes? The allocated parks there now have extremely restrictive time limits on them and it will only get worse. Get more carparks, not less.
55	N	Parking is already a nightmare! This would put people off shopping in the area and ruin businesses! If anything, there needs to be more parking made available. Not a good plan at all!
56	N	This project is crazy and out of touch with reality. Ferry Road will continue to be a major thoroughfare for motorists (Linwood Ave is far less convenient for a large proportion of people travelling to and from the suburbs) and the 30kph limit, plus people vying to get into one of the few parking spaces will just add to the bottlenecks that occur at peak time. Decimating the main street parking will not encourage people to park in side streets - they will just carry on driving. At best, the New World carpark will become the de facto carpark for Woolston. Perhaps the most practical thing that the CCC could do is purchase the Auto Electrician and a few other buildings that protrude into the road, so that a wide carriage way can be constructed through the village! Think things through - we don't want another Victoria Park proposal!
57	N	As a resident of the Eastern suburbs all my life and a resident of Woolston for the last 23 years I wish to voice my opposition to many aspects of the Council's proposal for Woolston Village. Woolston residents are very loyal and avidly support their local shopping centre. My concerns about this proposal are primarily regarding the removal of over 50 on street car parks. There are over 50 businesses in the affected area of this proposal, it seems ludicrous to not have more parking to support growth of both the local businesses and the population as the suburb is painfully repaired. Surely this removal of parking contravenes the city plan. The Council is OK with insisting a bar & café provide "X" amount of parking in proportion to the size of their premises on private land, yet the Council won't maintain a few dozen on-street parks to support a whole village! Woolston consists of people from all walks of life, with many being retired, elderly or infirm. This proposal does not provide any on-street mobility parks for these people. Parking supply, availability & turnover is such that Mobility spaces are not needed currently, but that would change if the parking supply was so drastically reduced. By completely removing parking from some places means those less mobile residents may no longer physically be able to access the same businesses they used to. It is cruel to spend millions on grand beatification schemes & cycle-ways when every road in Woolston is in extreme need of repair. The roads & footpaths are in such awful condition that they're not suitable for mobility scooters or wheelchairs. The lack of action in road repairs is preventing many people from having decent accessibility in and around their own properties and suburb. My elderly Mother ended up in a great deal of pain
58	N	You are pushing the cars off the main road onto the side roads. I don't feel safe walking around some of these back roads in the dark or during the day. Glenroy Street would need to be upgraded as well, as the road is narrow and the road is uneven. With the new supermarket going in, a lot of people will just park in that carpark, do you have a deal with the property owners which would allow this. It is crazy that you are going to chop down trees because they are the wrong kind and replace them with the right type. How is this saving money for rate payers??? There is a church on St Johns St which would be effected in regards to the parking if you push it off Ferry Road and on to the side streets. Please consider leaving more car parks on Ferry Road and not cutting down so many trees.
59	N	My children go to school on Ferry Road and there isn't much parking there at the moment. Reducing the parking will make it worse when dropping off and picking up children from school
60	N	30km speed limit I agree with very good as local schools and preschools. <u>Do not</u> like or agree with no parking on Ferry Road. Will affect all small businesses and also school drop off/pick up
61	N	Don't think the no parking spaces on Ferry Road is a good idea - There are a lot of bakeries, dairies etc and people park and run in and out - not a browsing area so much! You will have heaps of people using the n.w. carpark and the video shop carpark! Also the noticeboard outside the christian medical rooms is very dilapidated and not user friendly. We need a board the community can use.
62	Y	Love it, Woolston needs this. I live on Ferry Road and would enjoy a new environment. Hope it goes ahead.
63	N	I've been a local for 10 years and I don't want to loose parking outside the local shops it will be a inconvenience to a lot of people
64	N	
65	N	No car parking = no business, support the local businesses!
66	N	Parking on Heathcote Street makes it very hard to back out of our driveways as we have telephone polls at end of drive as I have to manovre slowly to avoid hitting cars I look up and a car has come round that bend end of road and I have nearly caused a few accidents. Very dangerous. May be parking on one side please. Would be nice to have a bigger playground with swimming pool to play in all year round.
67	N	Proposed Woolston Village Concepts. Thank You for the opportunity to comment. Concern is at the Reduction in parking spaces from 77 to 21. Through traffic will no longer be able to stop briefly. There will be loss of patronage. To pause and pick up lunch is not an option with the proposed "No stopping" lines. Bankruptcy of many food outlets may well ensue. It is understood that there was consultation in 2012. (That is a year after the major Quake. Were we not desperate for nice calming stable "village"-type places then?) But that is Four years ago. Since then three big commercial players have moved into the area. Their input deserves consideration. Please re-consult. The views will undoubtedly be fresh, and quite different, but will express concern at Commercial viability at the proposed changes. This is a bricks n mortar shopping not an online provision. Parking: There is a new preschool proposed near No 580. When mentioned to the presenter on 25th May, her reply was along the lines of 'if there was, how do I not know?' I trust she read the hoarding on the site as she left that afternoon. The concern is where will the parents park to pick up the pre-schoolers if there is this significant reduction in parking space? At No. 655 the IHC Day care vans have considerable difficulty getting out into the traffic flow after 3:30 pm onwards even now. This would not have been seen at the times the planners state they were observing in the area. The collection van drivers from other come from other suburbs. Neighbouring properties' established trees lean over their fences and tend to block their view, especially in summer months. Likewise anyone parking right adjacent to their driveway. Please check all this out before proceeding. Side roads are proposed as parking spaces. Right now there is a yellow broken line along one side of these roads. No further parking can be created. It will be down to one lane only. How can it possibly absorb "Proposed 120 parking"? There is a 2 metre median strip proposed middle of Ferry Road. The driver of the purple bus on which I travelled yesterday had no knowledge of the proposals (there have been a large number of new drivers employed recently), but was scathing as to manoeuvrability of large vehicles. Essentially the traffic flow-

		through from Sumner will be hindered. It may well divert to other routes i.e. the reverse of what is trying to be achieved with these proposals. The landscape planting in front of the Supermarket likewise deserves deletion. The patterned paved median: Suggest the city planners spend a day in a wheelchair being pushed over such areas. Please do not create a disability problem when there was none before. (Was not accessibility –friendly city one of the broader aims of the rebuild?) The medical centre is still marked on this plan. Is it not about to relocate? Request: rework these Woolston proposals. Avoid medians, reduction in this number of parking spaces, congestion of side streets and above all ask the newer players in the commercial sector about their concerns. Your deliberations are awaited with real interest. Thank You [REDACTED]
68	N	1. Parking: the side streets you've allotted for car parking are already keenly utilised. 2. The village needs more parking. After all according to survey 44% of shoppers arrive by car. 3. Traffic flow is already slowed down without trees etc. How many fatalities - accidents have there been in last 10 years?. 4. if you ban parking on 1 side of street you will effectively send most shops to the "wall", people shop at Woolston quickly and effectively in and out then drive off. 6. if you reduce speed limit and congest traffic anymore most traffic that shop & use ferry Road will detour using Linwood Ave & Brougham St & therefore causing more misery to local shop owners etc. P.s I am not a shop owner just a concerned ratepayer.
69	Y	Having attended the consultation meeting at St John's church and listened to several plans put forward. I have to agree that more car parking on the Ferry road, west to east on it's southside would be more acceptable to the businesses in Woolston. Otherwise without businesses our village will cease. Could the median strip opposite 713 Ferry Road be moved as the consented supermarket access / egress appears very close to traffic movements in this area. Have traffic lights been considered at the junction of St Johns Street and Ferry Road?. Carparking in side streets south side is restricted by the road widths available? Could the 1.8m wide cycle lane be reduced in width? Why? Doesn't the concept plan extend to Rutherford St. At it's east end as this seems a natural start to the village. Is a 40k speed limit acceptable?. Accident data would help with this decision. Tree planting proposals look good so long as a maintenance program is in place, this Ferry Rd route is often used for oversize through traffic and I would not like to see trees or the new lighting proposals damaged. The life of our village depends on through traffic 59% as your shopper survey. A good balance needs to be found between our foot residents and traffic users bearing in mind the age of the local population in the future young and old.
70	N	[REDACTED]. I believe the plan you are proposing for Ferry Rd at Woolston Village is deeply flawed. The loss of on road car parks along one side of Ferry Rd will cause significant loss of business for shops & businesses on the Port Hills side of Ferry Rd. Some of the businesses could fail because of this. My business at [REDACTED] lost two car parks outside my shop when trees were planted and the footpath was extended for crossing. Then sometime after the loss of one more car park which was given in lieu of the two parks taken, the bus stop was moved back and that car park was lost. EACH TIME MY BUSINESS WAS SIGNIFICANTLY EFFECTED ADVERSELY BY THE LOSS OF THESE CAR PARKS. It will be the same for other businesses as this side of FERRY ROAD as road side parking is essential. Also the tree's are established outside the shop and help the look of Woolston and were put in as part of the last plan which was not to long ago. My business depends on the on road parking on this side in both directions or the St. I believe the green planting strip along the centre of the road in unnecessary and a waste of precious space as parking on bot sides is essential. Something else that concerns me is the cost of these changes to rate payers when there are a lot of roads in other areas where roads and surfaces are very bad and need repairs. Safety issues can be used wrongly to make changes that common sense and other influences take care of.
71	Y	I like and fully support the proposals. I particularly endorse the additional improvements for pedestrians and cyclists. At present this is a dangerous area to cycle through because of opening car doors and cars pulling out into the cycle lane. This is the busiest cycle corridor in the city and if parking is available off the main street then it is selfish for business to put 'outside shop' parking above safety.
72	Y	I like the proposal for improvements to Woolston Village. I support the removal of car parking to make the streetscape more people friendly. I also like the wider cycle lanes and 30km/hr speed limit. Possible improvements to the plan could be to include some of the narrow side streets as 30km/hr zones and further increase the number of bike parks provided
73	Y	It looks great - really excited by it as a Woolston resident. Hopefully with this and the new New World store, it will boost the village, despite NZ Post and ANZ leaving. Please just make sure when you do the works that you look at the FWP of all council services and all other service providers in the vicinity and see if they have any future work planned? Last thing we want is this beautification of Woolston, only for a service to be relayed/upgraded in 2 years time. Force companies to bring plans forward, and then place like a five year embargo on work, other than emergency repairs. I get so pissed off when Council places new asphalt somewhere and then either a water/wastewater or other service comes along and makes a trench. Have seen it countless times with footpath rehabs post quake, only for fibre broadband to come and cut up footpath a couple months later!! For godsake, CCC owns the fibre company!!! Oh and the time that Lincoln Road was resurfaced and then a big trench was dug down it, and don't get me started on St Asaph Street!! Its full of trenches now!!
74	N	Ferry Road is a Main road and should be left as such. Reducing car parking at the local village shops i.e. the bakery & dairy & Salvation Army shop, will damage patronage. As far as parking on Heathcote, Maronan, Catherine & Portman Streets is concerned this is a joke. These streets are already narrow enough without forcing people to park in them, let alone access getting back out onto Ferry Road. Traffic flow is already slow through the village area with the set of lights in the middle disrupting the flow. All very well having trees - there would be ongoing costs - they need water, trimming and have leaf fall. Even evergreen trees lose leaves. Ratepayers I presume will be paying for ongoing maintenance of these?
75	N	As a resident of Woolston for 20 years now I can't think of anything more ridiculous as clogging up a main road that leads to the largest suburban area in Christchurch. Your plan to remove 71 car parks is crazy, it's already difficult to find a car park now with out reducing numbers. And whats the point of pedestrian access as everything is moving from this area down to Ferrymead. It's obvious to me that your designers do not live in Woolston and plan never to. What about spending this large amount on repairing the St Johns street roadway and all the wrecked footpaths that are a hazard for the elderly of which there are many living in Woolston. About time council woke up to what is really important to residents, not only in Woolston but in all Christchurch suburbs.
76	N	The convenience of parking outside the various businesses is a big part of the attraction of the Woolston shopping experience. Should these parks be drastically reduced, I see the people who would otherwise patronage these businesses take their business elsewhere to malls or where there is that convenience. The suggestion that people will be redirected and be willing to park in the nearby side- streets is not true for the majority of people who are leading busy lives. I'm sure some middle ground can be found for beautifications without losing the car parking, Woolston has already been dealt a large blow losing the Post office and soon the Anz bank. Thank you



77	N	<p>I say no to this for 2 main reasons: 1. As a business owner in the Village what car parking we have would end up being tied up with local workers and nothing left for our customers. 2. Making more parking on side streets is dangerous as they are that narrow now I, as a cyclist, have already been hit because of parked cars and a truck having to move over allowing oncoming car to pass hitting me. We need more parking around here not less.</p>
78	Y	<p>Please share your views by ticking the relevant box: Yes. I/We generally support the proposed changes outlined in the Ferry Road at Woolston Village project consultation plans Please provide any comments below: EditableTextField_5648b In general I feel we like the ideas of the proposed plans, however have some concerns around the "knock on effect" of certain aspects of the plan.</p> <p>My main concerns are around the reduced parking options and time limits and reduced speed limits on ferry road and this creating issues with:</p> <p>1 An increase in cars parking on residential streets surrounding this area, including Glenroy St. Increasing potential for left vehicles on quitter streets to be targets for criminals and petty thieves, then having a flow on effect to the house break-in crime rate.</p> <p>2 Glenroy St being utilised as a "Rat Run" for drivers able to travel at 50kmph.</p> <p>Point 2 gives me concern, as following recent ground works with the Waste Water System along Glenroy St, the ground seems to be suffering now from sinking and potholes in places. This in turn is causing damage to local houses when cars and trucks drop into these holes causing vibrations through the earth. Also having a church and a preschool on this street, I feel some consideration needs to be considered here and either a lower speed limit be put in place of 30km here too, or road calming measures be added. It might also be a good idea to have a vehicle size or weight limit in place as heavy goods vehicles passing over the work area of the waste water systems may be causing damage to the infrastructure.</p> <p>Has any consideration been given to the widening of the St Johns and Ferry Road junction and maybe adding traffic lights here. This is a busy junction for vehicles and pedestrians and I see no plans to make any improvements here. This needs to be reassessed especially with the rebuild of the New World.</p> <p>I appreciate your consideration into these matters.</p> <p>[REDACTED]</p>
79	N	<p>[REDACTED]</p>

		<p>SUBMISSION TO CHRISTCHURCH CITY COUNCIL RE: PROPOSED WOLLSTON VILLAGE DEVELOPMENT</p> <p>Improving the look of the area with landscaping, trees and furniture is a great idea and would line up with the more modern buildings.</p> <p>I object to some aspects of the current proposed street layout for Woolston Village development, i.e. speed limit, median strip and parking.</p> <p>I believe that to reduce the traffic flow in Ferry Road would force the flow down Humphreys Drive through the wide layout of Linwood Avenue (60 km/h) or to turn left at the lights on Radley Street and along to garlands Road via the Tannery complex to the city.</p> <p>Many of the smaller shops in Woolston depend on passing traffic and require that they are able to stop with on-street parking.</p> <p>The Woolston shops also are going to have to compete with around 40 shops becoming available in Ferrymead.</p> <p>Should businesses be forced to shift we will have empty shops and return to the lower standard of the past.</p> <p>If one looks at Lincoln Road or Papanui Road in Merivale there are no speed restrictions.</p> <p>With existing traffic lights and school patrols I think traffic speed will be self-regulating as happens in Merivale/Papanui.</p> <p>A village concept may be alright for Sumner, Lyttelton or Brighton which are end-of-road destinations but does not fit on a main road into the city.</p> <p>This road should be clear of obstacles allowing full traffic flow and parking.</p> <p>The current proposed plan does not fit these criteria and would be a backward step in Woolston's development. It will be less attractive to large food outlets, i.e. chicken and burger fast food chains.</p>
80	N	<p>My husband has bad knees and I have varicose veins and we are unable to walk great distances. Can you not increase the parking along Ferry Road more than proposed at present in your plan? The majority of the cyclists will cycle through the Village without stopping but we who shop there will not get a park anywhere near where we wish to shop. This plan appears to appease cyclists but will ruin the lively hood of the shop owners who will suffer miserably because of this idea. Can you not still achieve your agenda without taking away so many car parks? How does wider footpaths make it safer for pedestrians when there will be a cycle lane beside it also?</p>
81	N	<p>See end of document for PDF of full submission</p>
82	N	<p>The low percentage of cyclist & pedestrians using Ferry Road does not warrant the over the top loss of car parking proposed. If you are trying to encourage more cyclists & pedestrians travelling through the Woolston village I feel that the results will be marginally effective. The idea of beautifying the area is good, but the largely older population in the area will be severely hampered by having to walk long distances to visit the atm's, takeaway bars, hairdressers & retail shops. More so in inclement weather like present. By pandering to cyclists & pedestrians to such an extent you are letting the tail wag the dog, as they are in the vast minority. New Brighton Mall was redeveloped to cater for pedestrians & cyclists & failed miserably! It is difficult enough now for us "oldies" who use the shopping there now, it will be far far harder if this plan goes ahead, leaving us to shop in an area that has as yet not been "tampered with". Why not re-route a cyclepath along the river instead & let us older residents use our local shops & amenities without having to struggle to reach them. The whole scheme needs to allow for mor parking - even if only time zoned for certain hours. A survey of cyclists in February will differ vastly form a survey on cyclists & pedestrians in the cold wet winter months!!!!</p>
83	N	<p>Submission to Christchurch City Council</p> <p>Re: Proposed Woolston Village Development</p> <p>I am glad a business owner that the Council are seeking to improve the current Woolston village; however there are some real concerns over the issue of parking.</p> <p>In conjunction with Foodstuffs SI Ltd I am opening a new store on Ferry Road in late August/early September 2016. I am looking at have approximately another 8,000 customers per week shopping at our new store. This store is my livelihood and I am very concerned about the parking on Ferry Road that is proposed to go as what will happen will be those people will park in my car park. This will affect my sales and more importantly the ability to have safe and secure jobs for our employees.</p> <p>I think it is prudent that Council undertake a parking survey once our new store is open, as I believe the results will be totally different to the survey that was done. It has not taken into account the Post Office</p>



		<p>being closed along with the impending closure of ANZ bank. I believe a new survey would show that many people drive to the village, and that many potential customers of the village are that not shopping at Woolston now, will do so, once the supermarket is open.</p> <p>We all want people to stop in the village and spend money with local retailers and this is based on convenience. With no car parks potential customers will just drive straight through without stopping. We need to ensure we retain all car parks.</p> <p>New trees alone will not make people stop and shop in the Woolston village.</p> <p>I am concerned also about over-width vehicles travelling to the Port that will potentially mount kerbs with the new design – and this is dangerous and a serious risk that needs to be considered.</p> <p>On-street parking works well outside Merivale Mall on Papanui Rd and also Sydenham is another good example of how on-street parking works well – a business is vibrant.</p> <p>I simply cannot emphasise how important the on-street parking is for not just me but all the retailers within the Woolston village. We are not Copenhagen, we are not in Amsterdam, we are in Woolston and the only way this village will succeed will be because people can stop on the way through and have access to convenient car parks.</p> <p>Yours faithfully,  </p>
84	Y	We generally support the proposed changes outlined in the Ferry Road at Woolston Village project consultation plans.
85	N	The carparks on the Ferry Road are extremely important. 1. They bring people to Woolston. 2. Current carpark not enough anyway. Library and public toilet is must.
86	Y	Great idea
87	N	Disagree with your logic of trying to stop people driving through Woolston. You are taking away car parking - you will turn Woolston into another Brighton. You stuffed up Brighton by stopping cars driving right through - access, access is the important thing especially for old people. The other day I went to Cafe on main road for lunch and then dinner at Everest - both times I had to park on the back road.
88	N	I do not support the reduced speed zone or the reduced parking. I have worked in this area for 26 years and parking for my clients is an issue. Despite the survey results, the majority of people do come in by car, and to retain access to the businesses in important - loss of parking can result in loss of business. Reducing the speed zone will just add to the congestion. Cars tend to reduce when it is busy anyway. I am not aware of any accidents attributed to a speed zone of 50 km/h. Otherwise the pretty bits look nice.
89	N	Mobility parks <u>need</u> to be on Ferry Road near Post Office, Doctor's (both) and Chemist, ANZ Bank and Dairy and by Physiotherapy/ATM (WPAC). This area has a lot of elderly and disabled people. If Ferry Road is narrowed how will buses cope without blocking traffic and also keep to time? There also needs minimum P60+ parking outside <u>both</u> Churches on St John Street and Ferry Road to enable parishioners to attend Sunday's, funerals, weddings etc. (During School hours parking in St Anne's School is not available except to staff). Native trees and planting a must (Kowhai's can be big!)
90	N	The Council may be trying to force us all into the buses but I can drive to Harvey Norman from here in about 10 minutes. By bus it takes <u>three</u> separate buses and half the afternoon. These dotted yellow lines will wipe out the shopping centre. There is little enough parking as it is. New World refuses to let people use any of their car park and have gone to the trouble and expense of employing staff to clear people out of it. It will cost the Council more to look after gardens and plant trees everywhere and it narrows the road to the extent that parking places have to go. <u>Questions</u> - Where will business staff and customers park? Why were no copies of the plan booklet sent out to homes? When was it sent out? I've only just been given this. 61 on-street car parks have been removed.
91	N	Dropping the speed limit - it is a main route between the City and Sumner, I don't see this being kept to, what is the point? People are not likely to stop and shop if they have to drive around or away from main road to find parking. Is it really necessary to cut down existing trees? Great idea to add more trees but bare in mind sight lines for both cars and cyclists for turning out of drives and side streets. The choice of trees - surely natives, which don't drop leaves, would be tidier and easier to maintain. The diagram shows 18 car parks on Portman Street. It is very unrealistic - it is hard enough at the moment to get in and out of this street. If your waiting to turn into Portman Street when someone is waiting to come our there is not enough room so your forced to wait on Ferry Road holding up flow of traffic.
92	N	See end of document for PDF of full submission
93		<p></p> <p>I have ticked both boxes for the following reasons. On one hand I accept that the Woolston Village is in dire need of a makeover but not at the expense of the removal of all the parking on the South side of Ferry Road. As a business owner of 14 years I have observed that the majority of businesses, cater for fast turn over items, which would indicate that shoppers do not shop for timeframe indicated that shoppers do not shop for the timeframe indicated on the plan – proposed P120 parking.</p> <p>That is mall timeframes. Woolston is not a mall.</p>



	<p>Further I believe the proposed P120 parking is cynical at best. Presumably enforced, it provides revenue by way of taking away parking and repositioning it to benefit the Council. How does this benefit business? If you hinder business, then you are simply jeopardising the very fabric that creates the hub, that is and has become, an essential part of the community.</p> <p>A small drop in turnover can have a drastic effect on a business that may already operate on thin margins. I find this irresponsible and indicates to me that the council doesn't have an understanding of how businesses work. Not every business model is that same so generic concepts don't always work.</p> <p>In my view the Woolston shops need to retain close car parks for the convenience of their shoppers.</p> <p>The existing homeowners on the proposed P120 parking streets are also being disadvantaged by way of being time constrained and may have to move vehicles around in order to mitigate fines. These proposed streets are also narrow in existence therefore will create a narrowing effect if both sides are parked on, particularly Heathcote and Catherine St. Presumably the staff at the soon to be completed New World will occupy side streets making less available parks for shoppers and I usually go to at least one of the businesses on a daily basis. The talk around the village indicates a lot of opposition to removing the majority of parking on Ferry Rd.</p> <p>I see a reduction in speed as a positive move however a speed of 40kph would be less abrupt reduction and if it is considered safe past a school then I would have thought safe enough through a village.</p> <p>Overall I see the concept as a positive move for the Woolston Community. There just needs some consideration and tweaking to some major issues that may have major impacts on the people that create the community in the first place.</p>
<p>94 N</p>	<p>Re: Woolston Village</p> <p>Well done to your whimsical proposal in making Woolston another Brighton, (dead). The slower speed will make more traffic congestion, than it currently has, & people will cease using that part of Ferry Road altogether. No thought has been given to those who require an invalid's parking space. 1 park, really, can you spare it? Or those who cannot walk far. Parking is hard to get now, your new 7 parks of 60mins, & 3 parks of 30 minute parking won't work, is a parking warden to be on duty every day, waiting to pounce when the time expires (how will they know?) (Will there be metres or are you relying on people's honesty? Yah right) what about the off street parking where do visitors to those who live in those streets park? Then there are shops who will suffer from a down turn in walk in customers. Some will go out of business. Poor Plunket already has no parking outside. Where are parents supposed to park to drop off & pick up children from St Anne's School? There are too few parks at St Johns Anglican Church now where do vans drop off & pickup church goes & other groups who use the church? I for see people filling up New Worlds car park to do non supermarket shopping. As there is no longer a Kiwibank in Woolston everyone now has to go to either Ferrymead or Eastgate for some it's too far either way.</p> <p>Why remove trees what did they do to piss you lot off? They do give off oxygen.</p> <p>The new proposed trees information found on Wikipedia,</p> <p>Trident Maplett is small to medium sized deciduous tree reaching a height of 5-20 m with a trunk up to 50 cm diameter. Who's going to clean up when leaves drop & blow into shops, gutters tec. Oh I know, more money as council employees will get to do it wasting my rate money.</p> <p>Magnolia Kobus, known as the Kobushi magnolia or Kobus magnolia, is a species of Magnolia native to Japan and occasionally cultivated in temperate areas. 2) it is deciduous, small to tall tree which has a slow growth rate but can reach 8-15 m (25-27 ft) in height and up to 10 m (35ft) in spread. Really are you planning on having all shops in the dark??? Those that survive that is. Have any of you even looked at a picture to see how HUGE these trees get? Or did you just go with what the botanist recommended?</p> <p>What the hell is the Council thinking? Use my rates to fix the roads, footpaths, & other public amenities, e.g. parks. Avon river, sports grounds, swimming pools etc.</p> <p>I hate what you propose for Woolston, as does everyone I know. Stop trying to make Woolston another quaint English rural town, it won't work. Woolston folk are down to earth & don't want/need this poncing about with our area. I don't pay my rates for the Council to waste them on projects that are not needed. Quote don't fix what ain't broken. I know you'll just plow ahead & do it anyway, as you have done with everything else. Thanks for nothing.</p> <p>I'll take my custom & money elsewhere, & avoid Woolston altogether as I do Brighton.</p> <p>Unhappy rate payer & local Christchurch resident.</p>

95	N	Whilst the look of the proposed changes is, I think, great, the reality would be the death of most small businesses in the Woolston Village. Woolston needs more carparks on Ferry Road, not fewer, and the drastic reduction proposed would be disastrous. Motorists would simply carry on to the next set of shops where they can park. I have some specific suggestions: 1. Abandon the median strip so that parking can be retained; 2. rather than narrowing the carriageway, narrow the already generously wide footpaths so that more parking spaces can be added; 3. Move the cycle tracks to the other side of the parked cars (between the road and the curbing) to provide a cost-free safety barrier for cyclists; 4. Do not increase the number of pedestrian crossing, as a pedestrian I can report that the existing three are more than sufficient; 5. Do not change the speed limit to 30kph, this is unnecessary and would tend to irritate motorists, making them less, not more, likely to stop in the Village; 6. Move the Village "gateway" from opposite Heathcote Street to the natural place at the intersection of Ferry Road and Radley/Hargood Streets; 7. Bear in mind that most traffic is passing through our Village, it is not their destination, and they stop and do business with us more on impulse than intention and that on street parking plays a large part in such decisions. 8. Also bear in mind the already heavy demand for parking spaces in the evenings (for diners and the patrons of takeaway shops), and that curtailing parking will adversely effect such businesses. All in all, I recommend that the existing plan be abandoned it's entirety and that consultations with local businesses and residents form the basis, the starting point, of any future plan.
96	N	Cycle ways are a good idea but don't take away any Ferry Road on street car parks in front of the shops because they're convenient. When the Churches are being used just where are we all supposed to park our cars? Don't reduce speed to 30kms, it's a main thoroughfare, it will hold up traffic. I would rather see Ferry Road widened not narrowed for safety.
97	N	Regards to the woolston upgrade my main concern would be parking which is a problem now and we have had problems with parking around St Johns church at present and would only be compounded with the proposed changes. My other concern is the 30 k limit, as this is the only through way to ferrymead / sumner its bad now at peak times and its not un common to have cars backed up in the village, or do you have another means for the trafficat flow regards [REDACTED]
98	Y	I think this is a wonderful revitalization plan for Woolston Village, and as a local resident I'm excited about it. I live on Rutherford st. and my only concern with the concept, and it is a big one, is about the proposed reduced speed limit. What will the impact be on traffic, given this is a main thoroughfare from Sumner/Mt Pleasant etc into the city? Will it mean more of a traffic burden onto Rutherford st and Linwood Ave? Will it cause backups/delays at peak times? How will this be managed?
99	N	I am pleased that the council recognises that Woolston Village is in much need of an upgraded streetscape. I approve of much of the cosmetic design and better provision for pedestrians and cyclists. However, the planned significant reduction of designated parking spaces on Ferry Rd will be detrimental to many businesses. Many of the small businesses do not have any provision for private parking and rely upon street parking for their customers. Most/all of the approx. 350 off street parks, indicated on the council plan, are/will be on private property. The proposed plan retains a little street parking on the east side of Ferry Rd and reduces parking from 19 to only 3 parks on the west side. The proposed side street parking is inconvenient; it is out of sight and unlikely to be used by passers by. The purpose of many of the small businesses requires customers to make a brief stop e.g. dairies and take-aways. Being able to stop right beside these businesses is essential to their successful operation. The suggested 30kph speed limit may actually deter car drivers from driving through the Village and may only encourage them to take another route! Introducing more pedestrian crossing points will naturally slow traffic without drivers feeling they are being legally required to reduce their speed. Cyclists should be encouraged to use the enhanced cycle paths.
100	Y	Great to see the proposed improvements to Woolston Village. I also appreciate the effort to identify the level of available car-parking nearby, and also the proportion of shoppers coming by different modes, to put some context to concerns about losing parking - this approach should be used more often. Here are a few comments and suggestions: - The proposed 30km/h speed limit is welcomed, but it seems incongruous to then return to a 50km/h limit on the adjacent narrow local streets (especially when they will eventually provide a connection to the Heathcote River Major Cycleway). Suggest expanding the 30k zone to include the adjacent back-streets. - The project proposes "more bike parking", although it only seems to show about seven bike stands in the plans; hardly a dramatic increase. If cycling is to be encouraged more, then more bike parking is required. If footpath space is at a premium, why not replace single car-parks with a "bike corral", where 4-5 kerb-protected bike stands will support 8-10 customers? With a couple of popular taverns in the area, that could be the way to easily boost patron numbers. - Around Portman St, the placement of the bus stops and the central islands produces pinch-points for cyclists where a passing motorist may try to squeeze through. Reconsider the location of these features.
101	N	You must have rocks in your head to come up with such a stupid plan for Ferry Rd., Woolston. Do you not realise that Ferry Road is major road in and out of the city for people living, visiting or doing business in the Eastern part of Christchurch? Have you not observed the traffic that uses this road in the mornings and afternoons? Your "policy" to force traffic to use Moorhouse Avenue now as a major route across the city and to the eastern suburbs, such as Ferrymead, Lyttelton, Mt Pleasant, Sumner etc., makes it an important route-not some suburban "village" restricting the flow of traffic east and west. To say that people wishing to shop in the Woolston shops, can park in the narrow already congested streets off Ferry Road is ridiculous-the shops will have to close and the shoppers will of course shop elsewhere where access and parking is good!
102	N	I despair of this council's approach to infrastructure, particularly transport infrastructure, based as it is on the economics of the duck-pond combined with a mangling of the English language. So, as a frequent walker or buser to Woolston (usually to the Hop), I shall simply say this: LEAVE IT ALONE! The proposal you're floating will do no good, will almost certainly cause much harm, and would (again) not pass the most rudimentary of cost-benefit tests.
103		My husband and I have always enjoyed stopping for a delicious lunch at the Woolston bakery.. The charming owner (from Cambodia) always makes his customers welcome. Hot soup is always available in the winter. Now he is faced with no parking outside his shop. Because we are elderly and I have had recent foot surgery I am unable to walk far.. So we will no longer be able to stop close to the Bakery.. I imagine there will be congestion. We would be very upset - as many others in the area will be' if people stop going there because parking will be impossible especially during the lunch hour. Mostly elderly and mothers with children and of course many tradesmen. Where are all these people who sit down for their lunch going to find enough parking. They are not : and like us will simply have to drive past and find another place to eat. We don't want to do that as we have never found a more enjoyable place to date. We come from Sumner and don't mind travelling to Woolston to get such lovely service. We have looked at the plan and it is going to stop people stopping in the area.... The bakery is always full during 12noon and 3 pm.with many people just popping in to buy a takeaway lunch. so . where are all the cars and work vans going to be able to park.???
104	N	As one who frequently drives through the area in question and sometimes stops to visit shops, especially the barber, I am not in favor to decreasing the amount of parking on Ferry Rd in Woolston Village. This would inconvenience me and I cannot believe that it would be good for business for the shops. Decreasing speed limit and pedestrian crossings and, perhaps islands, would be OK, though if the speed limit is decreased there would be less need for the islands. Ferry Road is a main thoroughfare to and from the city centre, so views of people in my position should be taken seriously. I am neither for nor against the proposal as a whole but will tick No since apparently I have to tick Yes or No.

105	N	I do not agree with the proposal to impose a 30km speed limit on Ferry Road through Woolston. This is main road access from the Sumner, Redcliffs, Mt Pleasant and Ferrymead area to other areas of Christchurch. Slowing this traffic to 30km is not reasonable or useful. When the area is congested, the traffic slows to below 50km anyway. When it is not congested, there is no need to slow down. The pedestrian lights provide crossing for pedestrians and slows the traffic down when the area is actually in use. Setting the speed to 30km will only encourage motorists to avoid the area, causing additional congestion on Linwood Ave.
106	Y	Thank you for the opportunity of discussing the Ferry Road at Woolston development. I have put in a submission, however from discussion with other business owners, I get the feeling that each individual business and property owner should be visited by council staff regarding this matter.
107	Y	I cycle through Woolston often and use the shops and Twisted Hop and I think this plan is great- I love the focus on increased pedestrian and cycle use, the reduction in parking and the reduced speed limit. They will all make Woolston a much nicer and safer place to visit.
108	Y	Happy with the overall plan but would like to see more car parks retained....a few businesses here that rely on pop in customers who need the ability to park, run in, purchase and out again without having to drive round side streets looking for a park...
109	Y	I fully support this submission. I regularly cycle down this road, sometimes towing a trailer. The proposed layout will improve the feel of the Woolston area. Please don't compromise the plan for more car parks. My only suggestion is that I would have preferred the central median strip to be narrower, or non-existent to help slow traffic. Also this would create space for a marked separation between cycle lanes and parked cars.
110	Y	My husband and I are very happy to see this work proceed. We were aware of the Ferry Road Masterplan when we bought in Woolston 20 months ago - so pleased this work is going to happen. Will be great for the little town and hopefully attract more business.
111	N	██████████ I strongly oppose the proposed change to the parking reduction. Especially the change to time limits on Maronan Street. Our business is operated on volunteer labour. Most of the volunteers are 65 plus a lot have difficulty walking. The proposed 120 limit is not long enough for a shift. our shifts are 3.5 hours. i would like to see a change in parking duration to 3.5 instead of 2 hours.
112	N	I oppose the alterations to Ferry Road that have been proposed for the following reasons: 1.I live at 661 Ferry Road and I need the parking from my family. 2.It would be very hard to turn into my driveway and dangerous. 3. The speed restrictions would clog up traffic and stop the flow. 4.The loss of parking would ruin a lot of the businesses as they rely on parking. 5.At night time, there would be a lot of people hanging around drinking with the bars in close proximity. 6.The doctors are going. The ANZ is going, the Post Office is going. Who would want to go to Woolston if you haven't got parking? It would turn Woolston into a slum area.
113	N	I oppose the proposed parking restrictions on Maronan Street and the loss of two car parks on the corner of Maronan Street and outside my property on Ferry Road. The loss of car parks on Ferry Road and the parking restriction would cause unnecessary hardship for my wife and myself and visiting family with small children. I oppose the narrowing of the entrance and loss of a park at the entrance to Maronan Street and the planting of Magnolia Kobus and the flus paved median pavers. I oppose the proposed 30km restriction on Ferry Road as i believe it will cause traffic congestion and frustration for through traffic to City - Sumner-Lyttelton etc. Thanking you for the opportunity to have my say.
114	N	Though it would be nice to see the area 'prettied' up, I am against the loss of so many street parking spaces. The available off street parking has always been piecemeal. - Why not establish a better carpark? The suggestion that motorists could park on the side streets is rather like the quote 'let them eat cake'. Most of the side streets are narrow with some still having the dated deep gutters. Try accessing the footpath across them when pushing a pram or using a stick. I'm sure those residing on these streets don't want the congestion and the likelihood of driveway access being blocked. With several apartment blocks built with probably more to come parking is more difficult near the churches. The elderly parishioners need ready, safe access, especially at night. Ferry Road is a through street, not a destination in itself like a mall. Unless an alternative route is developed to service the Park, congestion will get worse. While it seems to have become the norm to push for cyclists/pedestrians merging from experience I have found it more dangerous than safe with too many cyclists tending to ride among those on foot without making their presence heard. Bear in mind that with it being an area where the older citizens reside that many don't and can't walk a long way, especially when carrying shopping as well. Why should a mall have to provide a number of parks but a shopping area doesn't? Parking should not be at the extreme/detriment of residents close to the area
115	N	██████████ We believe the creation of an island in front of our property will severely impact on the viability of our tenants and the tenants of the building next to us on ██████████. This island will compromise access to our 2 buildings by preventing cars on Ferry Road from turning right into the shared driveway between our buildings, and prevent cars leaving our buildings from turning right onto Ferry Road. Having been forced to turn left out of our driveway, motorists will have to stop, possibly disrupting traffic and make a U-turn over a flush paved median should they have wanted to turn right. A similar problem would be faced by motorists unable to turn right from Ferry Road directly into the driveway. Would it be possible for the planned island to be removed to give all motorists safe access to our shared driveway. We also do not support the removal of street carparks from the front of the buildings in our vicinity ██████████. Our tenants rely heavily on these carparks for customer convenience and access. We have an ATM on our premises. Westpac customers are often observed to use these street parks as quick and convenient parks while using the ATM, and this is also true for the customers of our other tenants. We do not believe they would stop otherwise. We believe that the removal of over 70% of street parking will make Woolston Village a place to drive through rather than stop, because of the inconvenience of having to look for off-street parks. In conclusion, we are very concerned that a landscaped island in front of ██████████ will harm access to these 2 buildings, and the removal of street parking between ██████████ will be another blow to our tenants hoping to attract customers. Thank you for the opportunity of entering a submission.
116	N	We who live in Woolston have lost so much already. Now we are to lose our medical centre and Post Office. I am a disable 77 years old,. While I can get a car park outside a shop I can manage to still do my own shopping. Even then with a crutch to help me it is a real effort. Our roads are a disgrace and the Heathcote River from the Radley Street bridge really stinks. It is especially bad from the Tannery complex to the Estuary. The Tannery complex is stunning. The one good thing to happen for us. The sewage and stormwater drains have never been sorted out and when you go out early in the morning the stink is vile. My house is the second from Cumner Terrace. About four years ago they replaced the drains and sealed the road to the fourth house from the corner and no further. Rain like we had this week it floods on both sides almost to the middle of the road. It can't get away at the corner. Please help us.
117	N	I am very upset to hear about the reduction in parking spaces on Ferry Road at the Woolston Village. I volunteer at the Sallies and I know that so many of our customers drive to us. If they can't get a park they won't stop. The Sallies provide a great service to the public, locals and further a field. We need parks please.

118	N	The Salvation Army has been here for just over a year. Prior to the earthquake we had been established here for just about ten years. We do have locals who visit the shop everyday but a large percentage of our customers are destination shoppers. Parking is vital for our business as they drive to us and want a close park to the shop. If there is no on street parking available (apart from the one designated outside the shop on your new plan) we will lose business. Beautifying the street is great but please keep all on street parks. All of our businesses will suffer if we don't have that parking made available. Your plan is to encourage people to shop here as it will look and feel great. Without parking people will not stop to shop
119	N	Why deciduous trees? Ferry Road shopping centre is untidy enough, deciduous trees will make it worse. The gardens are rarely tidy. Rock roses were placed in all the garden plots, hardly every tended, these extend right along Ferry Road. Colour is what is needed to brighten the area. Like Sumner plots. if you take the parking away businesses will close, some are struggling now. i do agree with the lower speed restriction, especially with schools in the area.
120	N	What a moronic idea! I use Woolston Village regularly and if this proposal goes through I will not go there. I will not park on side streets and walk to the shops. As for 30 kph, through traffic will avoid Ferry Road, also not using the shops thus putting local business livelihoods at risk. Having spoken to several business owners and staff they are very worried about the impact this proposal will have on their lives. (If it's not broken don't fix it). Perhaps the CCC should concentrate on fixing out broken city and spend the money it would cost to fuck Woolston where it is really needed. MORONIC!
121	Y	We are glad the proposed changes in the Ferry Road at Woolston Village project consultation plans. However, as a small business shop running in the Ferry Road over three years. Our customers are happy with our foods as an important reason as customers could easily park their cars beside the Ferry Road and then coming the shop to pick up their orders. During the three years we're operating the shop, there are many customers who had been complained about the car parking where they still were feeling hard to find in sometimes. Finally, we generally think the Woolston Village project consultation plans are great. But we do not agree the existence car park beside the road where will be changed. We hope the car park beside the road where can be remained. Thank you very much indeed.
122	N	I have been working for the [redacted] for 13 years now. A lot of our customers are regular and were customers at the old shop on this site. The parking is very important not only for convenience but also for people coming from the outside areas. I wouldn't stop here myself if there were no parking.
123	Y	Overall a good plan. Disadvantages are: 1.Reducing parking outside businesses will definitely reduce their turnover - Motorist will go to the easiest shop (e.g. Ferrymead). 2.Reducing speed to 20 kph through this area will certainly improve safety but will bunch up the traffic at peak times - this will encourage regular motorist to select Linwood Ave - This will also reduce turnover in the business. I think that when the new Library is constructed it should be in the new Supermarket carpark - It would get much more use as that's where the most people will be coming and going.
124	Y	I think this will be wonderful for Woolston, however I believe there needs to be more carparks on Ferry Road. Catherine Street is very narrow and is not ideal for off-street parking for shoppers, especially as residents use it for parking.
125	Y	Overall a good plan. Disadvantages are: Reducing parking outside businesses will reduce their turnover. People will not drive around looking for a space to park, they will leave the area and go to Ferrymead. Reducing speed is good in off-peak traffic. On peak traffic - not a good idea. The library should be by the new supermarket so it is easy access to the elderly and mum's with children.
126	N	I am absolutely appalled at the CCC changes to Ferry Road. I would be interested to know how much the 'clown' who came up with the idea got paid!! Any parking up side streets will be so chaotic!! Where will the workers park all day?? I fear for the businesses involved! Its hard enough now for them to make a living, with the proposed changes they will all be out of business in 6 months, leaving the way open for the rich fat cats to take over! As for reducing speed to 30 kph get real!! Its a main route from one side of the city to the other. If the CCC has so much money to spare perhaps they could start tidying brighton up. It looks like a 3rd world city down there! Dirty broken and buggar all shops! An absolute disgrace! Forget about Ferry Road!!! Spend our rate money wisely!! PS I live in Woolston!
127	N	I am extremely upset that you will be taking away the parking spaces outside the shops in Woolston Village. I use this Centre to do a lot of my shopping as I don't like going to Eastgate Mall as it is hard to get disabled parking spaces close to where I want to shop. I regularly use the bakery, gift shop, takeaway and the Salvation Army Family Store. I take my family and friends shopping here and if you take away the parking outside the shop we will not be able to donate goods and buy goods as I cannot walk all the way from Catherine Street or St John Street as I use a stick to walk. I have osteoarthritis and am waiting for a hip replacement. I have a lot of friends in the area who are in the same predicament as I am. Please do not take away the few parking spaces that are already there. Trees are nice but they do not make shopping more convenient, parking spaces do!!
128	Y	I love living in Woolston. With the proposed project I think it can only enhance and improve what we already have. But keep the 'small' village concept.
129	Y	While the proposed streetscape plan for Woolston Village, Ferry Road will be a huge visual improvement and unifying factor for this vibrant area, the severe reduction in on-street parking adjacent to dairies and cafes, and popular shopping venues like the wonderful Salvation Army Family Store (#636 Ferry Road) will disuade casual visitors and shoppers from shopping. The supermarket carpark is not a suitable alternative to council provided close car parks.
130	N	I am vehemently opposed to this plan and the over-riding reason for this is the loss of parking. I use and shop in this area at least 5 to 8 times a week. It has a good variety of shops and it's all very convenient and quick to shop there. I can't always get a park immediately but don't have to wait long as most shoppers time there is brief. There is a bit of a problem sometimes with pub patrons occupying parking spaces in front of other shops because their cars are left for hours. i think the alternative parking suggested in the plan is wholly inadequate. St Johns Street is often full and cars don't seem to move off as quickly as they do in Ferry Road itself. The other roads proposed have cars parked in them by people working in the area and are left there all day. Maronan Street is a short residential cul-de-sac and it would be very unfair to the residents (if not dangerous) to have shoppers park there. I am sure that businesses will suffer as some shoppers going to and fro through Ferry Road will find an alternate route to avoid the 30 speed limit. Some beautifying would be great but please don't put this thriving and friendly shopping area at risk. Local communities need our protection or they are forever lost to the shopping malls and the future hyper-markets. Thank you.
131	N	I have a retail shop at [redacted] and strongly object to the prospects as I rely heavily on people (customers) being able to stop and park outside my shop if they can't do so they will not stop which will be detrimental to all the shops. Most of my customers have also said to me that they object to these proposals as well.
132	Y	Thank you for the opportunity to submit on this project. We live in Woolston, and are excited by the developments planned for our local shops, which we visit via foot and bicycle, and travel through by car and bus, on a regular basis. We think the 30 km/h speed restriction is a good idea - we currently drive through the village well below the 50 km/h speed limit, as it feels unsafe for the environment. We appreciate the improved pedestrian crossings, especially the wider island outside the Post Shop, which will no doubt be more comfortable to cross with a pram than the current narrow island. Would it be possible for the pedestrian access to the village from the Woolston Cut/Heathcote River and Radley Park to be improved? The section of pathway between the footbridge and Maronan Street feels dangerous to walk through as it is narrow and surrounded by tall plants. There is often rubbish, bottles, and graffiti through there. With the old Catherine Street footbridge removed, this pathway is the only pedestrian access to the village from the network of pathways along and to the south of the river. We are sure there will be a lot of opposition to the loss of parking. A petition seen in a local shop stated that parking was proposed to be

		removed throughout the village. We understand that there needs to be a trade-off between the use of space for parking and for other uses, as well as for safety, and that the removal of some parking to enable this scheme to proceed will overall be a good thing for the village. We feel regardless of these improvements, that some of the existing parking around accesses needs to be removed, as vehicles trying to look for a gap in the traffic often pull out and stop in the cycle lane, often not seeing approaching cyclists. Please don't narrow the cycle lanes next to parking in an attempt to fit more parking in. They are too narrow at the moment to use safely with the risk of car doors opening. Would it be possible to change some of the parking time restrictions along Ferry Road to something like P15? The businesses most affected by the loss of convenient parking would be the likes of the dairies, bakeries and takeaway shops. A lot of cars parked in the middle of the village seem to be there quite a while. Making parks P15 or shorter would make the remaining parks more useful to the businesses most affected by parking removal. We would expect that if a person was going to be somewhere for a longer period of time that the trip would be more planned, and that parking further away wouldn't be so much of a problem.
133	N	I do not agree with the proposal to impose a 30km speed limit on Ferry Road through Woolston. This is main road access from Sumner, Redcliffs, Mt Pleasant and Ferrymead area to other areas of Christchurch. Slowing this traffic to 30km is not reasonable or useful. When the area is congested, the traffic slows to below 50km anyway. When it is not congested, there is no need to slow down. The pedestrian lights provide crossing for pedestrians and slows the traffic down when the area is actually in use. Setting the speed to 30km will only encourage motorists to avoid the area, causing additional congestion on Linwood Ave.
134	N	It would be great to improve the village of Woolston, but not to the detriment of the surrounding streets. Glenroy Street is already suffering from excess traffic due to the consent given to the supermarket, without any consideration given to its neighbour's, including a pre school. If the plan goes ahead, people will avoid ferry road, and speed down Glen Roy street in order to avoid the lower speed limit, and try to make some time, this is a danger to the preschool children as well as residents. Glenroy Street cannot handle the current traffic, due to the road being weakened by the new waste water system. We are constantly getting new damage to our house. I would support the plan, if traffic control measures were taken on Glenroy Street. My other concerns are for local businesses that struggle with lack of car parking spaces as it is. It will be near on impossible to let out any further premises, as there is no customer parking, leaving Woolston to be derelict and run down.
135	N	I am retired and use the Woolston shops regularly. My wife and I enjoy having our lunch at the Woolston Bakery. If several of the car parks are removed access to many of the shops will be difficult. If we are forced to park on the opposite side it will be very difficult for us to cross the road as my wife has a foot injury. The bakery is very busy with many tradesmen and road workers popping in to buy take aways. I feel many of these small shops will suffer due to the lack short term car parks.
136	N	Any reduction to the on street parking will further hinder patient access to health services from both the GP and the Pharmacy at 687 and 685 Ferry Road. There is no need to widen foot paths as they are plenty wide enough for our current users. Removing street parks will force more people to need to CROSS the road on foot as there will not be a park on 1 side of the road and will also increase the need to CROSS the centre lane when driving due to the need to cross it when parking. I Simon Payne of Woolston Pharmacy get several comments for my patients that they were unable to find a suitable park and many are elderly or immobile so removing any parking will only increase this problem.
137		Thank you for the opportunity at discussing the Ferry Road at Woolston development. I have put in a submission, however, from discussions with other business owners, I get the feeling that each individual business and property owners should be visited by Council Staff regarding this matter
138	Y	We are very very concerned about the lack of parkin in the current plan. We were shocked to see that car parking was to decrease from around 70 down to 21. We feel that carparking needs to stay at the very least at 45 spaces. The lack of car park spaces will affect us very much as home owners/residents. It will make it much harder for our parents to drip by and visit us, and as our parents get more elderly it will get less and less kin to make them walk down a side street. If this plan went through, we would struggle to have guests over to watch a movie, or to have dinner with friends. As many of my friends are single females in their twenties, I can see them being frightened to come to my house if it meant walking down a dark side street to get to their car at the end of the night. This reduction of carparks will devalue our property. If our property is devalued, we will expect reimbursement. We like most of the plan. We notice a large amount of litter being dropped in the landscaping we already have. Has litter been though about when considering this new attractive landscape?
139	Y	
140	N	The loss of convenience for a great deal of customers, not having parking outside the door. A lot of people are time poor these days and would sooner go to a shop with convenient parking in close proximity than not. Woolston can still be beautified while retaining the <u>very important</u> carparking.
141	Y	Overall a good idea. It would be safer for bikes if the bike lane was between the pedestrian foot path and the parked cars rather than between the road and parked cars. (if a car user opens a door without looking as they commonly do, I would prefer to serve and fall from my bike onto pavement than under a car/truck on the road as has happened outside Dunedin Hospital). I would like to see more bike rack / lock up points.
142	Y	Overall, I fully support the proposed changes to Woolston Village. However, I would like to see several changes made. Firstly, in the stretches where the cycle lane is adjacent to the kerb, I would like to see the cycle lanes separated from the traffic. Whether this be by using delineator posts, creating 'Copenhagen style' bike lanes (like on Colombo St) or similar, I believe the cycle lanes should be separated as there is more than enough room to do so. This will make it that much safer for people to cycle into the village. Secondly, I don't support the flush medians, as these usually make drivers speed up as there is more separation between oncoming vehicles. Why not have more of the medians on the plans planted for more green space- even better, have trees in the median like Bealey Ave or what's being done on Riccarton Road. This will make Woolston Village that much more green, less asphalt. Thirdly, I would like to see some priority given to public transport in Woolston Village, as one of the five main bus lines travels along the corridor. Whether the priority be having the bus stops in the traffic lane (so buses don't have to wait to merge), or by having an advanced stop at the pedestrian crossing next to Around Again Cycles (by removing the median in that 20-30m approach). In whatever form it may take, I would like to see some priority for public transport. Furthermore, it would be an excellent opportunity to extend the proposed 30km/h zone to nearby streets, such as Heathcote, Catherine, Portman, and Glenroy Streets. These are all narrow streets, so naturally traffic-calmed, so it makes no sense to have a 50km/h limit on them. Now would be the perfect opportunity to extend this proposed lower limit. Lastly, make sure plenty of cycle parking is provided in the area, as the racks provided at the moment are often full! Thanks to the CCC for persevering with these plans, as they will definitely make our streets safer and more attractive for all.
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145	N	With regards to the proposed changes to the Woolston Village streetscape, I would like to make the following comments as a resident of Woolston and co-owner of [REDACTED]. Overall I am supportive of enhancement of the Woolston Village corridor. However, I feel there are several elements that need to be amended in order to find a happy median between the needs of local businesses and the look/feel of the streetscape. Parking - Before getting into specifics, I would like to raise my concerns about the survey data which is being referenced throughout the proposal. From feedback I received from CCC staff at an information evening for the Woolston Business Association, I am led to believe the data was collected over one 2 hour period (2pm-4pm), one weekday during summer, February 2016. The nature of the majority of businesses in the area (convenience based) means that peak parking demand typically occurs around 12pm - lunchtime - and from 4-6pm with after-work/dinner traffic. My opinion is supported by comments Consultant Traffic Planner Andrew Metherell, of Traffic Design Group, made in his review of the resource consent RMA92024571 - New World Ferry Road - where he stated that he felt peak parking demand was 4-6pm weekdays. A second concern I have around the survey data is the referencing of 31% of respondents walking to the village. I would question if this level would be similar in the middle of winter or if some of those respondents would in fact drive during the cooler months. I will now raise some of the specific issues I have with the proposed removal of 56 street parks from Ferry Road. Firstly, in my opinion, the removal of 20 street parks between Oak and St Johns Streets will have a significant negative impact on the businesses located within this block. The majority of these businesses have limited, if any, off-street parks for customers and the nature of the majority of these businesses means that there is plenty of competition nearby and customers will chose the most convenient option when deciding which businesses to frequent. Removing these parks will likely see the vast majority of motorists keep driving to Ferrymead in the east, Phillipstown/Charleston to the west or Eastgate to the north where parking is much more convenient. The proposal states that the loss of parks on Ferry Road can be accommodated by side street parking on Heathcote, Portman and Catherine Streets. I somewhat agree with this statement for the parks which have been ear-marked for removal west of Oak Street, however I do not see acceptable alternatives for the 20 parks mentioned previously. From the pedestrian traffic lights on Ferry Road, Portman Street is approximately 160m away, Heathcote Street 170m away and Catherine Street 140m away. Bearing in mind that 56 parks are being proposed for removal, the actual distance someone may have to walk to get a park could end up being far higher. Again, if there is an alternative business nearby with better access, I feel most people would chose the alternative. From a personal point of view, our [REDACTED] business at [REDACTED] currently has access to 14 on street parks and 3 off street parks within an approximate 30m radius. The number of on street parks in this radius is proposed to reduce to 3. The nature of our business means that quite often our clients are injured and walking 100+ meters to receive treatment is not practical or acceptable. Again, clients will find an alternative business with better access and businesses in the village will suffer. Secondly, the side streets offered as alternatives for parking are very narrow, especially Catherine Street which would be the closest for our business at [REDACTED]. Traffic flow could become a serious issue on these side streets as they will essentially be one lane roads if their parks are full. Overall, these master plans are designed to strengthen suburban shopping centres and provide a sense of community. Given Woolston's close proximity to Eastgate and Ferrymead, which have abundant car parking, every care must be taken to ensure the plan adopted for Woolston Village does not force businesses to close their doors. Already the community has lost its post shop, it's losing the last bank in the village to Ferrymead and the Woolston Medical Centre doctors are relocating to the new community well-being hub at Eastgate. Any plan adopted must foster the regeneration of the area, not put further roadblocks in the way. Road layout changes - Overall I'm very supportive of the proposed changes including the paved median strip and increased planting. I have a few areas of concern though. Firstly, I can see potential for conflict on the median outside 616 Ferry Road. Is there enough room on the median for 2 vehicles - i.e. One vehicle travelling west bound towards the city and turning right into 693 Ferry Road and one vehicle travelling eastbound and turning right into 616 Ferry Road? Secondly, I am very upset to learn of the proposed planted median strip extending across the driveway to our business at 630 Ferry Road - effecting 3 businesses in total. I was also surprised to hear that this was a condition of the New World resource consent and that this was not notified to us as an effected party. I cannot fathom why the new driveway to New World could not have been positioned further east to maintain right hand turns into and out of our shared driveway? That being said, it does appear that the only restriction imposed by the resource consent is that right hand turns cannot be made out of the driveway at [REDACTED]. If this is correct, I would request a redesign of the median outside 630 Ferry Road to allow for a right hand turn into the driveway, as currently the planted median extends too far for this to occur. Being unable to turn right into this driveway will have a negative impact on the businesses that it services by decreasing accessibility. To access the driveway, eastbound traffic would be forced to do a U-turn on Ferry Road or turn down one of the narrow side streets - that will potentially be accommodating increased parked cars - perform a three point turn and then get back onto Ferry Road so they can turn left into the driveway. Things become more troublesome if our car park is then full and an on-street park must be sought. Ideally we would be able to have unrestricted entry and exit from our driveway. With regards to the New World resource consent, I do note that a left-turn arrow was meant to be painted on the exit lane but a straight arrow has been installed instead. Finally, is a right hand turn allowed from Ferry Road into Catherine Street? The line markings shown on the proposal show a right turn bay into St Johns Street extending over the intersection of Catherine Street and Ferry Road which would be creating even more obstacles for shoppers and residents in the area. Planting/lighting upgrade/street furniture - I am very supportive of the proposed upgrade to all these elements but would like to make the following comments: Planting- Are there no suitable native trees that can be used as feature trees in the landscaping? I feel we have a duty to reinstate as many native plants as possible to help regenerate native wildlife

		alongside the community. Lighting - 'Improving street lighting' is listed under the summary of improvements but there is no reference to what is being proposed. Can this be clarified please? Thank you for taking the time to read my submission and I look forward to receiving a response, particularly to my questions around loss of parking and the location of the median strip across the driveway at [REDACTED]
146	Y	I strongly support better street lighting (or more lights), mores seats, rubbish bins and cycle stands. I prefer Magnolia Kobus (tree type). I am not really like the idea of 30 km/hour speed zone but 40 kms/hour is more preferable. I support that more P30 and P60 car parks on the side of the Ferry Road other than those unlimited.
147	Y	
148	N	I drive through Woolston most evenings on my way to Mt Pleasant. At least twice a week I stop on Ferry Road in Woolston to either: Go to the Post Office; Go to my hairdresser; Go to New World; Go to the 2nd hand shop; Go to the ANZ; Go to the bakery. I believe I will only stop at these shops if I get a convenient park on Ferry Road. On Saturday I went to the Salmon Shop. I also attend St Annes Church and know that as well as the parishoners there are lots of residence who park on the road. I think Woolston will die a death. New World will be the only business which survives.
149	N	I oppose the narrowing of the road alongside my entrance at [REDACTED] with the landscape planting and the Flush paved medium. I oppose the loss of two carparks alongside my driveway and one carpark across the road. I oppose the loss of car parks on Ferry Road and the subsequent parking restrictions on Ferry Road and the side street. I oppose the 30km speed restriction on Ferry Road and the narrowing of Ferry Road which I believe it will cause traffic congestion and be dangerous for cyclist and all road users. Thanking you for this opportunity to have my say.
150	Y	The plan provides a good balance for all modes of travel along this busy corridor. Removing parking on Ferry Road will make this route more enjoyable for me to cycle on as there is less chance of being doored and being cut in front of by people trying to get into one of the parallel parks. I would never try to park on an arterial road as it is too busy and I don't want to hold people up so always use the side streets and off-road car parks when I visit Woolston. The cycle lane looks narrow outside of 733 and 739? How wide are the lanes? The improved crossings for pedestrians will make it easier when having to get a number of items from Woolston in one visit as it is very difficult to cross the road at busy times. The trees and landscaping will really improve the environment and look of Woolston and help it be a great centre for us residents. Is it possible to include colourful flowers/planting in the median strip? Can the 30km/hr zone be extended around Heathcote Street and north on Portman Street and along Glenroy Street? This will make it easier for users to know where it is 30 and where it is 50. Is it possible to introduce a right turn green arrow for the right turn from Ferry Road into Rutherford Street? During peak times, especially in the evening and on weekends, only one or two cars can make the turn at the end of the phase due to the demands going into the city.
151	N	The [REDACTED] Submission for the proposed concept for Ferry Road at Woolston Village. We, The [REDACTED], are delighted that there are plans to enhance the Village that will highlight its character to an unprecedented level. There are some outstanding plans for lighting, furniture and landscaping which will all help create the village feel that we need as a community so ultimately people will stop shop and spend time within. This ambience is not to be under-rated and we are glad it will be designed with the colours and tones that have made Woolston known from early pre-European times. However, the proposed concept for Ferry Road at Woolston Village also raises some areas of great concern for us as a business association. Appendix Four: Recovery Framework, of the 2014 Ferry Road Master Plan states "An overarching framework was prepared by the Suburban Centres Programme to guide the framing of Master Plan goals and actions. A framework provides goals for recovery-driven development." Multiple overarching goals are then listed, two of which have great relevance to the objections we will outline ahead. Those are: Economic development: Prosperous businesses; quality employment and job security; creating opportunities for training and employment and encouraging business opportunities; supporting existing businesses. Parking: Providing convenient on and off-street parking opportunities for the commercial core to encourage people to stop and spend. Working within the framework of the Parking Strategy to utilise parking efficiently. Keeping the above goals in mind - which are designed to enable recovery-driven development - we question how the decision to propose the removal of 56 of 91 on-street parks from Ferry Road was made? The current proposal seems to be at odds with the needs of the existing business community in Woolston Village. Appendix Six, of the Ferry Road Master Plan, lists that "In Woolston, an overdependence on convenience-based retail and passing trade has reduced the long-term resilience of the centre." Whilst there is undeniably an element of truth in that statement, does the proposed removal of 61% of the convenient on-street parks, from outside 'convenience based retail and passing trade' dependent businesses, indicate that Christchurch City Council (CCC) has limited interest in 'supporting existing businesses' of this nature in Woolston Village? Unfortunately, Woolston Village has already lost a great deal of the anchor tenancies that a resilient community depends on (Banks, Post Shop, and Medical Centre) to the newer, more easily accessible, centres of Eastgate and Ferrymead. It is therefore paramount the remaining businesses get all the assistance they can from CCC to ensure their survival, and that of the village itself. Removing 56 convenient on-street car parks does not facilitate the survival, or growth, of the existing businesses. One reason that has been offered by CCC staff, to try and validate the removal of these 56 parks from Ferry Road, is the survey data gathered between 2 and 4pm on a weekday in February 2016. During this two hour period it was noted that the peak occupancy of parking spaces on Ferry Road was 56%, with typical occupancy below 50%. As an association, we find it extremely concerning that CCC seem to have based the entire parking plan for Woolston Village on a single set of survey data that was collected at an off-peak time for the village. The only other reference to parking studies we can find is of the 2013 corridor study for Ferry Road, where one of the findings was; On-street parking capacity along Ferry Road exceeds demand except through Woolston and adjacent to Woolston Park during sporting events. We can therefore only assume this finding was overlooked when the decision to remove 56 car parks from Ferry Road was proposed as it clearly states demand exceeds capacity through Woolston. Content in the Master Plan also clearly shows that CCC recognise there is a high level of convenience based businesses in the area. The question must therefore be asked, why weren't multiple surveys undertaken to include lunch and dinner time data where peak occupancy of parking spaces occurs? Consultant Traffic Engineer Andrew Metherell, stated in RMA92024571 - New World Ferry Road - that he felt peak parking demand on Ferry Road was 4-6pm on weekdays. Coupled with the fact the survey was undertaken off-peak is the fact that it was undertaken during summer. Local knowledge suggests that car usage increases during the winter months for obvious reasons. Another answer offered by CCC as justification for the proposed removal of on-street car parks from Ferry Road, is that the parking proposed for removal could be accommodated on side streets or through existing off-street parks. There are several reasons why we strongly disagree with this suggestion. The section of Ferry Road between Portman and Catherine Streets - two of the proposed side streets that would accommodate the parks lost from Ferry Road - is approximately 300m long. From this section of road, 26 of 37 on-street parks are being earmarked for removal and the majority of the businesses in this area do not have any off-street parking available. As previously mentioned, the majority of businesses in Woolston Village are convenience based. Customers that frequent these types of shops want to stop outside the shop, go in, grab what they need, get back in their car and leave. Asking these customers to park their cars on a side street and walk a minimum of 100 meters to get to the shop is far from convenient. It was mentioned to the association that shoppers will eventually retrain their minds and the proposed parking changes would before long become the new norm for Woolston Village. We believe this is a very naive comment, and the reality is that the shoppers would simply stop shopping in the village and find a more convenient alternative close by, seriously compromising the survival chances of the existing businesses in Woolston Village. Appendix Six of the Ferry Road Master Plan also recognises - "The needs of

		<p>businesses dependant on passing trade to provide convenient, visible car parking must be balanced with the amenity and safety effects of on-street parking, large car parks at the front of buildings and frequent car park accesses on amenity and safety for pedestrians and cyclists." It also states "Traffic congestion occurs in Woolston during peak hours due in part to 'side friction' from parking manoeuvres and vehicles turning onto the road from side streets and car parks" and "It is difficult for vehicles to make movements in and out of Ferry Road outside of signalised intersections, particularly in Ferrymead." This again raises more questions. Removing on-street parks from Ferry Road will arguably improve the amenity and safety effects of on-street parking, but has this been done in a balanced way with the needs of the businesses reliant on convenient car parks being fairly considered? Proposing alternative on-street parking on side streets will surely just increase traffic congestion on the side streets and increase 'side friction' caused by vehicles turning onto Ferry Road from streets which are already deemed 'difficult for vehicles to move in and out of'? Given their width, will these side streets actually be able to accommodate two-way traffic flow if all their on-street car parks are full? At no point in the Ferry Road Master Plan can we find reference to the need to reduce on-street car parks in Woolston. However, WL4 - Woolston Parking Plan - makes reference to "Monitoring any requirements for additional parking in Woolston, including assessing the most appropriate locations for on-street parking for mobility and short stay parking; Undertake a parking plan for Woolston and, if necessary, purchase an additional site for off-street parking. Investigate opportunities to consolidate car parking facilities behind businesses on the south side of Ferry Road." Reducing car park numbers seems to be at odds with the action points of WL4. One gets the feeling that any reduction of on-street car parks was meant to be offset by the creation of a convenient off-street carpark that would be purchased by CCC, not by shuffling customers down side streets a considerable distance away from businesses. A third answer to why on-street car parks need to be removed was offered, and this was due to the road not being wide enough to accommodate parking on both sides of the road once the requirements of cycle lanes, carriageways and median strips were factored in. The question here is, why has it been deemed there is not enough space to accommodate everything? Figure 37 in the Ferry Road Master Plan shows a generic cross-section of Ferry Road as it stands today. This cross-section shows a 3m wide footpath on either side of the road, 1.9m wide car parks on each side of the road, 1.5m wide cycle lane on each side of the road, 3m wide carriageways and a 1.2m wide median strip. A total width of 20 meters. However, it would appear that cycle lanes need to be 1.8m wide - even when they are only a local network and the much publicised Rapanui, Opawaho River and Heathcote Expressway Major Cycle routes are situated nearby - and that car parks need to be a minimum of 2m in width. Going by those numbers, a cycle lane and car parking on each side of the road would take up 7.6 meters. Figure 37 shows carriageways are currently 3m wide, so two of those would be another 6 meters - 13.6m in total, with two footpaths and a median strip left to accommodate. The question then is why can adjustments not be made to the width of the footpaths and median strip instead of removing car parking? The current median strip is 1.2m wide, according to figure 37, but has been proposed at 2m wide in the concept plan. The carriageways have increased from 6m combined to 6.4m. Already that is 1.2 extra meters that appears to be unnecessary. The proposed concept cross-section adds up to a total width of 20.1m, so if a 1.2m median strip was retained, 3m wide carriageways, 1.8m wide cycle lanes and 2m wide car parks could be accommodated on both sides of the road if the footpaths were reduced by a mere 350mm on each side of the road (2.7m wide). The width of the median strip plus a carriageway (1.2 + 3 = 4.2m) would still be wide enough for cars to pass by each other.</p> <p>We request that this design is reviewed as we are against any streetscape upgrades that directly lead to the reduction of on-street car parks. We are also against the installation of planted medians if they restrict entry and exit from existing businesses (616, 630 and 636 Ferry Road). Again, we can't stress enough how important it is to have ease of access to all these businesses to ensure their survival. There is also concern that raised medians are going to be dangerous obstacles for reticulated delivery trucks to navigate around and they may cause trucks to mount footpaths - for example, a truck exiting left onto Ferry Road from the New World supermarket has a limited turning arch due to the planted median strip.</p> <p>Finally, we are against the proposed speed reduction to 30km/h through the village. We do not share the belief that slowing traffic will suddenly make motorists want to stop and shop. People will stop in the village if they need to buy something. The most likely outcome of a reduction in speed of the proposed magnitude will be that drivers will decide to bypass this section of Ferry Road and travel via Linwood Avenue or the Rutherford Street/Brougham Street expressway. The impact of that occurring on a business community largely dependent on passing trade would be crippling. We are also curious how this proposed speed limit was determined given that a suggested speed of 40km/h was recommended in the 2013 corridor study? That being said, we firmly believe that the 50km/h speed limit should be maintained and feel changes to the roading layout, especially the addition of several pedestrian crossing points, will naturally slow vehicles through the village anyway. In summary, we object to the removal of any on-street parks from Ferry Road because existing businesses rely heavily on the convenience of these parks for their trade; most existing businesses have limited or no off-street parking; the proposed side street alternatives are inconvenient due to their distance from shops and the traffic flow issues that will be compounded by increased parked cars on the narrow side streets; the survey data being used to justify the reduction is not representative of peak-time parking demands; priority should not be given to cycle lanes when cyclists made up only 8% of Woolston's shoppers in CCC's own survey, as well as the close proximity of the major Rapanui, Opawaho River and Heathcote Expressway Cycle Routes; there appears to be enough room to retain parking on both sides of Ferry Road even after increasing the width of cycle lanes and carparks. We are against the introduction of planted or raised median strips in locations that restrict access to existing businesses. We object to the proposed speed limit of 30km/h through the village as we feel this will encourage drivers to bypass the village; we do not believe slowing vehicles will increase patronage to shops; we feel road layout changes and existing traffic flow restrictors will naturally slow vehicles through the core anyway. We ask that priority is given to fostering the survival and growth of Woolston Village by supporting the many small businesses that have invested in the community. We strongly encourage the enhancement of the physical environment of the village but only if it incorporates the existing carparking numbers that so many rely on. What is the priority here? A streetscape with extra wide footpaths, cycle lanes and median strips from which the community can view the empty shops. Or, a design that enhances the streetscape without compromising the livelihood of the businesses that promote a sense of community and bring people to the village in the first place? We thank you for consideration of our points.</p>
152	Y	<p>I think the plan provides a great opportunity for Woolston to become a destination in itself and reduce the negative impacts of thousands of vehicles a day passing through without stopping and adding to the vibrancy of the area. When we visit the area with children to shop it is not a nice experience to get from one side of the road to the other with limited safe crossing places meaning that we tend to stay on one side of the village or the other. The emergence of places like the Twisted Hop show the potential for the area, on a core bus route, to be a retail and hospitality destination. I cycle along the corridor daily on my commute and it is currently very unsafe. I have had many near misses with parked cars opening doors into the cycle path, and cars exiting car parks and side roads pulling into the cycle lanes as they can't see past parked cars. There are large amounts of off street parking and on side roads and this again would encourage shoppers in cars to visit multiple destinations in the village, adding to the vibrancy.</p>
153	N	<p>Petition signed by 770 people: 'We, the undersigned, support the beautification and street enhancement of the Woolston Village but strongly OPPOSE the removal of the car parking throughout the Village (from St John St to Portman St) and ask that this car parking be retained. The shops in the Woolston Village are not "browsing shops" but "purchase and leave" shops in the main, such as pharmacy, bakery, dairy, sushi, fish and chips and other food outlets.</p>

		Please keep the carparking in the Woolston Village
154	Y	Spokes Canterbury is a local cycling advocacy group with approximately 1,200 members that is affiliated with the nation Cycling Advocates Network (CAN). All submissions are developed online and include member's input. Spokes is directed to including cycling as an everyday form of transport in the greater Christchurch area. We would like the opportunity to appear at any public hearing that is held to consider submissions on these projects. Should there be an officer's report or similar document(s) we would appreciate a copy(s). If you require further information or there are matters requiring clarification, please contact our Submissions Convenor Dirk De Lu in the first instance. Appreciation: CCC continues the effort to let people choose to cycle safely to get to the places and services they need to access. While this plan may not appear to appeal to the interested by concerned cyclist or the 8-80's at first blush, with some concerted education, promotion and enforcement it may well help us all transition to the ease of using bicycles for every day transport. CCC is commended for starting to do what they can to encourage a change in transport habits. General Observations: Thank you for the 30km/h speed limit in this busy centre. Pedestrian crossings will help to alert drivers of the need to slow down, especially as they create pinch points for people on bicycles who will either be forced to take the lane or hope that drivers leave them sufficient room when passing. Signage alerting drivers that they are now expected to share the road and to slow down will be required. With some of the side streets being barely wide enough for two cars extending the speed limit to surrounding streets is clearly needed for road safety. On Street Parking: Move the 3 on street parks from the south side of Ferry Road and consolidate all on street parking to the north side of Ferry Road. Take 90cm from central median to create door buffer zone on north side by cycle lane. Having drivers crossing the road will assist the cyclists being forced into pinch points in communicating to cars that this is a go slow environment. This will go a long ways to create both a sense of safety and greatly improved safety. Bus Stops by Portman Road: Bus stops on both sides by Portman Road with pedestrian crossings and dividers will force people on bicycles into the flow of traffic or require them to come to a full stop when buses are present. Alternatives: Moves north western bus stop to east of Portman Street and move the parking place there to where the proposed bus stop is now. This saves money by allowing the north western pedestrian crossing to be dropped which also removes a cycle pinch point. At the very least move the central raised dividers from here to the crossing east of Portman Street. Move stop at 596 Ferry Road so as to free up intersection with Portman Street. Bus Stops by St. John's Street: Bus stops on north and south sides of Ferry Road by St John's Street will also create pinch points for people on bicycles while adding to congestion in this intersection dominated stretch of Ferry Road. Alternatives: Move northern side bus stop to in front of 739 Ferry Road, St Annie's Catholic School and Church. Move southern side bus stop to in front of 672 Ferry Road. Both offer better sight lines for people on bicycles to see stopped buses and pull into traffic while also reducing congestion created by cars accessing on street parking on Maronan, Catherine and St John's Streets. Cycle Parking: With the recognition CCC has received for the Cycle Design Guidelines it is disappointing not to find cycle parking provided in accord with it. The 12 cycle parks indicated will be insufficient. With supermarkets, library, community centre, dairies, medical centre, restaurants additional cycle parking will be required. Creating bike corrals near popular stopping points can free up footpath space.
155	N	I go to the Salvation Army / Building and the Woolston Bakery and I feel that putting double yellow lines for no parking would affect these businesses quite a bit, but the over all picture looks really great.
156	N	I intended typing out this rough submission but an Energy Action Official called in and this took over an hour so I didn't manage to give you a decent copy. Today I went to the ANZ Bank and as there was heavy constant traffic going both ways, I turned left and went along St Johns Street which was 1 block only because of a detour, so I travelled along the street parrallel to Ferry Road to turn left at Hargood Street towards Linwood Ave. There wasn't any parking places until nearly up to Hargood Street so that means quite a long walk, so people with poor walking ability or in a hurry won't be popular with would be shoppers so they'll go elsewhere. I have lived at Sumner since 1956 and as shopping banking etc facilities have deteriorated over the years, I have been a regular Woolston shopper, but those days are over, I think, because this present scheme looks good on paper, but pracitcally speaking is not suitable. 1. First and foremost it must be recognised that the Woolston shopping area is each side of a main thoroughfare to Sumner, and is used as such all day and night. I use it often and do shop there, because I have used the two banks, ANZ and Kiwi. Unfortunately, one bank has transferred to Ferrymead and the other will do so in August. 2.As things are now, there is very little parking in the surrounding streets, and parking is limited in the Ferry Road so won't be stopping very often. 3.Any attempt to have green verges and a village atmosphere will be doomed. Heavy traffic flows involve unpleasant vehicle odours and emissions. A little further by the bridge may provide a little green space. The village atmosphere and green spaces should be off-main road. 4.A new supermarket is being constructed. If we can't park easily, and have no bank and no post services, why stop for groceries etc there instead of going to Ferrymead with its banks, shops etc and large parking areas and cheaper super market. 5.NZ post has reduced its usage at Sumner. The Hardware had to close down because the shop needed the full postal services to survive so, NZ Post has joined with petrol stations, banks, Kiwi bank and other banks, to erode our village life and we waste petrol going elsewhere which is a poor response to conservation, leading to global warming. People are hoping the Council will review their ideas for Woolston. Finally, many of us will use a longer route to get to Sumner emerging at either Rutherford Street or the rounadabout or even Heathcote bypassing Woolston entirely. Yours sincerely Nancy Meherne - long tim resident of Sumner who felt good about bringing some revenue to Woolston shops.
157	Y	I commute through Woolston Village twice each day en route from Mt Pleasant to Church Corner, and back. I support the proposed changes as outlined. I may not support all of the detailed proposals and reserve full support until such times as they are available. Travelling through in a west-bound direction the route is straightforward and without undue hazard. Travelling through in an east-bound direction the route is hazardous due to car parking on the road side, access/egress from the 'Mad Butcher/Dominos' off-street parking area and the intersection with St Johns Street. These hazards are multiplied in the hours of darkness and in inclement weather. The level of street lighting is poor and the road surface deteriorated. This makes it difficult to hold a straight line, in an already narrow cycle lane, against parked cars with possible opening doors, when being overtaken by cars doing at least 20kmh higher speed. I am a confident and assertive cyclist. Were I not I would not use this part of Ferry Road. When the cars slow it is only because they are looking to pull over or into the car park or St Johns Street, rarely in a manner that is considerate to the cyclist they just overtook or with sufficient indication to the cyclist approaching from the rear. I note that the newly refurbished New World supermarket is likely to increase traffic flow and increase the hazards to east-bound travel. I trust that access and egress to Ferry Road has been better designed than the St Andrews Hill intersection.
158	N	First off all I like to say thank you to council for thinking about spending huge amounts of money to make Woolston village more attractive but I disagree with this plan. We need more on street parking on ferry road not less. I have been working in this business for the last 22 years (standing by window while serving customers) I have never seen parking outside empty since the proposal I have been talking to customers. Every single customer agree with me that we need more parking on ferry road not less. They sometimes have to drive around twice or three times to get parking which is very inconvenient. They told me if there is no parking in front of the shop they would not stop and take their money somewhere else. yrl also pay my rates regularly since past 22 years. Since we do not have rear parking my customers need parking in front of the shop. I also disagree with 30km speed limit because drivers at the moment slow down in there area because off traffic. There are not many or any accidents happen in Woolston village which make us consider that this area is unsafe or need 30km speed limit. By in forcing 30km speed in this area people likely to avoid passing and take alternative routes. By putting island in the middle it would be hard to turn in the driveway and causing traffic block behind the car that is turning. I strongly disagree with the tree planting or garden between my driveway (701 ferry road) and supermarket driveway. Because before earthquake when next door building was bit forward on councils land when we come out of driveway it blocked our view and there have been many near miss incidents even though we drive very slowly. Since its going to be supermarkets exit for big truck it will be very busy and unsafe for people walking on the footpath going towards crossing lights.

159	N	Improving the Woolston Village is an excellent idea apart from the following: With the closing of the ANZ Bank, Post Office and the Local Doctor moving there will be less foot and car traffic in the area. To reduce on street parking will have an extra negative impact on the businesses in the area as people who travel by car pull in get what they need and carry on. If they have to find alternative places to park they will drive right through and shop elsewhere. Also dropping the speed limit to 30K per hour will also deter through traffic and they will take the alternative option to travel down Linwood Ave and Bypass Woolston Village altogether
160	N	<p>No. I/We generally do not support the proposed changes outlined in the Ferry Road at Woolston Village project consultation plans. My family and I have operated the [REDACTED] for approximately 28 years.</p> <p>Last year our business was hugely interrupted and affected financially for approximately 1 month when without notice wastewater services were installed for the New World Supermarket development [REDACTED] our property - this involved the placing of no stopping or no parking restrictions and cones on both sides of the street by traffic management from St Johns Street up to the pedestrian crossing - then once again for most of April this year all the parking in front of my business was fenced off while electrical services were installed again for the supermarket.</p> <p>As a very large proportion of our and the surrounding businesses customers visit our premises using cars they simply could not stop and park - the ones that did manage to park further away and walk a distance certainly expressed their frustrations on having to do so - many angrily exchanged words with the contractors and traffic management people for taking away their parking. Even though I have always known the importance of the availability of convenient parking outside my business and have seen first hand how busy and essential the parking outside both my and the surrounding businesses is and how we are all reliant on it to conduct our businesses, the loss of the parking on these two instances hugely reinforced and made us all appreciate more the importance of the parking and the dire consequences of losing it. We are to this day still recovering from the loss of custom and turnover because of these interruptions as some frustrated customers have not returned - possible because other businesses provide easier parking. On any given day if one were to walk through Woolston Village and Ferry Road and observe the use of current parking spaces it would be obvious and clear that full use is being made of all this parking by people visiting the village. The area from St Johns St to the pedestrian crossing particularly is always busy and at times observations would indicate that more parking spaces were needed - not less. It is common to see incidences of road rage over parking spaces and illegal parking on yellow lines and across driveways and other odd parking as people want to quickly get in and out after purchases at the relevant businesses - my business and the ones surrounding it are mostly food and convenience type operations e.g takeaways and bakery whose customers expect to be able to park quickly and conveniently outside, make their purchases quickly and leave - the 30 minute parks around us have a high turnover because of this and would probably be more suited to being 15 or 10 minute parks. I feel that the majority of an important group has been omitted from this proposal - this group being the various business owners and/or property owners of the Woolston Village whose input, feedback and interests are lacking in this proposal and very little consideration appears to have been given to them especially with regards to the extreme proposal to remove approx 70% of the on street parking available for their customers - no loss of parking for a shopping area can be beneficial and why would anyone want to park on side streets from their convenient front of shop parks especially so if they are handicapped, elderly or have small children of which our businesses have many - this is more so in winter when off street parking can be quite daunting in extreme rainy and cold weather for car users visiting the area. There is also the safety and security issue of parking on side streets and behind businesses - many of my elderly customers who also visit the surrounding businesses in one go use cars and rely on them for their freedom to get them to the area independently. Many of my customers were unaware of this proposal until they were informed by me and other business owners - the majority of business owners and customers and locals alike strongly oppose the removal of parking in the area and are at a loss to understand the need to remove parking when it is difficult enough to park as it is - I am sure there are plenty more people who frequent the area who are unaware of this proposal and its ramification especially with regards to the removal of parking - there did not appear to be any media information informing people of the proposal.</p> <p>I know for a fact a large percentage of people who visit the Village live outside of Woolston and rely on cars for transport - many passing through and stopping on impulse and convenience and thus convenient parking - what would be the incentive for them to stop in Woolston if they had to park far away and walk? Many locals have told me they have not received any material regarding this proposal. All the local business owners I have spoken to have said they were never directly asked for input on the proposal even when we really are the ones being directly affected - some owners have said they were never visited by the council with information at all. All the business owners I have spoken to oppose the removal of parking on Ferry Road. It is interesting and odd to see 60 minute parking being retained on Ferry Rd in front of the ANZ bank and 24 hour Dairy(Night and day) when these businesses have 35 private parks just next door to them whereas the area from St Johns St to the pedestrian crossing on Ferry Rd will lose 11 parks with most of the businesses here having limited or no private parking. With the loss of the NZ post and Kiwi Bank and the eminent loss of the ANZ Bank the village is facing an uncertain future as two of its largest businesses leave to set up in Ferrymead an area which is in direct competition to many businesses that are in Woolston Village. Many of the newer Ferrymead businesses in newer buildings have provisions for parking at their doorsteps as do businesses at Eastgate mall - a convenience this proposal will take away from Woolston Village and the majority of our customers with it. Woolston Villages fragile retail environment will be put at extreme risk possibly discouraging any future businesses and or developers from investing in the area - note parking consent requirements by council for new businesses starting up and new developments. There does not appear to be any provision for delivery vehicles making deliveries to the various businesses in the area, large orders of stock etc would need to be carted from who knows where - many supply reps and delivery people and customers alike have voiced their concerns over the no stopping or parking proposal as again they already have difficulty finding parking. The map of the concept flyer appears misleading as it appears to highlight private "Off street customer car parks" as being available parking for the general public when in fact this parking is privately owned and for customers shopping at the associated businesses e.g 104 New World Supermarket car parks that I am sure are only for shoppers shopping at New World - they will enforce this as they do currently. The map highlights street parking and the area past Moronan St and the area past Heathcote St and parking in front of residences out of the shopping area when in fact the main business area really only extends between Portman St and Catherine St which currently has approximately 37 parking spaces on Ferry Rd of which 26 are proposed to be removed or 70% removed from the main shopping area leaving 11 parks really. The proposed alternative parking sites on side streets e.g Portman and St Johns Streets are on observation already full of I am guessing residents cars and staff from the businesses. Heathcote, Maronan and Catherine streets are so far away from the main business area that most people would not even bother - many of these streets are so narrow that only a single car can pass through if cars are parked on both sides of them. Once the parking is removed from the front of St Annes school Maronan and Catherine Streets will be chaotic especially so at school pick up and drop off times and riskier for parents and children who will try to cross over during peak traffic times. I pity the residents off all these streets who will have increased traffic and the prospect of cars being parked on their streets for 2 hours or more at a time as I am certain many people will park over the limits here and on any retained parks on Ferry Road as they do at present - the council simply does not have the resources to enforce the parking limits continually as they are not even enforcing parking limits on Ferry Rd now. Are these streets equipped for the extra traffic? and the question of security and safety also arises e.g thefts vandalism assaults etc that can come with parking off street - is the lighting sufficient for those parking at night time? The proposed speed limit to 30 km and landscaped islands will slow traffic to a crawl and cause congestion on this part of Ferry Rd which has always been a main through road - past road works on Ferry Rd have exhibited this and high traffic on hot summer days for people heading to summer beach also exhibit major gridlocks - this possible gridlock possibly on a daily basis will I am sure cause people to avoid the Woolston Village altogether to use alternative routes e.g Linwood Ave. Traffic Islands will make it difficult for many business owners and/or customers to</p>



		<p>turn into their driveways and tree plantings beside driveways will hinder people exiting these driveways and create hazards for pedestrians. An example of this is the proposed tree planting beside the driveway at 701 Ferry Rd and the consented supermarket - this will greatly obstruct the view of both heavy delivery vehicles exiting from the supermarket and vehicles exiting 701 Ferry Rd. Trees that drop their leaves create a mess in the area and clog up gutters and downpipes causing increased maintenance and repair issues - this is from my personal experience. No provision appears to be made for much needed public toilets in the proposal. The Twisted Hop Pub can have at full capacity up to 160 patrons yet they only have private parking spaces for approximately 13 cars - the result of this extreme overflow can often be seen with cars parked to capacity up and down Ferry Road for hours on end - this overflow will likely take up all the retained parks on Ferry Rd and side streets should the proposal go ahead. Once the New World supermarket Development and planned Community Center and Library are completed this will put extra strain on available parking - has this been considered in the proposal? - Page 18 of the parking survey itself states "CAUTION if applying this surveyed parking demand to future development of the shopping area and non developed sites of the Woolston Shopping area need to be considered." With regards to the minutes of the meeting with Foodstuffs/ New World and the council on 17th May 2016 - they have made some interesting points in that they feel they won't have the necessary parking for their new development and that they will be relying on the side streets namely Glenroy and St Johns streets to accommodate the overflow as well as their query on retaining the consented Island on Ferry Road including the left turn - the fact that they were given consents by the council is concerning especially the later regarding the Island so that they can accommodate their entry/exit on such a busy road and on a corner that is already very busy and hard to negotiate - to accommodate this "Private" Island some public street parking will no doubt be removed - without consultation of the public or nearby businesses this was given prior consent and stamped for the benefit of Foodstuffs who already have entry/exit entrances from two additional streets being Glenroy and St Johns streets for their New World Supermarket. In summary I believe that the proposal for the Woolston Village and Ferry Road has relied too much on the mentioned parking and shopper surveys which I believe to be greatly flawed in that they are not complete or carried out properly or the results communicated correctly - the survey itself urges caution on its own use and mentions "Gaps" in data. There doesn't appear to be any information or statistics showing this section of Ferry Road is more unsafe than any other part of Ferry Rd or Christchurch for that matter. The Village has a perfectly good controlled pedestrian crossing and existing cycle lanes but the speed could be reduced to 40km rather than 30km as proposed - even though I cant recall any traffic fatalities in the immediate area in my time here. Having seen parking and shopper patterns myself for approximately 28 years and communicated with many people who frequent the area on a regular basis and who actually live and work in the community and wider area I can confidently say that the planners of this project have got it very wrong and that the proposal especially the removal of parking on Ferry Road will not attract people to the area but rather scare them away along with those that already use it. The nature of the individual businesses their customers and how they interact have not been taken into account and the assumptions of this proposal made by its planners are extreme and dangerous and put many businesses owners and their employee's livelihoods at risk. No loss of parking in a shopping area can be beneficial especially if it has been working perfectly fine for all this time - why try to fix something that isn't broken - I appreciate the council efforts to improve the area - but not this way - please leave all the parking on Ferry Road as it is. - Thank you. [REDACTED]</p>
161	Y	<p>[REDACTED] wishes to express strong support for the proposed changes to Woolston Village and the movement and streetscape improvements, as expressed in the Woolston Village proposed changes documentation. We believe these plans will make Christchurch a truly more accessible city. Woolston Village will become a thriving and attractive pedestrian-focused environment not only for the local residents but also visitors. The proposed changes will encourage the use of active transport (cycling and walking) down Ferry Road. [REDACTED] supports the installation of cycle lanes, advanced cycle stop boxes at traffic lights, and extra cycle parking. By also making the footpaths wider and introducing more crossing points and pedestrian islands, the proposed design will make the area more safe and pleasant for the pedestrians using this public space. [REDACTED] is also in full support of introducing a 30km/h speed limit zone, reducing carparks on Ferry Road, and directing motorists to alternative parking on the side streets, as this will make the village safer for all road users. By encouraging more active transport down around the Woolston Village, the proposed changes will have economic, health and environmental benefits. The health and economic benefits of cycling [1, 2] and walking [3, 4] are well documented in peer-reviewed literature. These benefits include decreased risk of disease, obesity and associated illnesses; improvements to quality of life; and higher life expectancy. The decreased healthcare costs of the above improvements are a direct economic benefit. Additionally, increased cycling and walkability reduces infrastructure maintenance costs, congestion, parking requirements, noise and emissions. The only perceived drawback from the proposed changes will be the decrease in the number of car parks by about 70%. However this perception is not based on available peer reviewed evidence, which suggests that "enough evidence exists to challenge the orthodoxy that exists amongst decision-makers that parking restraint will discourage economic development." [5] Given this, opposition to these proposals based on parking reduction will only serve to stifle economic opportunity and future prosperity of Woolston Village. The proposal is based on sound research, and the benefits far outweigh the costs. This will lead to Woolston Village becoming a citizen-friendly area, with thriving economic activity. As a result, Christchurch will take a further step towards modernisation where residents and visitors alike can enjoy a healthy, liveable, and resilient city. As outlined above, [REDACTED] supports the general idea behind the proposal, however we do have some specific concerns. These are mainly regarding cyclist safety, which must not be compromised if the aim is to see more people take up cycling who would otherwise not feel safe enough to do so. Our suggested improvements are: For safety reasons, as well as future-proofing the suggested improvements, all cycle lanes should be 2 metres in width and segregated from the car lanes. Sensors for the proposed advanced cycle stop boxes need to be located an appropriate distance from the traffic lights corresponding to the average cycling speed. The current system installed on Tuam Street outside the bus exchange is proving ineffective. References: [1] Deenihan, G., & Caulfield, B. (2014). Estimating the health economic benefits of cycling. Journal of Transport & Health, 1(2), 141-149. [2] Rojas-Rueda, D., de Nazelle, A., Tainio, M., & Nieuwenhuijsen, M. J. (2011). The health risks and benefits of cycling in urban environments compared with car use: health impact assessment study. Bmj, 343, d4521 [3] Litman, Todd. "Economic value of walkability." Transportation Research Record: Journal of the Transportation Research Board 1828 (2003): 3-11. [4] Giles-Corti, B., Foster, S., Shilton, T., & Falconer, R. (2010). The co-benefits for health of investing in active transportation. New South Wales public health bulletin, 21(6), 122-127. [5] Marsden, Greg. "The evidence base for parking policies - a review." Transport policy 13.6 (2006): 447-457. [6] Hass-Klau, Carmen. "A review of the evidence from Germany and the UK." Transport Policy 1.1 (1993): 21-31. [7] Topp, Hartmut, and Pharoah. "Car-free city centres." Transportation 21.3 (1994): 231-247.</p>

162	N	I oppose the removal of the parking at the Woolston Village on Ferry Road
163	N	As the owner of the property at [redacted] Ferry Rd in the name of [redacted] which is occupied by [redacted], We are not in favour of the proposed tree planting and removal of car parking in front of our building. The new proposed island in the centre of the road will restrict south turning traffic making the road more dangerous. All of these issues will reduce business/sales in the area for retailers not enhance it.
164	N	I strongly oppose the proposed removal of parking on Ferry Road and Woolston Village as it is not beneficial for the area and will have a negative impact on the area and its retailers - convenient parking is hard to find here as it is at present and its removal will deter me and others from visiting the Village should the parking proposal go ahead.
165	Y	I am in strong support of the proposed changes to Woolston Village and the movement and streetscape improvements, as expressed in the Woolston Village proposed changes documentation. This is a very visionary effort for the future of Christchurch and I would like to commend the Council on this proposal. I often cycle down this area of Ferry Road on my road bike and find the experience quite unsafe with parked cars obstructing the view of cars moving out into Ferry Road. The proposed changes encourage cycling and walking down this area of Ferry Road and the design features seek to enhance a more valued village atmosphere in this area. I support the installation of cycle lanes, extra cycle parking and advanced cycle stop boxes at traffic lights. However, to ensure the safety of cyclist, the cycle lanes need to be segregated from the road and span 2 m wide. I also recommend the sensors for the proposed advanced cycle stop boxes be located an appropriate distance from the traffic lights corresponding to the average cycling speed, as I am currently frustrated by the ineffective system currently installed on Tuam Street outside the bus exchange. Introducing a 30km/h speed limit zone, reducing carparks on Ferry Road, and directing motorist to alternative parking on the side streets, will make the village safer for all road users. By also making the footpaths wider and introducing more crossing points and pedestrian islands, the proposed design will make the area more safe and pleasant for the pedestrians using this public space. The current opposition to this proposal based on parking reduction will ultimately only serve to stifle economic growth of the Woolston Village. This opposed perception is unfounded, as case studies in other cities have shown that increasing other modes of access to streets and cities, particularly walkability and cycling access, led to businesses doing better long term. In turn, this shift toward active transport will result in numerous health and economic benefits, which have been well researched and documented in peer-reviewed literature. This will lead to Woolston Village becoming a citizen-friendly area, with thriving economic activity. As a result, Christchurch will take a further step towards modernisation where residents and visitors alike can enjoy a healthy, liveable, and resilient city. The proposed changes to the Woolston Village will transform the area into a thriving and attractive pedestrian-focused environment not only for the local residents but also visitors.
166	N	See end of document for PDF of full submission
167	N	See end of document for PDF of supporting information to #166
168	N	See end of document for PDF of supporting information to #166
169	Y	We think it will be a move in the right direction provided there is plenty of parking! As there is an older population to think of.
170	N	The loss of any parking spaces on Ferry Rd or the adjoining side streets would cause the St Anne's Catholic Church many problems. People would end up parking dangerously to be within walking distance of the Church. Church services Saturday evening and Sunday morning take 1 hour +, so 30 minute parking would be restrictive. Weekday services take 30 mins +. Please remove as little parking as possible but still beautify our village.
171	N	Hi. [redacted], this property is owned by a syndicate of investors. They strongly oppose the removal of 6 carparks from outside of their property. It seems from looking at the plans that the Council have decided that car parks supplied on landowners property will suffice instead of having street parking. The removal of street parking from outside of the bakery will be a large blow for this tenant. we support enhancing the area, but I have seen at other sites the inclusion of the median strip / mid street planting at the sacrifice of street carparking achieves nothing for the tenants or property owners. We request that street parking be left on the [redacted] side of the street outside of this property. Sorry for being late with the feedback we trust it will be accepted.
172		I apologise for not getting any response to the formal consultation process. We have simply been snowed under in work. I have taken your assurances about the envelope provided on face value and if that is what has been provided of as part of this design, then it is difficult to dispute otherwise - but I have to say just looking at the plans, there does appear to be plenty of obstacles to try to wind your way through with and overdimension load. And that is what the substance of my concern is. When members viewed the plans they were immediately looking for any possible alternative routes to try to avoid this area – suffice to say that they were not very successful. So in detail working from the northern end (and travelling south-east): <ul style="list-style-type: none"> - The future gateway artwork needs to be 11.5m apart. - The pedestrian islands before you get to Heathcote Street are central on the road and ideally we would like them deleted. Alternatively they need to be properly mountable – no more than 100mm high with 30 degree angles on the blocks. No handrails. - The trees adjacent to number 651 on each side of the road would appear to make it tight for an overdimension load - The next set of islands before Portman Street, ideally we would like them deleted. Alternatively they need to be properly mountable – no more than 100mm high with 30 degree angles on the blocks if they need to be mounted (given they have planting I assume not), so if possible then to have 7.5m of clear space to one or both sides of the islands to any trees, lightpole or sign. No handrails. - The next set of islands just after Portman Street also have trees adjacent to them. This is a 30km/h environment – do the islands have to be there? Make it a proper pedestrian crossing and then the islands are not required. Else the islands need to be properly mountable – no more than 100mm high with 30 degree angles on the blocks. No handrails. - The planted medians from #683 to approx. #699 needs to have 7.5m of clear space to one or both sides of the islands to any trees, lightpole or sign, to allow an OD load to travel one side or the other, and hang over the median. Ideally delete this as a 30 km/h speed area. - Is that a signalised crossing at #620? If so then the position of any signal poles is crucial. Have to be 7.5 away from the median.

		<p>- The planted median from #636 to approx. #640 needs to have 7.5m of clear space to one or both sides of the islands to any trees, lightpole or sign, to allow an OD load to travel one side or the other. Ideally delete this as a 30 km/h speed area.</p> <p>- The pedestrian islands at approx. #650 are central on the road and ideally we would like them deleted. Alternatively they need to be properly mountable – no more than 100mm high with 30 degree angles on the blocks. No handrails.</p> <p>- The future gateway artwork at approx. # 670 needs to be 11.5m apart while the pedestrian islands there are central on the road and ideally we would like them deleted. Alternatively they need to be properly mountable – no more than 100mm high with 30 degree angles on the blocks. No handrails.</p> <p>The concern I have is that the cumulative effect of having to run over at least 4 sets of pedestrian islands, removing signage and possibly hand rails on each one, at the same time are carefully negotiating through the rest of the obstacles will mean that transport operators will want to avoid this area. It will simply take a lot of time, will hold up other road traffic, and becomes a safety hazard as the load moves slowly down the road, and the traffic piles up in each direction.</p> <p>It is really disappointing to see such a congested road is proposed for an OD route. To be honest I don't recall any such similar examples anywhere around the country.</p> <p>I think that we definitely need to talk more about what is being proposed here. Cheers [REDACTED]</p>
173	Y	<p>My address is [REDACTED] I would very much like to have, Firms Vans and Trucks, not to be parked overnight and all weekends, either side of my drive way, as trying to make a right hand turn out of my drive way, is very dangerous. One has to pull out much to far, and sit to be able to see the way clear. Same thing happens across the road, either side of the School St Annes. I'm very concerned so one will lose their life, out there, as Ferry Road is a very busy road, at all times of the day and night, and speed is an issue.</p> <p>Thank you for your time in reading this.</p>
174	Y	<p>After reviewing the proposal I cannot see too many issues for heavy vehicles that fit the standard heavy vehicle dimensions and mass regulations. However I do concur with the feedback provided by the Heavy Haulage Association in regards to over dimension vehicles and their loads, and the challenges they will face if the proposal is implemented as presently planned. Ferry Road is an important freight corridor, and needs to be considered in light of this as part of the overall network of freight corridors around the greater Christchurch area. Once the alternative route for over dimension and hazardous goods ex the Lyttelton Port over Evans Pass / Sumner Road is reopened the volume of heavy vehicle traffic using Ferry Road will increase. If the use of Ferry Road by over dimension vehicles is going to be restricted, then I think it is important that an easily accessible and viable alternative route that does not push these vehicles down surrounding residential streets needs to be considered.</p>
175	Y	<p>Details of submission (see full submission for General comments) Dr Alastair Humphreys Public Health Physician CDB</p> <p>8 The CDHB is supportive of the plans to enhance the Woolston Village by making this section of Ferry road safer for road users as this reduces the burden of injury on the health sector. We are also supportive of creating more inviting public spaces as these will have a positive effect on people's mental health and wellbeing.</p> <p>9 The CDHB was involved in the Inquiry by Design process for the Ferry road Master Plan. The objectives and actions of the original Ferry Road Master Plan can be clearly seen in this proposed concept plan.</p> <p>10 The CDHB supports the proposal and has some recommendations for consideration which would further improve health outcomes for the community.</p> <p>Specific comments:</p> <p>11 The CDHB supports the creation of a pedestrian –focused environment with wider footpaths that have additional crossing points. This will make Woolston a more walkable community and enable people to easily access daily services including general practitioners. Additional crossing points also will allow bus patrons to have easy access to the shopping precinct.</p> <p>12 The placement of bus stops looks well considered so people can access different sections of the village as needed. The CDHB recommends that consideration is given to the type of landscaping and low plantings that adjoin bus stops. It is important that road users, especially cyclists, have good visibility when approaching bus stops.</p> <p>13 The CDHB is pleased to see that there is a mobility car park outside of the medical centre at 687 Ferry Road.</p> <p>14 The CDHB supports the introduction of a 30 kph speed zone. This was one of the CDHB's original submission points on the Ferry Road master Plan and it will reduce the likelihood of accidents in the village.</p> <p>15 The CDHB supports the introduction of cycle lanes, advanced cycle stop boxes and cycle parking. Active transport contributes to significant health benefits to individuals and communities through increased physical activity opportunities, improved air quality through reduced vehicle emissions and corresponding reduction in associated respiratory illness and an overall reduction of the burden of disease associated with obesity, cardiovascular disease and respiratory illnesses.</p> <p>16 The CDHB is pleased to see that street lighting will be improved as this will potentially lead to a reduction of accidents and injury, as well as crime.</p> <p>17 It is noted that there is a future library and community centre planned for the area. The CDHB encourages the Council to consider accessibility and universal design when it is constructing community facilities and infrastructure. It is important that the built environment be as accessible as possible to people of all ages and abilities.</p> <p>18 Thank you for the opportunity to submit on Woolston Village Concept Plan.</p>
176	Y	<p>I'm writing regarding the Proposed concept for Ferry Road at Woolston Village. I think the plan looks good, just wondered why the road had such a curve in it near St Johns Street?</p> <p>I think consistency in the surface finishes would be an improvement if that's possible? Continuing the cycle lane marking through the town centre (rather than stop start markings) and paving the entire footpath or road (rather than strips at crossings) I think would look better. I gather that would come at additional cost and thought would have to be given to identification of crossings for the sight impaired, but I think it would look less confused and busy for the majority of users.</p> <p>One final thought, there are four established street trees either side of a pedestrian crossing near Portman Street. The existing road has cycle lanes either side and a central island to aid pedestrian crossing. It looks like the proposal is to remove the trees, replace them with new trees and form a new crossing in a similar location. Can you let us know why the existing trees are not being retained and the line of the road adjusted slightly to accommodate them? It looks like the road curves and proposed street trees protrude into the cycle lanes elsewhere, so surely there is scope to accommodate the existing trees?</p>

Report from Linwood-Central-Heathcote Community Board – 20 February 2019

15. Curries Road/Tanner Street - Intersection Improvements

Reference: 19/187352

Presenter(s): Sandra Novais, Project Manager Transport
Barry Hayes, Traffic Engineer Traffic Operations

1. Linwood-Central-Heathcote Community Board Consideration

The Board noted that there are projects within the Linwood-Central-Heathcote Board Area that have been delayed owing to a shortfall of funding and ask Council to consider reallocating the funding from the Curries Road/Tanner Street project to another project within the Board area.

2. Staff Recommendations

That the Linwood-Central-Heathcote Community Board approve and recommend to the Council:

1. The 'do nothing option' for the Intersection Improvements: Curries Road/Tanner Street project.
2. Cancel the project and remove from the Long Term Plan.

3. Linwood-Central-Heathcote Community Board Recommendation to Council

Part A

That Council:

1. [Cancel the 2015-2025 Long Term Plan project Intersection Improvement - Curries Road/Tanner Street \(Project 17402\) and reallocate the funding, in consultation with the Linwood-Central-Heathcote Community Board, to another project within the Linwood-Central-Heathcote Board area that has been delayed owing to a shortfall of funding.](#)

Attachments

No.	Report Title	Page
1	Curries Road/Tanner Street - Intersection Improvements	172

No.	Title	Page
A ↓	Meeting - Curries_Tanner intersection_Scheme Investigation data	178

Curries Road/Tanner Street - Intersection Improvements

Reference: 18/383943

Presenter(s): Sandra Novais – Project Manager
Barry Hayes - Traffic Engineer - CCC Operations

1. Purpose and Origin of Report

Purpose of Report

- 1.1 The purpose of this report is to advise the Waikura/Linwood-Central-Heathcote Community Board of a change in circumstances at the Curries Road level rail crossing and request that the Linwood-Central-Heathcote Community Board approve the 'do nothing option' for this project and recommend to Council that the project be cancelled. This is as a result of changes in Kiwirail Operations.

Origin of Report

- 1.2 This report is staff generated following detailed project investigations.

2. Significance

- 2.1 The decision in this report is of low significance in relation to the Christchurch City Council's Significance and Engagement Policy.
 - 2.1.1 The level of significance was determined by using the engagement significance matrix. The engagement assessment performed by staff shows that the matter is of low significance due to the fact that no changes are proposed to the current layout of the intersection.

3. Staff Recommendations

That the Linwood-Central-Heathcote Community Board approve and recommend to the Council:

1. The 'do nothing option' for the Intersection Improvements: Curries Road/Tanner Street project.
2. Cancel the project and remove from the Long Term Plan.

4. Key Points

- 4.1 This report supports the [Council's Long Term Plan \(2015 - 2025\)](#):
 - 4.1.1 Activity: Roads & Footpaths
 - Level of Service: 16.0.3.0 Maintain resident satisfaction with road condition - =38%
- 4.2 The following feasible options have been considered:
 - Option 1 – Do nothing (preferred option)
 - Option 2 – Continue with a project despite need not being there.
- 4.3 Option Summary – 'Do nothing' Advantages and Disadvantages (Preferred Option)
 - 4.3.1 The advantages of this option include:
 - It reflects the current situation at the intersection and rail crossing.

- No road works disturbance to residents.

4.3.2 The disadvantages of this option include:

- Enhancement opportunity at the intersection is lost.

5. Context/Background

Location

- The roads and their classifications within this project are:
 - Tanner St– Collector
 - Curries Rd – Collector
 - Maunsell St – Collector (East of the intersection - towards Cumnor)
 - Maunsell St – Local (West of the intersection - towards Garland)
- These roads do not form part of the freight network, walking network, core public transport network or local cycleway network, as outlined in the CTSP.
- The Heathcote Major Cycleway Route is currently being constructed along Cumnor Terrace to the east of this intersection.
- The location of the project is shown in Figure 1 below.



Figure 1 – Location of the Tanner/Curries/Maunsell intersection.

- 5.2 The project brief identified a traffic efficiency problem at the intersection during the shunting operation at the railway crossing on Curries Road. Shunting operations were causing the line to be closed to road traffic, hence resulted in delays to traffic with cars waiting for long time to be able to cross the railway line.
- 5.3 In the analysis of the 10 year CAS data 2007 – 2017 there were three crashes at this intersection. Two of these were non injury crashes and one resulted in a minor injury.

- 5.4 **Attachment 1** of this report contains information about crashes, traffic volumes, rail activity and operations works in the intersection.

Project Objectives

- 5.5 The original project objectives are outlined below.
- 5.5.1 Improve capacity and minimise traffic delays at the intersection especially during shunting operation.
 - 5.5.2 Allow efficient movements for heavy traffic through the intersection;
 - 5.5.3 Free up Tanner St Corridor and encourage Tanner Street traffic to use the Cumnor Terrace and Chapman Road route especially during shunting operation;
 - 5.5.4 Align the intersection design with the Heathcote Expressway Major Cycleway proposal
 - 5.5.5 Maintain safety for all road-users; and
 - 5.5.6 Develop a cost-effective solution.

Evaluation of objectives

- 5.6 The primary objective of the scheme was to reduce the delay experienced at this intersection due to shunting at the railway line.
- 5.7 Based on the investigation undertaken and outlined in the scheme report, it is considered that the rail crossing no longer has a significant detrimental impact on the capacity of the road network in this location. The average delay is less than 2 minutes when the crossing is in operation and the average queue length is 4 vehicles. Shunting on average occurs 5 times/day.
- 5.8 Since the project was initiated, railway operations have changed. Lyttelton Port Company's (LPC) 'Inland' facility at Rolleston is now the major freight hub (where previously it was in the CityDepot/Woolston area) and the majority of shunting operations are now carried out at Rolleston. Major freight roading networks have been developed to support this change (e.g. extension of Halswell Junction road and extension of rail tracks by Hornby).
- 5.9 The LPC Inland Port at Rolleston, named 'MidlandPort' is considered critical by the Port Company for increasing container movement by rail and with the aim of removing trucks from Christchurch roads and allowing customers to avoid road congestion and delays.
- 5.10 Mindful of the above, and given that the primary objective for the project is no longer required as there is little delay to the traffic and no benefit from the proposed works, the project should be cancelled.

Conclusions

- 5.11 Based on the above the project team recommends the 'do nothing option' for this project as it is considered any improvements are not necessary at this intersection due to the change in the railway operations since the project was initiated.

6. Option 1 – Do nothing – remove project from LTP (preferred option)

Option Description

- 6.1 For this 'Do nothing' option no changes to the intersection layout are required. Normal maintenance activity would continue.

Significance

- 6.2 The level of significance of this option is low consistent with Section 2 of this report.

Impact on Mana Whenua

- 6.3 This option does not involve a significant decision in relation to ancestral land or a body of water or other elements of intrinsic value, therefore this decision does not specifically impact Ngāi Tahu, their culture and traditions.

Community Views and Preferences

- 6.4 This project has not reached the consultation phase and no options were presented to the community.

Alignment with Council Plans and Policies

- 6.5 This option is inconsistent with Council's Plans and Policies, especially the Long Term Plan 2015-25, which includes improvements for this intersection. Council approval is required for this project to be cancelled.

Financial Implications

- 6.6 Cost of Implementation - nil
- 6.7 Maintenance / Ongoing Costs – there will be no additional maintenance costs if the intersection stays the way it is.
- 6.8 Funding source – n/a

Legal Implications

- 6.9 There is not a legal context, issue or implication relevant to this decision.

Risks and Mitigations

- 6.10 There is no significant risk associated to the implementation of this option for the intersection.
- 6.11 No barriers arms are present at the intersection currently.

Implementation

- 6.12 Implementation dependencies - n/a
- 6.13 Implementation timeframe – n/a

Option Summary - Advantages and Disadvantages

- 6.14 The advantages of this option include:
- It reflects current situation at the intersection and rail crossing.
 - No road works disturbance to residents.
- 6.15 The disadvantages of this option include:
- Enhancement opportunity at the intersection is lost.

7. Option 2 - Continue with the intersection upgrade project

Option Description

- 7.1 This option involves progressing with the scheme design, consultation, design works and construction works for the project and allow for potential changes to the physical layout of the intersection.

Significance

- 7.2 The level of significance of this option is low consistent with Section 2 of this report.

Impact on Mana Whenua

- 7.3 This option does not involve a significant decision in relation to ancestral land or a body of water or other elements of intrinsic value, therefore this decision does not specifically impact Ngāi Tahu, their culture and traditions.

Community Views and Preferences

- 7.4 This project has not reached the consultation phase.

Alignment with Council Plans and Policies

- 7.5 This option is consistent with Council's Plans and Policies, especially the Long Term Plan 2015-25, which includes improvements for this intersection, but, it does not address the issues that triggered the project and as the issues are now considered minor the option is not recommended.

Financial Implications

- 7.6 Cost of Implementation - \$75,000 - \$300,000
- 7.7 Maintenance / Ongoing Costs - there may be additional maintenance costs that are yet to be determined.
- 7.8 Funding source – previous LTP (2015-2025)

Legal Implications

- 7.9 Nil

Risks and Mitigations

- 7.10 There is a risk of public perception that Council is utilising funds for projects that have no benefit.

Implementation

- 7.11 Implementation dependencies - n/a
- 7.12 Implementation timeframe – n/a

Option Summary - Advantages and Disadvantages

- 7.13 The advantages of this option include:
- Potential enhancement of street environment due to new landscaping.
- 7.14 The disadvantages of this option include:
- Funding is expended for no benefit.

Attachments

No.	Title	Page
A	Meeting - Curries_Tanner intersection_Scheme Investigation data	

Confirmation of Statutory Compliance

Compliance with Statutory Decision-making Requirements (ss 76 - 81 Local Government Act 2002).
(a) This report contains:

- (i) sufficient information about all reasonably practicable options identified and assessed in terms of their advantages and disadvantages; and
 - (ii) adequate consideration of the views and preferences of affected and interested persons bearing in mind any proposed or previous community engagement.
- (b) The information reflects the level of significance of the matters covered by the report, as determined in accordance with the Council's significance and engagement policy.

Signatories

Author	Sandra Novais - Project Manager
Approved By	Lynette Ellis - Manager Planning and Delivery Transport Richard Osborne - Head of Transport David Adamson - General Manager City Services

PROJECT: Curries Road/Tanner Street - Intersection Improvements
CB meeting date: 17 October 2018

INVESTIGATION DATA - SUMMARY

Crashes

Table 1: Crash type and number per year

Crash Type	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	%
Bend - lost control/head on	1	0	0	0	0	0	0	0	0	0	33
Crossing/turning	2	0	0	0	0	0	0	0	0	0	66
Total	3	0	100								

Traffic volumes

When the project was initiated it was considered that traffic flow has increased in the area due to development of the tannery, industry and port traffic. Although a traffic count has been completed as part of this scheme, there is no historic data at the same location to compare this to. There is however traffic counts on Curries Road at the rail crossing. The combined flows are shown below for 2012, 2009 and 2006, for the AM and PM peak are shown in table.

The intersection count undertaken for this scheme (2015) shows the AM and PM peak flows and can be used to find the traffic flows south of the intersection, where the previous surveys were undertaken at the rail crossing.

Table 2: comparison of traffic flows

	2015	2012	2009	2006
07:00 – 08:00	131	113	146	137
08:00 – 09:00	168	136	172	157
16:00 – 17:00	183	163	176	163
17:00 – 18:00	152	123	145	134

The comparison shows that there has not been substantial growth in traffic flow. The traffic flows were growing prior to 2009 however they dropped significantly between 2009 and 2011, presumably due to the effects of the earthquake. The most recent counts for 2015 are broadly comparable with 2009.

Rail Activity

The primary objective of the scheme was to reduce the delay experienced at this intersection due to shunting at the railway line. This was based on the fact that the Tanner Street/Curries Road/Maunsell Street Intersection is a priority intersection and the Curries Road- Tanner Street have priority over Maunsell Street. The intersection experiences some delays during the shunting operation at railway line (i.e. located at around 60 meter south of the intersection), which result in longer queues along Curries Road and Tanner Street. Moreover, the current road layout does not offer any alternative to the traffic on Curries Road and, depending on the time of shunting, the traffic especially along Tanner Street and Curries Road approaches get blocked, congested and create frustration to all road users.

A survey of the railway crossing was undertaken between Monday 12th and Friday 16th October 2015, between 7am and 7pm each day, recording operation of the crossing in respect to stoppages due to activity on the tracks, and operation of the intersection. From the survey, the average frequency of the crossing operation during the AM and PM peak periods is shown in a graph in Figure 1.

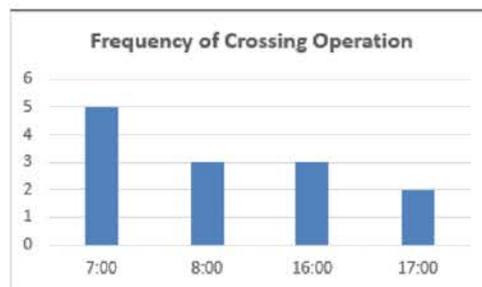


Figure 1: Frequency of Crossing Operation

Traffic disruption due to the rail crossing being in operation varies from less than a minute to several minutes and sometimes up to 5 minutes. From the seven day survey, it was found that the crossing in operation time varied between an approximate minimum of 10 seconds up to a maximum of 7 minutes, with an average of 1 minute 46 seconds. Figure 2 identifies how often the crossing was used for the various crossing times.

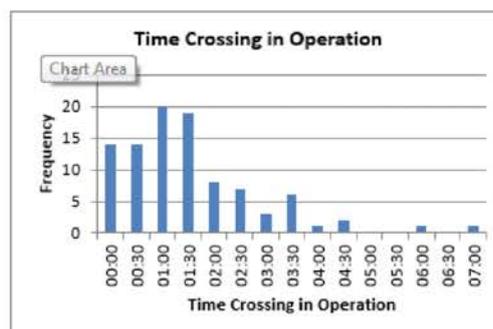


Figure 2: Distribution of Time which Crossing is in Operation

The longer crossing operation times resulted in traffic queuing that backed up over the Tanner Street / Curries Road / Maunsell Street intersection. In addition there were periods where the shunting operation was not physically blocking the crossing but the crossing lights and bells are operating. This in turns leads to some interesting traffic behaviour including:

People doing u turns and finding alternatives routes, in particular Cumnor Tce / Chapmans Road

Often the road is not physically blocked by engines or wagons whilst the crossing is in operation, so people will overtake the queue and crossing the railway lines while the crossing lights and bells are operating

From the survey of this crossing, it was found that there was a maximum of 9 vehicles queued at any one time when the crossing was in operation. Average queue length was approximately 3 vehicles.

Kiwirail has advised that it does not intend to install barrier arms or modify the rail yards to limit the effect of shunting on the road crossing. It also advises that it does not have a formal shunting schedule and does not have records of shunting times / delays on road uses.

During the peak hour between 4pm and 5pm there were 183 vehicles crossing the railway lines, 106 northbound and 77 southbound.

	Southbound	Northbound	Total
7:00	83	48	131
8:00	93	75	168
16:00	77	106	183
17:00	78	74	152

Council Operations works in the intersection

'No stopping' lines have recently been installed at the intersection to increase the visibility and manoeuvring space for vehicles using the intersection.

Vehicles turning out of Maunsell Street west now have visibility splays in either direction meeting the requirements set out in Austroads. The visibility for vehicles turning out of Maunsell Street east however still does not meet current standards. Visibility to the north, near side traffic, is below the requirements for both the left and right turners measuring 60 metres and 40 metres respectively. The requirements for a 50 km/h road is 90 metres. Visibility to the south meets the requirements in for both movements.

The shunting at this location is not an issue anymore as Kiwirail has changed the operations of this line to Rolleston.

Report from Linwood-Central-Heathcote Community Board – 4 February 2019

16. Redcliffs Transport Project - Redcliffs School Transport Safety Requirements

Reference: 19/136280
Mark Gregory – Transport Network Planner

Presenter(s): Isabelle Gensburger – Project Manager
Tara King – Senior Engagement Advisor

1. Linwood-Central-Heathcote Community Board Consideration

1. The Board received and considered deputations from the Redcliffs School Board of Trustees, Redcliffs School Principal and Mr Macadam a local resident.
2. The Board considered that the speed on Main Road, Sumner needs to be reduced in the vicinity of the new Redcliffs School and acknowledged that vehicle speeds around schools is an issue throughout the city. The Board requested staff to engage with the community on the potential for 30kph speed restrictions on Beachville Road and Celia Street and asks the Council to advocate on behalf of the community for 30kph school speed zones in line with other slow speed zones in the city.

2. Staff Recommendations

That the Waikura/Linwood-Central-Heathcote Community Board:

1. Approve the preferred Option, consisting of the following (in accordance with **Attachment A**)
 - a. Establish a turning restriction, banning the right turn movement from Main Road (from the east) to Beachville Road (to the north/east).
 - b. Extend the traffic island at the intersection of Main Road/Beachville Road intersection, as per **Attachment A**.
 - c. Disestablish the bus stop on the south side of Main Road, including the indented bay, (located approximately 70 metres east of McCormacks Bay Road).
 - d. Resolve no stopping markings in place of the bus stop (entirely) on the south side of Main Road (approximately 70 metres east of McCormacks Bay Road).
 - e. Establish a zebra crossing, to operate as a School patrol crossing, outside of 25-27 Main Road, including kerb build outs.
 - f. Remove the pedestrian crossing opposite the proposed Redcliffs Park (the 'old School site').
 - g. Construct a refuge island and kerb build outs in place of the pedestrian crossing, opposite the proposed Redcliffs Park.
 - h. Establish a kerb extension and pedestrian crossing refuge island, at the intersection of Beachville Road / Celia Street.

- i. Establish a footpath on Celia Street, between 53 Celia Street and Beachville Road (a distance of approximately 93 metres).
2. That the Waikura/Linwood-Central-Heathcote Community Board recommend to the Council to approve:
 - a. A new variable speed limit of 40km/h (School Zone), as per **Attachment A**:
 - i. On Main Road, commencing approximately 42 metres west of the McCormacks Bay Road centre line, for a distance of approximately 480 metres.
 - ii. On Beachville Road, from Main Road (at Main Road / Beachville Road/McCormacks Bay Road intersection), to outside 107 Beachville Road; a distance of approximately 320 metres.
 - iii. On Celia Street, outside 47 Celia Street to the intersection of Beachville Road/Celia Street; a distance of approximately 140 metres.
 - iv. On McCormacks Bay Road for a section of approximately 20m south of Main Road.
 - b. Cycle lanes on approaches to proposed zebra crossing and refuge island, in accordance with **Attachment A**.

3. Linwood-Central-Heathcote Community Board Decisions Under Delegation

Part C

That the Waikura/Linwood-Central-Heathcote Community Board:

1. Approve the preferred Option, consisting of the following (in accordance with **Attachment A**)
 - a. Establish a turning restriction, banning the right turn movement from Main Road (from the east) to Beachville Road (to the north/east).
 - b. Extend the traffic island at the intersection of Main Road / Beachville Road intersection, as per **Attachment A**.
 - c. Disestablish the bus stop on the south side of Main Road, including the indented bay, (located approximately 70 metres east of McCormacks Bay Road).
 - d. Resolve no stopping markings in place of the bus stop (entirely) on the south side of Main Road (approximately 70 metres east of McCormacks Bay Road).
 - e. Establish a zebra crossing, to operate as a School patrol crossing, outside of 25-27 Main Road, including kerb build outs.
 - f. Remove the pedestrian crossing opposite the proposed Redcliffs Park (the 'old School site').
 - g. Construct a refuge island and kerb build outs in place of the pedestrian crossing, opposite the proposed Redcliffs Park.
 - h. Establish a kerb extension and pedestrian crossing refuge island, at the intersection of Beachville Road / Celia Street.
 - i. Establish a footpath on Celia Street, between 53 Celia Street and Beachville Road (a distance of approximately 93 metres).

- j. Request staff to engage with the community on the potential for 30kph speed restrictions on Beachville Road and Celia Street.

4. Linwood-Central-Heathcote Community Board Recommendation to Council

Part A

That the Council:

1. Approves new variable speed limit of 40km/h (School Zone), as per **Attachment A**:
 - a. On Main Road, commencing approximately 42 metres west of the McCormacks Bay Road centre line, for a distance of approximately 480 metres.
 - b. On Beachville Road, from Main Road (at Main Road/Beachville Road/McCormacks Bay Road intersection), to outside 107 Beachville Road; a distance of approximately 320 metres.
 - c. On Celia Street, outside 47 Celia Street to the intersection of Beachville Road/Celia Street; a distance of approximately 140 metres.
 - d. On McCormacks Bay Road for a section of approximately 20 metres south of Main Road.
 - e. Cycle lanes on approaches to proposed zebra crossing and refuge island, in accordance with **Attachment A**.
2. Advocates to the New Zealand Transport Agency (NZTA) for 30kph school speed zones in line with other slow speed zones in the city.

Attachments

No.	Report Title	Page
1	Redcliffs Transport Project - Redcliffs School Transport Safety Requirements	184

No.	Title	Page
A ↓	Redcliffs Transport Plan for approval	198
B ↓	Redcliffs Transport Project Public Information Leaflet	199
C ↓	Redcliffs Transport Project Submission Form	201
D ↓	Redcliffs map of submissions	203
E ↓	Map of all submissions	204

Redcliffs Transport Project - Redcliffs School Transport Safety Requirements

Reference: 19/14647
Mark Gregory – Transport Network Planner,
Presenter(s): Isabelle Gensburger – Project Manager
Tara King – Senior Engagement Advisor

1. Purpose and Origin of Report

Purpose of Report

- 1.1 The purpose of this report is for the Waikura/Linwood-Central-Heathcote Community Board to approve the proposed changes to the road network, associated with ensuring a safe environment for the proposed Redcliffs School development (**Refer Attachment A**).

Origin of Report

- 1.2 This report is staff generated as part of the 2018/19 funding round process.

2. Significance

- 2.1 The decisions in this report are of medium significance in relation to the Christchurch City Council's Significance and Engagement Policy.
 - 2.1.1 The level of significance was determined by using the engagement and significance matrix. Staff have considered the significance of the decision to be made by the Community Board and Council. Their assessment is that the matter is of medium significance for the following reasons:
 - 2.1.2 There is a strong interest within the local community in relation to any work that is associated with the new Redcliffs School.
 - 2.1.3 The new Redcliffs School cannot operate without a full safety audit that includes specific consideration of access to the school and speed in the area. This transport plan works to address this requirement.
 - 2.1.4 There are strong safety benefits in the implementation of the transport plan, as it will ensure that children and parents accessing the school can do this safely and traffic is managed appropriately.
 - 2.1.5 The community engagement and consultation outlined in this report reflect this assessment.

3. Staff Recommendations

That the Waikura/Linwood-Central-Heathcote Community Board:

1. Approve the preferred Option, consisting of the following (in accordance with **Attachment A**)
 - a. Establish a turning restriction, banning the right turn movement from Main Road (from the east) to Beachville Road (to the north/east).
 - b. Extend the traffic island at the intersection of Main Road / Beachville Road intersection, as per **Attachment A**.

- c. Disestablish the bus stop on the south side of Main Road, including the indented bay, (located approximately 70 metres east of McCormacks Bay Road).
 - d. Resolve no stopping markings in place of the bus stop (entirely) on the south side of Main Road (approximately 70 metres east of McCormacks Bay Road).
 - e. Establish a zebra crossing, to operate as a School patrol crossing, outside of 25-27 Main Road, including kerb build outs.
 - f. Remove the zebra crossing opposite the proposed Redcliffs Park (the 'old School site').
 - g. Construct a refuge island and kerb build outs in place of the zebra crossing, opposite the proposed Redcliffs Park.
 - h. Establish a kerb extension and pedestrian crossing refuge island, at the intersection of Beachville Road / Celia Street.
 - i. Establish a footpath on Celia Street, between 53 Celia Street and Beachville Road (a distance of approximately 93 metres).
2. That the Waikura/Linwood-Central-Heathcote Community Board recommend to the Council to approve:
- a. A new variable speed limit of 40km/h (School Zone), as per **Attachment A**:
 - i. On Main Road, commencing approximately 42 metres west of the McCormacks Bay Road centre line, for a distance of approximately 480 metres.
 - ii. On Beachville Road, from Main Road (at Main Road / Beachville Road/McCormacks Bay Road intersection), to outside 107 Beachville Road; a distance of approximately 320 metres.
 - iii. On Celia Street, outside 47 Celia Street to the intersection of Beachville Road/Celia Street; a distance of approximately 140 metres.
 - iv. On McCormacks Bay Road for a section of approximately 20m south of Main Road.
 - b. Cycle lanes on approaches to proposed zebra crossing and refuge island, in accordance with **Attachment A**.

4. Key Points

- 4.1 This report supports the [Council's Long Term Plan \(2018 - 2028\)](#):
- 4.1.1 Activity: Traffic Safety and Efficiency
- Level of Service: 10.0.6.1 Reduce the number of casualties on the road network - =129 (reduce by 5 or more per year)
- 4.2 The following feasible options have been considered:
- Option 1 – Approve the Redcliffs Transport Plan as per attachment A (preferred).
 - Option 2 – Do not approve the Redcliffs Transport Plan and request staff to consider alternative designs and re-consult with the community.
- 4.3 Option Summary - Advantages and Disadvantages (Preferred Option)
- 4.3.1 The advantages of this option include:
- Meets objectives relating to safety and the design is safety audited. The outcome of Audit finds no outstanding safety matters.

- Ensures that effects on the function of the Arterial Road network, including the strategic freight corridor, are limited.
 - Minimum impact on surrounding communities (e.g. no reduction in availability of on street car parking).
 - Achieves financial and legal requirements (outlined below, section 6.32).
 - Designed to be appropriately scaled to meet anticipated needs and demands.
- 4.3.2 The disadvantages of this option include:
- It has not been possible to include a crossing point on Main Road in immediate vicinity of site pedestrian access.
- 4.4 Option Summary – Advantages and Disadvantages (Option 2)
- 4.4.1 The advantages of this option include:
- There are no identified advantages at this stage.
- 4.4.2 The disadvantages of this Option
- Uncertain that safety objectives would be achieved, and need for revised planning, design and safety auditing.
 - Uncertain that outcome would achieve financial and legal objectives.
 - Uncertain that outcome would be appropriately scaled to meet anticipated needs and demands.

5. Context/Background

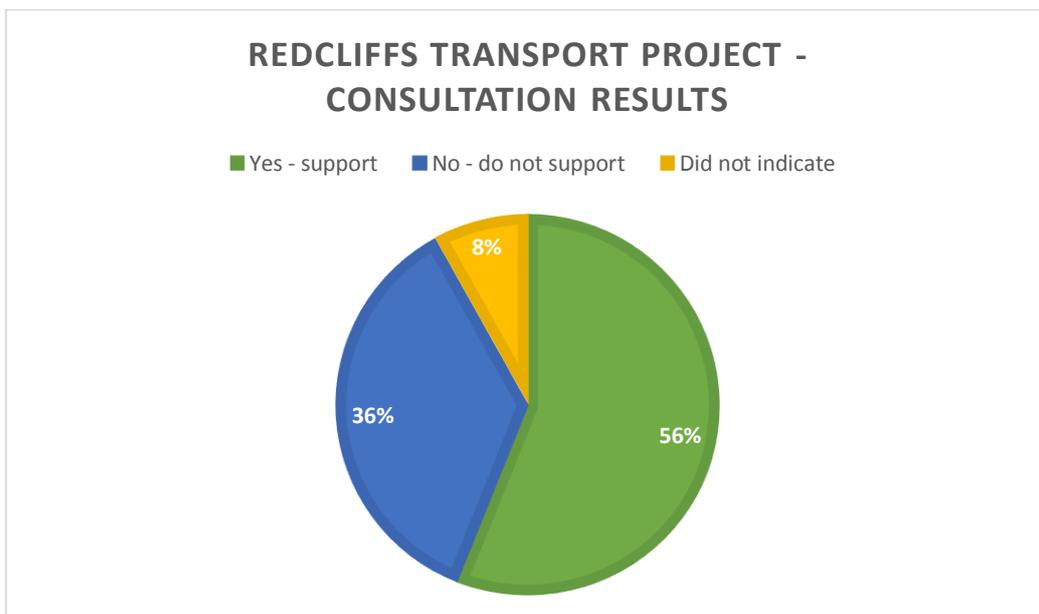
- 5.1 The Ministry of Education (MoE) are planning to operate a school, initially for approximately 300 pupils (potentially increasing to 400 over time). The MoE have acquired the former Redcliffs Park site for this purpose, and have been granted resource consent for the project. Following the preferences of Council (7 September 2017), conditions have been included in both the Land Sale Agreement and Resource Consent, that suitable safety remediation works be undertaken in order to ensure safe pedestrian access to the proposed school, with particular focus on Main Road. Substantial funding has been sought from the MoE, and the design has been undertaken in partnership with the MoE.
- 5.2 The objectives of the scheme are to enable safe pedestrian access to the proposed school, without compromising the function of the network, including preserving the 'alternative freight route' function of Main Road. The design has been safety audited (with a 'post implementation audit' to follow) and no outstanding safety concerns are identified. Whilst achieving the objectives, the preferred option is also suitably scaled (in terms of cost and likely effects) to the size of the proposed school, and requires no additional funding from Council over and above pre-existing proposals.
- 5.3 Several alternative design options have been considered, including a crossing closer to the proposed building access. However, it has not been possible to achieve a crossing which would comply with necessary safe design standards without compromising the Arterial and freight function of Main Road.
- 5.4 The preferred option achieves the provision of safe walking routes, (integrated with the location of pick up – drop off points) including carefully aligned crossings. Pedestrians will not be required to walk 'out of their way' to access a safe crossing, meaning that all pedestrian crossing activity of Main Road are expected to be managed, and within a reduced speed environment.

- 5.5 Safety works will continue after implementation of the scheme, to ensure that access to the school operates as intended. A School Travel Plan is to be prepared in partnership between the MoE/Board of Trustees and the Council’s Travel Demand Management Officer, and ensure ongoing dialogue in this space. A post implementation Safety Audit will also be undertaken, and monitoring by Council’s transport team.

Community Consultation

- 5.6 Community Consultation on the Redcliffs Transport Project was undertaken from 19 November 2018 to 17 December 2018. The submission form asked submitters to indicate whether: Yes, they supported the traffic changes; or no they did not support the traffic changes. There was also the opportunity to provide any further comments on the transport plan. (Refer to **Attachment B and C** for the public information leaflet and submission form).
- 5.7 A public drop in session was held on Tuesday 27 November from 4 pm to 6 pm at the Redcliffs Mt Pleasant Bowling Club in Redcliffs. There were 15 residents who attended the drop in session over the two hour period, to find out more information on the project and to drop off their feedback forms. Generally those who attended supported the transport plan but had some concerns about the increase in traffic on Celia Street and the removal of the bus stop.
- 5.8 Approximately 150 consultation leaflets were hand delivered to properties surrounding the new Redcliffs School location, including 68 absentee land owners. A link to the consultation page on ‘Have Your Say’ was also emailed out to 798 key stakeholders (those who participated in the consultation on the new Redcliffs School land swap) and printed copies of the consultation leaflet were made available at the Linwood Service Centre, Civic Offices, Matuku Takotako: Sumner Centre, Redcliffs Village Library, Redcliffs School and Beckenham Service Centre.
- 5.9 A Newsline article was also published on the 19 November 2018 and included a link to where online submissions could be made <https://ccc.govt.nz/news-and-events/newsline/show/3178>
- 5.10 At the close of consultation 48 submissions were received with 27 (56%) in support of the transport plan, 17 (36%) not in support and 4 (8%) who did not indicate.

Yes - support	No – do not support	Did not indicate	Total
27 (56%)	17 (36%)	4 (8%)	48



- 5.11 All submissions have been provided to the Waikura/Linwood-Central-Heathcote Community Board and are publicly available on the Council 'Have Your Say' page electronically <https://ccc.govt.nz/the-council/consultations-and-submissions/haveyoursay/show/207>

6. Option 1 – Redcliffs Transport plan as per attachment A (preferred)

Option Description

- 6.1 A package of measures intended to facilitate safe pedestrian and cyclist access to the proposed Redcliffs School site.

Significance

- 6.2 The level of significance of this option is medium consistent with section 2 of this report.
- 6.3 Engagement requirements for this level of significance are consistent with the level of significance for this project. These activities are included in section 5.2 to 5.5 of this report.

Impact on Mana Whenua

- 6.4 This option does not involve a significant decision in relation to ancestral land or a body of water or other elements of intrinsic value, therefore this decision does not specifically impact Ngāi Tahu, their culture and traditions.
- 6.5 Mahaanui Kurataiao Limited (MKT) have been provided with all the information on this project. The project team had not received specific feedback from MKT at the time of writing this report.

Community Views and Preferences

- 6.6 Local residents surrounding the new Redcliffs School location and those who use the school are specifically affected by this option due to their proximity to the new school and their use of the school. Their views have been collected as part of the consultation process.
- 6.7 At the close of consultation 48 submissions were received with 27 (56%) in support of the transport plan.
- 6.8 The Redcliffs School Board of Trustees support the transport plan, but would prefer the speed limit to reduce to 30 km/h instead of 40 km/h.
- 6.9 The Ministry of Education also support the transport plan.
- 6.10 Environment Canterbury support the transport plan, however they do have concerns about the space left between bus stops, in particular with the removal of the bus stop on the corner of Main Road and McCormacks Bay Road.
- 6.11 The location of other submissions and whether they support the transport plan is available on a on the attached map (refer to **Attachments D and E**).

Themes relating to those who support the Redcliffs Transport Plan

- 6.12 For those submitters who supported the transport plan, the common reasons were:

Reasons for supporting the plan	Submitter ID #	No. of comments
Good safety improvements	20615, 20598, 20583, 20513, 20205	5
Speed reductions good	20603, 20583, 20573, 20513, 20361	5
Happy with the pedestrian crossings	20603, 20598, 20205, 20195, 20167	5

6.13 For those who did support the transport plan there were also further requests:

Requests	Submitter ID #	No. of comments
Move zebra crossing closer to the school	20598, 20583, 20513, 20540	4
Reduce the 40 km/h school speed limit to 30 km/h (extend to Celia Street and Beachville Road).	20598, 20583, 20513	3
Do not ban the right turn onto Beachville Road from Main Road (Causeway end)	20287, 20222	2
Install traffic lights at the Beachville Road and Main Road intersection (Causeway end).	20183	1

6.14 Project team comments in relation to these are as follows (where relevant):

Moving of the zebra crossing

6.15 There were four comments from those who support the transport plan, requesting that the zebra crossing is moved closer to the school.

“We would like to ask that the new zebra crossing is places as close as possible to the school. Closer than planned would be very much appreciated”. Submitter ID #20598.

Due to other technical challenges, there isn’t room to locate the crossing directly outside the school gate. We have instead located is as close as possible, and have also ensured that the location of the crossing suits all users.

School speed zone reduced from 40 km/h to 30 km/h

6.16 There were three comments from those who support the transport plan, requesting that the 40 km/h speed limit is reduced further to 30 km/h and includes all of Celia Street. There were also two separate comments requesting that the entire length of Celia Street was included in the speed reduction area.

“We would prefer a 30kph rather than 40kph speed limit around the school, including all of Beachville and Celia as these streets will have children crossing to the school all along their lengths. The evidence is definitive on how much safer for pedestrians 30kph is than 40kph”. Submitter ID #20583.

The proposed 40km/h limit is cognisant with standard school speed zone treatments around the City; however, the project team will monitor the performance of the school speed zone post implementation, and recommend proposed changes if necessary (noting that these will require special approval from the New Zealand Transport Authority).

Celia Street already has traffic calming measures in place with the narrowing of the road and installation of the islands. It is considered as an existing low speed environment.

Do not ban the right turn into Beachville Road

6.17 There were three comments from those who support the transport plan, requesting that the right turn into Beachville Road from Main Road (at the Causeway end) is not banned.

“The proposal to prohibit a right turn into Beachville Road for cars coming from Sumner should be rejected. It will just increase traffic along Beachville Road and past the school, and is entirely unnecessary”. Submitter ID #20287.

The main purpose of this plan is to ensure it is safe and the design has been safety audited. The current space available for right turning traffic will not be enough, and the result will be increased delays on Main Road, as the right turn queue ‘over spills’. Furthermore, the presence of a right turn queue will obstruct pedestrian sight distance at the crossing. Therefore, if the right turn is in place it will create congestion issues on the Arterial Road network and visibility issues for pedestrians using the pedestrian refuge island.

Installation of traffic lights at the Beachville Road and Main Road intersection

6.18 There was one comment from a submitter who supports the transport plan, suggesting a set of signalised traffic lights is installed at the Beachville Road and Main Road intersection (Causeway end).

“I do wonder whether with the extra traffic, whether lights should be installed at this intersection, with pedestrian crossing for school children”. Submitter ID #20183

Signalised traffic lights were considered for this intersection, but the proposal did not meet the test in relation to demand, cost and network impacts. The size of the school is not large enough to generate enough traffic to justify the significant cost for signalised lights. In order for the lights to work appropriately the McCormacks Bay Road and Main Road intersection (opposite Beachville Road) would also require traffic lights, which would also increase the cost and put it well outside the available budget.

Themes relating to those who do not support the Redcliffs Transport Plan

6.19 For those submitters who did not support the transport plan, the common reasons were:

Reasons for not supporting the plan	Submitter ID #	No. of comments
Concern over increased congestion and traffic issues	20422, 20356, 20297, 20158	4
No mention of cyclists in the transport plan	20641, 20605, 20599,	3
Do not support right turn ban from Main Road onto Beachville Road (Causeway end).	20400, 20398	2
Request to see the 40 km/h speed limit reduced to 30 km/h	20605, 20599	2
Request for roundabout installation at Beachville Road and Main Road intersection (Causeway end)	20207	1
Request for traffic lights to be installed at Beachville Road and Main Road intersection	20338	1

6.20 Project team comments in relation to these are as follows (where relevant).

Concern over increased congestion and traffic issues

6.21 There were four comments from submitters who did not support the transport plan, in relation to the school traffic creating further issues in the area.

“Very concerned about the impact of significant increased traffic on homes and community in narrow Celia and Beachville Roads, congestion, parking and traffic speed. Neither road was ever intended as a main traffic thoroughfare to and from a school. Submitter ID #20422.

The transport plan provides three opportunities for accessing the school with either Main Road, Beachville Road or Celia Street, which should split up traffic numbers. The school is also working on a school travel plan as part of the conditions of the resource consent, this plan will work to actively encourage students to walk or cycle to school instead.

The Redcliffs Transport Plan will be an improvement to what is currently in place. The site will also be monitored to ensure that it is working appropriately.

No mention of cyclists in the transport plan

- 6.22 There were three comments from submitters who did not support the transport plan, as the plan made no mention of cyclists.

“I am concerned about the lack of cycling facilities in this plan. Main Road and Beachville Road are important cycling connections between Sumner to the east and the rest of Christchurch to the west, and these works would be an excellent opportunity to make safer and more attractive”. Submitter ID #20605.

Cycle lanes will continue to operate along Main Road as they have done previously. The Coastal Pathway is also available for some pupils to use. There is not enough road space to separate the cycleway with separator posts and this route is not a major cycleway route. We also need to accommodate heavy vehicle trucks, as they will use Main Road again once Sumner Road is re-opened.

Do not support right turn ban from Main Road onto Beachville Road

- 6.23 There were two comments from submitters who did not support the transport plan, as they do not support the right turn ban from Main Road onto Beachville Road (Causeway end).

“I support everything except the no right turn onto Beachville Road from Main Road – while I think it is a good idea to reduce potential congestion around the new pedestrian crossing, I am worried that it would funnel a significant amount of school traffic down Celia Street. Celia Street is narrow and not suited to heavy traffic volumes”. Submitter ID #20400

Please refer to project team comments in section 6.17 of this report.

Speed zone reduced from 40 km/h to 30 km/h

- 6.24 There were two comments from submitters who did not support the transport plan, as they would like to request the speed zone is changed to 30 km/h.

“I would also support lowering a speed limit to 30 km/h in a school zone rather than 40 km/h. A lower speed limit will not significantly increase travel time, as it does not affect average speed as much as it affects top speeds, but the security gain for cyclists, particularly children cycling to school, will be worth it”. Submitter ID #20605

Please refer to project team comments in section 6.16 of this report.

Request for roundabout installation at the Beachville Road and Main Road intersection

- 6.25 There was one submitter who did not support the transport plan, who suggested that a roundabout would work better at the Beachville Road and Main Road intersection (Causeway end).

“A safer option would be to realign McCormacks Bay Road slightly so that it lines up more closely with Beachville Road and install a mini roundabout”. Submitter ID #20207.

There would be a significant cost to install a roundabout at this intersection, as additional land would be required. Given the relatively low turning traffic volumes, compared to non-turning, the level of service for the side roads would not be improved by a roundabout, meaning that the sought after improvements would not be achieved by a roundabout.

Request for traffic lights to be installed at Beachville Road and Main Road intersection

6.26 There was one submitter who did not support the transport plan, who suggested that a set of signalised traffic lights would work better at the Beachville Road and Main Road intersection (Causeway end).

“For the McCormacks Bay/Beachville/Main Road intersections, install lights after the intersection (on the Causeway) to enable pedestrians/cyclist to join the coastal pathway”.
Submitter ID #20338.

Please refer to project team comments in section 6.18 of this report.

Comments from those who did not indicate

6.27 There were four submitters who did not indicate on their submission form whether yes they support the plan or no they do not support the transport plan. The main comments related to retaining the right turn, increased traffic and congestions concerns and request to reduce the speed limit proposed from 40 km/h to 30 km/h.

The project team comments in relation to these concerns are responded to in section 6.17, 6.21 and 6.16 of this report.

6.28 In summary, the main themes from all submissions relate to:

Description	No. of comments	Project team comment
Reduce the 40 km/h school speed limit to 30 km/h (extend to Celia Street and Beachville Road).	5	To be monitored, but a reduction would require NZTA approval.
Move zebra crossing closer to the school	4	Crossing is as close as we can technically get it.
Do not ban the right turn onto Beachville Road from Main Road (Causeway end)	4	For safety reasons the right turn is being banned.
Concern over increased congestion and traffic issues	4	We are not expecting this to be an issue with what is in place, but we will monitor.
No mention of cyclists in the transport plan	3	The final plan to be approved now specifically marks out the cycle lanes.

Alignment with Council Plans and Policies

6.29 This option is consistent with Council’s Plans and Policies, including the Land Sale Sub Committee’s recommendations adopted by Council on 7 September 2017.

Financial Implications

6.30 Cost of Implementation: \$396,841

6.31 The following funding streams:

6.31.1 \$183,000 received from the Ministry of Education

6.31.2 \$213,841 programmed through the Master Plan ‘Main Road M3 Beachville Road Streetscape enhancements’

Legal Implications

- 6.32 There is a legal context, issue or implication relevant to this decision.
- 6.33 This report has not been reviewed and approved by the Legal Services Unit.
- 6.34 The legal consideration is that the proposal:
- 6.34.1 Enables conditions of Resource Consent to be enacted, agreed within the framework of resource Management Act s176, namely that:
- “The school shall not commence operation at the new site until a full safety audit is undertaken in accordance with “Road Safety Audit Procedures for Projects: Guidelines”, NZTA May 2013, with particular consideration given to:*
- Pedestrian crossing location and design for school pupils crossing Main Road to the school; and*
- The design of the Main Road/Beachville intersection; and*
- Vehicle Speeds in the vicinity of the school”.*
- 6.34.2 The design safety audit has been completed, and a post-implementation safety audit will also be completed.
- 6.34.3 Meets the Conditions of Land Sale, with regards to the delivery of road safety measures and financial contributions towards the Project paid by the Ministry of Education:
- “The Crown agrees to pay to the Council a minimum of \$183,000 towards new traffic management and pedestrian safety systems, such sum to be paid on the Settlement Date.”*

Risks and Mitigations

- 6.35 There is a risk to the Ministry of Education’s project in the event that the proposed Part C matters are not resolved.

Implementation and dependencies

- 6.36 Approval of Part A matters by Council, including Cycle lanes, and inclusion of the temporary (School zone) speed limit.
- 6.37 Implementation of the temporary (school zone) speed limit must proceed in accordance with section 2.5 and 2.6 of the ‘Land Transport Rule Setting of Speed Limits (2017)’. Consultation with the Community Board and Community meets the requirements of the rule. Subject to Community Board approval, formal approval will be sought from the additional parties identified in the rule, including NZTA and Police. The proposed scheme meets the technical requirements for a school speed zone.
- 6.38 Option 1 would be constructed from mid-2019, in time for the proposed School opening currently scheduled for January 2020.

Option Summary - Advantages and Disadvantages

- 6.39 The advantages of this option include:
- Meets objectives relating to safety; and design is safety audited. Outcome of Audit finds no outstanding safety matters.
 - Ensures that effects on the function of the Arterial Road network, including the strategic freight corridor, are limited.
 - Minimum impact on surrounding communities (e.g. no reduction in availability of on street car parking).

- Achieves financial and legal requirements (outlined below, section 6.32).
- Designed to be appropriately scaled to meet anticipated needs and demands.
- Developed in partnership with the NZTA and Traffic Engineering Consultants, and considered the 'best' option, optimising costs and impacts, in light of an array of other design options.

6.40 The disadvantages of this option include:

- It has not been possible to include a crossing on Main Road in the immediate vicinity of the school entrance.

7. Option 2 – Do not approve the Redcliffs Transport Plan and request staff to consider alternative designs and re-consult with the community.

Option Description

7.1 Do not adopt the preferred option; adopt alternative designs.

Significance

7.2 The level of significance of this option could be high due to the Legal Implications (see paragraph 7.12).

7.3 Engagement requirements for this level of significance are to Consult (as defined within the Significance and Engagement Policy).

Impact on Mana Whenua

7.4 This option does not involve a significant decision in relation to ancestral land or a body of water or other elements of intrinsic value, therefore this decision does not specifically impact Ngāi Tahu, their culture and traditions.

Community Views and Preferences

7.5 Local residents surrounding the new Redcliffs School location and those who use the school are specifically affected by this option due to their proximity to the new school and their use of the school. Their views would need to be collected and considered again if a completely new traffic design was created.

7.6 At the close of consultation 48 submissions were received with 17 (36%) not in support. However, there were no submitters who indicated that a transport plan was not required at all and that staff should do nothing. Those who did not support the plan did acknowledge that changes need to be made to accommodate the new Redcliffs School location.

7.7 Alignment with Council Plans and Policies.

7.8 This option is likely to be inconsistent with Council's Plans and Policies.

7.8.1 Inconsistency – Does not respond to the Hearing Panel's recommendations made to Council (7th September 2017) for a school speed zone 'pedestrian safety systems that may be required'.

7.8.2 Amendment necessary – an alternative scheme could possibly meet requirements approved by Council.

Financial Implications

7.9 Cost of Implementation - Unknown

7.10 Maintenance / Ongoing Costs - Unknown

7.11 Funding source – Unknown

Legal Implications

- 7.12 There is a legal context, issue or implication relevant to this decision.
- 7.13 This report has not been reviewed and approved by the Legal Services Unit.
- 7.14 The legal consideration is that under Option 2:
- 7.14.1 The Ministry of Education cannot enact Conditions of Resource Consent, and henceforth would be unable to operate a school without being in breach of conditions.

Risks and Mitigations

- 7.15 Given uncertainty of Option 2, there is a risk that technical, financial and legal requirements would not be met. The ability of the Ministry of Education to deliver the proposed school, within the purview of its Conditions of Consent, would be uncertain.

Implementation

- 7.16 Implementation dependencies – unknown.
- 7.17 Implementation timeframe – unknown.

Option Summary - Advantages and Disadvantages

- 7.18 The advantages of this option include:

- No known advantages at this stage.

- 7.19 The disadvantages of this option include:

- Legal risks: The MoE would be unable to proceed with the proposed school, until such time that an alternative design was found to meet requirements of Conditions of Consent.
- Financial: There are no known sources of funding for alternative designs at this stage, especially those pertaining to more expensive options.

It is unlikely that options of greater expense (for example, traffic signals at Main Road/Beachville Road/McCormacks Bay Road) would be appropriately scaled to demand, forecast growth and unlikely to achieve value for money against any of the funding criteria.

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Confirmation of Statutory Compliance

Compliance with Statutory Decision-making Requirements (ss 76 - 81 Local Government Act 2002).

(a) This report contains:

- (i) sufficient information about all reasonably practicable options identified and assessed in terms of their advantages and disadvantages; and
- (ii) adequate consideration of the views and preferences of affected and interested persons bearing in mind any proposed or previous community engagement.
- (b) The information reflects the level of significance of the matters covered by the report, as determined in accordance with the Council's significance and engagement policy.

Signatories

Authors	Mark Gregory - Transport Network Planner Tara King - Senior Engagement Advisor Isabelle Gensburger - Project Manager (Consultant)
Approved By	Richard Holland - Team Leader Asset Planning Richard Osborne - Head of Transport David Adamson - General Manager City Services



Redcliffs Transport Project
For Community Board Approval

Original Plan Size: A3
ISSUE.1 11/01/2019
TP354801 MJR CP503127

Changes to Main Road and Beachville Road intersection

In order to improve safety and to avoid congestion at this intersection, the plan includes the removal of the right turn lane from Main Road into Beachville Road.

This will then prevent those turning right from Main Road into Beachville Road, from blocking vehicles wanting to travel straight ahead towards the causeway, and then congesting the road. This congested traffic could then also be an issue for pedestrian visibility when waiting to cross Main Road at the pedestrian refuge island. However, road users will still be able to turn right out of Beachville Road onto Main Road towards the causeway, as this movement will not create a safety issue.

The pedestrian island near this intersection on Main Road will also be extended to create space for more pedestrians to wait safely before they continue to cross and the road.

Changes to pedestrian crossing on Main Road

With the new school coming, changes are needed on Main Road to make sure that children and their families can cross safely. A new zebra crossing (opposite 25 Main Road), operating with a school patrol (much like how Redcliffs School operated in the past) will be relocated, but closer to the school gate.

As there isn't room to locate the crossing directly outside the school gate, we have instead located it as close as possible, and have also ensured that the location of the crossing suits all users.

Space has been left to the east of the proposed crossing for parents to drop off their children, and there is the opportunity to use the 'old' Redcliffs School car park, for parents to park and walk their children in. There is also plenty of parking available on Beachville Road, outside the school frontage. We've also listened to the Community concerns about on street parking, and the current proposal will ensure that there is no loss of on street parking.

Removal of the bus stop opposite 5 Main Road

The existing indented bus stop at this location requires removal for safety reasons. There is concern that parents will pull in here to drop off their children and then children would also cross from here, which could be dangerous. The kerb will instead be realigned and the indented bus space removed and no stopping lines will be re-marked along here instead.

Timeline:



To comment on the plan and find out more

- Go online ccc.govt.nz/haveyoursay or complete the enclosed freepost form and return to:
- Christchurch City Council,
PO Box 73016, Christchurch 8154

Consultation is open until 5pm Monday 17 December 2018

The next closest bus stop would then be 225m east (towards Redcliffs Village) of this one, which is approximately a 2-3 minute walk away.

Changes to the Beachville Road and Celia Street Intersection

For safety reasons, we are looking at squaring up the current layout and include an improved crossing facility. A new footpath along Celia Street will be built, where there is currently a section missing (along the new school frontage). These changes will make it easier and safer for children to cross the road and walk into the School. The street lighting along this section will also be reviewed and upgraded as necessary.

Installation of a new school speed zone

A new school speed zone has been included in this plan. This zone includes a 40km/h speed restriction on school days. This zone starts near the end of the causeway and covers a portion of Beachville Road, Celia Street and a small section of McCormacks Bay Road.



What happens next?

Once the consultation period has closed, the project team will analyse the feedback and produce a staff report which will go to the Linwood-Central-Heathcote Community Board for approval.

At this stage we are expecting that the decision by the Linwood-Central-Heathcote Community Board will be made in February 2019.

All submitters will receive written updates on the project, including details of the staff recommendations and decision meeting and how to request to speak at the Board meeting if they wish to do so.

Construction works relating to signage, pedestrian crossing works and street lighting upgrades are expected to commence in April 2019 and take approximately three months. This is subject to weather conditions and contractor availability.

HAVE YOUR SAY

**Redcliffs Transport Project
Main Road, Beachville Road, Celia Street and
McCormacks Bay Road**

Closes Monday 17 December 2018

ccc.govt.nz/haveyoursay



Purpose of this project

We are proposing changes to parts of Main Road, Beachville Road, Celia Street and McCormacks Bay Road in Redcliffs. We are working closely with the Ministry of Education with the aim of making it safer and easier for parents and children to access the new Redcliffs School, which is due to open in January 2020.

As part of preparing for the location of the new school we have had to consider:

- How and where children can cross Main Road safely.
- The safest locations for pick up and drop offs.
- How to make sure that drivers and crossing children can see each other.
- The best way to manage vehicle speeds.

What is included on the plan?

The plan includes these changes:

- Main Road and Beachville Road intersection - removal of the right turn into Beachville Road from Main Road. Road users will still be able to turn right out of Beachville Road onto Main Road.
- Installation of a new school speed zone with a 40 km/h speed limit - starting near the end of the causeway and covering a portion of Beachville Road, Celia Street, Main Road and a small section of McCormacks Bay Road.
- Main Road - removal of the zebra crossing opposite 45 Main Road and replacement with a pedestrian refuge.
- Main Road - installation of a new school patrol zebra crossing opposite 25 Main Road, with a street lighting upgrade.
- Main Road (near Beachville Road) - repair of the safety barrier on the Beachville Road side and extension of the pedestrian island.



Main Road in Redcliffs

On street car parking

The location of the new transport facilities such as signage, zebra crossing points or pedestrian refuges will not require the removal of any on street car parking. These have been placed in areas where parking is already unavailable.

- Main Road - removal of the bus stop bay opposite 5 Main Road and kerb realignment to remove the indentation.
- Beachville Road and Celia Street intersection - installation of a new pedestrian refuge.
- Beachville Road and Celia Street intersection - installation of a new footpath and street lighting upgrade from 53A Celia Street up to Beachville Road (where there is a small gap in the footpath network).

Talk to the team

Tuesday 27 November 2018,
4 pm to 6 pm (drop in at anytime),
Redcliffs Mt Pleasant Bowling Club,
9 James Street, Redcliffs.





Name*	_____	Please note: We require your contact details as part of your submission - it also means we can keep you updated throughout the project. Your submission, name and address are given to decision-makers (Community Board / Committee / Council) to help them make their decision. Submissions, with names only , go online when the decision meeting agenda is available on our website. If requested, submissions, names and contact details are made available to the public, as required by the Local Government Official Information and Meetings Act 1987. If there are good reasons why your details and/or submission should be kept confidential, please contact our Engagement Manager on (03) 941 8999 or 0800 800 169 (Banks Peninsula).
Address*	_____ _____ _____	
Postcode*	_____	
Phone*	_____	
Email	_____	
* required		
Please fold with the reply paid portion on the outside, seal and return by 5pm, 17 December 2018		

Fold

Staple or tape here

Fold

If you wish to attach extra paper, please ensure the folded posted item is no thicker than 6mm. Alternatively, you can send your submission in an envelope of any size and address it using "Freepost Authority No. 178"

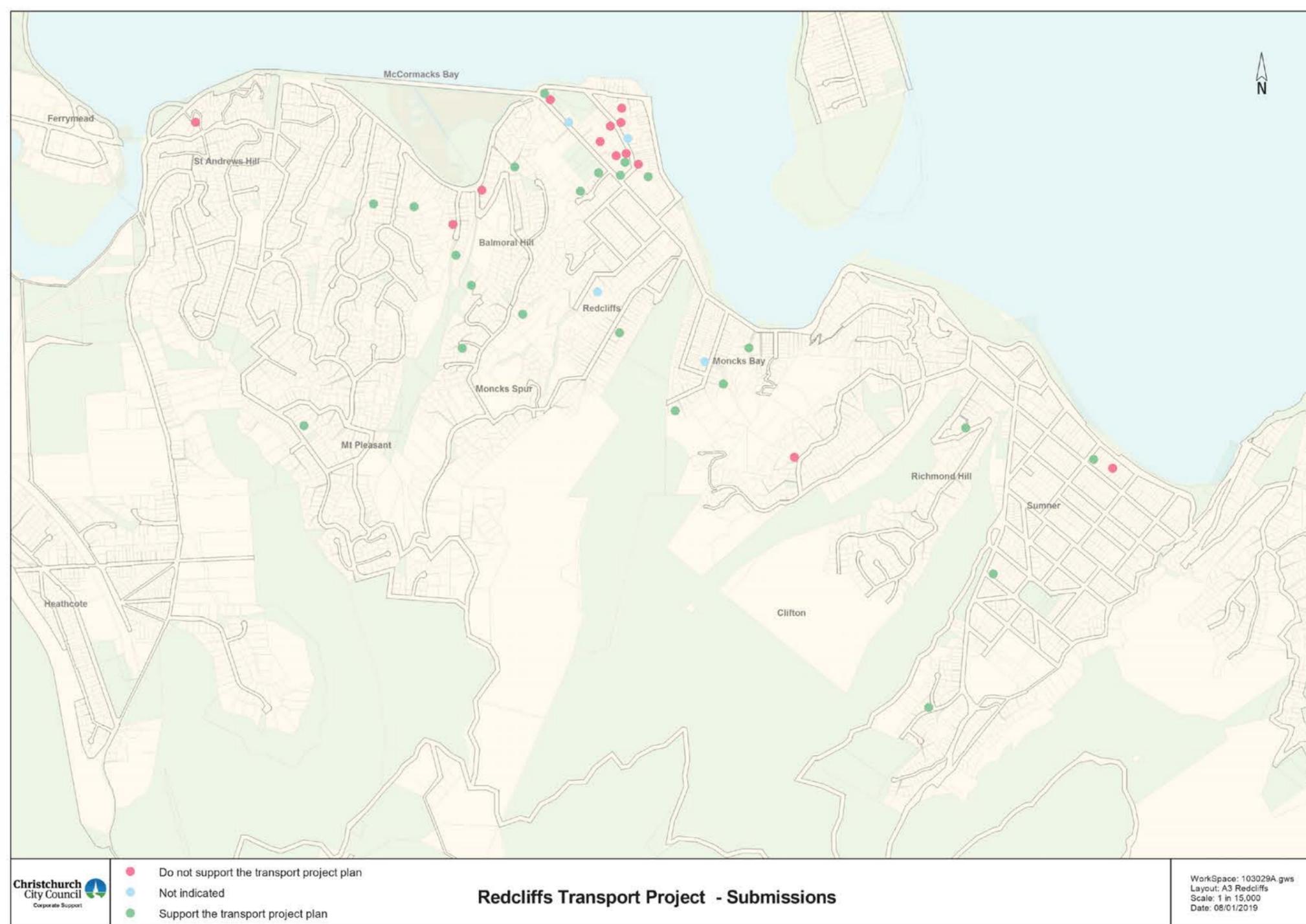
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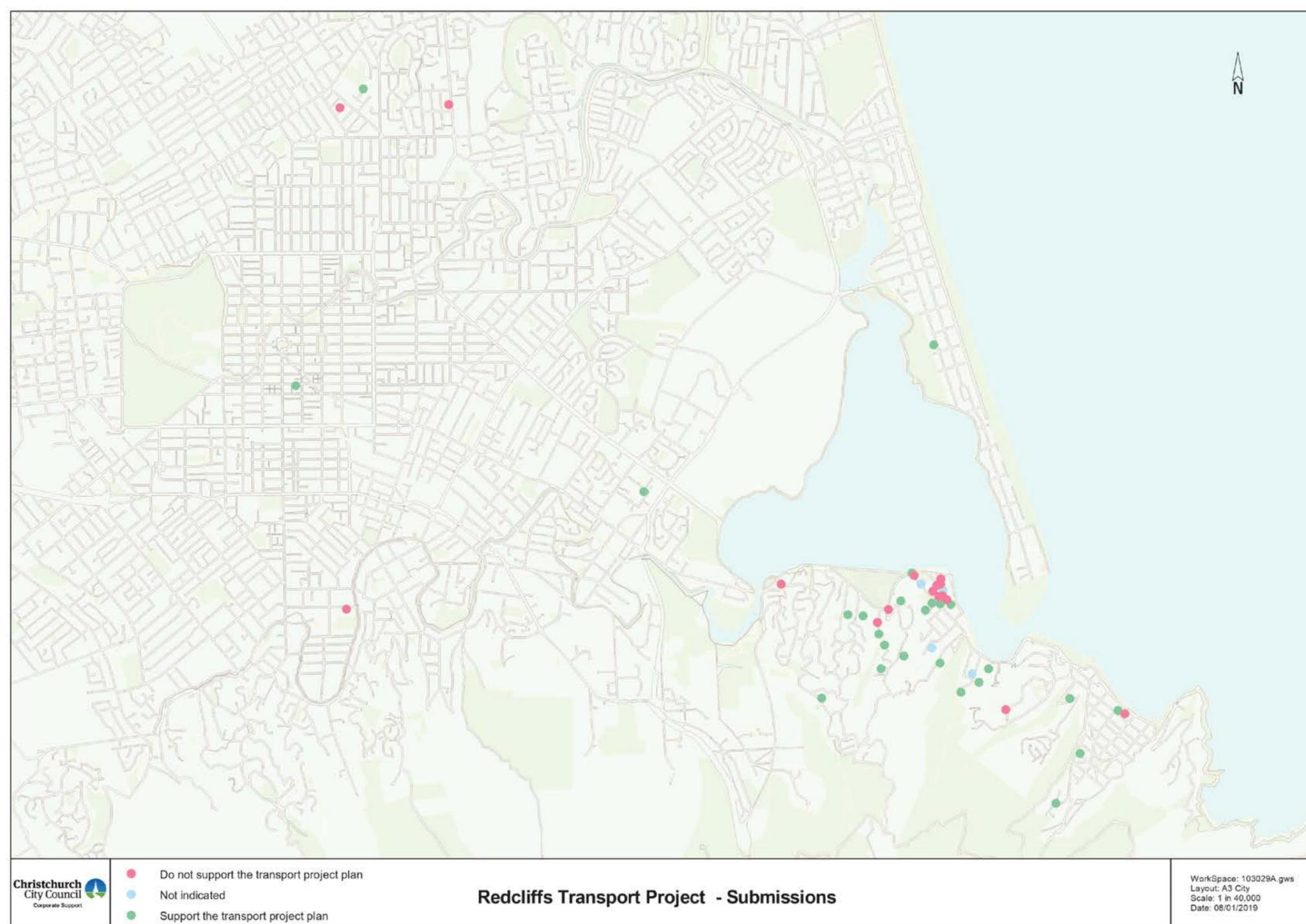
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Attention: Tara King
Senior Engagement Advisor
Christchurch City Council
PO Box 73016
Christchurch Mail Centre
Christchurch 8154





Report from Linwood-Central-Heathcote Community Board – 20 February 2019

17. Cambridge Green Pouwhenua Artwork Future Treatment Options

Reference: 19/187249

Presenter(s): Jo Grigg, Project Manager

1. Linwood-Central-Heathcote Community Board Consideration

1. The Board considered that the pouwhenua are a significant feature of the local community and noted that the community, or the original working party that installed the pouwhenua, had not been consulted on the removal or the future of the pouwhenua.
2. The Board understands that Ōtākaro Limited have an artworks fund for the Avon River Corridor and that funding to reinstate the pouwhenua or replacements may be obtained from Ōtākaro Limited.

2. Staff Recommendations

That the Council:

1. Decommission the Cambridge Green Pouwhenua artwork and carefully remove the remaining carved wooden pou from site and return all three pieces to the carver's family
2. Commission a new artwork for the plinths on this site in the future.

3. Linwood-Central-Heathcote Community Board Recommendation to Council

Part A

That the Council:

1. Note that the Community Board has requested staff consult with the original commissioning group before a decision is made by the Council.
2. Decommission the existing Pouwhenua artwork in Cambridge Village Green Reserve and carefully remove the remaining carved wooden pouwhenua from site and return all three pieces to the carver's family
3. Commission a new artwork for the plinths on this site in the future.

Attachments

No.	Report Title	Page
1	Cambridge Green Pou Artwork Future Treatment Options Report	207

No.	Title	Page
A ↓	Cambridge Green Pouwhenua Earthquake Structural Inspection Report	217
B ↓	Cambridge Green Pouwhenua - Condition Assessment June 2011	230
C ↓	Cambridge Green Powhenua Core Assessment - Treetech Revised Report 5 July 2016	253
D ↓	Cambridge Green Pouwhenua Structural Review 24 January 2019	266

Cambridge Green Pou Artwork Future Treatment Options Report

Reference: 18/951434

Presenter(s): Jo Grigg, Project Manager, Parks Project Management Team

1. Purpose and Origin of Report

Purpose of Report

- 1.1 The purpose of this report is for the Waikura/Linwood-Central-Heathcote Community Board to recommend to Council an option for the future treatment of the Cambridge Green Pouwhenua artwork.

Origin of Report

- 1.2 This report is staff generated to Waikura/Linwood-Central-Heathcote Community Board as a result of the earthquake damage to the artwork.

2. Significance

- 2.1 The decision in this report is of medium significance in relation to the Christchurch City Council's Significance and Engagement Policy.
 - 2.1.1 The level of significance was determined by the cost, city wide significance and number of people affected by the decision.
 - 2.1.2 The community engagement and consultation outlined in this report reflect the assessment.

3. Staff Recommendations

It is recommended that the Waikura/Linwood-Central-Heathcote Community Board recommend that the Council:

1. Decommission the Cambridge Green Pouwhenua artwork and carefully remove the remaining carved wooden pou from site and return all three pieces to the carver's family
2. Commission a new artwork for the plinths on this site in the future.

4. Key Points

- 4.1 This report supports the [Council's Long Term Plan \(2018 - 2028\)](#):
 - 4.1.1 Activity: Parks & Foreshore
 - Level of Service: 6.9.1.4 To manage and maintain Public Monuments, Sculptures, Artworks and Parks Heritage Buildings of significance - Public Monuments, Sculptures, Artworks & Parks Heritage Buildings Asset of above average condition: 80%
- 4.2 This report supports the **Artworks in Public Places Policy 2002**.
 - 4.2.1 That the Council approves the Procedures for Moving, and Altering Artworks as described in **Appendix 10**
- 4.3 An Artworks Commissioning Agreement was not executed for this artwork.
- 4.4 The following options have been considered:

- Option 1 – Decommission the artwork and return the wooden pou to the carver’s family, and commission a new artwork at a later date (preferred option)
 - Option 2 – Repair existing and carve new central pou
 - Option 3 – Do nothing
- 4.5 Option Summary - Advantages and Disadvantages (Option 1 - Preferred Option)
- 4.5.1 The advantages of this option include:
- The original artwork is no longer damaged and deteriorating.
 - The risk of the remaining two pou falling in a seismic event is eliminated.
 - The concrete plinths remain, therefore no requirement for consents, archaeological authority. Impact on ecological system is significantly reduced.
 - There are funds available to undertake the removal.
 - Supported by the carver’s family representative.
 - Supported by Matapopore representatives.
 - Supports Maori tikanga practices.
 - Commissioning a new artwork allows Ngāi Tahu / Ngāi Tūāhuriri history to continue to be interpreted on the site.
 - The site continues to be enhanced with artwork.
- 4.5.2 The disadvantages of this option include:
- The context of the original artwork as a whole including the plinth is lost permanently.
 - The carved pou are no longer on display and the plinths largely hidden by the surrounding foliage until such time as a new artwork is commissioned.
 - There is a risk that the community perceive the artwork could have been repaired or replaced like for like. However this can be mitigated through effective communication and education on the cultural sensitivities surrounding this artwork.

5. Context/Background

Artwork Commissioning and Interpretation

- 5.1 An Artwork Commissioning Agreement was not executed for this artwork.
- 5.2 The Pouwhenua in Cambridge Village Green Reserve were erected in 2004 to signify the importance of the site to Māori. This area was a part of Tautahi’s Pā site.

The macrocarpa pouwhenua were carved by Tohunga Whakairo George Edwards, and bought by the Hagley/Ferrymead Community Board for the site via a third party.

A small working party oversaw the artwork plan. The working party comprised representatives from Tuahiwi, Ōtautahi Runaka, Council staff, the Council Community Board and local residents associations. The artworks were given a judges citation from Creative New Zealand for the works and the consultation process that was undertaken.

The concrete plinths were designed by Council's former Maori Community Arts Advisor under the guidance of Reverend Maurice Gray. The designs on the plinth are moko kauae (traditional Maori chin tattoo worn by Maori women).

Pou A: Hine-titama (Goddess of life)

Pou B: Hine-nui-te-pō (Goddess of death & wisdom)

Pou C: Hine-ahu-one (Goddess of mortal beings)

The poles figuratively represents 'te ara' – 'the pathway' to the star constellation of Tauroru (Orion's Belt). The three stars of Orion's Belt are at the top of each pole. The feminine spiritual pathways which connect to the masculine cosmic stars are captured in the structures. The first pole is Tautahi, the middle pole is Taurua and the third Tauroru which completes the trinity of stars. The rope cords are symbolic as they bind the masculine and feminine energies together as one united force.

The Pou were erected and unveiled at a dawn ceremony carried out by Reverend Maurice Gray. One half of a pounamu mauri stone is installed in the plinth of the central pouwhenua. The other half is located beneath the Tribute to Firefighters artwork upstream.

In the handover report following installation, it notes that the wooden pouwhenua were installed in a degraded state. The lifespan of the wooden pou was estimated at 5-10 years and the rope five years. The concrete plinths have a lifespan of 50 years.

Condition Assessment

5.3 In the 22 February 2011 Canterbury earthquake, the central pou (B) failed and fell into St Mary's stream. The two other pou (A and C) moved out of alignment by approximately 5-6°. Lateral spreading is visible in the surrounding area. **Refer Attached- CCC Structural Inspection Report dated 3 October 2011.**

The fallen pou was recovered in April 2011 and transported to CCC storage. A condition assessment was undertaken by Emily Fryer Conservation in April and June 2011. **Refer attached Condition Assessment Report dated June 2011.** The pou was reported to have substantial decay and was in a very poor condition.

Treetech were engaged in June 2016 to undertake a condition assessment of the two remaining pou, as there were concerns over the level of decay. **Refer attached Treetech Revised Report 5 July 2017.** Their investigations involved using a sounding hammer to detect audible changes in tone to the wood which would indicate areas of potentially poor wood structure. Visual observations of deterioration in the wood surface was also recorded. The consultant arborist took two 350mm (L) core samples from each pou in the lower and upper third respectively.

The following was recorded:

- Pou A (note reported as Pou 1 in Treetech Report)
 - The smaller of the two remaining pouwhenua
 - external degradation and splintering
 - Core Sample A – Lower third showed localised degradation of outer weathered surface but good wood from approximately 15mm and deeper to the centre.
 - Core sample B – Upper third showed overall sound wood. Good exterior surface with soft wood only 0.10mm depth.

- Pou C (note reported as Pou 2 in Treotech Report)
 - The larger of the two remaining. Close proximity fall distance to pathways.
 - H&S concern falling. Reduced quality of wood. Greater target area for falling.
 - Core Sample C – Lower third showed substantial soft, deteriorating wood. Sound wood estimated at 250mm depth. The width of the pou is 520mm. Weaker wood structure with a softer interior and potentially reduced tensile strength.
 - Core Sample D – Upper third substantial soft, deteriorating wood. Sound wood estimated at 210mm plus depth. The diameter of the pou is 450mm. Weaker wood structure with a softer interior and potentially reduced tensile strength.

Recommendations: Pou A contains enough sound wood to remain on site however will require treatment and monitoring. Analysis of the core samples indicate that the strength of Pou C has been compromised and should be removed.

Consultation

- 5.4 Council staff held a series of meetings during 2016 and 2017 with George Edwards' family, Paula Rigby and Matapopore representatives to discuss the future treatment of the artwork. Due to George Edwards' ill health at the time, his daughter Mrs Kirsten Aumua represented the Edwards family. The following was discussed:
- 5.4.1 The Edwards family gave consent to decommission the artwork and expressed a strong desire to see the three pieces returned home to family.
 - 5.4.2 Matapopore and Paula Rigby supported in principle the decommissioning of the artwork due to its earthquake damage.
 - 5.4.3 An artwork or carving and its pieces would not normally be separated. The pieces should remain together, therefore the fallen pou should be displayed or returned to the site. The pieces should be given the treatment and honour they deserve and be preserved together.
 - 5.4.4 It would be acceptable to reduce the height of the pou by cutting out the decayed wood, however in later discussions and upon inspection of the fallen pou it was agreed that the decay extended to nearly 90% of the length of the pou. It was agreed that the pou could not be re-erected safely at its full height and too much of the original material would be lost if the decayed wood was cut out.
 - 5.4.5 A pouwhenua would not normally be laid down. They cannot be retained on site without a transitional layer between them and the ground.
 - 5.4.6 The original carver is not able to undertake repairs or carve a new pou. It is not customary to have another carver carry out the work.
 - 5.4.7 Agreed if the carved pou were to be removed, then it would be acceptable to leave the concrete plinths and tidy the top rope sections of the artwork. This would minimise the impact on St Mary's stream and the ecosystem of the site. There would be no requirement for consents, an archaeological authority etc.

6. Option 1 - Decommission Artwork and Gift Carved Pou to the Artist's Family and Commit to Commissioning a New Artwork (preferred option)

Option Description

- 6.1 This option would see the artwork decommissioned and the remaining two pou carefully removed from the plinths. The concrete plinths would remain. The foundations extend approximately 6m into the ground below. The rope would be tidied to the top of the plinths or removed.
- 6.2 The fallen pou that is currently in storage would be transported to Cambridge Green and all three pou returned to the carver's family. The careful removal would ensure that as much of the original carving is kept together.
- 6.3 Maori tikanga practices undertaken.
- 6.4 The Council would follow the Artworks in Public Places Policy, for the commissioning of new artwork.
- 6.5 The timeframe to commission a new artwork would be in excess of 12 months.
- 6.6 Mana Whenua and the Artist of the plinth would be involved in the project from its commencement, to participate in the early stages of the consultation and provide comment on the new artwork and to ensure the correct interpretation.

Significance

- 6.7 The level of significance of this option is medium consistent with section 2 of this report. Engagement requirements for this level of significance are medium. Engagement with the carver's family and Matapopore has been undertaken for the removal of the existing pou.
- 6.8 Engagement with mana whenua and the wider community will be required for any new artwork on this site.

Impact on Mana Whenua

- 6.9 This option does involve a significant decision in relation to ancestral land or a body of water or other elements of intrinsic value, therefore this decision does specifically impact Ngāi Tahu, their culture and traditions.
- 6.10 Matapopore representatives were consulted with in 2016 & 2017 and were supportive in principle of the decommissioning of the original artwork.
- 6.11 Consultation with Matapopore will be required for any new artwork.

Community Views and Preferences

- 6.12 The artists are specifically affected by this option due to the loss of the original artwork. The artists and/or their representatives are in support of the decommissioning of the artwork.
- 6.13 The community are affected by this option when commissioning a new artwork, due to "having a true account of the area's history from the original occupants of the region, e.g. Ngāi Tahu". This will allow for open and transparent conversations with communities and citizens within the region.

Alignment with Council Plans and Policies

- 6.14 This option is consistent with Council's Plans and Policies.

Financial Implications

- 6.15 Cost of Implementation - \$4500 approximately for the removal. Funding source – Delivery Package Artworks Project (CPMS25506)

- 6.16 Maintenance / Ongoing Costs until the new artwork is installed - \$500 per annum (wash down of the plinths, structural assessment)
- 6.17 Cost of Implementation for the new artwork is unknown and can only be determined once the new artwork has been designed and commissioned.
- 6.18 Maintenance / Ongoing Costs for the new artwork - Unknown

Legal Implications

- 6.19 There is a legal implication relevant to this decision. A commissioning agreement would need to be executed with the new artist for their artwork.
- 6.20 This report has not been reviewed and approved by the Legal Services Unit.

Risks and Mitigations

- 6.21 There is a risk that in the event of another seismic event the remaining pou will fall. This may result in injury to members of the public, destruction of the remaining pou.

This risk is eliminated by removing the carved pou.

Implementation

- 6.22 Implementation dependencies are as follows:
 - 6.22.1 The removal of the remaining carved pou is approved by the Community Board.
 - 6.22.2 Commissioning of a new artwork is approved by the Community Board
 - 6.22.3 Funds are sourced to allow the project to proceed.
 - 6.22.4 The artist who designed the plinth is engaged early on in the consultation process and approves of the new artwork
 - 6.22.5 Mana whenua approve the new artwork.
- 6.23 Implementation timeframe – it is estimated that to commission a new artwork the process could take in excess of 12 months from consultation to installation.

Option Summary - Advantages and Disadvantages

- 6.23.1 The advantages of this option include:
 - The original artwork is no longer damaged.
 - The risk of the remaining two pou falling in a seismic event is eliminated.
 - The concrete plinths remain, therefore no requirement for consents, archaeological authority. Impact on ecological system is significantly reduced.
 - There are funds available to undertake the removal.
 - Supported by the carver's family representative.
 - Supported by Matapopore representatives.
 - Supports Maori tikanga practices.
 - Commissioning a new artwork allows Ngai Tahu / Ngai Tuahuriri history to continue to be interpreted on the site.
 - The site continues to be enhanced with artwork.
- 6.23.2 The disadvantages of this option include:
 - The context of the original artwork as a whole including the plinth is lost permanently.

- The carved pou are no longer on display and the plinths largely hidden by the surrounding foliage until such time as a new artwork is commissioned.
- There is a risk that the community perceive the artwork could have been repaired or replaced like for like. However this can be mitigated through effective communication and education on the cultural sensitivities surrounding this artwork.

7. Option 2 - Repair the Carved Wooden Pou

Option Description

- 7.1 This option would see the decayed wood removed and new wood spliced in. The fallen pou cannot be reinstated, therefore a new central pou would be carved.

Significance

- 7.2 The level of significance of this option is low consistent with section 2 of this report.
- 7.3 Engagement requirements for this level of significance are low. Consultation will be required with mana whenua, and the artist of the plinth.

Impact on Mana Whenua

- 7.4 This option does involve a decision in relation elements of intrinsic value, therefore this decision does specifically impact Ngāi Tahu, their culture and traditions.
- 7.5 Consultation with the carver's family and Matapopore highlighted that it is culturally insensitive to engage another artist/carver to repair and replicate an original carver's work.
- 7.6 Further engagement with mana whenua and the artists family will be required if this option was selected.

Community Views and Preferences

- 7.7 The community and members of the public are not affected by this option.

Alignment with Council Plans and Policies

- 7.8 This option is inconsistent with Council's Plans and Policies
- 7.8.1 Inconsistency – The Artworks in Public Places Policy 2002, Appendix 10 Moving and Altering Artworks.
- 7.8.2 Reason for inconsistency – The carver's family provided consent to decommission the artwork and advised another carver would not normally work on the repair or replication of an original carvers work. With the passing of George Edwards, the pou are unable to be repaired. This would not meet the policy conditions as approval has not been granted for repair.

Financial Implications

- 7.9 Cost of Implementation – estimated > \$15,000
- 7.10 Maintenance / Ongoing Costs – estimated at \$2000 pa
- 7.11 Funding source – There are currently no funds identified sufficient to cover the cost of this option.

Legal Implications

- 7.12 There is no legal implication relevant to this decision

Risks and Mitigations

7.13 There is a risk of that if the pou are to be repaired, the carver may not fully understand Ngai Tahu / Ngai Tuahuriri history and therefore may not be mandated to integrate adequate interpretations to the current depictions. This may result in offence to both iwi and the artist's whanau.

7.13.1 Residual risk rating: The residual rating of the risk after the below treatment(s) is implemented will be low.

7.13.2 Engagement would be required with both mana whenua and the carver's family to gain approval to a) undertake the work and ensure the correct interpretation and b) approval of the carver.

Implementation

7.14 Implementation dependencies - Agreement required from the original artists and/or their representatives and mana whenua.

7.15 Implementation timeframe – in excess of 6 months.

Option Summary - Advantages and Disadvantages

7.16 The advantages of this option include:

- The artwork is repaired like for like.

7.17 The disadvantages of this option include:

- Not supported by the artists family
- In principle does not comply with Artworks in Public Places Policy, Appendix 10.

8. Option 3 - Do Nothing

Option Description

8.1 This option would see the two remaining pou left on site with no further treatment.

8.2 The remaining pou are exhibiting areas of decay and will continue to decay to the point where they fail and fall.

8.3 This option is not in keeping with the intent of the original artwork.

8.4 This option is not supported by the carver's family.

Significance

8.5 The level of significance of this option is Low consistent with section 2 of this report.

8.6 Engagement requirements for this level of significance are low.

Impact on Mana Whenua

8.7 This option does involve a decision in relation elements of intrinsic value, therefore this decision does specifically impact Ngāi Tahu, their culture and traditions.

8.8 Following consultation with the carver's family and Matapopore, it was advised that an artwork or carving and its parts would not normally be separated. The carvings should remain together, therefore the fallen pou should be displayed or returned to the site. The carvings should be given the treatment and honour they deserve and be preserved together. By doing nothing, this option does not support mana whenua culture and tradition.

Community Views and Preferences

8.9 There is currently no community interest.

Alignment with Council Plans and Policies

8.10 This option is inconsistent with Council's Plans and Policies

8.10.1 Allowing the artwork to degrade and be incomplete is not aligned with LTP Activity: Parks & Foreshore

- Level of Service: 6.9.1.4 To manage and maintain Public Monuments, Sculptures, Artworks and Parks Heritage Buildings of significance - Public Monuments, Sculptures, Artworks & Parks Heritage Buildings Asset of above average condition: 80%

Financial Implications

8.11 Cost of Implementation - \$0

8.12 Maintenance / Ongoing Costs – Unknown. However it is anticipated that there will be future costs for removal once the two pou have degraded to a point they fail and fall.

8.13 Funding source – No funding source has been identified in the LTP for future works.

Legal Implications

8.14 There is a potential for legal implication relevant to this decision, if one of the pou fails in an earthquake or due to degradation and injures a member of the public.

Risks and Mitigations

8.15 There is a risk that in a seismic event the remaining pou could fall and injure members of the public walking by.

Implementation

8.16 This option has no implementation dependencies or timeframe.

Option Summary - Advantages and Disadvantages

8.17 The advantages of this option are NIL.

8.18 The disadvantages of this option include:

- Ongoing maintenance costs
- Risk of injury to members of the public, legal action and associated costs.
- The remaining pieces of the artwork will continue to degrade
- The artwork remains incomplete.
- Not supported by the carver's family.
- This option does not meet the Councils' Level of Service.
- Does not meet the Councils Art in Public Places policy.

Attachments

No.	Title	Page
A	Cambridge Green Pou EQ structural inspection report.doc	
B	Cambridge Green Pouwhenua - Condition Assessment June 2011	
C	Cambridge Green Pouwhenua Core Assessment - Treetech Revised Report 05-07-16	
D	Cambridge Green Pouwhenua Structural Review 24.01.2019	

Confirmation of Statutory Compliance

Compliance with Statutory Decision-making Requirements (ss 76 - 81 Local Government Act 2002).

(a) This report contains:

- (i) sufficient information about all reasonably practicable options identified and assessed in terms of their advantages and disadvantages; and
- (ii) adequate consideration of the views and preferences of affected and interested persons bearing in mind any proposed or previous community engagement.

(b) The information reflects the level of significance of the matters covered by the report, as determined in accordance with the Council's significance and engagement policy.

Signatories

Author	Jo Grigg - Project Manager
Approved By	Rod Whearty - Team Leader Project Management Parks Darren Moses - Manager Capital Delivery Community Mary Richardson - General Manager Citizen and Community

STRUCTURAL INSPECTION REPORT
CAPITAL PROGRAMME GROUP

STRUCTURE: Cambridge Green Poupou	
ADDRESS: Corner of Cambridge Tce and Barbados St/Salisbury St.	
SIZE 3 No. Pillars between 4.9m and 6.8m height by 0.6m diameter	
YEAR BUILT : 2004	
DRAWING No: SD-0322-02 S01 to S03	
INSPECTION BY: Alejandro Amaris	DATE: 27/01/2012
REPORT PREPARED BY: Alejandro Amaris and Mark Humphery	DATE: 1/10/2012
REVIEW BY: Mark Humphery	DATE: 03/10/2012

1. INTRODUCTION

A Structural inspection was carried out on the Cambridge Green Maori Pillar (Poupou) at the Cambridge Village Green Reserve on the 27 January 2012. The objective of this report is to determine the condition of the structure following the 4 September 2010 and 22 February 2011 earthquakes and following sequence of aftershocks. Options for repair are given at the end of this report.

2. STRUCTURE DESCRIPTION

Situated at the Barbadoes/Salisbury Streets intersection on the Cambridge Village Green Reserve the three Cambridge Green Pous highlight an area of cultural and historical significance and were a collaborative effort to provide a community art work best suited to the area. (Figure 1).

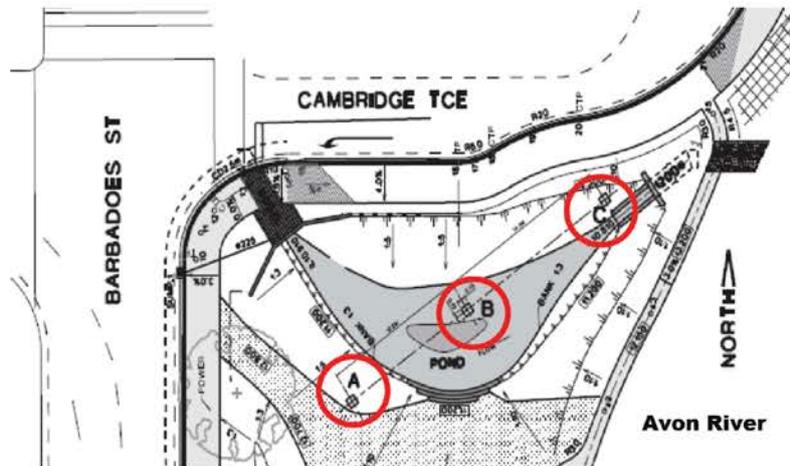


Figure 1: Pillar location denoted on circle A, B and C

The three timber pillar pous referenced A, B and C from Figure 1 are 4.9m, 5.8m and 6.8m in height respectively (including the concrete plinth) and are mounted on concrete plinths (figure 2). Pillar B is situated within a pond and both pillars A and C at the river bank. All three artworks are connected to the concrete plinths by steel ring plates as shown on the drawing in the Appendix A. The plinths are supported by 6.2m long by 219mm diameter steel screw piles filled with 30MPa concrete. It is understood there were installed to resist lateral movement due to liquefaction.

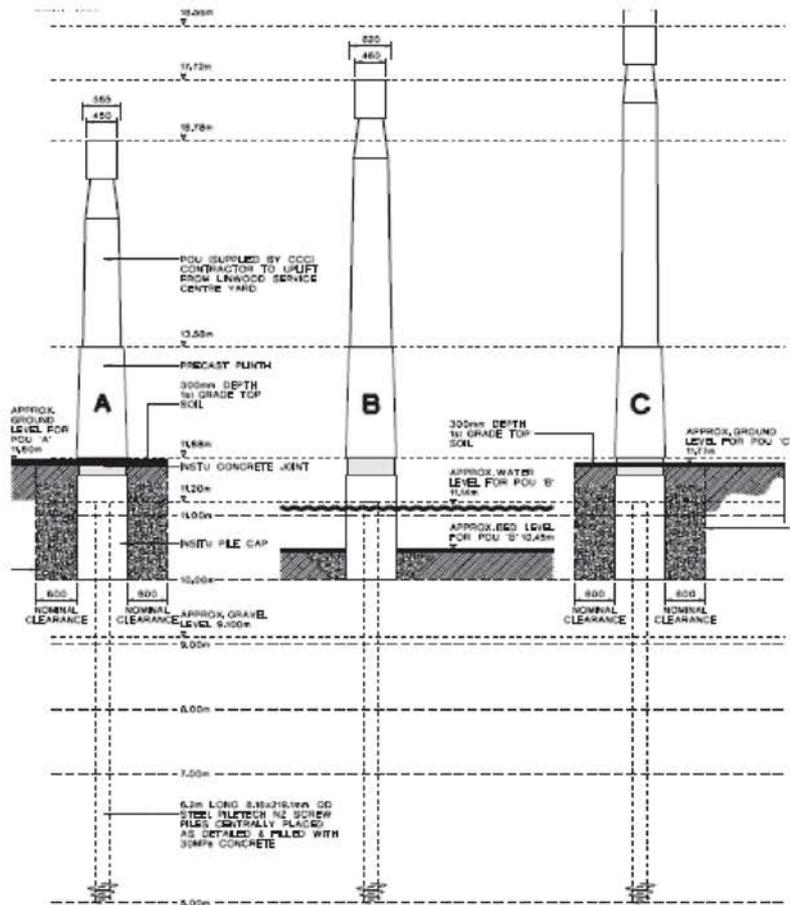


Figure 2: Pillar elevation and foundations

3. INSPECTION

The structural inspection identified extensive damage due to liquefaction and lateral spreading of the ground where the timber pillars were located (figure 3). As a result,

pillars A and C have tilted 5% and 6% respectively (Figures 4 and 5). Pillar B had completely failed at the base of the timber base section causing the pillar to break off (Figure 6).



Figure 3: Evidence of lateral spreading observed around the site



Figure 4: Tilt of pillar A. Pillar B broken off.

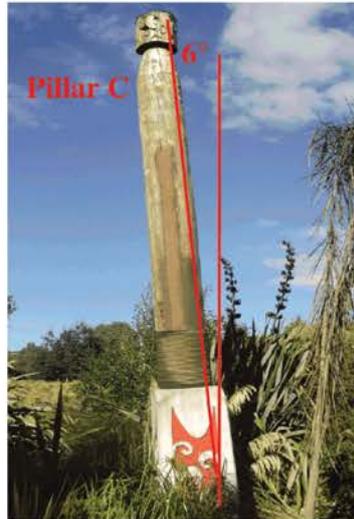


Figure 5: Tilt of pillar C

The brittle failure of pillar B at the timber base to steel housing connection appears to be related to rotten timber at this section in combination with the excessive seismic forces of the 22 February 2011 earthquake.

At the early construction stage, the structural engineer identified the timber used for the poles was rotten in some parts. Repair work was undertaken prior installation of the poles at pillar C (Figure 5 darker brown colour). Figure 7, shows the repair methodology for the pillar. The broken section of pillar is being stored at a CCC depot.

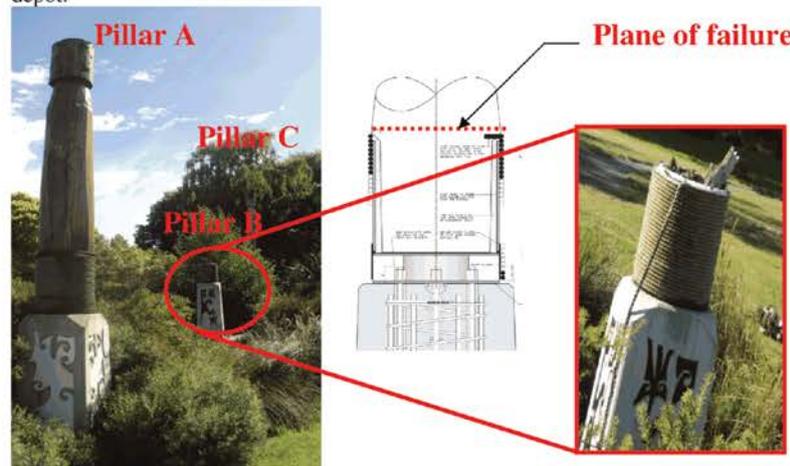


Figure 6: Pillar B failure

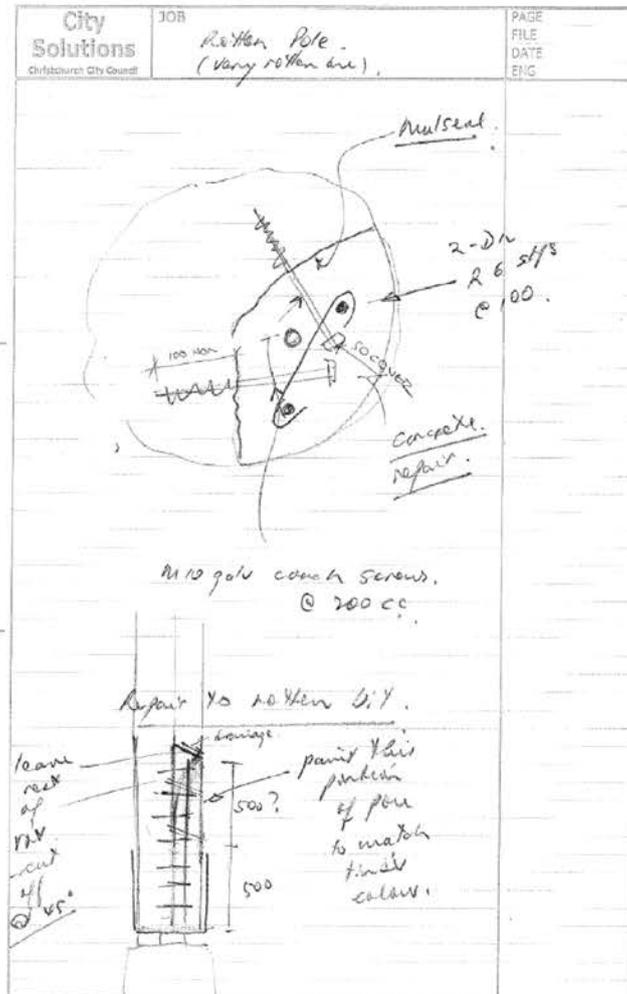


Figure 7: Methodology adopted to repair the rotten timber of Pillar C before construction. This section did not fail during the earthquakes.

4. DESKTOP INVESTIGATIONS

A desktop investigation determined the Cambridge Green Pou bases were designed using the NZS 4203:1992 seismic design standard, which was a predecessor of the current NZS 1170.5:2004 standard for earthquake actions.

The ultimate seismic load coefficient was originally calculated as 54% of the seismic mass at ultimate limit state with a ductility factor of 1.0 (elastic design). This equates that the Pou bases were designed for a moment of 9.62 kNm.

An analysis of the seismic loading using NZS 1170.5, for an importance level 2 and 50 year design working life and ductility 1.0, the seismic coefficient will be 63% and 21% of the seismic mass at ultimate and serviceability limit states respectively. Note that the seismic load coefficient for Christchurch was increased by 36% following the 22 February Earthquake and this would account for some of the difference in seismic demand effects from NZS 1170.5.

However, the derivation of a lower seismic design load used from the earlier standard is not likely to have affected the outcome following the 22 February 2011 earthquake. This is because the failure of the timber pillar B was due to rotten timber (and hence lower timber strength), and the tilt of the other pillars was due to significant ground movement and subsidence far exceeding design expectations.

The structural calculations show in detail the design of the steel screw piles designed for lateral earthquake pressure, the timber pillar stresses generated due to bending and shear and the steel ring connector plate capacities.

The author believes pillars A and C have moved and rotated as a rigid body from the base of the screw piles to the top of the Pou (elastic rotation and no inelastic deformation of the foundation or piles has occurred). However, an invasive site investigation of the pile and plinth connection would be required to confirm this assumption and that the rotation has not been caused by bending failure of the screw pile (although this is unlikely).

Due to the tall, slender nature of the artwork and the way it is connected to the foundations, small movements of the ground will have a more pronounced effect upon the top of the pillars and hence the visual appearance. For example, the 6° tilt of pillar C could be generated by 700mm lateral ground movement and would translate to a 1400mm horizontal displacement at the top of the pillar. Generally for a building column, the acceptable out of plumb is 1:500, which for the tallest pillar would be 14mm horizontal displacement at the top. Small adjustments of the pillar verticality could be made at the steel plate to pillar connection by unbolting and inserting steel shims. The acceptable tilt of the pillars to preserve their artistic effect would need to be considered and accounted for in the design of any ground remediation measures.

4.1 Geotechnical Review

Interrogation of the recently released CERA geotechnical information from this area (Area 8 Central North) revealed the extent of ground movement around the pillars. These reports include mapping of ground cracking, liquefaction and lateral spreading observations, LiDAR ground elevation and vertical ground movements.

Generally, the proximity of the site close to the Avon River has subjected the ground to significant vertical and horizontal movement due to lateral spreading and the effects of liquefaction.

Since the site is not residential it has not been given a specific technical categorization, however it is adjacent to, and between zones marked TC3 which states that "Moderate to significant land damage from liquefaction is possible in future large earthquakes. Foundation solutions should be based on site-specific geotechnical investigation and specific engineering foundation design".

Observed ground cracking in this area has been recorded as ranging from 50-200mm directly on the site and greater than 200mm along the adjacent Cambridge Terrace.

Minor ground cracking but no liquefaction was recorded at the site following the 4 September 2010 earthquake, however large quantities of ejected material was recorded following the 22 February 2011 earthquake.

Major damage to the below ground services in the area was recorded with the network directly adjacent to the site requiring complete rebuild.

The recorded change in elevation of the site between July 2003 and February 2012 measured using LiDAR, was in the order of 500mm subsided.

5. REMEDIAL WORK OPTIONS

Due to the high liquefaction and lateral spreading potential of the site in future earthquakes, methods to mitigate the impact of ground movement on the pillars are likely to be expensive. Further specialist geotechnical assessment of ground improvement methods would be required, and should be considered with regard to the long-term remediation of the surrounding area.

Re-levelling of the pillars is likely to be an expensive undertaking with some uncertainty of success. Re-levelling the structures without ground remediation or verification of the integrity of the existing piles would risk similar failures occurring again in potential future earthquakes.

It should be recognised that in the ultimate limit state (ULS) seismic event where most ground movement will occur, the design codes allow for significant damage to the structure so long as life safety is maintained. It could therefore be appropriate for the client to accept the risk of liquefaction induced damage in the event of a large earthquake. A comparison between the cost of remedial work to the pillars after each event and the cost of extensive ground improvement to mitigate the earthquakes effects (if actually possible) should be considered.

The seismic strength of the pillars can be assessed against current design levels and strengthening undertaken as required. This is not likely to involve significant work, other than the repair and reinstatement of the damaged pillar B.

5.1 Option 1: Re-align the structure

The tilt of the pillars could be corrected by pulling back the artwork's concrete plinth close to ground level. This methodology requires the unbolting of the timber pillar section from the concrete plinth to make it easier to attach a sheet pile vibrator. A

steel frame connected to the concrete plinth and a sheet pile vibrator would pull the section back into place while the ground was vibrated. Careful monitoring would be needed during this operation to ensure both the plinth and screw pile moved as a rigid structure. This procedure would have to be undertaken under the guidance of a specialist geotechnical contractor as the vibrating depth will depend upon the soil strata and properties. Some filling and compaction of the ground surrounding the pile may be required to maintain its verticality.

Due to the extent of the rotten timber of Pillar B, it is likely a new timber section will need to be spliced to the base of the pillar. Consultation with the original artist will be necessary to achieve the same look of the original is maintained.

A cost estimate for this solution with no ground improvement is \$30,000.

5.2 Option 2: Re-align the structure with moderate improvement to performance under lateral spreading

Several methods can be implemented to guard against the risk of liquefaction and lateral spreading damage on the structure. However, these methods are fairly expensive particularly due to the proximity of the Avon River and nature of the ground.

A method to prevent ground movement due to from lateral spreading under a large earthquake would be the construction of a new retaining wall structure along side the adjacent Avon River. This structure would be able to withstand the lateral earth pressure during an earthquake and hence would likely be a substantial structure with piled foundations.

Detailed geotechnical analysis and design of this structure would be required and should be incorporated within any future remedial ground work in this area and along the Avon River.

Repairs to the damaged pillar and re-levelling of the tilted structures would still be required as outlined in Option 1.

A cost estimate for this solution is \$300,000.

6. CONCLUSIONS

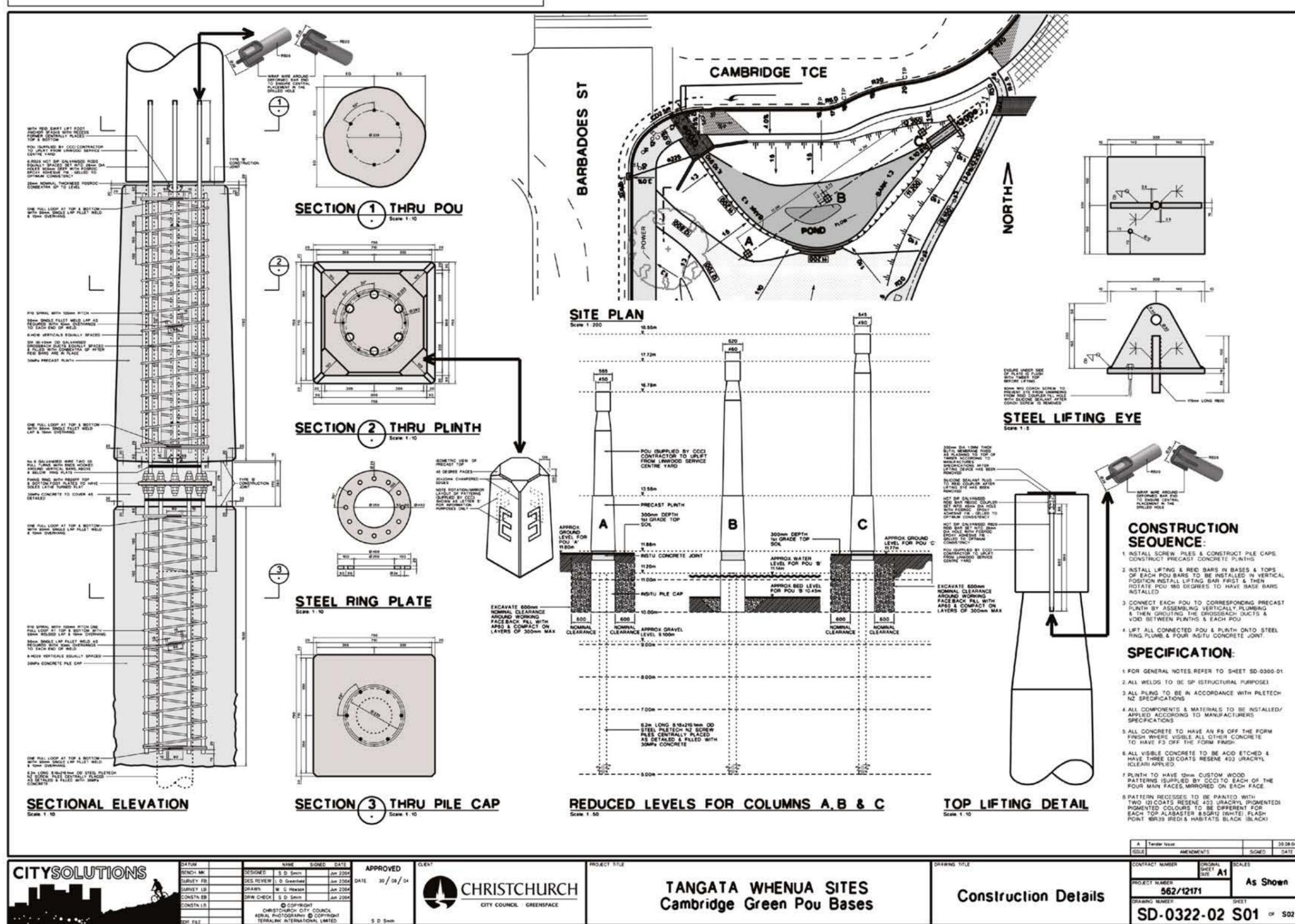
The following conclusions can be drawn:

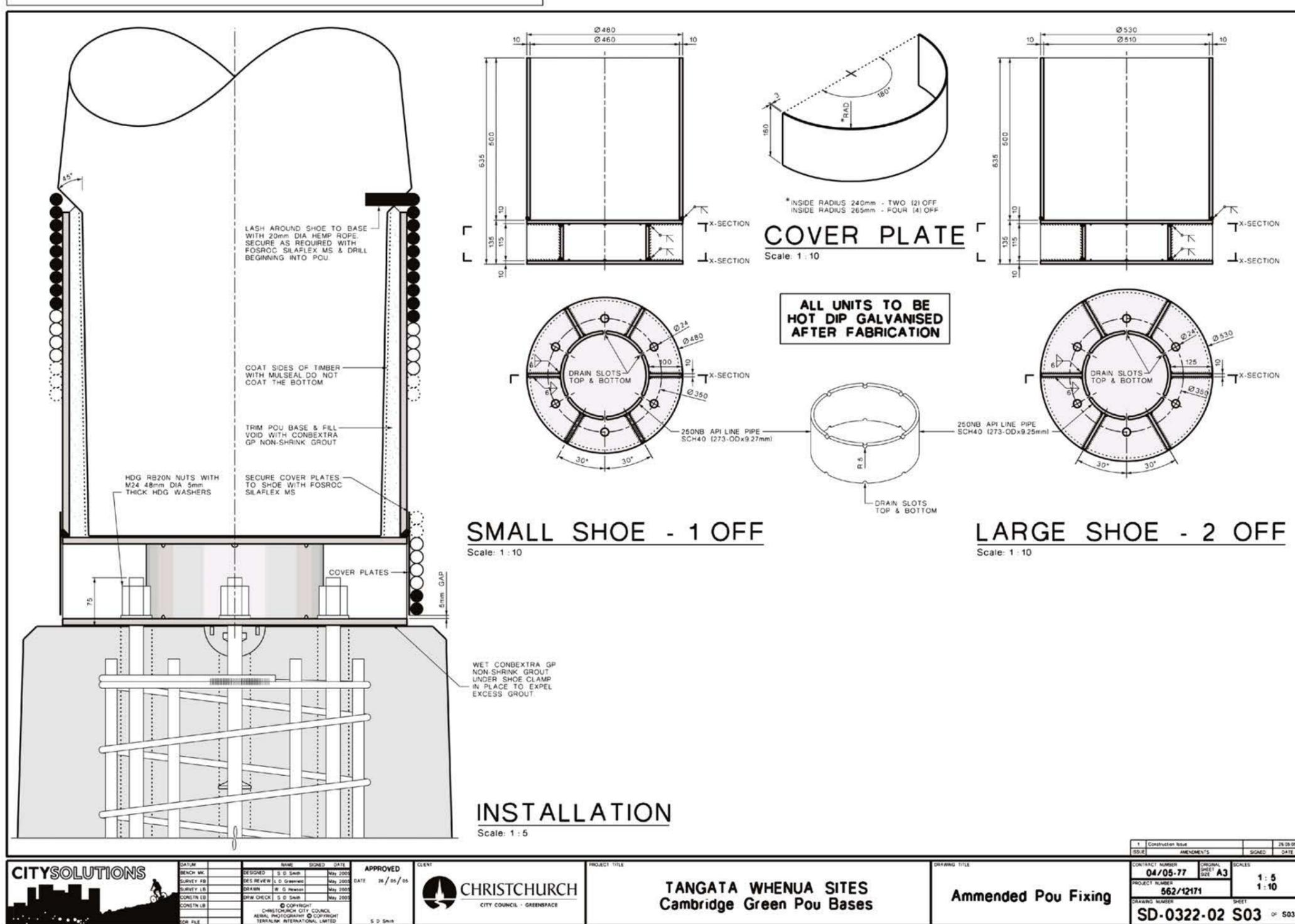
- The 22 February 2011 earthquake subjected the artwork to strong ground shaking, probably well in excess of its design loading and the moderate earthquake definition in the Building Act regulations.
- Site investigations identified moderate to significant liquefaction and lateral spreading around the site. Two of the pillars had tilted towards the Avon River, with the third pillar collapsing due to failure through its timber base.

- Due to the tall, slender construction of the artwork and its connection to the foundation, small lateral ground movements will be amplified to much larger displacements at the top of the pillars, impacting upon the visual appearance.
- Methods to re-level the pillars consist of pulling the pillar as the ground is mechanically vibrated. A replacement section of the collapsed pillar will be required.
- The cost and feasibility of ground improvement of the surrounding area to prevent movement damage compared to having to re-level the structures after potential future earthquakes should be considered and evaluated.

Please Note: This report has been prepared by Capital Delivery Unit, Christchurch City Council solely for the benefit of our client. No liability is accepted by the author, in respect of its use by any other person. Any other person who relies upon any matter contained in this report does so entirely at their own risk.

Appendix A: Original Construction Drawings





WHITE
ACID ETCH & CLEAR
POU 'A' - WHITE
SIDES 1 & 3

BLACK
ACID ETCH & CLEAR
POU 'B' - BLACK
SIDES 1 & 3

RED
ACID ETCH & CLEAR
POU 'C' - RED
SIDES 1 & 3

650
1700

2mm BEVELLED EDGES
16mm
FRONT FACE TO FORM WORK

PLAN VIEW OF CUSTOMWOOD

POU 'A' - WHITE
SIDES 2 & 4

POU 'B' - BLACK
SIDES 2 & 4

POU 'C' - RED
SIDES 2 & 4

A Tender Issue		30/08/14	
ISSUE	AMENDMENTS	SIGNED	DATE

	DWTW DESIGNED SURVEY EB SURVEY LB CONSTN EB CONSTN LB JOB FILE	NAME W. G. Newson S. D. Sevan W. G. Newson S. D. Sevan S. D. Sevan	SIGNED DATE 30/08/14	APPROVED DATE 30/08/14	CLIENT CITY COUNCIL - GREENSPACE	PROJECT TITLE TANGATA WHENUA SITES Cambridge Green Pou Bases	DRAWING TITLE 12mm CUSTOMWOOD RELIEF PATTERNS FOR PRECAST PLINTHS	CONTRACT NUMBER 562/12171	ORIGINAL SHEET SIZE A3	SCALES N.T.S.
	DRAWING NUMBER: SD-0322-02 S02 of S02									

emily fryer conservation

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Cambridge Green Reserve Pou



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condition report – Cambridge Terrace Pou

Contents

1	Executive Summary	3
2	Introduction	3
2.1	Object Summary	3
2.2	Background.....	3
2.3	Description.....	4
2.4	Materials	5
2.5	Fabrication and assembling (including base).....	5
2.6	Surface finish	7
2.7	Inscriptions.....	8
3	Condition	9
3.1	Structural Condition	9
3.2	Surface Condition	13
4	Environment.....	18
5	History and Previous Treatments.....	19
6	Short-term Treatment Recommendations.....	20
7	Long-term Options	20
7.1	Option 1– Exhibition Outdoors	21
7.2	Option 2 – Exhibition Indoors.....	21
7.3	Option 3 – Storage Indoors.....	22

condition report – Cambridge Terrace Pou

1 Executive Summary

This report describes the current condition of one of three pou pou from the Cambridge Green Reserve, and makes recommendations for short term treatment of the object and longer term maintenance.

The following short term recommendations are made:

- Unwrap large fragment detached from statue to allow to dry
- Isolate large fragment (mold growth) as much as possible
- Cover the statue and associated fragments in Tyvek to protect from dripping condensation
- Investigate improvement of air flow in container
- Consult the artist / a cultural advisor. Use this dialogue to inform decisions relating to any future treatment, storage or exhibition, etc., of the artwork.

2 Introduction

2.1 Object Summary

Object	One of three pou pou from Cambridge Green Reserve (2005)
Artist	George Edwards
Dimensions	3.7m long with a 0.54m diameter
Location	Moved to storage at Beckenham Service Centre
Report Date	14 th June 2011
Owner	Christchurch City Council
Contact	Maria Adamski

2.2 Background

A brief site inspection was made in the morning of 26th April 2011 in the container. The weather conditions for the inspection were fair, but the sky was overcast. A follow-up inspection was made on 7th June 2011. The morning was cool and sunny.

The sculpture is in bad condition, having been damaged in the earthquake. It also exhibits a significant degree of deterioration inherent to rotting wood (see Section 5 of this report).

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2.3 Description

Part of a large carved wooden statue with rope detail on base. The piece has a protective rubber covering on its head (likely to protect from water ingress). There is a bituminous substance around the base and large metal nails (possibly for attaching the rope to the statue). Several carved elements near the top of the statue are highlighted in reddish-brown paint. The statue was originally mounted on to a painted concrete plinth.



View of proper left side of pou pou

condition report – Cambridge Terrace Pou

2.4 Materials

Wood - possibly *Macrocarpa*

Varnish / Coating - unknown

Bitumen / Tar

Rope

Nails

Rubber

Paint – unknown

2.5 Fabrication and assembling (including base)

The section of the statue in storage is 3.7 m long. At its widest, the statue has a diameter of 54 cm.

The wood appears to be carved from a single tree.

There is a bituminous substance around the bottom edge of the statue.

Several 78mm long (approximately) nails with 4mm heads are driven in to the bottom edge of the statue.

A 1.15m length of double-stranded rope (80mm circumference) is attached to the bottom of the statue. Photos viewed as part of the on-line article "On the Edge of a Stream" (October 28, 2009 / <http://maorilifestyles.blogspot.com/2009/10/on-edge-of-stream.html>) show that the rope was originally wrapped around the bottom of the wooden portion of the statue, just above the cement plinth. The rope fragments attached to the pou pou, and those accompanying the statue, are likely part of this decorative element.

The cap of the statue is cut to shape from a thin (approximately 1mm thick) sheet of textured black rubber. The rubber appears to be secured to the top of the statue using an unknown adhesive. Nails, staples or other fasteners are not visible.

The exact colour and type of paint used on the statue is currently unknown. However, the painted decorative elements on the concrete plinths has been recorded, and they are all Resene Uracryl 403 paints (white: Alabaster 8.5GR12; black: Habitats Black; red: Flash Point 1BR39).

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Detail of nails in bottom of pou pou



Length of rope attached to bottom of pou pou

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Detail of rubber cap on top of pou pou

2.6 Surface finish

There are multiple holes (around 15mm diameter) over the body of the pou pou. Most of these holes appear to be between 90 and 120mm deep. Despite the lack of visible tool marks in relation to the hole, the relatively uniform depth of the holes suggests that their presence is intentional. Tool marks, likely from carving, are visible on sections of the surface of the statue.

Four linear grooves are cut into the wood about halfway down the length of the statue. The grooves are all approximately 8mm wide, but range in length from 120mm to 225mm.

The statue had an unknown coating / varnish applied in the past. There are also remnants of a reddish colour in the recesses of the carving, particularly in the top portion of the carving.

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Painted surface of topmost section of pou pou



Holes and parallel gouges in side of pou pou

2.7 Inscriptions

There are no inscriptions visible on the pou pou.

Page 8

condition report – Cambridge Terrace Pou

3 Condition

3.1 Structural Condition

The statue appears to be structurally unstable. Documentation (*"Handover of artworks, plaques, memorials"* for Cambridge Green Pou) ascribes an approximate overall height of 8m (0.8m diameter) for each of the three pou pou. Given that the section currently in storage is only 3.7m tall, it is possible that just over 4m of the statue is either missing or remains on-site at the Reserve.

Additionally, there is a large loss to both sides of the statue near the base. One void is filled with rubbish, dirt and wood fragments. A sizable fragment from this void (1.37m in length) was collected, but is still quite wet and has significantly deteriorated.

The wood in the interior of the statue is very soft (almost "spongy"), crumbly, fibrous and still wet to the touch in many places. Wood fragments collected in baggies exhibit similar characteristics. There are also several smaller fragments collected from the river that are drying on ethafoam padding. These were accompanied by a 50 cm section of dirty, fraying and degraded rope.

The statue is drying out, but shows little sign of new large cracks. There are a large number of existing cracks running vertically down the length of the statue. Most of these cracks are no larger than 1-2mm, with the exception of a crack at the bottom of the statue. At its widest, this particular crack is 10mm. These cracks do not appear to have been previously filled.

condition report – Cambridge Terrace Pou



Detail of gouge in side of pou pou



Leaf litter and rubbish in void near broken bottom edge of pou pou

condition report – Cambridge Terrace Pou



Detail of decaying wood in void near broken bottom edge of pou pou



1.37m fragment wrapped in ethafoam (left) and unwrapped (right)

condition report – Cambridge Terrace Pou



Fragments of wood and rope collected from river



Baggies of wood fragments collected from river

condition report – Cambridge Terrace Pou



Detail of degraded rope collected from river

3.2 Surface Condition

The sculpture is covered with a layer of surface dirt.

The varnish has flaked off in most places and on the head has become whitened from water damage. The wood has coloured to a grey-silver where weathered. Newly exposed areas are pinky-yellow.

The statue is dirty overall. Dirt and leaves / grass hang of the back of the statue. Its cracks and voids in the wood are filled with a variety of materials, including insect casings, spider webs, snails / snail trails, leaf litter and rubbish. Many of the small holes found over the surface of the pou pou are also filled with dirt, debris and tiny wood fragments. The piece has a fairly strong smell which may mean it is contaminated by sewage from the water.

The rubber cap is coated in dirt.

No active mold was seen on 26th April 2011. However, by 7th June 2011 large patches of active mold were growing on the large fragment of wood from the bottom of the statue. Patches of mould and mould spores were also found in various spots on the side of the pou.

condition report – Cambridge Terrace Pou



Dirt, leaves / grass hanging off bottom of top portion of the pou pou



Water droplets (left) and snail (right) on surface of pou pou

condition report – Cambridge Terrace Pou



Remnants of varnish and exposed greying surface



Dirt on wooden fragment collected from the river (note degraded condition)

condition report – Cambridge Terrace Pou



Dirt on rubber cap of pou pou

condition report – Cambridge Terrace Pou



Mould actively growing on side of 1.37m fragment

condition report – Cambridge Terrace Pou



Mould growing near linear groove on side of pou pou

4 Environment

The piece has been removed to a container (unlined) at Christchurch City Council's Beckenham Service Centre. The statue itself is on its side lying on several blocks of wood padded with black plastazote on top. Fragments of wood and rope sit uncovered on plastazote. The baggies of wood fragments were unsealed so as to allow the wet wood to dry. Only the larger fragment from the bottom of the statue was still wrapped up in ethafoam.

Droplets of condensation were noticeable on the ceiling of the container, suggesting a storage environment that lacks airflow and suffers from high humidity.

condition report – Cambridge Terrace Pou



Droplets of condensation on ceiling of storage container

5 History and Previous Treatments

The statue was one of a set of three pou pou installed on the Cambridge Green Reserve grounds on 11th August 2005 by Niveau Construction. Each pou pou was set on to a cement plinth designed by City Solutions and decorated with Maori cultural designs.

The following documents were consulted and provide a background to the development of the Cambridge Green Reserve, as well as the commissioning and creation of the statues to be installed therein.

- Correspondence: D. Sissons to A. Kamo, 8 August 2006
- Correspondence: A. Kamo to D. Sissons, 17 July 2006
- "Meeting Notes of a Meeting to Consider Artwork Development for Cambridge Green", 16 April 2003
- Map of Cambridge Green Reserve / Tautahi's Pa, City Solutions / Christchurch City Council
- Correspondence: Christchurch City Council Parks and Waterways Unit to M. Parsons, 23 August 2002
- Correspondence: P. B. Dickson to Rev. M. Gray, 6 May 2002
- Meeting Minutes: Cambridge Management Group, 13 November 2001
- Report: "Pointing to the Matters of Resource Management Significance to Takata Whenua in Regard to the Concept Plan for St. Mary's Stream Cambridge Green Reserve", prepared for the Water Services Unit of

condition report – Cambridge Terrace Pou

the Christchurch City Council by ORA Environmental Services,
December 2000

There are no records of any on-site treatment of the statue, but a document relating to the Cambridge Green statues entitled "*Handover of artworks, plaques, memorials*" does briefly outline ideas for a possible maintenance schedule. This includes a plan to have City Solutions monitor the condition of the wood, as "the timber was installed in a degraded state". It appears that the coating on the timber was to be allowed "to weather off" / "not recommended to repair". The concrete plinths were to be cleaned "as required".

The document also suggests an expectation of a limited lifespan for the statues. The timber, which was rotting, was thought to last 5-10 years. It was anticipated that the rope would have a life span of about 5 years ("or until vandalized"), while the concrete plinths would last considerably longer (50 years).

The statue was removed from the lower banks of the Avon River after the 22nd February 2011 earthquake. Wood fragments of various sizes were also removed from the river, along with a second piece of rope. These were extremely wet, and have been drying out in the container at Beckenham.

6 Short-term Treatment Recommendations

The following short term treatment recommendations will facilitate the need to stabilize the condition of the artefact without the need to partake in any interventive treatment:

- Unwrap large fragment detached from the statue to allow it to dry.
- Isolate mould growth on large fragment and the rest of the statue as much as possible. It is not advisable to store other organic materials in the storage container with this item in its present condition.
- Cover the statue and associated fragments in Tyvek. This will protect the wood from dripping condensation and allow it to breathe.
- Improve RH conditions investigating and implementing means by which air flow can be improved within the container (e.g. creating a vent hole of a suitable size and location).

7 Long-term Options

Developing and implementing a full treatment proposal / long-term care plan for the Cambridge Green Reserve statue should not be undertaken without first consulting the artist and / or a cultural advisor. It will be necessary to fully

condition report – Cambridge Terrace Pou

discuss the implications of possible treatment options, as they may affect the artist's intent of the statue. The following treatment / maintenance options are presented for consideration, and can be more fully developed using the information gathered as part of the "artist's interview" process.

7.1 Option 1– Exhibition Outdoors

Fairly extreme measures will need to be taken if the statue is to be re-installed outdoors (either on its original plinth in the Cambridge Green Reserve, or elsewhere).

- Clean dirt, debris and rubbish from voids, holes and cracks
- Remove lichen and moss from surface
- Treat mould growth
- Treat possible sewage contamination
- Assess need for treating possible insect infestation
- Stabilize and/or remove deteriorating wood
- Fill voids in wood and/ or remove highly degraded material
- Replace rope
- Re-touch painted surfaces and fill cracks if deemed appropriate
- Protect surface by re-coating statue
- Attach securely to new or existing plinth. If using the existing plinth, a decision will need to be made about treating / making use of portion of statue still attached to existing plinth. Making use of any remaining wood will require that the degraded wood be treated and be able to structurally support the rest of the statue.
- Develop a monitoring and maintenance program – dirt, lichen, moss, vandalism, expansion / development of new or old cracks, deterioration of coating, degradation of wood, etc. Regular on-going maintenance after treatment is essential to the longevity of the statue should it be decided to re-exhibit the artwork outdoors.

7.2 Option 2 – Exhibition Indoors

A great deal of treatment will also need to be undertaken in order to stabilize the statue for exhibition indoors.

- Clean dirt, debris and rubbish from voids, holes and cracks
- Treat mould growth
- Treat possible sewage contamination
- Assess need for treating possible insect infestation
- Stabilize deteriorating wood
- Fill voids in wood and/or remove highly degraded material.
- Re-touch painted surface / fill cracks if deemed appropriate
- Replace rope
- Retouch paint / fill cracks if deemed appropriate

condition report – Cambridge Terrace Pou

- Attach to a new plinth and attach a central support structure in stainless steel.
- Provide and monitor safe, secure and environmentally controlled (as much as possible) conditions for exhibition of the statue

7.3 Option 3 – Storage Indoors

The statue could take on new life as a research piece to be retained in suitable indoor storage conditions

- Clean dirt, debris and rubbish from voids, holes and cracks
- Remove lichen and moss from surface
- Treat mould growth
- Assess possible sewage contamination
- Assess need for treating possible insect infestation
- Stabilize deteriorating wood
- Treat remaining rope fragments
- Provide and monitor safe, secure and environmentally controlled conditions for the long-term storage of the statue
- Case piece

condition report – Cambridge Terrace Pou

Estimates

Please note that the estimate provided is not a quotation. The complex nature of the work involved means that additional problems may be discovered during treatment. If this indicates a cost increase we will notify the client and await further instructions before proceeding. You will be entitled to withdraw the object or objects upon payment for the work already done. For the same reason, any time estimates or guidelines can only be given as an indication. We cannot guarantee completion by a given date, as the well-being of the object or objects must be given prime concern. Notwithstanding that all treatments are carried out to the highest standards, no warranty in respect of the quality or durability of the final result will be implied or expressly given. Information gathered through technical examination may have a bearing on the date or source of an object, but we cannot and do not give opinions or issue statements on questions of style, authorship or monetary value of an object.

Estimates are valid for a period of 90 days from the date of the estimate after which we reserve the right to revise the estimate.

Conditions of Acceptance

In agreeing to the treatment or examination of an object, you accept the following terms and conditions:

- You agree to indemnify Emily Fryer Conservation Ltd from any and all liability in the event of any claim by any other person based in any way upon records, reports or opinions arising from the treatment or examination of an object. Further to this you agree that any transcripts, reports or opinions arising from the treatment or examination of an object may be used for scientific and educational purposes at our discretion.
- In the event of serious damage to the object while in our care, whether due to act of God, riot or other violence, or to other similar or dissimilar causes, we will be free to determine the course to be followed in protecting or removing such objects and storing them and any such determination shall be final and shall not subject us to any liability. Any reasonable cost of such protection, removal or storage shall be reimbursed to us by you.
- A storage fee equal to one hour's labour (\$100) may be charged for any object left one month past notification of completion. A similar fee may be added each succeeding month, and after six months the object may be considered abandoned property and sold in lieu of payment.
- These provisions shall be binding upon the client or other owner and on their respective heirs, legal representatives and assigns.

Insurance

We do not provide insurance for the object or the treatment. Objects under examination or treatment are at your sole risk at all times. In agreeing to the treatment or examination of the object, you waive and release any and all claims which may arise for damage to or loss of or related to such objects, however occasioned, and whether or not due to our negligence or default.

Copyright

Emily Fryer Conservation Ltd will retain the copyright in any report that we prepare and of any photographs we take of the object.

Ongoing Care by the Client

The client is advised to follow any written guidelines we may issue for the care and treatment of an object after we have worked on it. If these guidelines are not followed then the condition of the object may be adversely affected.

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Registered in New Zealand, number 2025954



**Pouwhenua Assessment – Core Sampling
Cambridge Green, Cambridge Terrace**

Client:	Christchurch City Council
Contact:	Jo Grigg (Project Manager – Consultant), Facilities Infrastructure Rebuild
Site:	Cambridge Green, Cambridge Terrace, CBD, Christchurch
Author:	Ed Sard
Date:	05/07/16 Final (Revised)



1.0 Introduction

- 1.1 Treotech Specialist Treecare Ltd was contacted by Jo Grigg (Project Manager – Consultant) for Facilities Infrastructure Rebuild on behalf of Christchurch City Council and engaged to attend the site of Cambridge Green, Cambridge Terrace to carry out an assessment of two Pouwhenua. The Pouwhenua are artistic wooden poles positioned on concrete plinths and an assessment of the structural integrity of the two Pouwhenua was required to inform interested parties as to the safety and future management of the Pouwhenua within the context of the site.
- 1.2 The two Pouwhenua were specifically assessed for the structural integrity of their wood structure following the failure of a third Pouwhenua during the Canterbury Earthquakes. Observations of the failed Pouwhenua identified wood decay within its structure. As part of the assessment, two core samples were obtained using an increment borer from each Pouwhenua. In addition to the core samples, observations as to the general condition of the two Pouwhenua and the surrounding targets were recorded.
- 1.3 The following details were recorded following a site visit on Monday 13th June 2016.
- 1.4 The two Pouwhenua were inspected from ground level and aerially by a qualified arborist experienced in assessing the structural integrity and composition of trees.
- 1.5 Whilst core samples were obtained for on-site analysis, no additional advanced decay testing was carried out. The following report provides observations as to the likely composition and structural integrity of the two Pouwhenua. The structural integrity of the concrete plinths and their attachment points was not assessed and falls outside the remits of this report.
- 1.6 An assessment of the base of each Pouwhenua pole and their attachment onto the concrete plinths was limited by the presence of decorative rope.

2.0 Site Observations:

2.1 The two Pouwhenua are located within the open recreational area of Cambridge Green, Cambridge Terrace. The Pouwhenua are positioned within native planting on the northern boundary of Cambridge Green and are located adjacent to a small pond. The two Pouwhenua are positioned on concrete plinths, with a third Pouwhenua having been removed post-earthquake. Its concrete plinth still remains in-situ within the pond (see Appendix A).

Pouwhenua - 1

- 2.2 This is the smaller of the two assessed Pouwhenua. The height from the top of the concrete plinth to the top of the Pouwhenua was measured at 3.3 metres (see photo 1a).
- 2.3 An initial assessment of the Pouwhenua observed a slight lean to the north/north east but this is possibly attributed to historic ground movement and/or displacement of the concrete plinth as a result of the Canterbury Earthquakes (see photo 1b).

Photo 1a & 1b:



2.4 A sounding hammer was used as an initial method of identifying whether the Pouwhenua had areas of weak or decaying wood structure. Audible changes in tone

3

would indicate areas of potentially poor wood structure in addition to visual observations of deteriorating wood on the exposed surface.

- 2.5 Pouwhenua 1 has an area of deteriorating wood on the northwest side at approximately 1 metre height above the top of the concrete plinth. The outer surface has splintered exposing the internal wood. This in turn has exposed the wood structure to the elements, ie moisture and frost. The exterior wood was brittle and there were audible changes on tone when struck with the sounding hammer. Both Pouwhenua have been treated in what appears to be a type of varnish to protect the outer surface, but with time this has weathered.
- 2.6 Two core samples were obtained from Pouwhenua 1;
- Sample A: Core taken at 0.9 metres height from top of plinth (west side) to a depth of 300mm. Diameter of wooden pole at sampling location 580mm (see photo 2a).
- Sample B: Core taken at 2.4 metres height from top of plinth (south side) to a depth of 200mm. Diameter of wooden pole at sampling location 430mm (see photo 2b).

Photo 2a & 2b:



Photo 2a: Location of core sample A (indicative) – Pouwhenua 1

Photo 2b: Location of core sample B (indicative) – Pouwhenua 1

Findings:

- 2.7 Sample A: This sample was obtained within the lower third of the Pouwhenua. Taken from an area identified as having a poor exterior surface with visible degradation, the actual core sample was found to contain good wood structure with sound heartwood. This indicates that the degradation of the wood has at the time of the inspection been confined to the outer weathered surface of the Pouwhenua in a localised area.

	<p>Core sample A:</p> <p>Height taken at: 0.9m (west side)</p> <p>Diameter of wooden pole at sampling location: 580mm</p> <p>Bore depth: 300mm</p> <p>Soft wood (outer wood): 15mm depth</p> <p>Sound wood: 15mm to 300mm depth</p>
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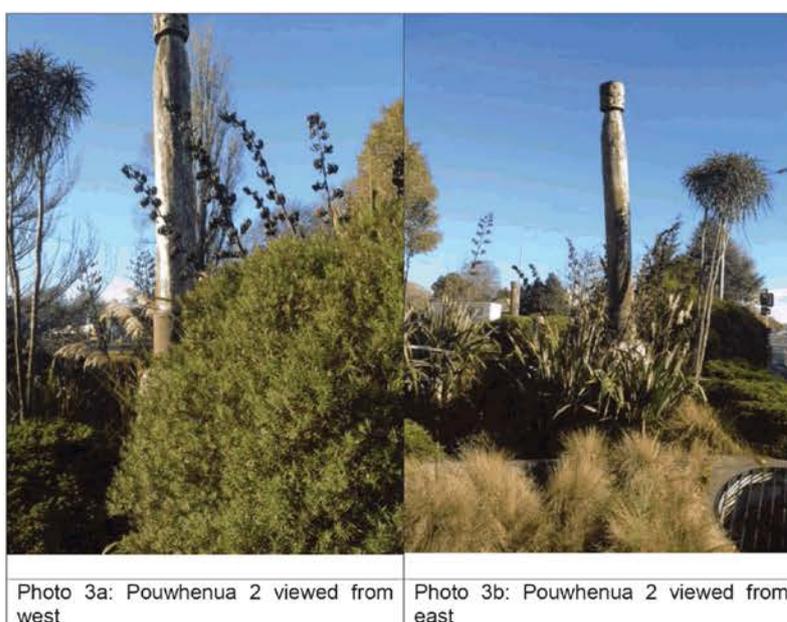
- 2.8 Sample B: This sample was obtained within the upper third of the Pouwhenua. Taken from an area identified as having good exterior surface with no visible degradation, the actual core sample was found to contain good wood structure with sound heartwood. There was no discolouration indicating a change in wood structure or presence of decay.

	<p>Core sample B:</p> <p>Height taken at: 2.4m (south side)</p> <p>Diameter of wooden pole at sampling location: 430mm</p> <p>Bore depth: 200mm</p> <p>Soft wood (outer wood): 0.10mm depth</p> <p>Sound wood: 0.10mm to 200mm depth</p>
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Pouwhenua - 2

- 2.9 This is the larger of the two assessed Pouwhenua. The height from the top of the concrete plinth to the top of the Pouwhenua was measured at 5.8 metres (see photo 3a).
- 2.10 An initial assessment of the Pouwhenua observed a minor lean to the southeast but this is possibly attributed to historic ground movement and/or displacement of the concrete plinth as a result of the Canterbury Earthquakes (see photo 3b).

Photo 3a & 3b:



- 2.11 As with Pouwhenua 1, a sounding hammer was used as an initial method of identifying whether the Pouwhenua had areas of weak or decaying wood structure. Audible changes in tone would indicate areas of potentially poor wood structure in addition to visual observations of deteriorating wood from exposed surfaces.
- 2.12 Pouwhenua 2 – The wooden structure appears to have been repaired in previous years with circular wooden discs and strips of different wood embedded into the wooden structure. These were identified due to their different colour and texture when compared with the surrounding wood. Audible changes were noted with the sounding hammer when localised areas were struck. This was not confined to one particular area and differing resonance was noted in a number of locations around the circumference of the pole. Some areas had a weakened and deteriorating exterior surface with soft wood and cracked varnish. As with Pouwhenua 1, the surface of the wooden pole has been treated with a protective varnish.

7

2.13 Two core samples were obtained from Pouwhenua 2;

Sample C: Core taken at 0.9 metres height from top of plinth (east side) to a depth of 350mm. Diameter of wooden pole at sampling location 520mm (see photo 4a).

Sample D: Core taken at 2.3 metres height from top of plinth (north side) to a depth of 350mm. Diameter of wooden pole at sampling location 450mm (see photo 4b).

Photo 4a & 4b:



Findings:

- 2.14 **Sample C:** This sample was obtained within the lower third of the Pouwhenua. Taken from an area identified as having a poor exterior surface with visible degradation and changing resonance when sounded with a hammer, the core sample was found to contain poor wood structure. The extracted core was very small, pale in colour with a lighter density and softer texture when compared to the other core samples obtained from Pouwhenua 1. The increment borer was easily inserted into the sampling site with minimal effort required to obtain the sample. This indicates weakened wood structure, with a softer interior and potentially reduced tensile strength.

	<p>Core sample C:</p> <p>Height taken at: 0.9m (east side)</p> <p>Diameter of wooden pole at sampling location: 520mm</p> <p>Bore depth: 350mm</p> <p>Soft wood (outer wood): 0 – 170mm plus depth. Note approx. 70mm plus of sample deteriorated on site when being removed from borer.</p> <p>Sound wood: Estimated at 250mm plus depth</p>
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- 2.15 Sample D: This sample was obtained within the upper third of the Pouwhenua. Taken from an area identified as having good exterior surface with no visible degradation, the actual core sample was found to contain wood varying from average to poor structure. The extracted core was pale in colour with darkened patches randomly spaced along the sample. The texture of the wood was softer and the density lighter when compared to the other core samples obtained from Pouwhenua 1. As with sample C, this indicated that the wood within the vicinity of the sample is weaker in structure, with potentially reduced tensile strength.

	<p>Core sample D:</p> <p>Height taken at: 2.3m (north side)</p> <p>Diameter of wooden pole at sampling location: 450mm</p> <p>Bore depth: 350mm</p> <p>Soft wood (outer wood): 0 - 180mm plus depth. Note approx. 30mm plus of sample deteriorated on site when being removed from borer.</p> <p>Sound wood: Estimated at 210mm plus depth</p>
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3.0 Conclusion:

- 3.1 The core sampling was commissioned to determine the structural integrity of the two remaining Pouwhenua at Cambridge Green. There were originally three Pouwhenua located on site, but one Pouwhenua was found to contain decaying wood following the Canterbury Earthquakes. With the remaining two Pouwhenua located in an area accessible to members of the public, the safety aspect of these artistic structures needs to be considered.
- 3.2 Pouwhenua 1 is located within native planting adjacent to an open area of managed grass. An entry point for pedestrians into Cambridge Gardens from Barbadoes Street is located to the east but there are no roads or formed pedestrian footpaths immediately adjacent to the Pouwhenua. Therefore the targets within one length of its total height are reduced. Occupancy rates for Cambridge Green and the access point from Barbadoes Street are relatively low and seasonally driven.
- 3.3 It is exhibiting signs of exposure to the weathering effects of the sun, rain and frost. A protective layer of varnish does cover the main structure but this has degraded with time and moisture has entered the exterior surface of wood. The outer edges of the wood structure is exposed in a defined area on the west side, and the condition of the exterior wood was found to be brittle and degrading in selected places. However, the core samples indicate, that whilst there continues to be a level of wood degradation to the outer surface, this is confined to a small area. More importantly, the internal heartwood appears to be sound, with no cavities or seated decay found.
- 3.4 Pouwhenua 2 is also located within native planting, but it is located in a more exposed position adjacent to Cambridge Terrace road, with its associated footpath (south side of Cambridge Terrace) and a linked access footpath from Cambridge Terrace into Cambridge Green. All these targets are within one length of its total height and at the time of inspection, the access footpath was being used by members of the public as a cut through from Cambridge Terrace to Barbadoes Street and the central city.
- 3.5 As with Pouwhenua 1, Pouwhenua 2 is exhibiting signs of exposure to the elements, with varying levels of deterioration of the exterior wood. The exterior wood surface is brittle and despite the protective varnish layer, continues to be exposed to the effects of weathering. The core sampling indicated that the density and texture of the internal wood within the whole structure is of reduced quality. Whilst no cavities or seated decay were observed externally or within the samples obtained, it is highly likely that the tensile strength of the wood structure within Pouwhenua 2 is weaker when compared to Pouwhenua 1. The density and texture of the sampled cores indicates softer wood which continues to be impacted by the presence of moisture, frost and desiccation. This was particularly evident on the east side within the lower third of Pouwhenua 2 where sampling took place. Pouwhenua 2 is the larger of the two at 5.8 metres height and has the greater target area.
- 3.6 The limitations of obtaining core samples at greater depths than those recorded were governed by the length of the increment borer (400mm) and the density of the wood structure. Further investigation utilising other more advanced decay detection techniques could be carried out. However, by collecting samples from defined areas of both Pouwhenua and comparing their density and texture to sound wood structure observed within trees, we have been able to surmise as to the likely condition of the Pouwhenua at the time of the assessment.

11

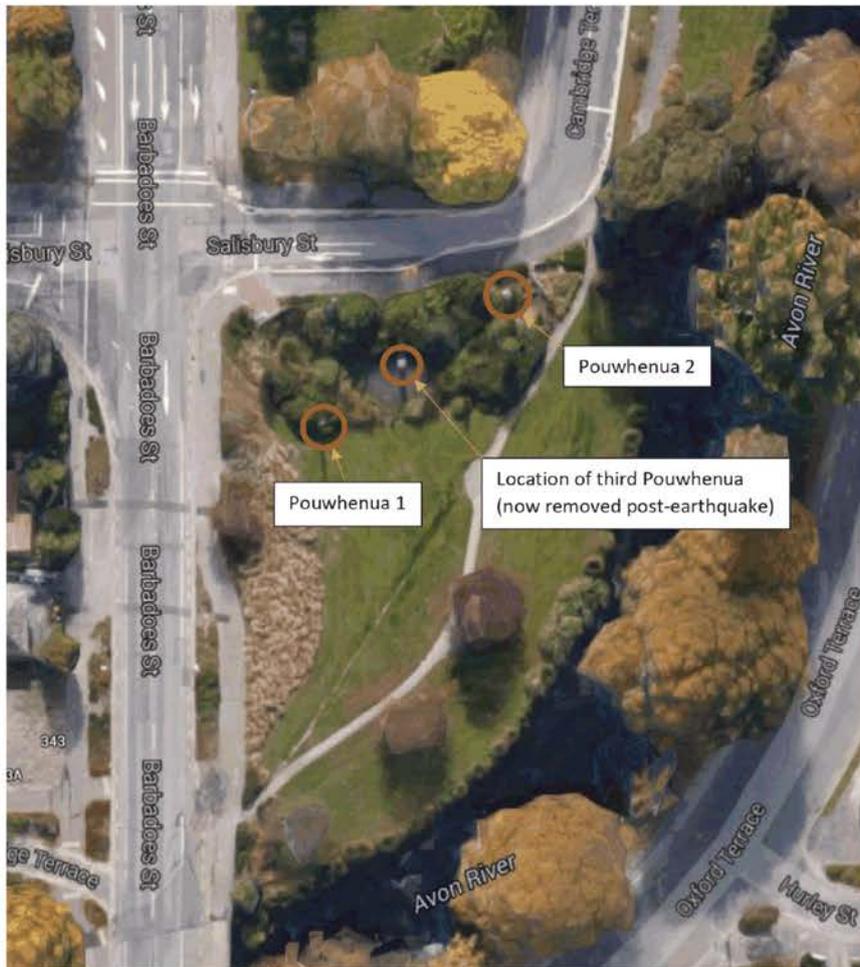
- 3.7 Limitations of the decorative rope covering the attachment point between the Pouwhenua and concrete plinths prevented a detailed assessment of these particular areas. This is a potential area of failure as it is likely to be the weakest point of the structures. Further investigation of the attachment point by engineering professionals is therefore recommended, to include the stability and structural integrity of the concrete plinths themselves.
- 4.0 Recommendations:**
- 4.1 Pouwhenua 1 – Analysis of core samples at the time of the inspection indicate that it still contains enough sound wood of adequate tensile strength to be retained and monitored.
- 4.2 Pouwhenua 2 – Analysis of core samples at the time of the inspection indicate that the tensile strength of the structural wood has been compromised and as a result the amount of sound wood has been reduced to such an extent that it should be removed with options as detailed in paragraph 4.4 considered.
- 4.3 The location of Pouwhenua 2 with the more exposed targets of greater occupancy rate within one length of its total height is a considered factor. The overall wood structure within Pouwhenua 2 was found to have less tensile strength than Pouwhenua 1. The degradation of the exterior surface continues and it appears to have been actively repaired with new pieces of wood added over time. This further indicates that the wood has degraded in the past and may well be deteriorating both externally and internally at a faster rate than the wood in Pouwhenua 1.
- 4.4 Considered options for Pouwhenua 2 are;
- Relocate to another location within the native planting to remove the target area, eg use the existing spare plinth as new base. The relocation could be incorporated into a re-modelling of Pouwhenua 2 so as to retain its existing form and cultural significance, whilst making it smaller in stature.
 - Reduce the risks of failure by strengthening the attachment point and reinforcing the main structure with engineering solutions, whilst maintaining the aesthetic and cultural importance of the Pouwhenua.
 - Remove the Pouwhenua and replace with new Pouwhenua or similar structure in another area of Cambridge Green away from identified targets.
- 4.5 Pouwhenua 1 is exhibiting the effects of weathering to exposed surfaces, but the structural integrity of the internal wood appears to be stronger. Its position away from identified targets and less occupancy rate negates the need for moving or strengthening, but it should continue to be monitored every two years. The blistered exterior wood (west side) could be repaired for aesthetics and an additional protective layer of varnish reapplied over the whole Pouwhenua.

Ed Sard
Consultant Arborist
Treetech Specialist Treecare Ltd

12

Location Plan

Appendix A



13

STRUCTURAL REVIEW REPORT

CAPITAL PROGRAMME GROUP

STRUCTURE: Cambridge Green Poupou	
ADDRESS: Corner of Cambridge Terrace and Barbados St/Salisbury Street	
SIZE: Two pillars of 4.9m and 6.8m height by 0.6m diameter	
YEAR BUILT: 2004	
INSPECTION BY: Natasa Aleksic	DATE: 10/01/2019
PREPARED BY: Natasa Aleksic	DATE: 24/01/2019

INTRODUCTION

Structural review of the two pou structures at corner of Cambridge Terrace and Barbados Street has been requested due to concerns about structural stability. The two pillars tilted 5° (H=4.9m) and 6° (H=6.8m) following the 2010-2011 Canterbury earthquakes. Structural inspection report dated October 2012 identified extensive damage due to liquefaction and lateral spreading of the ground. This caused the pillars to move and rotate as rigid body from the base of the screw piles. Third pillar collapsed. Failure of the third pillar at the timber base to steel housing connection was due to rotten timber.

INSPECTION

Structural inspection was carried out on 10th January 2019. Pillars were surrounded by dense shrubs which made access to the structures difficult. The following observations were made regarding condition of the two structures:

6.8m high pillar:

- Angle of inclination, measured relative to the vertical street posts, is approximately 7°
- There is no visible damage of timber at the timber base to steel housing connection/ critical section.
- There is no visible damage at the connection of the steel housing to concrete plinth.
- Structure is located next to the footpath, therefore, failure could endanger human life.

4.9m high pillar:

- Angle of inclination, measured relative to the vertical street posts, is approximately 5°
- There is no visible damage of timber at the timber base to steel housing connection/ critical section.
- There is no visible damage at the connection of the steel housing to concrete plinth.
- Structure is surrounded by native planting. It is not likely that failure of the structure would endanger human life.

STRUCTURAL REVIEW

Timber section capacity at the critical location was calculated assuming the pillars are made of totara heartwood with the following characteristic strength properties (Totara ingrade test results, Scion CRI):

Bending Strength	20MPa
Tension Strength	10MPa
Shear Strength	4MPa
Compression Strength	30MPa

Assessment of structural integrity of the wood was carried out in July 2016 by Treotech Specialist Treecare Ltd. Results of the core sampling for 6.8m high pou showed weakened wood structure with a softer interior and potentially reduced tensile strength. Sample obtained within the lower third of the pou had deteriorated exterior surface of approximately 70mm thickness.

Timber section capacity at the critical location was calculated using reduced section size (D = 490mm-2*70mm) because of deteriorated surface. Accurate reduction factor due to weakened wood structure is unknown. However, for calculation purpose 40% reduction of characteristic strength was assumed.

6.8m pou structure was analysed for the following ultimate limit state loads:

- Gravity load (self-weight)
- Wind load (design wind speed = 37.4m/s, Terrain category 3)
- Seismic load (Response spectrum modal analysis; ductility factor = 1.0, soil class D)

Calculations show that wind (along-wind and crosswind combination) is the governing load. However, more accurate seismic load calculation would be required, where the timber structure is analysed as a part. In accordance with NZS 1170.5:2004 this requires a special study to determine dynamic characteristics of the part. However, given the unknown accurate timber properties a special dynamic study seems unreasonable at this stage.

Calculation results for 6.8m high pou are shown in the table below:

Critical timber section check					
	diameter	bending strength	capacity	demand (Wind load)	
	D (mm)	fb (MPa)	ϕ Mn (kNm)	M* (kNm)	demand/capacity
intact section	490	20	184	39	0.21
reduced diameter due to deterioration (70mm)	350	20	67	39	0.58
reduced diameter and reduced strength due to weakened wood*	350	12	40	39	0.98

* assumed reduction factor = 0.6

CONCLUSIONS

- There is no visible damage or increase of the inclination angle of the pillars which means that the structures have been structurally stable since the post-earthquake inspection in 2012.
- Structural strength and stability depend on material/ timber properties which are unknown. Timber section capacity was calculated using assumed material properties. Therefore, capacity calculation results are only an estimate.
- Calculation results show it is likely that the critical timber section still has some reserve capacity despite of weakened wood structure.
- Special study would be required to determine the maximum seismic load. With the available information it is reasonable to conclude that failure of the structure at the critical timber section is possible in the event of a strong earthquake.

Inspection and structural analysis results of the pou structures show that there is likely no reason for immediate alarm. However, given the unpredictability of earthquake events and the unknown current condition of weakened timber we suggest that the pillars be removed as soon as possible.

Report from Linwood-Central-Heathcote Community Board – 20 February 2019

18. Gloucester/Worcester Street Park - Proposed Name and Landscape Plan

Reference: 19/188426
Sarah Blows, Parks Planner

Presenter(s): Nicki Williams, Landscape Architect
Jennie Hamilton, Engagement Advisor

1. Linwood-Central-Heathcote Community Board Consideration

1. The Board were concerned on the lack of walkway lighting, a rubbish bin and a drinking fountain for people and dogs. The Board requested further staff advice on the inclusion of these items in the landscape plan.

2. Staff Recommendations

That the Waikura/Linwood-Central-Heathcote Community Board:

1. Approve and recommend to the Council for adoption the proposed name as listed below:

Proposed Name	Address	Legal Description	Area	Reserve Classification
Te Ara a Rongo – Gloucester/Worcester Park	300 Gloucester Street	Part Town Reserve 88	0.0506	Recreation Reserve
	302 Gloucester Street	Lot 1 Deposited Plan 7674	0.0508	Recreation Reserve
	304 Gloucester Street	Lot 2 Deposited Plan 7674	0.0521	Recreation Reserve
	261 Worcester Street	Part Section 88 Town Reserve Christchurch	0.0516	Recreation Reserve

2. Approve the landscape plan (reference number LP373602) for the development of the new community park located at 300, 302, 304 Gloucester Street and 261 Worcester Street (**Attachment A**).

3. Linwood-Central-Heathcote Community Board Decisions Under Delegation

Part C

That the Waikura/Linwood-Central-Heathcote Community Board:

1. Approve the landscape plan (reference number LP373602) for the development of the new community park located at 300, 302, 304 Gloucester Street and 261 Worcester Street (Attachment A).
2. Request staff advice on the possible placement of a recycle/rubbish bin, a drinking fountain and the cost of putting lighting along the walkway for Te Ara a Rongo – Gloucester/Worcester Park.

4. Linwood-Central-Heathcote Community Board Recommendation to Council

Original Staff Recommendation Accepted with Change

Part A

That the Council:

1. Adopt the proposed park name as listed below:

Proposed Name	Address	Legal Description	Area	Reserve Classification
Te Ara a Rongo – Gloucester/Worcester Park	300 Gloucester Street	Part Town Reserve 88	0.0506	Recreation Reserve
	302 Gloucester Street	Lot 1 Deposited Plan 7674	0.0508	Recreation Reserve
	304 Gloucester Street	Lot 2 Deposited Plan 7674	0.0521	Recreation Reserve
	261 Worcester Street	Part Section 88 Town Reserve Christchurch	0.0516	Recreation Reserve

Attachments

No.	Report Title	Page
1	Gloucester/Worcester St Park - Proposed Name and Landscape Plan	271

No.	Title	Page
A ↓	Gloucester/Worcester St Park - Proposed Landscape Plan	282
B ↓	Gloucester/Worcester St Park Submissions	283

Gloucester/Worcester St Park - Proposed Name and Landscape Plan

Reference: 19/10383

Presenter(s): Sarah Blows – Parks Planner, Nicki Williams – Landscape Architect, Jennie Hamilton – Engagement Advisor

1. Purpose and Origin of Report

Purpose of Report

- 1.1 The purpose of this report is for the Waikura/Linwood-Central-Heathcote Community Board to:
 - 1.1.1 To approve and recommend to the Council for adoption the proposed park name.
 - 1.1.2 Approve the landscape plan for the development of a new community park located at 300, 302, 304 Gloucester Street and 261 Worcester Street (**Attachment A**).

Origin of Report

- 1.2 This report is staff generated following a seminar with the Waikura/Linwood-Central-Heathcote Community Board on 17 September 2018.
- 1.3 The report presents a proposed name and landscape concept plan for a new community park located at 300, 302, 304 Gloucester Street and 261 Worcester Street. The proposed name and landscape plan was prepared in consultation with the community and affected stakeholders.

2. Significance

- 2.1 The decisions in this report are of low significance in relation to the Christchurch City Council's Significance and Engagement Policy.
 - 2.1.1 The level of significance was determined by using the engagement and significance matrix. While there are strong social and environment benefits in developing the park in this densely populated residential area, the project area is small and there is minimal risk to the Council in implementing the proposals.
 - 2.1.2 The community engagement and consultation outlined in this report exceed the requirements for this level of significance because a decision was made at the outset of this project for staff to work closely with the surrounding community to develop a landscape plan and name for the neighbourhood park.

3. Staff Recommendations

That the Waikura/Linwood-Central-Heathcote Community Board:

1. Approve and recommend to the Council for adoption the proposed name as listed below:

Proposed Name	Address	Legal Description	Area	Reserve Classification
Te Ara a Rongo – Gloucester/Worcester Park	300 Gloucester Street	Part Town Reserve 88	0.0506	Recreation Reserve

Proposed Name	Address	Legal Description	Area	Reserve Classification
	302 Gloucester Street	Lot 1 Deposited Plan 7674	0.0508	Recreation Reserve
	304 Gloucester Street	Lot 2 Deposited Plan 7674	0.0521	Recreation Reserve
	261 Worcester Street	Part Section 88 Town Reserve Christchurch	0.0516	Recreation Reserve

2. Approve the landscape plan (reference number LP373602) for the development of the new community park located at 300, 302, 304 Gloucester Street and 261 Worcester Street (**Attachment A**).

4. Key Points

- 4.1 This report supports the [Council's Long Term Plan \(2018 - 2028\)](#):

4.1.1 Activity: Parks & Foreshore

- Level of Service: 6.8.5.0 Satisfaction with the range and quality of recreation opportunities within parks - Resident satisfaction with range and quality of recreation facilities within Parks: = 85%.

- 4.2 The following feasible options have been considered:

- Option 1 – Approve and recommend to the Council the proposed name and approve the landscape plan (preferred option)
- Option 2 – Do not recommend the proposed name to Council and; do not approve the landscape plan

- 4.3 Option Summary - Advantages and Disadvantages (Preferred Option)

4.3.1 The advantages of this option include:

- Improvement to the habitat, biodiversity and amenity values of the new park.
- Encourages community ownership of the new park.
- Implementing the outcome of the public consultation.

4.3.2 The disadvantages of this option include:

- Closure of the park during the construction period of the implementation of the landscape plan is approved.

5. Context/Background

Background

- 5.1 The Public Open Space Strategy 2010-40 identified the residential neighbourhoods in the east of the central city as an area requiring additional open green space with an inner city pedestrian connection.

- 5.2 Following the 2010 and 2011 earthquake an opportunity arose to purchase 300, 302 and 304 Gloucester Street and 261 Worcester Street. On 19 September 2012 the Council resolved:
 - 5.2.1 *“(a) Approve the purchase of the property situated at 300, 302 and 304 Gloucester Street and 261 Worcester Street in the inner City as a Recreation Reserve pursuant to Section 17 of the Reserves Act 1977, as part of the Neighbourhood Parks Programme.”*
 - 5.2.2 *“(c) Pursuant of Section 16 (2)(A)(a) of the Reserves Act 1977 the reserve be classified as a Recreational Reserve.*
- 5.3 The unoccupied, earthquake damaged houses located at 300, 302 and 304 Gloucester Street were demolished and the land returned to grass.
- 5.4 The property located at 261 Worcester Street was subject to a residential lease until 18 January 2013. Once the residential lease expired the house was demolished and the land returned to grass.
- 5.5 The development of the park was put on hold until funding became available.
- 5.6 Once funding was identified in the Long Term Plan 2018-2028, staff carried out a site investigation.
- 5.7 Staff attended a seminar with the Community Board on Monday 27 November 2017 to discuss the name and landscape plan.

Engagement with the community

- 5.8 Staff met a representative of Te Whare Roimata on 30 November 2017 to gain an understanding of the area and identify those who might wish to be involved with the development of the park.
- 5.9 The former owner of the properties attended a meeting on 15 January 2018 to discuss the family’s knowledge of the land and to gain an understanding of the existing trees and plants on site.
- 5.10 Staff met with local residents on 17 January 2018 to talk about the project. From this meeting an informal community advisory group was formed.
- 5.11 Approximately 60 residents and several Community Board members attended a sausage sizzle on Wednesday 7 March 2018. This was an opportunity for local residents to meet onsite, share their ideas for the park and to meet other local residents.
- 5.12 Staff drafted a landscape plan based on the ideas that were raised during the drop-in evening. The draft plan was discussed and revised at two further drop-in sessions with the advisory group.
- 5.13 Efforts were made to involve Christchurch East School at every stage. Staff met the student council on several occasions throughout the project to hear their ideas for the development of the site. The draft landscape plan was revised to include their suggestions, such as a chess board, prior to consultation.
- 5.14 A theme throughout the project was the inclusion of artwork in the park. An idea raised at the drop-in evening was for the school to create a community artwork on the side of the garage which borders the park. The owner of the garage has given permission to use the neighbouring wall which borders the park for a community artwork. A local artist has been working alongside a group of Christchurch East School students to design and install a mural. This is a separate project which is running alongside the development of the park and is following the process outlined in the Artwork in Public Places Policy 2002.

- 5.15 Space has been set apart to allow room for a communal garden if the community wish to pursue this in the future. This will require a lease due to the recreation reserve status of the land and will need to follow the Christchurch City Gardens Guidelines.
- 5.16 Staff are working with the neighbours through the Fencing Act 1978 to replace some boundary fencing, which is currently outside the scope of this project.
- 5.17 A Crime Prevention Through Environmental Design (CPTED) assessment was undertaken in September 2018. This assessment recommended against providing lighting in the park. Lighting of parks is only proposed where there is facilities and associated car parks that allow for night time use (community halls for example), or where there is no alternative safe route. In this instance, the roading network is the alternative safe route.
- 5.18 A landscape concept plan was presented to the Waikura/Linwood-Central-Heathcote Community Board at a seminar on Monday 17 September 2018.

Name of the park

- 5.19 Prior to consultation a resident asked the Council to find a Maori translation for a pathway link. As a result Ngāi Tahu gifted the name Te Ara a Rongo. The definition of Te Ara a Rongo is:
 - 5.19.1 Ara is defined as a path between two locations (in this case the two streets).
 - 5.19.2 Rongo is the Māori Atua/deity who has a number of names depending on the following:
 - Rongomātāne - deity of cultivated foods. In this case (and this reserve) would include the fruit trees.
 - Rongomaraeroa - deity of peace. In this case (and on this reserve) would include a safe space to reflect, and for our children to play and to flourish.
- 5.20 Some local residents had suggested the name Gloucester/Worcester Park because it was simple and described the location. This was offered as a descriptive name that sits with Te Ara a Rongo.
- 5.21 Naming options were discussed at the seminar with the Community Board on Monday 17 September 2018.
 - 5.21.1

6. Option 1 – Approve and recommend to the Council the proposed name and approve the landscape plan (preferred)

Option Description

- 6.1 This option recommends to the Council to approve the dual name Te Ara a Rongo – Gloucester/Worcester Park and to approve the landscape plan.
- 6.2 Mana Whenua were consulted and Ngāi Tahu have gifted the name: Te Ara a Rongo. (See 5.19 for how the name was derived.)
- 6.3 Some local residents suggested an English translation of Gloucester/Worcester Park to support Te Ara a Rongo.
- 6.4 The landscape plan, refer **Attachment A**, has been prepared in consultation with the community and affected stakeholders. The landscape plan features bug hotels, native trees, seating which are planned alongside a formal pathway linking Gloucester and Worcester Street.

Significance

- 6.5 The level of significance of this option is low, consistent with section 2 of this report.
- 6.6 Engagement requirements for this level of significance have been exceeded because of a decision made at the outset of this project for staff to work closely with the surrounding community to develop a landscape plan and name for the neighbourhood park.

Impact on Mana Whenua

- 6.7 This option does not involve a significant decision in relation to ancestral land or a body of water. However, the park is in the vicinity of the pā site of the Ngāi Tahu chief Tautahi, by the Ōtākaro/Avon River on what is now Kilmore Street.
- 6.8 Mana Whenua approached Ngāi Tahu who have gifted the name Te Ara a Rongo for the new park located at 302, 304 Gloucester Street and 261 Worcester Street. The link with Ngāi Tahu is also acknowledged in the proposed planting of native trees.

Community Views and Preferences

- 6.9 Formal consultation on the Gloucester/Worcester Park landscape plan, name for the park and potential artwork was undertaken from 15 November to 10 December 2018.
- 6.10 More than 600 consultation leaflets were delivered to properties in the surrounding area. Sixty five consultation leaflets were posted to absentee owners and information about the project was emailed to Housing New Zealand and other key stakeholders.
- 6.11 The response form asked three questions:
 - 6.11.1 Do you support the proposed landscape plan for the new park?
 - 6.11.2 Ngāi Tahu have gifted the name Te Ara a Ronga for the park. Local residents have suggested Gloucester/Worcester Park as the descriptive name. Do you support Gloucester/Worcester Park as the descriptive name?
 - 6.11.3 What artwork would you like to see in the park?
- 6.12 At a consultation drop-in meeting at the park on 29 November new suggestions included whether a local resident could donate a *Dacrydium cupressinum* (Rimu) tree, additional planting, an extra seat, and repairs to a neighbouring fence.

- 6.13 A letter has been sent to all submitters advising the outcome of the consultation, including details of the Board meeting and how they can request speaking rights. Also included in this letter was a link to the feedback summary with project team responses.

Proposed landscape plan

- 6.14 Of the 20 submissions received during the consultation, 17 (85%) supported the proposed landscape plan, two (10%) did not support the plan and one respondent (5%) did not indicate a view.
- 6.15 Positive comments included: “We think that this park is a great idea. The kids will love it! Also a nice place for people to sit in.”
- 6.16 A submitter suggested *Hoheria augustifolia* (Narrow-leaved Lacebark) rather than *Hoheria lyalli* (Mountain Lacebark) for the avenue of trees leading from Worcester Street. The project team had opted for the *Hoheria Lyalli* (Mountain Lacebark) because it was a smaller variety. However, after reviewing both species again staff accepted this suggestion.
- 6.17 As a result of feedback, one of the two proposed *Acer plamatum* ‘Bloodgood’ trees has also been changed to a *Fagus sylvatica* (Copper Beech) to bring a larger specimen tree into the park. A Rimu tree, which a nearby resident wishes to donate, has also been included in the plan for approval.
- 6.18 About 20 of the park’s existing trees will remain. Eighteen of these are exotics, including five fruit trees.
- 6.19 Three submissions wanted lighting to be included in the plan, while one respondent did not. The project team advised that a safety review had confirmed that lighting should not be included. At night, there were safer alternative routes available and lighting could give people a false sense of security.
- 6.20 Four submitters queried the provision of chess pieces that would be stored in seats, saying these pieces were likely to disappear. The project team supports a submitter’s suggestion to label round draught pieces as specific chess pieces so they can be used for both games.
- 6.21 A submitter was unsure about the relevance of bug hotels in this urban setting. The project team advised that a key aspect of the play elements in the park is to give young visitors a taste of nature.
- 6.22 Two requests for a rubbish bin in the park were not accepted as these are not included in neighbourhood parks as people normally live close by and can take their rubbish home with them.
- 6.23 A communal garden requested by another submitter is outside the scope of the project. However, space has been retained next to the barbeque area where they can be added in future. This will require a lease due to the recreation reserve status of the land and will need to follow the Christchurch City Gardens Guidelines.
- 6.24 Two submissions mentioned that there have been alcohol-related issues in the park and have requested appropriate signage.
- 6.24.1 The recently reviewed Christchurch City Council Alcohol Restrictions in Public Places Bylaw 2018 notes that the park falls within a permanent alcohol ban area (central city) and that the ban applies at all times, 24 hours, seven days a week.
- 6.24.2 The Bylaw also notes that where it is practicable or reasonable to do so, the Council will erect signage within Alcohol Ban Areas to provide information to the public about the restrictions. The size, location and content of the signage will be at the Council’s discretion. Project funding has been set aside to erect signage.

- 6.25 Exercise/fitness facilities, additional *Sophora microphylla* (Kowhai) trees, another seat and a drinking fountain were not included in the plan. Reasons are outlined in the table of submissions and responses in **Attachment B**.

Changes to the draft landscape plan as a result of consultation are:

- 6.26 The avenue trees on 261 Worcester Street changed from *Hoheria lyalli* to *Hoheria angustifolia*. As this is a taller species than the *H.lyalli* (6m rather than 4m) they have been moved closer to the path to create greater distance from the property boundaries.
- 6.27 Two *Acer plamatum* 'Bloodgood' trees were originally proposed for the site. The *Acer plamatum* 'Bloodgood' tree closest to 310 Gloucester St has been retained and the other has been changed to a Copper Beech to bring a larger specimen tree into the park and to provide shade.
- 6.28 A Rimu tree has been added to the garden bed next to the nature play area. This location has been selected because a Rimu does best among other planting to keep the roots cool. This part of the site is slightly wetter and is well away from the property boundaries. It also has good visibility in this location.
- 6.29 Chess pieces changed to draughts pieces which are labelled with the names of the chess pieces. This allows people to play both draughts and chess. It makes the pieces less attractive to steal and they require less space for storage. The pieces will be kept in a storage seat that will have a combination lock on it. The combination will be shared with the local community.
- 6.30 Three storage seats were originally proposed. By changing the chess pieces to draught pieces less storage is required in the park. Two of the storage seats have been removed and replaced with standard park benches. This has reduced the overall cost and allowed for an extra seat to be added next to the chess board; this extra bench seat will contain the draughts pieces and creates a U shaped seating area. Users of the bench seat can face either direction making this a more flexible space.
- 6.31 Appropriate signage indicating that alcohol is banned in the park.

Name of the park

- 6.32 During the consultation submitters were asked if they agreed with Gloucester/Worcester Park as the descriptive name or did they have any other suggestions.
- 6.33 Twelve submissions agreed with Gloucester/Worcester Park as the descriptive name. Of the seven who did not agree, six said the park should have only one name: Te Ara a Rongo.
- 6.34 One submitter suggested Two Links Park or Counties Park.

Future artwork

- 6.35 In the consultation plan a site near the Gloucester Street entrance was identified for a potential artwork for the park. A sculpture was the most popular choice for this space but options will be considered in a separate project.

Alignment with Council Plans and Policies

- 6.36 This option is consistent with Council's Plans and Policies.
- 6.37 The Council Policy: Naming of Reserves and Facilities, outlines the procedure for the naming of reserves, which is for the proposed reserve name to be referred to the Community Board in the first instance and then to the Council for adoption.

Financial Implications

- 6.38 Cost of Implementation – The cost of implementing the current landscape plan is approximately \$117,500.
- 6.39 Maintenance / Ongoing Costs – The approximate cost to maintain this new park is \$1300 per annum.
- 6.40 Funding source – Financial year 2019 - \$80,000 – CPMS 43676 Delivery Package Play and Recreation Development. - \$22,000 – CPMS 43660 – Community Parks Development. \$15,500 Urban Renewal Budget.

Legal Implications

- 6.41 There are no negative legal implications to the naming of the Council land. The land has already been entered into the maintenance contract under a proposed name and the naming of the park complies with the Council Register: Naming of Reserves and Facilities.
- 6.42 The land is classified for Recreation Reserve pursuant of Section 16 (2)(A)(a) of the Reserves Act 1977.
- 6.43 This report has not been reviewed and approved by the Legal Services Unit

Risks and Mitigations

- 6.44 There is a risk of increase in costs of play equipment caused through time delay from estimates at the concept plan stage until gaining approval and placing orders.
- 6.44.1 Planned treatment include: Confirming the estimate and obtaining a final quote. If the cost is higher than expected, other suppliers will be researched for better pricing.
- 6.44.2 Residual risk rating: the rating of risk is low.

Implementation

- 6.45 Implementation dependencies – Gaining Council approval of the proposed name. Gaining Community Board approval to proceed with construction of the landscape plan.
- 6.46 Name implementation timeframe:
- Approximately one month after the names have been approved by Council.
- 6.47 Landscape implementation timeframe:
- Community Board approval of landscape plan – February 2019.
 - Detailed design and tendering – March – May 2019.
 - Construction – June – July 2019.

Option Summary - Advantages and Disadvantages

- 6.48 The advantages of this option include:
- Improvement to the habitat, biodiversity and amenity values of the new park.
 - Encourages community ownership of the new park.
 - Implementing the outcome of the public consultation.
- 6.49 The disadvantages of this option include:
- Closure of the park during the construction period of the implementation of the landscape plan is approved.

7. Option 2 - Do not recommend the proposed name to Council and; do not approve the landscape plan

Option Description

- 7.1 This option does not recommend to the Council to approve the proposed name or approve the landscape plan. Further, the Community Board requests staff to consider alternative name and landscape options and to re-consult with the community.

Significance

- 7.2 The level of significance of this option is low consistent with section 2 of this report.
- 7.3 Engagement requirements for this level of significance are low, consistent with section 2 in this report.
- 7.4 Engagement requirements for this level of significance have been exceeded because of a decision made at the outset of this project for staff to work closely with the surrounding community to develop a landscape plan for the neighbourhood park.

Impact on Mana Whenua

- 7.5 This option does not involve a significant decision in relation to ancestral land or a body of water. However, the park is in the vicinity of the pā site of the Ngāi Tahu chief Tautahi, by the Ōtākaro/Avon River on what is now Kilmore Street.
- 7.6 The park is in the vicinity of the pā site of the Ngāi Tahu chief Tautahi, by the Ōtākaro/Avon River on what is now Kilmore Street.
- 7.7 Mana Whenua were consulted and Ngāi Tahu have gifted the name Te Ara a Rongo for the new park. The link with Ngāi Tahu is also acknowledged in the proposed planting of native trees.

Community Views and Preferences

- 7.8 Two of the 20 submitters (10%) did not support the proposed landscape plan.
- 7.9 Two submitters did not support either of the names Te Ara a Rongo or Gloucester/Worcester Park.

Alignment with Council Plans and Policies

- 7.10 This option is consistent with Council's Plans and Policies.

Financial Implications

- 7.11 Cost of Implementation – Further funding would be required to cover the cost of a Landscape Architect to draft a new landscape plan and for an Engagement leader for further community consultation.
- 7.12 Funding source – Financial year 2019 - \$80,000 – CPMS 43676 Delivery Package Play and Recreation Development. - \$22,000 – CPMS 43660 – Community Parks Development. \$15,500 Urban Renewal Budget. This option would have an impact on the total budget available for the development of the park.

Legal Implications

- 7.13 There are no negative legal implications to the naming of the Council land. The land has already been entered into the maintenance contract under a proposed name and the naming of the park complies with the Council Register: Naming of Reserves and Facilities.
- 7.14 The land is classified for Recreation Reserve pursuant of Section 16 (2)(A)(a) of the Reserves Act 1977.
- 7.15 This report has not been reviewed and approved by the Legal Services Unit

Risks and Mitigations

7.16 There is a risk of increase in costs of play equipment caused through time delay from estimates at the concept plan stage until gaining approval and placing orders.

7.16.1 Planned treatment include: Confirming the estimate and obtaining a final quote. If the cost is higher than expected, other suppliers will be researched for better pricing.

7.17 Residual risk rating: the rating of risk is low.

Implementation

7.18 Implementation dependencies – gaining Community Board support to consult on the name of the park, draft a new landscape plan and approval of the revised landscape plan.

7.19 Implementation timeframe:

- Redesign of landscape plan and investigate alternative names – March/April 2019.
- Community Board Seminar – May 2019.
- Community Engagement – June 2019.
- Community Board Support for name and Approval of Landscape Plan – August 2019.
- Detailed design, tendering, placing orders for equipment – September 2019
- Construction – November 2019.

Option Summary - Advantages and Disadvantages

7.20 The advantages of this option include:

- The community has the option to consider alternative landscape designs.

7.21 The disadvantages of this option include:

- Additional funding for design, consultation and implementation which may result in less budget being available for play equipment/furniture/landscaping (or alternatively more budget may be required to complete the project).
- Delay in completing the project.
- Consultation feedback did not support this option.

Attachments

No.	Title	Page
A	Gloucester/Worcester St Park - Proposed Landscape Plan	
B	Gloucester/Worcester St Park Submissions	

Confirmation of Statutory Compliance

Compliance with Statutory Decision-making Requirements (ss 76 - 81 Local Government Act 2002).

(a) This report contains:

- (i) sufficient information about all reasonably practicable options identified and assessed in terms of their advantages and disadvantages; and
- (ii) adequate consideration of the views and preferences of affected and interested persons bearing in mind any proposed or previous community engagement.

(b) The information reflects the level of significance of the matters covered by the report, as determined in accordance with the Council's significance and engagement policy.

Signatories

Authors	Sarah Blows - Parks Planner Jennie Hamilton - Senior Engagement Advisor
Approved By	Andrew Rutledge - Head of Parks Mary Richardson - General Manager Citizen and Community



Gloucester/Worcester Park landscape plan - submissions and responses

Sub ID	Name	Organisation	Support landscape plan?	Submitters' comments	Project team responses
20204	Peter & Lynda Quaid		yes	<p>The overall plan looks great - a real practical enhancement. A couple of feedback though:</p> <p>We are unsure of the relevance of the Bug Hotels, in this urban setting.</p> <p>We are also unsure about the benefit/usage of the chess pieces, versus the potential cost and risk of theft (therefore replacement). We propose draught pieces instead - maybe just simple timber rounds painted white & black. If the school kids want to play chess, then they could supply their own pieces. Maybe the draught pieces could be 'labelled' as the chess pieces.</p>	<p>Thank you for your feedback.</p> <p>Bug Hotels: A key aspect of the play elements in this park is to give young visitors a taste of nature. Bug hotels will attract insects and give children an experience of looking for bugs and seeing them in this environment.</p> <p>Chess Pieces: As this idea was put forward during pre-engagement with the school we would like to take this opportunity to trial it. Thank you for your suggestion about the draught pieces, we think this is a good idea. Labelled draught pieces will mean that people can play both draughts and chess; they will be less appealing to steal and they require less storage space. In addition, we're proposing that the game pieces are kept in a storage seat that can be accessed via a combination lock that will be shared with the local community. If they go missing despite these measures then people will be able to bring their own pieces.</p>
20231	David Barwick	Christchurch Botanic Gardens	no	<p>The avenue of <i>Hoheria lyalli</i> is not a good choice for the reserve! This subalpine species needs cool, humid conditions in summer and rainfall above 1500 mm per annum along with good soil drainage -in lowland conditions this <i>Hoheria</i> quickly succumbs to heat stress and various root rots and would not be a good use of limited resources. I suggest an alternative species, <i>Hoheria angustifolia</i>, a heat and drought resistant tree which is native to the lowland/coastal plains ecosystem and much admired in late summer for its beautiful starry white blossom. <i>H.angustifolia</i> is widely planted around the city in bush plantings, but it also makes a great park/avenue planting as its tiny leaves don't smother the lawn and the fibrous branches resist vandalism and winds. Instead of <i>Acer 'Bloodgood'</i>, (very sensitive to wind and drought) plant some Quinces or Apricots as they are more drought and wind tolerant when established (as well as edible!)</p>	<p>Thank you for your feedback. We had previously considered the <i>Hoheria angustifolia</i> (Narrow-leaved Lacebark) but were keen to trial the <i>H.lyalli</i> (Mountain Lacebark) because it's a smaller variety. However, we have reassessed this following your comments and have changed back to the <i>Hoheria angustifolia</i> (Narrow-leaved Lacebark).</p> <p>We are comfortable with our choice of the <i>Acer platanum</i> 'Bloodgood', however we have changed one of these to a <i>Fagus sylvatica</i> (Copper Beech) based on a suggestion from another submitter. We are already proposing some fruit trees and there are other fruit trees already existing on the site.</p>
20240	Lisa James		yes		
20261	Richard Bell		yes		
20265	Trish Lowe		no	<p>No lighting? Are you serious? At least some lighting in the central part to light existing & established trees. It would minimise the temptation for rough sleepers and general night loitering.</p> <p>Please include a water drinking fountain and shade over the picnic table.</p> <p>Otherwise it is okay albeit cussing on mediocre and low budget</p>	<p>Thank you for your feedback.</p> <p>Lighting: A safety review has confirmed that lighting should not be used in the park. At night, there are safer alternative routes available. Lighting can give people a false sense of security.</p> <p>Furniture: We generally don't include drinking fountains in small neighbourhood parks as people are close to home and are able to bring water with them.</p> <p>The <i>Acer platanum</i> 'Bloodgood' trees have been included in the park specifically to provide shade to the picnic table. But taking your comment into consideration we've</p>

					replaced one of these with a larger <i>Fagus sylvatica</i> (Copper Beech) tree. Trees have the benefit of being deciduous so will allow sun through to the table in winter and shade it during the summer.
20300	Mike O'Grady	CDHB	yes		
20304	Matthew Reid		yes		
20327	Ronny Groenteman		yes	<p>As an owner of a property on Gloucester St, I thank the Council for proposing this reserve. Love the bug hotels, chess board, use of existing fruit trees, addition of more fruit trees, planting native trees... All wonderful!</p> <p>I would like to propose widening of the footpath to enable separating cyclists and pedestrians.</p> <p>I would also like to propose replacing the exotic deciduous trees with the native deciduous kowhai, which will add bright yellow colour when in flower and will attract birdlife to the reserve.</p> <p>Lastly, I would like to propose adding outdoor exercise/fitness facilities to encourage adult users of the reserve to engage in free healthy activity.</p> <p>I agree that no lighting is required in the reserve.</p>	<p>Thank you for your feedback.</p> <p>Cycle Path: The width of the path is 2m which is the minimum required for a shared pedestrian and cycle path. The cost of the footpath is a significant portion of the budget for this park. We are therefore proposing the minimum width to allow for both cyclists and pedestrians while keeping the cost down. The path is bordered by grass which allows room for users to move off the path if necessary.</p> <p>Trees: There are a number of native trees proposed in the park as well as two existing <i>Sophora microphylla</i> (Kowhai) trees. The purpose of the two deciduous trees is to provide shade to the picnic table. The size and deciduous nature of the trees will provide shade in summer and allow sun through to the table in winter. Kowhai are a smaller tree, only semi-deciduous and are unlikely to perform this function so well.</p> <p>Fitness equipment: The addition of outdoor fitness equipment is outside the scope and budget for this park. However, the development of this park is intended to make it easier for people to walk and cycle through the neighbourhood and we hope this will encourage people to do this.</p>
20353	Lindsay Campbell		yes	<p>I whole heartedly support the plan - the provision of a "path of peace" which encourages residents, birds & children in the centre of a busy city is to be encouraged. I particularly like the provision of a path / cycle way, as the land does get very wet in the winter, with seating, BBQ area & chess.</p> <p>It is a lovely, sunny neighbourhood asset which will be much improved when the proposal is completed. A rubbish bin, designed to accept small items only, should be provided.</p>	<p>Thank you for your feedback. We generally don't include bins in small neighbourhood parks as people are close to home and are able to take their rubbish home with them.</p>
20382	Maggie Rankin			<p>I'd love to come to the park this week re; landscaping plan but am away with work. One concern (which may already have been addressed, - sorry if I might be repeating it) is that of adequate lighting, ideally solar-powered.</p>	<p>Thank you for your feedback. A safety review has confirmed that lighting should not be used in the park. At night, there are safer alternative routes available. Lighting can give people a false sense of security.</p>
20383	Peter Kent		yes	<p>One concern (which may already have been addressed, - sorry if I might be repeating it) is that of adequate lighting, ideally solar-powered.</p>	<p>Thank you for your feedback. A safety review has confirmed that lighting should not be used in the park. At night, there are safer alternative routes available. Lighting can give people a false sense of security.</p>

20390	Laura Gartner		yes	Really like the nature play. Would like to see more native trees like kowhai to attract native birds. How about some space for small communal vegetable gardens given the many new housing complexes in the area that have no garden space. This would give local apartment/multi-unit residents an opportunity to grow some food. Also a small perennial flower garden with flowers attractive to bees to help the ailing bee populations.	Thank you for your feedback. Trees: We have proposed a number of native trees for the park which produce flowers and fruit that are attractive to birds and bees. There are two existing <i>Sophora microphylla</i> (Kowhai) in the park but we are not proposing to add any more. Communal garden: This is currently outside the scope of the project, however space has been retained next to the barbecue area where they could be added in future. This will require a lease due to the recreation reserve status of the land and will need to follow the Community Gardens Guidelines.
20393	Bernie & Diane Williams		yes	We think that this park is a great idea! The kids will love it! Also a nice place for people to relax in	Thank you for your feedback.
20404	Ray & Judy Minchin		yes	It sounds so amazing	Thank you for your feedback.
20406	Sheldon murtha		yes	Green spaces close to town great given the excess apartment living coming.	Thank you for your feedback.
20442	Warren Robertson		yes	Good plan. A bit sorry to see existing trees removed. Bit worried about chess pieces going missing. Though good idea. A ban on alcohol as been a problem A ban on alcohol has been a problem several times in the past. Another seat	Thank you for your feedback. Trees: While it is a shame to remove existing trees, the trees proposed for removal are very close to the fence lines. The removal of these trees will provide room for native trees to be planted in a more appropriate location. About 20 of the park's existing trees will remain. Eighteen of these are exotics, including five fruit trees. Chess Pieces: As this idea was put forward during pre-engagement with the school we would like to take this opportunity to trial it. Following feedback from the submissions, we have decided to provide draught pieces that are labelled as the chess pieces. Labelled draught pieces will mean that people can play both draughts and chess; they will be less appealing to steal; and they require less storage space. In addition, we're proposing that the game pieces are kept in a storage seat that can be accessed via a combination lock that will be shared with the local community. If they go missing despite these measures then people will be able to bring their own pieces. Signage: The Christchurch City Council Alcohol Restrictions in Public Places Bylaw 2018 identifies the central city as a permanent alcohol ban area. Signage is proposed for the park and will include wording regarding the alcohol ban. Seating: We are proposing an extra bench seat next to the chess board.

20443	Michael & Sascha Corcoran		yes	<p>Hi. I live close by. I have a degree in 'Recreation and Sport' also Diploma from the Hillary Commission: My comments are as follows:</p> <p>The FENCING right through - on either side, is an eyesore, needs to be renewed or tidied up;</p> <p>"Alcohol Ban" sign, needs to be placed both entry place;</p> <p>(Last Summer) full of people drinking. Keep in mind new blocks of state housing across the road for single men;</p> <p>CARS always obstructing the entrance way. WORCESTER END, needs levelling off to pavement area!</p> <p>A rubbish "Council Bin" - re bar-b-que (etc.)</p> <p>Scrap the idea of chess pieces (they will be gone in one week. (London/New York have seen people bring there own sets.</p> <p>Provide two tables, close to each other CREATES a better participation</p>	<p>Thank you for your feedback.</p> <p>Fencing: Replacing boundary fencing is outside the scope of this project. Staff will investigate working with neighbours through the Fencing Act 1978 to replace the boundary fencing.</p> <p>Signage: The Christchurch City Council Alcohol Restrictions in Public Places Bylaw 2018 identifies the central city as a permanent alcohol ban area. Signage is proposed for the park and will include wording regarding the alcohol ban.</p> <p>Cars: Fencing and a seating area is proposed at the Worcester Street entrance which will prevent vehicles being able to park in the park.</p> <p>Rubbish: We generally don't include bins in small neighbourhood parks as people are close to home and are able to take their rubbish home with them.</p> <p>Chess Pieces: As this idea was put forward during pre-engagement with the school we would like to take this opportunity to trial it. Following feedback from the submissions, we have decided to provide draught pieces that are labelled as the chess pieces. Labelled draught pieces will mean that people can play both draughts and chess; they will be less appealing to steal; and they require less storage space. In addition, we're proposing that the game pieces are kept in a storage seat that can be accessed via a combination lock that will be shared with the local community. If they go missing despite these measures then people will be able to bring their own pieces.</p>
20444	S Rowse		yes	<p>Great idea, I hope the storage benches are made of metal.</p> <p>I'm sure the chess pieces will disappear! Sounds a bit simplistic</p>	<p>Thank you for your feedback.</p> <p>Chess Pieces: As this idea was put forward during pre-engagement with the school we would like to take this opportunity to trial it. Following feedback from the submissions, we have decided to provide draught pieces that are labelled as the chess pieces. Labelled draught pieces will mean that people can play both draughts and chess; they will be less appealing to steal; and they require less storage space. In addition, we're proposing that the game pieces are kept in a storage seat that can be accessed via a combination lock that will be shared with the local community. If they go missing despite these measures then people will be able to bring their own pieces.</p>
20445	Marette Wells		yes	<p>I really like the flow</p>	<p>Thank you for your feedback.</p>
20548	S. Peddie		yes	<p>Fantastic idea!! Great plan, good flow</p> <p>*Lacebarks are relatively short lived - how about an exotic tree that would provide more shade + autumn colour (this is in the avenue area) & have a group of lacebarks elsewhere?</p> <p>* Kauri is slow growing - would just keep this to one. But this is the only tree with some height. Would be great to see stronger tree selection. Some large exotic park trees e.g.: Exotic Beech (NZ Beech) * More seating / or another table & seats combo.</p> <p>* Some oaks</p> <p>A couple of low mounds could be good - 700mm high max, but nice to sit on, roll down etc.</p>	<p>Thank you for your feedback.</p> <p>Avenue Trees: The feedback we've had so far is a preference for native trees rather than exotics. We also need to be mindful of shading to neighbours properties which is why we've selected a smaller tree.</p> <p>Trees: Thank you for your suggestion of some larger trees within the park. We have proposed to replace one of the <i>Acer platanum</i> "Bloodgood" trees with a <i>Fagus sylvatica</i> (Copper Beech).</p>

					<p>Seating: We're proposing an extra bench seat next to the chess board.</p> <p>Mounds: There is a mound proposed in the nature play area.</p>
Suggestions made at consultation drop-in session on 29 November 2018					
				Investigate whether a donated rimu can be planted out from the corner (adjacent to rear Gloucester St unit (310)) Seat in that corner?	This has been proposed next to the nature play area.
				Kowhai and flax planted on other side of the path?	There are two existing <i>Sophora microphylla</i> (Kowhai) in the park and we are not proposing to add any more at this stage. Other proposed native trees produce flowers and fruit that attract birds and bees. Flax can get very large resulting in visibility concerns so any flax considered for this site would need to be small varieties. This will be considered at the detailed design stage.
				Underplanting/kowhai/azaleas along fence adjacent to 259 Worcester St.	No additional planting is proposed along here at this stage due to the costs involved.

Gloucester/Worcester Park - Feedback on name and suggested artwork

Sub ID	Name	Organisation	Support G/W Park name?	Name. Do you have any other suggestions?	What artwork would you like to see in the park?
20204	Peter & Lynda Quaid		No	We think the Te Reo name of the "Te Ara a Rongo" is a great gift and should be adopted as the official name. An additional translation on any signage to (like) "Path between the streets" might be good.	We would like to see simple (geometric) shapes and colours representing the homes, villas units and landscapes of the surrounding urban area. Something that 'blends' in, but still provides interest (and discourages tagging). See below. 
20231	David Barwick	Christchurch Botanic Gardens	Yes		
20240	Lisa James		Yes		Natural INEXPENSIVE LOCAL art. The council does not need to continue spending too much on shifty art that most of chch cringes at. Maybe get the local schools to collaborate? Or better still use the youth that like to tag up the neighbourhood and get them to design a graffiti inspired feature. You're welcome~
20261	Richard Bell		Yes		Mural and sculpture
20265	Trish Lowe		Yes		Willow sculpture Water feature
20300	Mike O'Grady	CDHB	Yes		
20304	Matthew Reid		No	Just use the Ngai Tahu name.	Mural of a weta or another insect
20327	Ronny Groenteman		Yes	No	A sculpture by a NZ artist would be great. I would like to suggest Anna Korver http://www.annakorver.co.nz/gallery.html Being next to a school, the sculpture could focus on the theme of education.
20353	Lindsay Campbell		Yes		Perhaps an artwork that celebrates the owners of the earthquake, damaged homes upon which the park now exists
20382	Maggie Rankin				

20383	Peter Kent		Yes	Thank you for your message. I am very happy with the proposed park and both Maori and English names	
20390	Laura Gartner		No	Please accept Te Ara a Rongo as the sole park name....Gloucester/Worcester Park is boring, dull, unimaginative and too long. Just keep the name gifted by Ngai Tahu please. It has much more relevant meaning.	Something natural....wood or stone carving? Something to celebrate nature and appreciate in peaceful contemplation.
20393	Bernie & Diane Williams		Yes	The proposed plan looks really good	Would leave that to you
20404	Ray & Judy Minchin		Yes		Maybe some sculptures!
20406	Sheldon murtha		No	Maori name excellent,	Local
20442	Warren Robertson		Yes		Sculpture
20443	Michael & Sascha Corcoran		No	"Boring" "Two Links" - Park - [Re-the connection Gloucester/Worcester] OR "Counties - Park [Re-Counties of Gloucester/Worcester]	Something simple / maybe to climb on. Example: Maori Mosaic on the stop. See below. What artwork would you like to see in the park? <i>something simple / maybe to climb on</i> EXAMPLE: 
20444	S Rowse		Yes		Some kinetic pieces
20445	Marette Wells		No	Te Ara a Rongo	
20548	S. Peddie		No	Just have Te Ara Rongo	Sculpture work by local artists that can be used for play - e.g. rotating sculpture.

Report from Banks Peninsula Community Board – 4 March 2019

19. Sumner Road Realignment

Reference: 19/236959

Presenter(s): Justin Sims

1. Banks Peninsula Community Board Consideration

The Board was concerned that not all of the piece of recreation reserve being taken for legal road was needed for the physical roadway. Members wanted as much of that land as possible to be managed as reserve so that the environmental impact would be minimal.

2. Staff Recommendations

That the Council recommend to the Council that it resolve to:

1. Delegate to the Chief Executive the power to apply to the Minister of Lands pursuant to s114(2)(e) of the Public Works Act 1981 for part of Urumau Reserve (record of title reference CB31B/11) as indicated Sec 1 on the plan attached, to be declared as road under section 114 of the Public Works Act 1981, and to give the written consent of the Council under section 114(2)(h) of that Act.
2. Delegate authority to the Property Consultancy Manager to do all things necessary at his sole discretion to implement and conclude the declaration as road.

3. Banks Peninsula Community Board Recommendation to Council

Part A

That the Council resolve to:

1. Delegate to the Chief Executive the power to apply to the Minister of Lands pursuant to s114(2)(e) of the Public Works Act 1981 for part of Urumau Reserve (record of title reference CB31B/11) as indicated Sec 1 on the plan attached, to be declared as road under section 114 of the Public Works Act 1981, and to give the written consent of the Council under section 114(2)(h) of that Act.
2. Delegate authority to the Property Consultancy Manager to do all things necessary at his sole discretion to implement and conclude the declaration as road.
3. Request that the Property Consultancy Manager work with the Lyttelton Reserve Management Committee to establish future roles and responsibilities for management of the land, with the aim of having the maximum amount of land to be legalised as road managed as part of the Urumau Reserve, to reduce the environmental impact as much as possible. The roles and responsibilities to be formally established in the Reserve Management Committee Terms of Reference or similar documentation.

Attachments

No.	Report Title	Page
1	Sumner Road Realignment	293

Sumner Road Realignment

Reference: 19/233831

Presenter(s): Justin Sims

1. Purpose of Report

- 1.1 The purpose of this report is for the Te Pātaka o Rākaihautū/Banks Peninsula Community Board to recommend to the Council that it approve the declaration as road of part of Urumau Reserve indicated as Sec 1 on the plan at 5.10 below (record of title reference CB31B/11) due to the realignment of Sumner Road.

Origin of Report

- 1.2 This report is being submitted to the Council as it has undertaken rock fall mitigation works above Sumner Rd followed by road repairs to the carriageway itself. As a result, part of the road at Windy Point was moved away from the cliff edge for safety and financial reasons.
- 1.3 The new alignment and subsequent need to declare part Urumau Reserve for road can be completed under the Public Works Act 1981 (PWA) but is not covered by any staff delegations so it requires Council approval.

2. Significance

- 2.1 The decision in this report is of low significance in relation to the Christchurch City Council's Significance and Engagement Policy.
 - 2.1.1 The level of significance was determined utilising the significance and engagement assessment worksheet.
 - 2.1.2 The community engagement and consultation outlined in this report reflect the assessment.
 - 2.1.3 The assessment reflects the fact that there is no impact to the public's use of the reserve due to the negligible impact as a result of the topography. Furthermore, this is a necessary action to establish the correct land status related to the Sumner Road works.

3. Staff Recommendations

That the Te Pātaka o Rākaihautū/Banks Peninsula Community Board recommend to the Council that it resolve to:

1. Delegate to the Chief Executive the power to apply to the Minister of Lands pursuant to s114(2)(e) of the Public Works Act 1981 for part of Urumau Reserve (record of title reference CB31B/11) as indicated Sec 1 on the plan attached, to be declared as road under section 114 of the Public Works Act 1981, and to give the written consent of the Council under section 114(2)(h) of that Act.
2. Delegate authority to the Property Consultancy Manager to do all things necessary at his sole discretion to implement and conclude the declaration as road.

4. Key Points

- 4.1 This report supports the [Council's Long Term Plan \(2015 - 2025\)](#):

4.1.1 Activity:

- Level of Service:

4.2 The following feasible options have been considered:

- Option 1 – Declare part of Urumau Reserve as road (preferred option).
- Option 2 – Do not declare the land as road.

4.3 Option Summary - Advantages and Disadvantages (Preferred Option)

4.3.1 The advantages of this option include:

- Relocating the road was considerably cheaper than rebuilding it in its previous location which would have required significant cliff stabilisation and construction of an expensive retaining wall above sensitive Lyttelton Port Company infrastructure.
- Relocating the road results in a safer road alignment.
- There are no alternatives given the road abuts the reserve on one side and a cliff edge on the other.
- The part of Urumau reserve which is affected by the proposal in this report cannot be put to meaningful use given its topography, so there is a negligible loss in amenity.

4.3.2 The disadvantages of this option include:

Part of the reserve will become road.

5. Context/Background

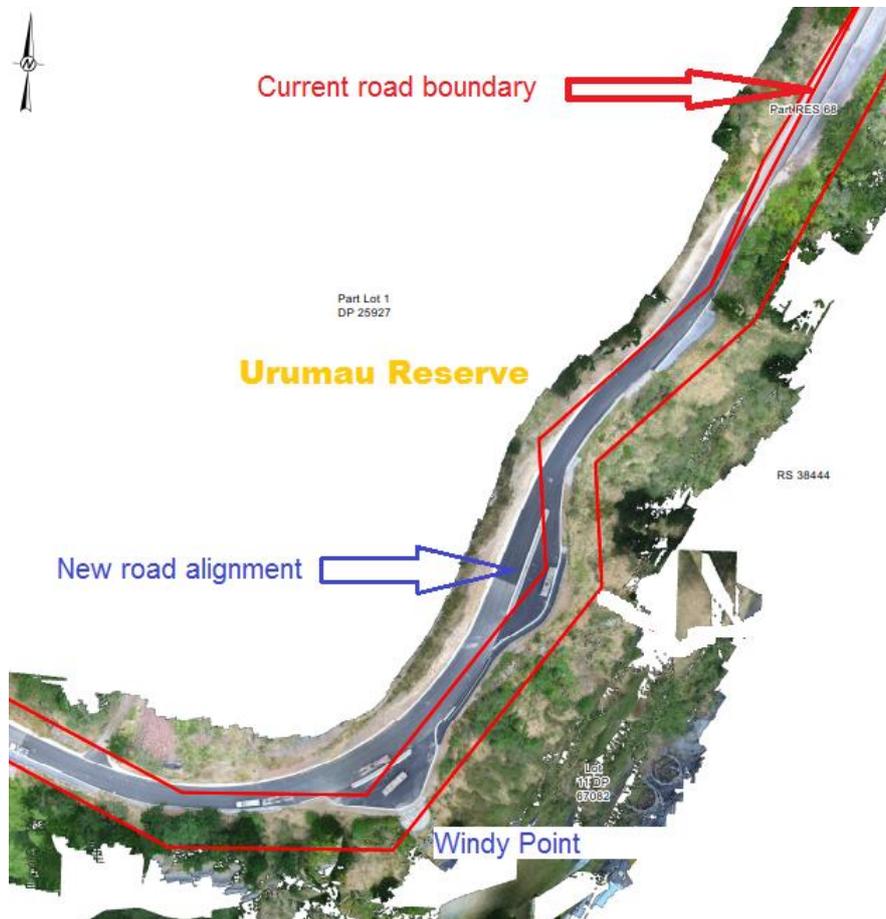
The Works

- 5.1 Sumner Road has, as result of the Canterbury earthquakes, sustained a significant level of damage to the carriageway surface and road edge due to rock fall from the bluffs above the road and earthquake induced slipping of the seaward half of the road. The bluffs above the road became fragmented and loose and posed an ongoing safety risk to road users to the extent that the road was closed temporarily by the Council.
- 5.2 The project was undertaken in two phases, the first to be the rock fall source risk mitigation works above Sumner Road, which reduces rock fall risk and allows access to the road itself, while the second phase was the road repair and reconstruction works.
- 5.3 Works undertaken include source rock deconstruction by scaling Windy Point and the upper reaches of the Crater Rims Bluffs, with a 400-metre-long, 15-metre-wide catch bench constructed at the base of the bluffs to protect the road below from rock fall.
- 5.4 A rock bund has also been constructed in Double Gully to the west of the Crater Rim Bluffs to intercept rock fall from the bluffs. This bund is several metres high and 50 metres long, faced with basalt cobbles to reflect the basalt stone walls in the area.

The issue

- 5.5 As Sumner Rd in the location of the proposed realignment is bound by a cliff edge on one side and Urumau Reserve on the other, there is no alternative to the proposed realignment.

- 5.6 Making safe the cliff below the road was not cost effective nor does it provide the most resilient long term solution. The majority of the land is also not in Council ownership.
- 5.7 The road was therefore realigned into a small part of Urumau Reserve which is a classified recreation reserve as shown on the aerial photo below (the red lines indicating the current road boundaries).



- 5.8 The majority of the land in which the road is to be located is a cliff edge already significantly modified by previous earthquake related emergency works and therefore its amenity value as a recreation reserve is not being lost as it is not capable of use by the public in any event.
- 5.9 Access to existing walking and mountain bike tracks will still be possible albeit this will be from informal access points as was the case prior to the earthquakes.

The Decision

- 5.10 As Urumau Reserve is a recreation reserve, Sec 1 on the plan below should be declared road under the provisions of the PWA to make lawful the new road alignment.
- 5.11 Occupation of the reserve originally occurred under an emergency legislation warrant. The decision in this report relates to legalising this occupation under “business as usual” legislation.



Attachment 1 - Original Staff Report Item 19

6. Option 1 – Declare part of Urumau Reserve as road (preferred)

Option Description

- 6.1 Realign Sumner Road away from the damaged cliff edge on to part of Urumau Reserve that is adjacent to the road. As the reserve is a classified Recreation Reserve this must be declared road.

Significance

- 6.2 The level of significance of this option is low consistent with section 2 of this report.

Impact on Mana Whenua

- 6.3 This option does not involve a significant decision in relation to ancestral land or a body of water or other elements of intrinsic value, therefore this decision does not specifically impact Ngāi Tahu, their culture and traditions.

Community Views and Preferences

- 6.4 Sumner Road users are specifically affected by this option. As the part of Urumau Reserve that is to be declared road is not useable by the public due to its topography, the users of the reserve are not directly affected.
- 6.5 The declaration of part of the reserve as road does not require public notification.

Alignment with Council Plans and Policies

- 6.6 This option is consistent with Council's Plans and Policies

Financial Implications

- 6.7 Cost of Implementation – as part of Sumner-Lyttelton Corridor project the required works are within approved project budgets.
- 6.8 Maintenance / Ongoing Costs – as part of road network maintenance
- 6.9 Funding source – Sumner-Lyttelton Corridor capital project(s);
9982 Sumner Road Zone 3A Roading - HI CSA funded

Legal Implications

- 6.10 There is a legal context, issue or implication relevant to this decision. The procedure to declare land as road has been used on many occasions and is set out in the PWA.
- 6.11 The process under section 114 of the PWA requires the Council to apply to the Minister of Lands, and the Minister of Lands, by notice in the Gazette, declares the land to be road.
- 6.12 Under section 114(2) of the PWA, part of the process involves the Council and also for the Minister of Conservation to provide written consent to the Minister of Lands to the land becoming road.

Risks and Mitigations

- 6.13 There is a risk approval to declare the land as road is not received from the Council and the Minister of Conservation.
- 6.14 Risk that the required consent of the Council and Minister of Conservation is not received which means the road would be occupying recreation reserve.
- 6.14.1 Treatment: provide a compelling case as to why the reserve should be declared road.
- 6.14.2 Residual risk rating: the rating of the risk is low.

Implementation

- 6.15 Implementation dependencies - opening of Sumner Road is dependent on realignment of the existing carriageway.
- 6.16 Implementation timeframe – by 29th March 2019.

Option Summary - Advantages and Disadvantages

- 6.17 The advantages of this option include:

- Relocating the road was considerably cheaper than rebuilding it in its previous location which would have required significant cliff stabilisation and construction of an expensive retaining wall above sensitive Lyttelton Port Company infrastructure.
- Relocating the road results in a safer road alignment.
- There are no alternatives given the road abuts the reserve on one side and a cliff edge on the other.
- The part of Urumau reserve which is affected by the proposal in this report cannot be put to meaningful use given its topography, so there is a negligible loss in amenity.

- 6.18 The disadvantages of this option include:

- Part of the reserve will become legal road and part a Local Purpose (Road) Reserve.

7. Option 2 – Do not declare the land as road.

Option Description

- 7.1 Do not declare the land as road and leave the road occupying part of Urumau Reserve in breach of the Reserves Act 1977.

Significance

- 7.2 The level of significance of this option is low consistent with section 2 of this report.
- 7.3 Engagement requirements for this level of significance are not applicable.

Impact on Mana Whenua

- 7.4 This option does not involve a significant decision in relation to ancestral land or a body of water or other elements of intrinsic value, therefore this decision does not specifically impact Ngāi Tahu, their culture and traditions.

Community Views and Preferences

- 7.5 Impact on users of the reserve would in practical terms not be affected given the topography of the land limits current use and the ability to access the balance of the reserve whether the land is legal road or not is unaffected.

Alignment with Council Plans and Policies

- 7.6 This option is not consistent with Council's Plans and Policies as it would not comply with the Reserves Act.

Financial Implications

- 7.7 Cost of Implementation - as part of Sumner Corridor project
- 7.8 Maintenance / Ongoing Costs - as part of road network maintenance
- 7.9 Funding source – Sumner Corridor capital project

Legal Implications

7.10 A breach of the Reserves Act would be actionable by the Minister of Conservation.

Risks and Mitigations

7.11 The Minister of Conservation may require the breach in the Reserves Act to be remedied.

7.12 Risk that the occupation of the reserve for road is still required to be formalised or else removed from the reserve.

7.12.1 Treatment: subsequently approve the land to be declared as road or realign the road.

7.12.2 Residual risk rating: the rating of the risk is medium.

Implementation

7.13 Implementation dependencies - opening of Sumner Road is dependent on realignment of the existing carriageway.

7.14 Implementation timeframe – by 29th March 2019.

Option Summary - Advantages and Disadvantages

7.15 The advantages of this option include:

- Urumau Reserve would not be affected.

7.16 The disadvantages of this option include:

- The use of the reserve would be in breach of the Reserves Act.
- A subsequent report to Council may be required to provide consent to declare the land as road.
- Relocating the road off the reserve, if this were considered feasible, would be at a significant cost.
- Cost of future maintenance if the road was relocated would be higher as the cliffs below the road are inherently unstable.
- The safety benefits of realigning the road are not realised.

Attachments

There are no attachments to this report.

Confirmation of Statutory Compliance

Compliance with Statutory Decision-making Requirements (ss 76 - 81 Local Government Act 2002).

(a) This report contains:

- (i) sufficient information about all reasonably practicable options identified and assessed in terms of their advantages and disadvantages; and
- (ii) adequate consideration of the views and preferences of affected and interested persons bearing in mind any proposed or previous community engagement.

(b) The information reflects the level of significance of the matters covered by the report, as determined in accordance with the Council's significance and engagement policy.

Signatories

Authors	Justin Sims - Property Consultant Peter Bawden - Senior Project Manager Barry Hayes - CTOC Traveller Information Team Leader
Approved By	Angus Smith - Manager Property Consultancy Bruce Rendall - Head of Facilities, Property & Planning Lynette Ellis - Manager Planning and Delivery Transport Richard Osborne - Head of Transport David Adamson - General Manager City Services

Report from Banks Peninsula Community Board – 4 February 2019

20. Lyttelton Seafarers Welfare

Reference: 19/247271

Presenter(s): Joan Blatchford – Community Governance Manager

1. Banks Peninsula Community Board Consideration

The Board considered it was appropriate to ask the Council directly, to consider including provision relating to seafarers welfare in the the Letter of Expectation and Statement of Intent for Christchurch City Holdings Limited (CCHL) and the Lyttelton Port Company (LPC).

2. Staff Recommendations

That the Te Pātaka o Rākaihautū/Banks Peninsula Community Board recommend to the Council that it:

1. Ask staff to investigate whether Council can include a provision in the Letter of Expectation and Statement of Intent for Christchurch City Holdings Limited (CCHL) and the Lyttelton Port Company (LPC) or other mechanisms which provide for the Council, CCHL or LPC to assist with meeting the desired outcomes for the Lyttelton Seafarers' Centre in line with the recommendations from the February 2018 Council meeting.

3. Banks Peninsula Community Board Recommendation to Council

Part A

That the Te Pātaka o Rākaihautū/Banks Peninsula Community Board recommend to the Council that it:

1. Include a provision in the Letter of Expectation and Statement of Intent for Christchurch City Holdings Limited (CCHL) and the Lyttelton Port Company (LPC) or use other mechanisms which provide for the Council, CCHL or LPC to assist with meeting the desired outcomes for the Lyttelton Seafarers' Centre in line with the recommendations from the February 2018 Council meeting.

Attachments

No.	Report Title	Page
1	Lyttelton Seafarers Welfare	302

Lyttelton Seafarers Welfare

Reference: 19/18458

Presenter(s): Joan Blatchford – Community Governance Manager, Banks Peninsula

1. Purpose and Origin of Report

Purpose of Report

- 1.1 The purpose of this report is for the Te Pātaka o Rākaihautū / Banks Peninsula Community Board to recommend to the Council that it seek staff advice on whether Council can include a provision in the Letter of Expectation and Statement of Intent for Christchurch City Holdings and the Lyttelton Port Company (LPC) that LPC assist with funding for the Lyttelton Seafarers Centre.

Origin of Report

- 1.2 This report is staff generated to progress a request of the Banks Peninsula Community Board from its 10 September 2018 meeting, where the Board had noted its concern, and community expectations, about seafarers' welfare in Lyttelton. The Board had *asked for advice from staff by the end of the year on how those concerns can be taken into account in the Letter of Expectation and Statement of Intent processes for Christchurch City Holdings Ltd and Lyttelton Port Company, and how the Board could influence those processes.*
- 1.3 At the 10 September Board meeting the Board had heard from John McLister who spoke on behalf of the Lyttelton Seafarers Trust. He told the Board he believed there needs to be a plan in place for seamen visiting Lyttelton, along with appropriate funding to implement the plan. Reverend McLister said the Lyttelton Seafarers Trust wanted to partner with the Council in providing a service for seafarers, and he asked that the Board advocate to the Council to source funding through a levy on ships visiting Lyttelton Port. It was noted that the Lyttelton community had indicated its support for a fully functioning seafarers centre in Lyttelton at a recent public meeting.

2. Significance

- 2.1 The decision in this report is of low significance in relation to the Christchurch City Council's Significance and Engagement Policy.
 - 2.1.1 The level of significance was determined by assessment against the criteria in the Significance and Engagement Policy.
 - 2.1.2 The community engagement and consultation outlined in this report reflect the assessment.

3. Staff Recommendation

That the Te Pātaka o Rākaihautū/Banks Peninsula Community Board recommend to the Council that it:

1. Ask staff to investigate whether Council can include a provision in the Letter of Expectation and Statement of Intent for Christchurch City Holdings Limited (CCHL) and the Lyttelton Port Company (LPC) or other mechanisms which provide for the Council, CCHL or LPC to assist with meeting the desired outcomes for the Lyttelton Seafarers' Centre in line with the recommendations from the February 2018 Council meeting.

4. Key Points

- 4.1 The Banks Peninsula Community Board has advocated for a long time for the welfare of seafarers visiting Lyttelton. In particular the Board has sought funding for the Lyttelton Seafarers Centre through a levy on visiting ships.
- 4.2 The Board strongly supports the Maritime Labour Convention, of which New Zealand has become a member state. The Board specifically supports provisions relating to access to *shore based welfare facilities*. The Board is aware that the Convention suggests that one method to secure funding for shore-based seafarers welfare centres is through a levy on shipping (MLC B4.4.4).
- 4.3 The Board has resolved to *support the introduction of a levy on ships in Lyttelton to support seafarer's welfare, and to advocate for this to appropriate authorities*.
- 4.4 Board members believe that New Zealand has an opportunity to be a world leader in seafarer welfare. The Board also believes that it is the responsibility of New Zealand and New Zealanders to demonstrate Manaakitanga to guests from overseas, and the provision of high quality facilities for seafarers is a simple way to achieve this.

5. Context/Background

- 5.1 At its meeting on 1 February 2018, the Council received a report from the Banks Peninsula Community Board which asked the Council to consider if it has “*a moral obligation to voluntarily uphold the Maritime Labour Convention*”.
- 5.2 In response the Council resolved that it:
 1. *Receive the report and attached legal advice, noting the provisions of the Maritime Labour Convention regarding seafarers' welfare centres.*
 2. *Supports the provision of access to shore based welfare facilities as set out in the Maritime Labour Convention.*
 3. *Note the challenges facing the Seafarer's Centre regarding the resources required to provide these services and the constraints they face due to a short-fall in funding.*
 4. *Note the provisions of the Maritime Labour Convention which suggest methods of funding, which include a levy on ships.*
 5. *Note that staff are continuing to discuss with the Seafarers Centre the options that may be available to them for seeking funding and grants.*
 6. *Request the Deputy Mayor and staff to meet with the Seafarers' Centre and Lyttelton Port Company to explore a range of initiatives, including the possibility of a levy on shipping, that could support the Seafarers' Centre and report back to the Community Board within two months.*
- 5.3 As per Clause 6 of the resolution, the Deputy Mayor and staff have met with the Seafarers Centre and Lyttelton Port Company (LPC) to discuss options to support the Centre, including a possible levy on shipping. LPC do not believe that a levy on shipping is the most appropriate mechanism to support seafarer welfare.
- 5.4 At the 10 September 2018 meeting of the Board, it was resolved to seek staff advice on how the continuing concerns of the Board and the Lyttelton community, about seafarer welfare, could be included in the considerations for the Letter of Expectation (LOE) and Statement of Intent (SOI) processes for Christchurch City Holdings Ltd (CCHL) and LPC.

- 5.5 Legal Services staff advised that as the Board is not the decision maker in regard to the LOE and SOI for CCHL and LPC, the Board should recommend to the Council that Council ask staff to investigate whether it can include something in the LOE/SOI. The Council can then consider whether or not this is a matter it wishes staff to investigate/include in the LOE and SOI, in the context of Council's knowledge of other matters to be set out in the LOE and SOI for CCHL and LPC, and other recent decisions affecting CCOs, including the living wage resolutions.

Attachments

There are no attachments to this report.

Confirmation of Statutory Compliance

Compliance with Statutory Decision-making Requirements (ss 76 - 81 Local Government Act 2002).

(a) This report contains:

- (i) sufficient information about all reasonably practicable options identified and assessed in terms of their advantages and disadvantages; and
- (ii) adequate consideration of the views and preferences of affected and interested persons bearing in mind any proposed or previous community engagement.

(b) The information reflects the level of significance of the matters covered by the report, as determined in accordance with the Council's significance and engagement policy.

Signatories

Author	Liz Carter - Community Board Advisor
Approved By	Joan Blatchford - Manager Community Governance, Banks Peninsula/Lyttelton Judith Cheyne - Associate General Counsel Len Van Hout - Manager External Reporting & Governance John Filsell - Head of Community Support, Governance and Partnerships

Report from Regulatory Performance Committee – 6 March 2019

21. Proposed Plan Change 1 Woolston Risk Management Area

Reference: 19/247837

Presenter(s): Marie Pollisco, Policy Planner City Planning

1. Regulatory Performance Committee Recommendation to Council

Original Staff Recommendation Accepted without Change

Part A

That the Council:

1. Publicly notify Proposed Plan Change 1 Woolston Risk Management Area pursuant to Clause 5, Schedule 1 Resource Management Act 1991, subsequent to the Order in Council (Canterbury Earthquake (Christchurch Replacement District Plan) Order 2014) being revoked on 18 March 2019.
2. Delegate to the Chief Executive authority to apply to the Environment Court, under section 86D(2) Resource Management Act 1991, for the proposed change to Rule 4.1.4.1.5 NC2 and its associated updated Woolston Risk Management overlay shown in Planning Map 47A to have immediate legal effect from either the date of public notification or the date of any order made by the Court. This application should be lodged immediately following revocation of the Order in Council on 18 March 2019 and before public notification.

Attachments

No.	Report Title	Page
1	Proposed Plan Change 1 Woolston Risk Management Area	307

No.	Title	Page
A 	Attachment A to RPC 6 March 2019 Report - Plan Change 1 WRMA Text Amendments	322
B 	Attachment B to RPC 6 March 2019 Report - Plan Change 1 WRMA - Proposed Change to Planning Map 47A	327
C 	Attachment C to RPC 6 March 2019 Report - Plan Change 1 WRMA - Proposed Change to Planning Map Legend	328
D 	Attachment D to RPC 6 March 2019 Report - Plan change 1 WRMA - Section 32 Evaluation Report	329
E 	Attachment E to RPC 6 March 2019 Report - Plan Change 1 WRMA - Liquigas QRA	368
F 	Attachment F to RPC 6 March 2019 Report - Plan Change 1 WRMA - Mobil QRA	484
G 	Attachment G to RPC 6 March 2019 Report - Plan Change 1 WRMA - Combined Summary of QRA	588
H 	Attachment H to RPC 6 March 2019 Report - Plan Change 1 WRMA - Copy of Plan Change Text Amendments	601
I 	Attachment I to RPC 6 March 2019 Report - Plan Change 1 WRMA - Proposed Change to Planning Map 47A	604
J 	Attachment J to RPC 6 March 2019 Report - Plan Change 1 WRMA - Proposed Change to Planning Map Legend	605
K 	Attachment K to RPC 6 March 2019 Report - Plan Change 1 WRMA - Map Showing Existing and Proposed Overlays	606

Proposed Plan Change 1 Woolston Risk Management Area

Reference: 18/1365227

Presenter(s): Adele Radburnd, Acting Team Leader - City Planning
Marie Pollisco, Policy Planner

1. Purpose and Origin of Report

Purpose of Report

- 1.1 There is a rule in the Christchurch District Plan that requires resource consent for sensitive activities to establish themselves in the Risk Management Area in Woolston. This rule expires on 31 March 2019. This creates a planning risk. Remedying this risk will take some time to work through the required processes to retain the rule and make any other necessary changes. To avoid this risk, a plan change is needed and an application to the Environment Court for the rule and its associated overlay to have immediate legal effect when the (Canterbury Earthquake (Christchurch Replacement District Plan) Order 2014) (OIC) is revoked on 18 March 2019.

Origin of Report

- 1.2 This report is being provided following Regulatory Performance Committee resolution number RPCM/2018/00055 and Council resolution number CNCL/2018/00301, which states that the Council:

- “1. Note the report on the Proposed Plan Change 1 Woolston Risk Management Area as being the first proposed plan change under the Council’s operative District Plan (due to the expiry of Rule 4.1.4.1.5 NC2 on 31 March 2019).
2. Note that staff will progress preparation for the proposed plan change, and seek Council agreement to notify the plan change immediately once the Order in Council is revoked.”

2. Significance

- 2.1 The decision in this report is of medium significance in relation to the Christchurch City Council’s Significance and Engagement Policy.
 - 2.1.1 The level of significance was determined by the limited number of properties affected within the proposed Woolston Risk Management Area. Any disruption however to the petroleum and liquefied petroleum gas (LPG) supply chains would have a major impact on the availability of fuel supplies across the city and beyond, and therefore on people’s ability to meet their social and economic needs. The level of impact on those people affected is expected to be of low probability but potentially high impact.
 - 2.1.2 The community engagement and consultation outlined in this report reflect the assessment.

3. Staff Recommendations

That the Regulatory Performance Committee recommend that Council:

1. Publicly notify Proposed Plan Change 1 Woolston Risk Management Area pursuant to Clause 5, Schedule 1 Resource Management Act 1991, subsequent to the Order in Council (Canterbury

Earthquake (Christchurch Replacement District Plan) Order 2014) being revoked on 18 March 2019.

2. Delegate to the Chief Executive authority to apply to the Environment Court, under section 86D(2) Resource Management Act 1991, for the proposed change to Rule 4.1.4.1.5 NC2 and its associated updated Woolston Risk Management overlay shown in Planning Map 47A to have immediate legal effect from either the date of public notification or the date of any order made by the Court. This application should be lodged immediately following revocation of the Order in Council on 18 March 2019 and before public notification.

4. Key Points

- 4.1 This report supports the [Council's Long Term Plan \(2018 - 2028\)](#):

4.1.1 Activity: Strategic Planning and Policy

- Level of Service: 9.5.1.1 Guidance on where and how the city grows through the District Plan - Ensure Christchurch District Plan is operative.

- 4.2 The following feasible options have been considered:

- Option 1 – Approve Proposed Plan Change 1 Woolston Risk Management Area for public notification with application to the Environment Court (preferred option)
- Option 2 – Approve Proposed Plan Change 1 Woolston Risk Management Area for public notification without application to the Environment Court
- Option 3 - Do nothing and let the sunset clause expire on 31 March 2019.

- 4.3 Option Summary - Advantages and Disadvantages (Preferred Option)

4.3.1 The advantages of this option include:

- Resolving an identified problem in an effective and efficient manner.
- Improving the accuracy of the District Plan by more accurately identifying the geographic extent of risk, thereby improving Plan efficiency and effectiveness. The removal of the sunset clause likewise improves certainty of the plan provisions.
- Directing sensitive activities to locations where they will not be exposed to unacceptable risks and thereby achieving the intended outcomes for industrial zones.
- Continuing to enable assessment of proposals for the establishment of sensitive activities in proximity to bulk fuel terminals through a resource consent process.
- Maintaining long-term security for strategic infrastructure and the associated security of reliable fuel supplies including the ability of the existing strategic infrastructure to expand to meet demand as required.
- Removing the costs for developers of discretionary and non-complying activities near the terminals to prepare individual full Quantitative Risk Assessments (QRAs).
- Fostering investment certainty in the ongoing operation and upgrading of strategic infrastructure, and likewise providing certainty for other landowners contemplating sensitive activities regarding locations where such activities would not be exposed to an unacceptable level of risk.

- 4.3.2 The disadvantages of this option include:
- Council will be absorbing processing costs, including lodgement fees for the application to the Environment Court.
 - There is no guarantee the application will be granted.
- 4.4 On 19 December 2018, Council noted the report of the Regulatory Performance Committee which provided the background, process, timing and issues surrounding the Proposed Plan Change 1 Woolston Risk Management Area. The full report can be viewed [here](#) (refer to Agenda Item No. 5).
- 4.5 Briefly, the plan change is in relation to the risk management areas, or the overlays, around two bulk fuel storage terminals in Woolston. These risk management areas are mapped in the District Plan along with policy direction and a non-complying rule (Rule 4.1.4.1.5 NC2) as a tool to manage reverse sensitivity effects and to avoid sensitive and some other activities locating in an area where they would be exposed to unacceptable risk. The rule expires on 31 March 2019 (the “sunset clause”) and staff consider it appropriate to retain the rule (i.e. delete the sunset clause) now that Mobil and Liquigas have completed the necessary risk assessments to inform a revised Risk Management Area boundary.
- 4.6 A full set of changes proposed within the Plan Change is set out in **Attachments A, B and C**, and the accompanying Section 32 Evaluation Report is found in **Attachments D, E, F, G, H, I and J**. In summary Plan Change 1 proposes the following changes to the District Plan:
- Amendments to the geographic extent of the existing Risk Management Areas to create the new Woolston Risk Management Area by combining the risk contours for sensitive activities of the QRAs for both sites, shown as a change to Planning Map 47A. (Refer to **Attachment K** to view the existing and proposed overlays.)
 - Renaming “Risk Management Areas” to “Woolston Risk Management Area”, and removing the “sunset clause” from Chapter 4.1 Hazardous Substances, Risk Management Area policy and rule, and the planning map legend.
 - Updating the policy and advice note in Chapter 16 Industrial relating to the LPG and oil depots located in Chapmans Road, Woolston, which are those depots associated with the Woolston Risk Management Area.
 - In Chapter 16 Industrial, changing the status of preschool activities in the part of the Woolston Risk Management Area which overlays the Industrial General Zone, from permitted to non-complying.
- 4.7 With the rule’s expiry date fast approaching, staff consider that the most effective and efficient way to avoid the gap in the District Plan, or to shorten the length of this gap if unavoidable, is to make an application to the Environment Court under s86D(2) of the Resource Management Act 1991 for the proposed changes to Rule 4.1.4.1.5 and its associated updated overlay shown in Planning Map 47A to have immediate legal effect, rather than for it to have legal effect after submissions, a hearing and commissioners decision. The proposed text amendments to the rule are as follows:

4.1.4.1.5 Non-complying activities

Activity	
NC2	<p>a. Any sensitive activity located within a the Woolston Risk Management Area. This rule shall cease to have effect by 31 March 2019.</p> <p>Advice note:</p> <p>1. The Woolston Risk Management Areas are is shown on Planning Map 47A. The geographic extent of these areas may be subject to a future plan change to have effect by 31st March 2019 and any such plan change would need to be based on the findings of a Quantitative Risk Assessment.</p>

Application to the Environment Court

- 4.8 Section 86D of the Resource Management Act 1991 (the 'RMA') is available to be used for this plan change. This process involves making an application to the Environment Court for a rule to have immediate legal effect from a date other than the date on which the decision on submissions relating to the rule is made and publicly notified. However, this process requires the OiC (Canterbury Earthquake (Christchurch District Plan) Order 2014) to be revoked and the proposed plan change approved by Council for public notification. While limited notification of the plan change would normally be an option for this plan change under the RMA Schedule 1 process, any plan change that utilises Section 86D has to be publicly notified.
- 4.9 The application will seek an Environment Court order for Rule 4.1.4.1.5 NC2 and its associated updated Woolston Risk Management Area overlay shown in Planning Map 47A to have immediate legal effect from either the date of public notification or the date of any order made by the Court. The proposed rule and the updated overlay still need to be determined through the standard RMA process of submissions and hearings for a plan change. In the meantime, consent would be required for any breach of that rule. The proposed rule with legal effect will be weighted accordingly alongside the operative rule for any consent applications in breach of that rule.
- 4.10 Staff initially considered making a section 86D application in relation to the non-complying rule without the associated updated Woolston Risk Management Area overlay. However, legal advice suggested that the updated underlay would need to accompany the rule. It would be illogical for the proposed rule to take on immediate legal effect alongside the out-of-date operative Risk Management Areas. The order, in this case, would not reflect the updated QRA. It would also not give effect to Policy 4.1.2.2.2 wherein sensitive activities locating within the Risk Management Areas where they could be exposed to unacceptable risk and/or constrain the development, upgrading or maintenance of bulk fuel and gas terminals are avoided. This may also confuse the Court as to why the Council is seeking the order if it is not seeking that the order reflect the results of the updated QRA.
- 4.11 In respect of fairness to the 54 properties newly affected by the updated Woolston Risk Management Area overlay, the fact that both the proposed non-complying rule and the updated overlay remain proposed and subject to a Schedule 1 RMA process should alleviate any concerns. There will be opportunities for persons to make submissions opposing both aspects, or seeking to have their properties removed from the overlay, which will be determined in accordance with the Schedule 1 hearing process.

- 4.12 Staff do not hold delegation under the Council's Delegation Register (Sept 18) to make an application to the Environment Court under s86D of the RMA and therefore a delegation is being sought to make the application. This will be prepared and submitted by Council's legal team.

The OiC

- 4.13 The government announced on 19 February 2019 that the revocation of the OiC will take effect from 18 March 2019. From this date, Christchurch City Council can revert to normal planning processes to manage and make changes to the Christchurch District Plan.

Pre-notification Consultation

- 4.14 Pre-notification consultation was conducted from mid-January 2019 to mid-February 2019. During this period, letters were sent to owners and owner-occupiers of 248 properties considered to be directly affected and inviting them to provide feedback on the draft plan change.
- 4.15 Three public information drop-in sessions were held with nine owners representing twelve properties attending. One owner expressed concern that his development rights were being limited by the extension of the risk management overlay over his property. All other property owners did not have any concerns with the plan change proposal. All agreed that sensitive activities should be avoided in the area.
- 4.16 Queries received via email were mainly clarification requests with respect to the boundary of the overlay in relation to properties. One specific query was received from the media (after seeing the plan change info at the Council Have Your Say webpage) about the process involved in revoking the OiC.
- 4.17 Three completed feedback forms were received via post: (1) One landowner noted no concerns as long as there are no further or additional restrictions placed on their current business use under the current plan; (2) One landowner would be very pleased to see this change take effect; and (3) the other landowner sought flexibility to operate offices in the Industrial Heavy zone, within the overlay.
- 4.18 The rūnanga conveyed, through Mahaanui Kurataiao Limited (MKT), that they do not have any concerns about the proposed plan change.
- 4.19 A comment of substance came from Liguigas Limited (Liguigas) and the Oil Companies (Mobil Oil, BP Oil, and Z Energy). They support the draft plan change except for the proposed change to Policy 16.2.1.4 - Activities in industrial zones. Suggested amendments were made, which were considered and accepted in part by Council staff.
- 4.20 No further comments/feedback were received on the draft plan change.

5. Context/Background

Background

- 5.1 On 19 December 2018, Council noted the report of the Regulatory and Performance Committee which provided the background, process, timing and issues surrounding the Proposed Plan Change 1 Woolston Risk Management Area. The full report can be viewed [here](#) (refer to Agenda Item No. 5).

Application to the Environment Court

- 5.2 Council staff presented in its previous report to Council detailed descriptions of different procedural options considered.

- 5.3 It was considered that the approach of undertaking a standard plan change provides for the greatest assurance that parties affected by the changes have the optimal opportunity for engagement in the process. At the same time, the value of protecting strategic infrastructure and preventing or minimising the lacuna is recognised as vital, hence the recommendation that relevant elements of the plan change related to the sunset clause is expedited through an application to the Environment Court.

Pre-notification Consultation

- 5.4 A total number of nine property owners representing twelve sites attended the scheduled public information drop-in sessions, broken down as follows into different groups:
- new properties inside the proposed overlay – 5
 - properties inside the existing and proposed overlay – 7
 - properties no longer inside the existing overlay and outside the proposed overlay – 0
- 5.5 A comment of substance came from Liquigas and the Oil Companies. They support the draft plan change except for the change initially proposed to Policy 16.2.1.4 - Activities in industrial zones as explained below.
- 5.5.1 The informal consultative draft plan change proposed to delete the part of the policy that required discretionary and non-complying activities to prepare and submit a QRA with their resource consent application in order to demonstrate that their proposal meets the appropriate risk acceptability criteria for the type of land use. Council initially considered that this policy requirement was no longer required or necessary because QRAs had since been undertaken by Liquigas and the Oil Companies and provisions in Chapter 4 of the District Plan (Hazardous Substances) now manage the location of sensitive activities within the WRMA.
- 5.5.2 Liquigas and the Oil Companies conveyed their view that it remains appropriate for Council to consider the potential of discretionary and non-complying activities seeking consent to establish within the WRMA. This is to enable an assessment of the extent to which these activities were likely to generate reverse sensitivity effects on the bulk fuel terminals and to consider the exposure of these activities to unacceptable risk. These potential effects may be relevant to all activities, not just those defined as sensitive in the District Plan¹. Council staff now agree that it is appropriate to retain this policy requirement but that it is also appropriate to include reference to the existing QRAs to provide additional clarity to plan users via an advice note that:
- The QRAs prepared by the LPG and oil depot companies for the Woolston Risk Management Area will be made freely available to the public to inform the policy requirement; and
 - The relevant discretionary and non-complying activities are only those the subject of Rule 16.4.1.4 D1, Rule 16.5.1.4, and Rule 16.5.1.5 NC1.
- 5.6 No further comments/feedback were received on the draft plan change.

¹ E.g. residential, care facilities, education activities and preschools, guest accommodation, health care facilities, hospitals and custodial accommodation.

6. Option 1 – Approve Proposed Plan Change 1 for public notification with application to the Environment Court (preferred)

Option Description

- 6.1 Should Council select this option, the plan change will be processed under Schedule 1 of the RMA and an application under s86D(2) will be made to the Environment Court (as soon as the OiC is revoked on 18 March 2019) for the change in Rule 4.1.4.1.5 NC2 and its associated updated Woolston Risk Management Area overlay to have immediate legal effect from either the date of public notification or the date of any order made by the Court.
- 6.2 The effect of such an application being granted is that Rule 4.1.4.1.5 NC2 and the updated overlay will have ‘legal effect’ from the date of the Court’s decision, rather than after the Council’s decision on submissions (as in the normal course of events for a Schedule 1 plan change). Consent will be required for any breach of this rule.
- 6.3 The Council’s legal team has provided the following information and relevant considerations with this option:
 - 6.3.1 This process requires that an application comprises a notice of motion and supporting affidavit. After the application is lodged, the Environment Court can regulate the process as it sees fit.
 - 6.3.2 While the Court has wide discretion to grant or refuse an application under section 86D, there are several procedural and/or substantive matters that case law suggests will factor into the Court’s decision-making. Those matters include:

Procedural

 - Whether persons other than the Council should be deprived of the opportunity to provide input prior to rules taking on legal effect; and
 - Why consultation and consideration that has been undertaken in relation to the proposed changes; and
 - Whether the application has or should be limited or publicly notified, including consideration of potential prejudice.

Substantive

 - The nature, purpose, effect and significance of the proposed changes by reference to the status quo;
 - The basis upon which it can be said that immediate legal effect is necessary to achieve the sustainable management purpose of the RMA; and
 - The spatial extent of the areas which are to become subject to the proposed changes and/or how many properties will potentially be affected. Site-specific rules addressing a particular issue are more likely to be granted early legal effect.
 - 6.3.3 In terms of the proposed change to Rule 4.1.4.1.5 NC2 and the updated Woolston Risk Management Area having immediate legal effect, a number of factors exist that may support the grant of any application under s86D, including that:
 - Rule 4.1.4.1.5 NC2 and its associated overlay are site-specific, and would impact only on landowners who will be well-aware of the existing framework;
 - That the reinstated non-complying rule would involve only the removal of the sunset clause;

- The strategic importance of the bulk fuel storage terminals (noting that the importance of strategic infrastructure is recognised in Strategic Objective 3.3.12, Policy 4.1.2.2.1 and Policy 16.2.1.4);
- The purpose of the rule, being to manage reverse sensitivity effects and avoid sensitive activities locating near the Terminals where they would be exposed to unacceptable risk; and
- The existing non-complying rule has been in the District Plan for some time, and was the outcome of detailed consideration and consultation by the Independent Hearings Panel (IHP) hearing the Christchurch Replacement District Plan.

Significance

- 6.4 The level of significance of this option is medium consistent with section 2 of this report.
- 6.5 Engagement requirements for this level of significance are to be determined through the standard Schedule 1 RMA process.

Impact on Mana Whenua

- 6.6 This option does not involve a significant decision in relation to ancestral land or a body of water or other elements of intrinsic value, therefore this decision does not specifically impact Ngāi Tahu, their culture and traditions.
- 6.7 The rūnanga conveyed, through MKT, that they do not have any concerns about the proposed plan change.

Community Views and Preferences

- 6.8 The Oil Companies (Mobil Oil, BP Oil and Z Energy) and Liquigas are specifically affected by this option being the owners/users of the bulk fuel storage terminals in Woolston. They support the notification of the plan change proposal and the application to the Environment Court to avoid a lacuna in the District Plan provisions. Further to suggesting amendments to Policy 16.2.1.4, they also wish to include new provisions to Chapter 4 Hazardous Substances and Contaminated Land in relation to a Site Emergency Management Plan (SEMP) requirement; but these will be considered during the submissions and hearings stages.

Alignment with Council Plans and Policies

- 6.9 This option is consistent with Council's Plans and Policies.

Financial Implications

- 6.10 If the Council resolves to notify the plan change, there are legal processes which must be followed in accordance with Schedule 1 of the RMA. This is a standard process that all plan changes must follow and if the processes are correctly followed, no particular financial risks are foreseen. There will be costs at various stages of the plan change process relating to the preparation of officer reports and a hearing in response to submissions. The scale of costs will depend on the level of complexity of the submissions received. Should the Council select this option, it will need to absorb all the processing costs, including lodgement fee for the application to the Environment Court.
- 6.11 Funding is to be sourced from the Planning and Strategic Transport Unit's budget.

Legal Implications

- 6.12 There has been a full discussion of the legal implications throughout this report.
- 6.13 There is a legal process set out in the RMA which must be followed. It includes notification of the plan change followed by submissions, reporting, hearings, decisions and possible appeals.

- 6.14 The Environment Court will set its process for the application that a rule have immediate effect, which could involve notification.
- 6.15 If the Court grants the application, the non-complying rule and the updated overlay will have legal effect on the date specified in the Court Order and will then be subject to the submission and hearing process for the Council to determine whether it will make that plan change.

Risks and Mitigations

- 6.16 There is a potential risk that affected landowners may argue prejudice and seek a lesser activity status.
- 6.16.1 Residual risk rating: The residual rating of the risk after the below treatments is implemented will be low.
- 6.16.2 Planned treatment includes further consultation with affected parties. This issue did not arise during pre-notification consultation.

Implementation

- 6.17 Implementation dependencies - The Schedule 1 process is determined by the Resource Management Act while the application to the Environment Court for the rule to have immediate effect will be made after the Council has approved the proposed plan change for public notification, and after the OiC is revoked. If granted, the proposed Rule 4.1.4.1.5 and the updated Woolston Risk Management Area overlay then have legal effect alongside the operative rule and overlay, and is weighted accordingly when considering resource consent applications. Proposed Rule 4.1.4.1.5 and the updated overlay will still go through the Schedule 1 plan change process as part of Plan Change 1 Woolston Risk Management Area.
- 6.18 Implementation timeframe - It is uncertain how long the Court process for the application would take to complete. The Schedule 1 process however could take at least a year to complete. Council staff will seek to expedite the process by working with the Oil Companies and Liquigas.

Option Summary - Advantages and Disadvantages

- 6.19 The advantages of this option include:
- Resolving an identified problem in an effective and efficient manner.
 - Improving the accuracy of the District Plan by better identifying the geographic extent of risk, thereby improving Plan efficiency. The removal of the sunset clause likewise improves certainty of the plan provisions.
 - Directing sensitive activities to locations where they will not be exposed to unacceptable risks and thereby achieving the outcomes for the industrial zones.
 - Continuing to require resource consent for breaches of the rule.
 - Maintaining long-term security for strategic infrastructure and the associated security of reliable fuel supplies including the ability of the existing strategic infrastructure to expand to meet demand as required.
 - Removing the costs for developers of discretionary and non-complying activities near the terminals to prepare individual full Quantitative Risk Assessments (QRAs).
 - Fostering investment certainty in the ongoing operation and upgrading of strategic infrastructure, and likewise providing certainty for other landowners contemplating sensitive activities regarding locations where such activities would not be exposed to an unacceptable level of risk.

6.20 The disadvantages of this option include:

- Council will be absorbing processing costs, including lodgement fees for the application to the Environment Court.
- There is no guarantee the application may be granted.

7. Option 2 – Approve Proposed Plan Change 1 for public notification without application to the Environment Court

Option Description

- 7.1 This option will involve the proposed change to Rule 4.1.4.1.5 NC2 and the updated Woolston Risk Management Area overlay to be part of the proposed plan change without having immediate legal effect and processed under Schedule 1 of the RMA as soon as the OiC is revoked on 18 March 2019.
- 7.2 This option will result in the rule to expire on 31 March 2019 while the out-of-date operative overlay will remain as it does not have an expiry date. Management of risks would therefore be reliant solely on the underlying zone provisions while the proposed plan change is going through the Schedule 1 process.
- 7.3 Sensitive activities in the surrounding Industrial Heavy and Industrial General Zones are either discretionary or non-complying, while preschool activities are permitted in the Industrial General Zone.

Significance

- 7.4 The level of significance of this option is medium consistent with section 2 of this report.
- 7.5 Engagement requirements for this level of significance are determined through the standard Schedule 1 RMA process.

Impact on Mana Whenua

- 7.6 This option does not involve a significant decision in relation to ancestral land or a body of water or other elements of intrinsic value, therefore this decision does not specifically impact Ngāi Tahu, their culture and traditions.

Community Views and Preferences

- 7.7 The Oil Companies (Mobil Oil, BP Oil and Z Energy) and Liquigas are specifically affected by this option being the owners/users of the bulk fuel storage terminals in Woolston. They do not support this option as it will still create a gap or lacuna in the District Plan provisions when the sunset clause expires. They wish to protect their terminals from reverse sensitivity effects and avoid sensitive and other activities from locating in close proximity to their terminals where they would be exposed to unacceptable risk.

Alignment with Council Plans and Policies

- 7.8 This option is inconsistent with Council's Plans and Policies.
- 7.8.1 Inconsistency – the importance of strategic infrastructure is recognised in the District Plan Strategic Objective 3.3.12, Policy 4.1.2.2.1 and Policy 16.2.1.4.
- 7.8.2 Reason for inconsistency – Proceeding with this option will allow the non-complying rule to expire on 31 March 2019, after which Council will have limited ability to control sensitive activities that may impact on strategic infrastructure. A preschool may be established as a permitted activity close to strategic infrastructure which may result in reverse sensitivity effects.

- 7.8.3 Amendment necessary – a lacuna in the District Plan provisions need to be avoided by applying to the Environment Court for the change to Rule 4.1.4.1.5 NC2 and its associated updated Woolston Risk Management Area overlay to have immediate legal effect from either the date of public notification or the date of any order made by the Court.

Financial Implications

- 7.9 If Council selects this option, costs involved in making an application to the Environment Court are no longer required.
- 7.10 Proposed Plan Change 1 Woolston Risk Management Area will continue under the standard Schedule 1 process. There are costs at various stages of the plan change process.
- 7.11 Funding is to be sourced from the Planning and Strategic Transport Unit's budget.

Legal Implications

- 7.12 There is no legal context, issue or implication relevant to this decision. The proposed plan change will proceed under the standard Schedule 1 process of the RMA.

Risks and Mitigations

- 7.13 There is a risk of a preschool to be established in the Industrial General Zone as a permitted activity if the Council selects this option. This may result in Council's limited ability to control such a use that may impact on strategic infrastructure after 31 March 2019.
- 7.13.1 Residual risk rating: The residual rating of the risk after the below treatment is implemented will be medium.
- 7.13.2 Planned treatment include liaising with Building Consent and Resource Consent officers about the issues involving sensitive activities establishing close to strategic infrastructure. Under the Building Act 2004 legislation however Council would not have any ability to decline a proposal on reverse sensitivity grounds.

Implementation

- 7.14 By selecting this option, Proposed Plan Change 1 Woolston Risk Management Area, including the change to the non-complying rule and the updated overlay, will go through the standard Schedule 1 RMA process.
- 7.15 Implementation timeframe – The standard plan change process may take up to a year or more depending on whether there are hearings or appeals to be resolved.

Option Summary - Advantages and Disadvantages

- 7.16 The advantages of this option include:
- Council will not bear any costs for any lodgement fees in making an application to the Environment Court and processing costs.
- 7.17 The disadvantages of this option include:
- There will be a lacuna in the District Plan provisions when the sunset clause expires on 31 March 2019 and Proposed Plan Change 1 is still going through the standard Schedule 1 RMA process.
 - Any proposals to establish a sensitive activity in the Industrial Heavy or Industrial General Zones are either discretionary or non-complying. The more enabling activity status (particularly discretionary for the Industrial General Zone) would signal that such activities may be appropriate on a case by case basis.

- Under the Industrial General Zone rules, preschool activities could be established as a permitted activity close to the terminals. The Council's ability to control such activities that may impact on strategic infrastructure becomes extremely limited after 31 March 2019.
- The cost to the District and wider region of a constrained fuel supply could be significant in the event a sensitive activity or otherwise inappropriate activity was located near a bulk fuel storage terminal as it could lead to constraints on operations and development required to meet increasing community fuel demands.

8. Option 3 – Do nothing and let the sunset clause expire on 31 March 2019

Option Description

- 8.1 This option will result in the non-complying rule expiring on 31 March 2019. Management of risk would therefore be reliant solely on the underlying zone provisions. Sensitive activities in the surrounding Industrial Heavy and Industrial General Zones are either discretionary or non-complying; a preschool is a permitted activity in the Industrial General Zone.
- 8.2 In the event of the above, a complying preschool proposal in the Industrial General Zone for example will not trigger the need for any form of resource consent. The Council's ability to assess the use would be limited to the more procedural Building Act 2004 legislation, which does not include any ability to decline a proposal on reverse sensitivity grounds. Subsequently, any additions or modifications to the oil terminals would be subject to an assessment of their environmental effects on the preschool.
- 8.3 In addition, the Risk Management Areas shown on Planning Map 47A would not reflect the updated Quantitative Risk Assessments for each terminal.

Significance

- 8.4 The level of significance of this option is medium consistent with section 2 of this report.
- 8.5 There will be no engagement requirements for this option.

Impact on Mana Whenua

- 8.6 This option does not involve a significant decision in relation to ancestral land or a body of water or other elements of intrinsic value, therefore this decision does not specifically impact Ngāi Tahu, their culture and traditions.

Community Views and Preferences

- 8.7 The Oil Companies (Mobil Oil, BP Oil and Z Energy) and Liquigas are specifically affected by this option being the owners/users of the bulk fuel storage terminals in Woolston. They do not support this option. The sunset clause needs to be removed and the geographic extent of the Risk Management Areas in Woolston updated to protect their terminals from reverse sensitivity effects and avoid sensitive and other activities from locating close to the terminals where they would be exposed to unacceptable risk.

Alignment with Council Plans and Policies

- 8.8 This option is inconsistent with Council's Plans and Policies
- 8.8.1 Inconsistency – The importance of strategic infrastructure is recognised in the District Plan Strategic Objective 3.3.12, Policy 4.1.2.2.1 and Policy 16.2.1.4.
- 8.8.2 Reason for inconsistency – Proceeding with this option will allow the non-complying rule to expire on 31 March 2019, after which Council will have limited ability to control sensitive activities that may impact on strategic infrastructure. A preschool may be established as a permitted activity close to strategic infrastructure which may result in reverse sensitivity effects.

- 8.8.3 Amendment necessary – a lacuna in the District Plan provisions need to be avoided by applying to the Environment Court for the change to Rule 4.1.4.1.5 NC2 and its associated updated Woolston Risk Management Area overlay to have immediate legal effect from either the date of public notification or the date of any order made by the Court.

Financial Implications

- 8.9 If Council selects this option, costs involved in making an application to the Environment Court is no longer incurred.
- 8.10 There will be no plan change costs involved with this option.

Legal Implications

- 8.11 There is no legal context, issue or implication relevant to this decision.

Risks and Mitigations

- 8.12 There is a risk (albeit low) of a complying preschool to be established in the Industrial General Zone as a permitted activity if the Council selects this option. This may result in Council's limited ability to control such a use that may impact on strategic infrastructure after 31 March 2019.
- 8.12.1 Residual risk rating: The residual rating of the risk after the below treatment is implemented will be medium.
- 8.12.2 Planned treatment include liaising with Building Consent and Resource Consent officers about the issues involving sensitive activities establishing close to strategic infrastructure. Under the Building Act 2004 legislation however Council would not have any ability to decline a proposal on reverse sensitivity grounds.

Implementation

- 8.13 By selecting this option, there is no implementation process and timeframes involved.

Option Summary - Advantages and Disadvantages

- 8.14 The advantages of this option include:
- Council will not bear any fees and processing costs for a plan change and in making an application to the Environment Court.
- 8.15 The disadvantages of this option include:
- There will be a lacuna in the District Plan provisions when the sunset clause expires on 31 March 2019 and Proposed Plan Change 1 is still going through the standard Schedule 1 process.
 - Any proposals to establish a sensitive activity in the Industrial Heavy or Industrial General Zones are either discretionary or non-complying. The more enabling activity status (particularly discretionary for the Industrial General Zone) would signal that such activities may be appropriate on a case by case basis.
 - Under the Industrial General Zone rules, preschool activities could be established as a permitted activity close to the terminals. The Council's ability to control such activities that may impact on strategic infrastructure becomes extremely limited after 31 March 2019.
 - The District Plan will contain misleading and ineffective references to an outdated risk management area.
 - The cost to the District and wider region of a constrained fuel supply could be significant in the event a sensitive activity or otherwise inappropriate activity was located near a bulk

fuel storage terminal as it could lead to constraints on operations and development required to meet increasing community fuel demands.

Attachments

No.	Title	Page
A	Attachment A to RPC 6 March 2019 Report - Plan Change 1 WRMA Text Amendments	
B	Attachment B to RPC 6 March 2019 Report - Plan Change 1 WRMA - Proposed Change to Planning Map 47A	
C	Attachment C to RPC 6 March 2019 Report - Plan Change 1 WRMA - Proposed Change to Planning Map Legend	
D	Attachment D to RPC 6 March 2019 Report - Plan change 1 WRMA - Section 32 Evaluation Report (<i>Under Separate Cover</i>)	
E	Attachment E to RPC 6 March 2019 Report - Plan Change 1 WRMA - Liquigas QRA	
F	Attachment F to RPC 6 March 2019 Report - Plan Change 1 WRMA - Mobil QRA	
G	Attachment G to RPC 6 March 2019 Report - Plan Change 1 WRMA - Combined Summary of QRA	
H	Attachment H to RPC 6 March 2019 Report - Plan Change 1 WRMA - Copy of Plan Change Text Amendments	
I	Attachment I to RPC 6 March 2019 Report - Plan Change 1 WRMA - Proposed Change to Planning Map 47A	
J	Attachment J to RPC 6 March 2019 Report - Plan Change 1 WRMA - Proposed Change to Planning Map Legend	
K	Attachment K to RPC 6 March 2019 Report - Plan Change 1 WRMA - Map Showing Existing and Proposed Overlays	

Confirmation of Statutory Compliance

Compliance with Statutory Decision-making Requirements (ss 76 - 81 Local Government Act 2002).

(a) This report contains:

- (i) sufficient information about all reasonably practicable options identified and assessed in terms of their advantages and disadvantages; and
- (ii) adequate consideration of the views and preferences of affected and interested persons bearing in mind any proposed or previous community engagement.

(b) The information reflects the level of significance of the matters covered by the report, as determined in accordance with the Council's significance and engagement policy.

Signatories

Authors	Marie Pollisco - Policy Planner Paul Waiting - Team Leader City Planning Adele Radburnd - Team Leader City Planning
Approved By	Polly Leeming - Corporate Counsel David Griffiths - Head of Planning & Strategic Transport Brendan Anstiss - General Manager Strategy and Transformation

	<p>Resource Management Act 1991 Christchurch District Plan Proposed Plan Change</p>	<h1>1</h1>
<p style="text-align: center;">WOOLSTON RISK MANAGEMENT AREA</p> <p>Explanation</p> <p>The purpose of the proposed plan change is to provide updated District Plan provisions that:</p> <ul style="list-style-type: none"> (a) manage low probability but potentially high impact risks which would arise from the location of sensitive activities in the area; and (b) enable the ongoing efficient use of the two bulk fuel storage facilities and preventing reverse sensitivity effects from arising. It also (c) requires other new discretionary or non-complying activities establishing in the area to consider the issue of risk and ensure they meet relevant risk acceptance criteria appropriate to the nature of the proposed activities. <p>The bulk fuel terminals located at 50 and 79 Chapmans Road in Woolston (Terminals) comprise important infrastructure in the fuel supply chain for the Canterbury region and Christchurch City. The operators of the Terminals are also identified as “lifeline utilities” under the Civil Defence and Emergency Management Act 2002, i.e., entities that produce, supply, or distribute manufactured gas or natural gas. Lifeline utilities must be able to function to the fullest possible extent during and after an emergency. Any disruption to the petroleum and/or LPG supply chains would have a major impact on the availability of fuel supplies and therefore on people’s ability to meet their social and economic needs. It is important that the Terminal operators are not unduly constrained in the way they use their land resource in order to operate successfully and remain viable.</p> <p>The District Plan currently classifies “sensitive activities”¹ as non-complying within a specified area around the bulk fuel terminals (Rule 4.1.4.1.5 NC2). This rule expires on 31 March 2019 (the “sunset clause”), the intent being that by this date, the relevant Terminal operators would have completed the Quantitative Risk Assessments (QRAs) required by the Independent Hearings Panel on the Christchurch Replacement District Plan and formulate an appropriate plan change based on the outcome of the QRAs for these sites.</p> <p style="text-align: right;"><i>... continued on next page</i></p>		
<p>Date Publicly Notified:</p> <p>Council Decision Notified:</p> <p>Plan Details: Planning Map 47A</p>		<p>Date Operative:</p> <p>File No: PL/DP/1</p> <p>TRIM No: FOLDER19/119</p>

¹ Sensitive activities are defined in the District Plan as including residential activities, care facilities, education activities and preschools, and health care facilities.

The plan change is based on the findings of the QRAs for both sites. The plan change will update the boundary of the Risk Management Areas, remove the sunset clause as no longer being necessary, and make several consequential amendments to provisions relating to the establishment of new risk-sensitive land uses within the new Woolston Risk Management Area, which might constrain or compromise the ability of the terminals to continue to provide for petroleum and LPG demands, i.e. generating "reverse sensitivity" effects.

The following changes to the District Plan are proposed:

- Amendments to the geographic extent of the existing Risk Management Areas to create the new WRMA by combining the risk contours for sensitive activities of the QRAs for both sites, shown as a change to Planning Map 47A.
- Renaming "Risk Management Areas" to "Woolston Risk Management Area", and removing the "sunset clause" from Chapter 4.1 Hazardous substances, Risk Management Area policy and rule, and the Planning Map Legend.
- To be consistent with Chapter 4.1 Hazardous substances, updating the policy and advice note in Chapter 16 Industrial relating to the LPG and oil depots located in Chapmans Road, Woolston, which are those depots associated with the Woolston Risk Management Area.
- In Chapter 16 Industrial, changing the status of preschool activities in the part of the WRMA, which overlays the Industrial General Zone, from permitted to non-complying.

DISTRICT PLAN AMENDMENTS

Note: For the purposes of this plan change:

Any text proposed to be added by the plan change is shown as **bold underlined** and text to be deleted as **bold strikethrough**.

Text in **green** are defined terms to be linked to their respective definition in Definitions Chapter.

Text in **blue** are cross references to be linked to external and/or other provision within the Plan.

Amend the District Plan as follows:

Chapter 4 Hazardous substances and contaminated land, 4.1 Hazardous substances, 4.1.2 Objectives and Policies

4.1.2.2.2 Policy - Woolston Risk Management Areas

- a. Avoid **sensitive activities** locating within **the Woolston** Risk Management Areas where these have the potential to be exposed to unacceptable risk and/or may otherwise constrain the development, operation, upgrading or maintenance of bulk fuel and gas terminals.

Advice note:

1. The Woolston Risk Management Areas **are is** shown on [Planning Map 47A](#). **The geographic extent of these areas may be subject to a future plan change to have effect by 31st March 2019 and any such plan change would need to be based on the findings of a Quantitative Risk Assessment.**

Chapter 4 Hazardous substances and contaminated land, 4.1 Hazardous substances, 4.1.4 Rules – Hazardous substances

4.1.4.1.5 Non-complying activities

Activity	
NC2	<p>a. Any sensitive activity located within a the Woolston Risk Management Area. This rule shall cease to have effect by 31 March 2019.</p> <p>Advice note:</p> <p>1. The <u>Woolston</u> Risk Management Areas are is shown on Planning Map 47A. The geographic extent of these areas may be subject to a future plan change to have effect by 31st March 2019 and any such plan change would need to be based on the findings of a Quantitative Risk Assessment.</p>

Chapter 16 Industrial, 16.2 Objectives and Policies

16.2.1.4 Policy – Activities in industrial zones

- a. ...
- 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, or by being exposed to unacceptable risk**. This includes but is not limited to avoiding:
 - i. **sensitive activities** located within the 50dB Ldn Air Noise Contour, the Lyttelton Port Influences Overlay Area, **the Woolston Risk Management Area** and in proximity to the **National Grid**;
 - ii. discretionary or non-complying activities in **the Woolston Risk Management Area 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.
- c. ...
- d. ...

Advice note for Clause b.ii:

- 1. The Woolston Risk Management Area is shown on [Planning Map 47A](#). As at June 2015, bulk fuel storage facilities in industrial zones are limited to the LPG and oil depots in Chapmans Road, Woolston.**
- 2. The quantitative risk assessment shall consider the vulnerability of activities to hazardous events from a bulk fuel storage facility, such as fires and vapour cloud explosions, and the ability of the proposed activity to enact timely and effective emergency action and evacuation. This will require consideration of factors including:**
 - a. Site and building occupancy, and the ability to easily evacuate;**
 - b. Building type and siting; and**
 - c. The effects of structures and landscaping on the propagation of vapour cloud explosions.**
- 3.2. The identification of appropriate ~~Appropriate~~ risk acceptability criteria and guidance on preparing a quantitative risk assessment shall refer to guidance include those in the [Planning NSW Hazardous Industry Planning Advisory Papers No. 3 and 4 Risk Criteria for Land Use Safety Planning](#). Those criteria were used in determining the geographic extent of the Woolston Risk Management Area. ~~or similar guidance suitable to the content of the site and activity that the risk assessment is for.~~ Early consultation with the companies responsible for the LPG and oil depots is encouraged for any proposed activity within the Woolston Risk Management Area 300 metres of the depots, as the companies will be able to assist with the identification of appropriate risk issues relating to any proposed development, acceptability criteria and the extent to which a quantitative risk assessment is necessary.**
- 3. Council holds and will make freely available to the public, the Quantitative Risk Assessments prepared by the LPG and oil depot companies for the Woolston Risk Management Area.**
- 4. For the avoidance of doubt, the relevant discretionary and non-complying activities are only those the subject of Rule 16.4.1.4 D1, Rule 16.5.1.4, and Rule 16.5.1.5 NC1.**

Chapter 16 Industrial, 16.4 Rules – Industrial General Zone

16.4.1.1 Permitted activities

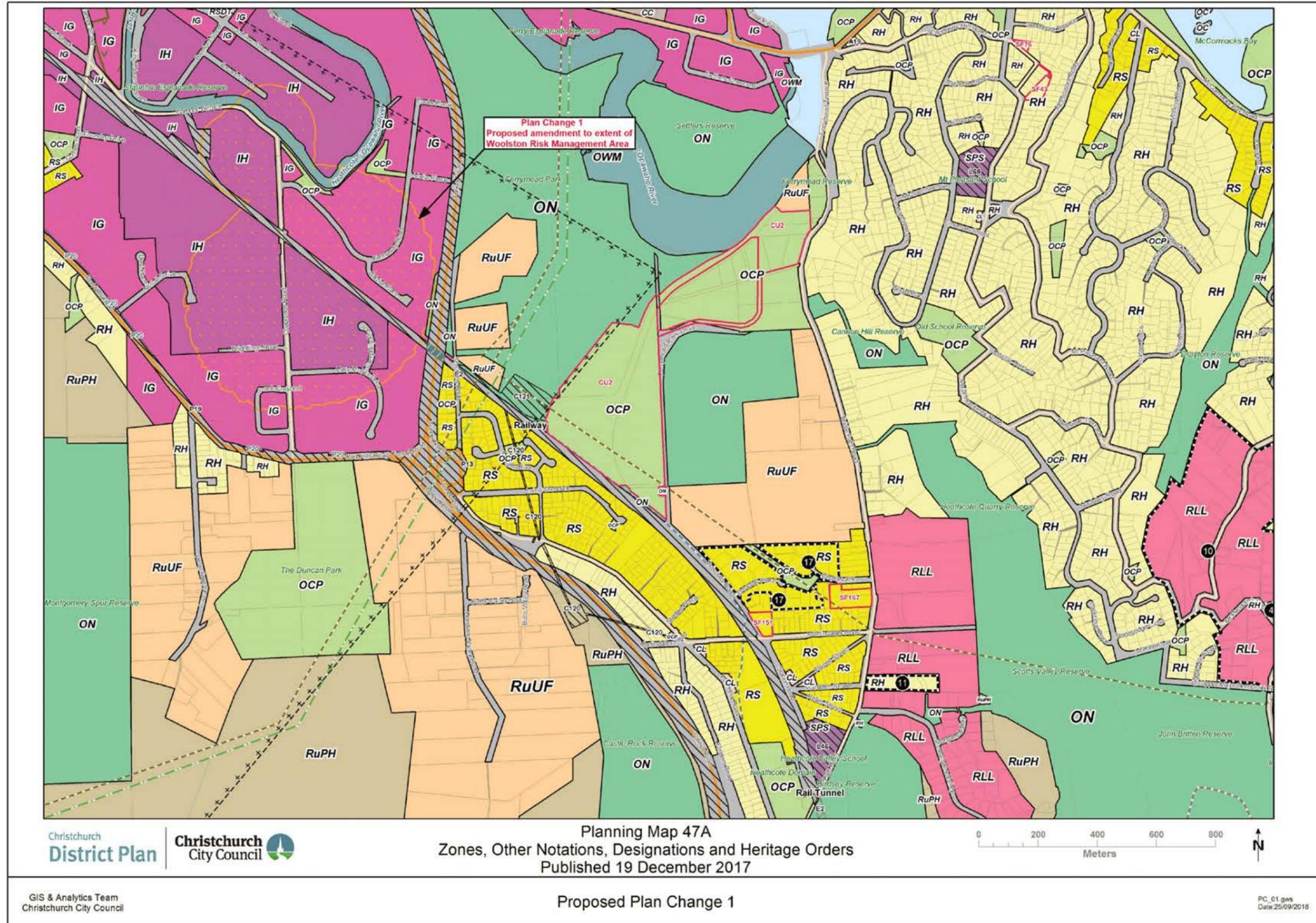
Activity	Activity specific standards
<p>P18 Preschool</p> <p>a. outside the 50 dB L_{dn} Air Noise Contour;</p> <p>b. in Lyttelton, outside the Lyttelton Port Influences Overlay Area as defined on the planning maps;</p> <p>c. <u>outside the Woolston Risk Management Area as defined on the planning maps</u></p>	<p>a. Any preschool activity shall be:</p> <p>i. located more than 100 metres from the boundary of an Industrial Heavy Zone; and</p> <p>ii. any habitable space must be designed and constructed to achieve an external to internal noise reduction of not less than 25 dB $D_{tr,2m,nT,w}+C_{tr}$; and;</p> <p>and</p> <p>iii. any bedroom or sleeping area must be designed and constructed to achieve an external to internal noise reduction of not less than 30 dB $D_{tr,2m,nT,w}+C_{tr}$.</p>

16.4.1.5 Non-complying activities

Activity
<p>NC2 Sensitive activity within the 50 dB L_{dn} Air Noise Contour, <u>the Woolston Risk Management Area</u> or within the Lyttelton Port Influences Overlay Area as defined on the planning maps.</p>

Amend Planning Map 47A by removing the existing Risk Management Areas and replacing it with the new Woolston Risk Management Area, as shown on the attachment.

Amend Planning Map Legend by renaming “Risk Management Areas” to “Woolston Risk Management Area” and removing the text under “Risk Management Areas”, as shown on the attachment.



	<p>Resource Management Act 1991</p> <p>Christchurch City Council</p> <p>Christchurch District Plan</p> <p>Plan Change Section 32 Evaluation</p>	<h1>1</h1>
<p style="text-align: center;">WOOLSTON RISK MANAGEMENT AREA</p> <p>Introduction</p> <p>The purpose of the proposed plan change is to provide updated District Plan provisions that manage low probability but potentially high impact risks which would arise from the location of sensitive activities in close proximity to two bulk fuel terminals in Woolston, Christchurch. It proposes provisions that seek to enable the ongoing efficient use of those facilities and prevent reverse sensitivity effects from arising that may affect their ongoing operation and growth. It does this through the identification of a risk management area, and related provisions which limit the extent to which new sensitive activities, including pre-schools, can locate within it. The change would continue to require other new discretionary or non-complying activities seeking to establish in the area to consider the issue of risk and ensure they meet relevant risk acceptance criteria appropriate to the nature of the proposed activities but without the need to undertake an individual quantitative risk assessment to support their proposals.</p> <p>The proposed plan change has been prepared in accordance with the requirements of Section 32 (s32) of the Resource Management Act 1991 (RMA).</p> <p>This report includes:</p> <ul style="list-style-type: none"> • An outline of resource management issues and possible options for addressing these; • An overview of the proposed changes in the context of relevant legislative and planning policy documents; • An evaluation of the policies, rules and other methods proposed, including an evaluation of costs, benefits of the reasonably practicable options considered; • An evaluation of effectiveness and efficiency of each option based on the anticipated effects of implementing the plan change in such detail as corresponds with the scale and significance of the actual or potential environmental effects anticipated; and • A conclusion as to the most appropriate option. <p>The report also contains supplementary technical assessments including:</p> <ol style="list-style-type: none"> 1. Liquigas Terminal Quantitative Risk Assessment. 2. Woolston Oil Terminal Quantitative Risk Assessment. 3. Combined Summary of Quantitative Risk Assessments. 		

Table of contents

1	Introduction	3
1.1	Purpose of this report	3
1.2	Section 32 evaluation overview	3
1.3	The Plan Change overview	3
2	Existing land-use context	4
2.1	Site Location	4
2.2	Surrounding area	5
2.3	Zoning.....	5
3	Resource management issues.....	6
3.1	Background.....	6
3.2	Findings of the Independent Hearings Panel on the Christchurch District Plan Review.....	7
3.3	Use of New South Wales (NSW) Hazardous Industry Planning Advisory Papers (HIPAP) Framework	9
3.4	New Quantitative Risk Assessments	10
4	Proposed Plan Change Content.....	13
5	Relevant statutory context	14
5.1	The Requirements of the RMA	14
5.2	Planning documents.....	15
6	Section 32 evaluation	19
6.1	Introduction	19
6.2	Scale and significance evaluation	19
6.3	Evaluation of proposed provisions and reasonably practicable alternative options.....	21
7	Assessment of Environmental Effects	30
7.1	Introduction	30
7.2	Avoidance of Sensitive Activities and (potentially) other Non-Industrial Activities	30
7.3	Reverse Sensitivity and Constraints on Strategic Infrastructure	32
8	Consultation.....	33
9	Conclusion.....	34
	APPENDIX 1 – LIQUIGAS TERMINAL QUANTITATIVE RISK ASSESSMENT	36
	APPENDIX 2 – WOOLSTON OIL TERMINAL QUANTITATIVE RISK ASSESSMENT	37
	APPENDIX 3 – COMBINED SUMMARY OF QUANTITATIVE RISK ASSESSMENT.....	38
	APPENDIX 4 – COPY OF PLAN CHANGE TEXT AMENDMENTS.....	39

Plan Change 1 - Section 32 Evaluation

2

1 Introduction

1.1 Purpose of this report

- 1.1.1 Section 32 (s32) of the Resource Management Act 1991 (RMA) requires that Council provides an evaluation of the changes proposed in Plan Change 1 to the Christchurch District Plan (the Plan). The evaluation must examine whether the proposed provisions are the most appropriate way to achieve the objectives of the plan change and the purpose of the RMA. The report must consider reasonably practicable alternatives and assess the benefits and costs of inserting/amending/deleting any objective, policy, rule or method in the Plan.
- 1.1.2 The purpose of this report is to fulfil these s32 requirements for proposed Plan Change 1 – Woolston Risk Management Area.

1.2 Section 32 evaluation overview

1.2.1 This section 32 evaluation includes:

- An outline of resource management issues and possible options for addressing these;
- An overview of the proposed changes in the context of relevant legislative and planning policy documents;
- An evaluation of the policies, rules and other methods proposed, including an evaluation of costs, benefits of the reasonably practicable options considered;
- An evaluation of effectiveness and efficiency of each option based on the anticipated environmental, economic, social and cultural effects of implementing the plan change in such detail as corresponds with the scale and significance of the actual or potential environmental effects anticipated; and
- A conclusion as to the most appropriate option.

1.3 The Plan Change overview

- 1.3.1 The proposed plan change relates to the Risk Management Areas identified in the Christchurch District Plan and relates to two bulk fuel terminals located at Chapmans Road, Woolston. The purpose of the proposed plan change is to provide updated District Plan provisions that:
- (a) manage low probability but potentially high impact risks which would arise from the location of sensitive activities, including pre-schools, in close proximity to the two terminals;
 - (b) enable the ongoing efficient use of the facilities and prevent reverse sensitivity effects from arising; and
 - (c) continues to require other new discretionary or non-complying activities seeking to establish in the area to consider the issue of risk and ensure they meet relevant risk acceptance criteria appropriate to the nature of the proposed activities, when applying for resource consent but without the need to undertake individual Quantitative Risk Assessments (QRAs).
- 1.3.2 Liquigas and the Oil companies have themselves now completed new QRAs (May and June 2018, respectively), which provides the evidence base to support the ongoing use of a risk management

3

Plan Change 1 - Section 32 Evaluation

area overlay in the district plan, amendments to its boundary and district plan provisions which seek to manage activities within the overlay area to avoid adverse effects on strategic infrastructure and minimise exposure to unacceptable risk for surrounding land uses. The proposed replacement risk management areas form the basis of this plan change.

2 Existing land-use context

2.1 Site Location

2.1.1 The plan change is based around two sites in the suburb of Woolston and identified in the Christchurch District Plan (**District Plan**) as strategic infrastructure. The site located at 79 Chapmans Road (referred in this report as the '**Woolston Oil Terminal**') is owned by Mobil Oil New Zealand Limited (**Mobil**) and used by the Mobil, BP Oil and Z Energy (**Oil Companies**). The other site located at 50 Chapmans Road (referred in this report as the '**Liquigas Terminal**') is owned by Liquigas Limited. The location of these two sites are shown in **Figure 1** below.

2.1.2 Both sites contain bulk fuel storage terminals for LPG (Liquigas Terminal) and petroleum fuel products (Woolston Oil Terminal). Both sites are serviced via ship deliveries to the tank farm in Lyttelton, with product then transported via separate pipelines over the Port Hills to the main storage terminals in Woolston. These terminals then supply truck-based delivery and distribution across the City, wider region and the upper South Island. The Oil Companies use the Woolston Oil Terminal as a supply point for their distribution networks.

2.1.3 Both sites are comprised of heavy industrial buildings and fuel storage terminals. The Liquigas Terminal comprises LPG storage tanks that are buried within engineered gravel mounds, with the Woolston Oil Terminal storage located within above ground tanks. Associated control buildings, workshops, pipework, truck loading facilities and perimeter security fencing is also present.



Figure 1 Location Map

2.2 Surrounding area

- 2.2.1 Both sites are located within a wider industrial suburb that includes a mix of warehousing, distribution and manufacturing activities with ancillary offices. The Lyttelton Port Company has an inland port and container hub located west of the Liquegas Terminal and south-west of the Woolston Oil Terminal site. Small-scale cafes and commercial service businesses are also located within the wider area to support the industrial workforce.
- 2.2.2 The Liquegas Terminal is bounded to the north-east by the rail corridor that services Lyttelton Port, with the Heathcote River located north of the Woolston Oil Terminal on the far side of Chapmans Road.

2.3 Zoning

- 2.3.1 As shown in **Figure 2** below, both sites are zoned Industrial Heavy (**IH**) in the Christchurch District Plan. The surrounding area also generally has an **IH** zoning, although there are areas of lighter Industrial General (**IG**) zoning east of both sites. A local park zoned Open Space Community Park (**OCP**) is located east of the Woolston Oil Terminal site on the far side of Chapmans Road, with the Heathcote River and riparian banks having an Open Space Water and Margins (**OWM**) zoning.
- 2.3.2 The **IH** and **IG** zones both provide for a range of predominantly industrial activities along with a limited range of other compatible activities. Both zones also restrict most sensitive activities such as residential accommodation, healthcare facilities and hospitals, although pre-schools are currently permitted in the **IG** Zone.
- 2.3.3 Planning Map 47A currently identifies Risk Management Area overlays around each of the bulk fuel terminals and a note on the planning map legend states that the geographic extent of those areas may be subject to a future plan change to have effect by 31st March 2019, with any such plan change needing to be based on the findings of a Quantitative Risk Assessment (**QRA**).
- 2.3.4 The District Plan currently classifies "sensitive activities"¹ as non-complying activities within the Risk Management Area overlay areas (Rule 4.1.4.1.5 NC2) although this rule (the "sunset clause") expires on 31 March 2019. The intent of this interim rule was that by this date the relevant bulk fuel storage facility operators would have completed new QRAs, the outcome of which would inform whether to retain, amend or delete the overlays and associated provisions via a formal RMA plan change process².
- 2.3.5 Without a plan change, Rule 4.1.4.1.5 (NC2) will cease to have effect on 31st March 2019, the implication being that the plan would have less controls on the location of sensitive activities in close proximity to the bulk fuel terminals, although the underlying rules would still require resource consent for the establishment of sensitive activities (other than preschools in the **IG** Zone which are permitted).

¹ Sensitive activities are defined in the District Plan as including residential activities, care facilities, education activities and preschools, and health care facilities.

² Independent Hearings Panel Decision 18 (March 2016) paragraphs 75-85.

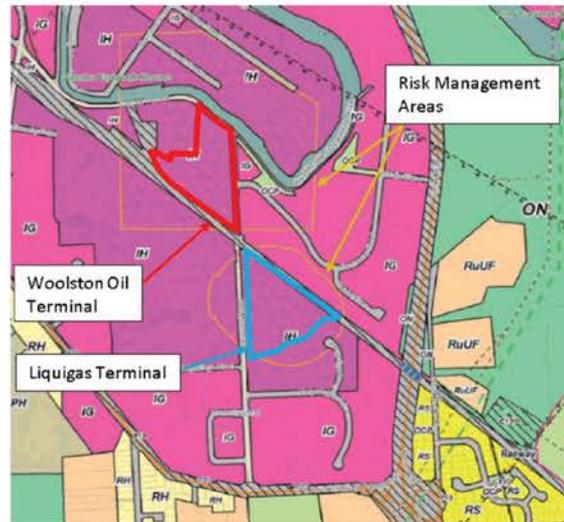


Figure 2 Extract of Operative Planning Map 47A

3 Resource management issues

3.1 Background

- 3.1.1 This plan change relates to two sites containing bulk fuel infrastructure, located at Chapmans Road, Woolston, operated by Liquegas and three oil companies (Mobil Oil, BP Oil, and Z Energy).
- 3.1.2 The Oil Companies receive, store and distribute refined petroleum products. They have commercial, shore and marine based aviation and bulk fuel storage facilities, and are owners of retail outlets and suppliers of petroleum products to individually owned retail outlets throughout the Canterbury region and the South Island. The Oil companies have bulk storage facilities in the Naval Point area of the Port of Lyttelton (**the Lyttelton Terminals**) and at Chapmans Road (**the Woolston Oil Terminal**). The Woolston Oil Terminal is supplied (continuously) by the Lyttelton Terminals via the Woolston pipeline. This pipeline transports the bulk of petroleum products for the Oil Companies to the Woolston Oil Terminal from which all three Oil Companies then load out for distribution to their networks.
- 3.1.3 Liquegas receives, stores and distributes liquid petroleum gas (LPG) that is used in homes, business, vehicles and industry throughout Canterbury and the upper South Island. The Liquegas Terminal has LPG supplied directly from ships via pipeline from Lyttelton (via a pumping station) as there is no large volume LPG storage facility in Lyttelton.
- 3.1.4 These bulk fuel terminals in Woolston comprise important infrastructure in the fuel supply chain for the Canterbury region and Christchurch City. The operators of the Terminals are identified as "lifeline utilities" under the Civil Defence and Emergency Management Act 2002, i.e. entities that produce, supply, or distribute manufactured gas or natural gas. Lifeline utilities must be able to function to the fullest possible extent during and after an emergency. Any disruption to the

6

Plan Change 1 - Section 32 Evaluation

petroleum and/or LPG supply chains would have a major impact on the availability of fuel supplies and therefore on people's ability to meet their social and economic needs. It is important that the bulk fuel terminal operators are not unduly constrained in the way they use their land resource in order to operate successfully and remain viable.

- 3.1.5 Both Terminals are also designated as "Major Hazard Facilities" (MHFs) under the Health and Safety at Work (Major Hazard Facilities) Regulations 2016 (MHF Regulations) and must manage their activities in accordance with the Health and Safety at Work (Hazardous Substances) Regulations 2017 (HS Regulations). These provisions control and target the safety, design, operation and emergency response actions of those facilities. However, the MHF Regulations recognise that MHFs do not contain (or internalise) all residual risks on site. Strategic infrastructure needs to be managed through the district plan so as to protect it from incompatible development and activities by avoiding adverse effects from them, including reverse sensitivity effects³.
- 3.1.6 Due to the nature and volume of fuels stored at both Woolston Terminals, they pose a potential risk to surrounding land uses, which cannot be fully contained, and could potentially give rise to emergency scenarios, such as a vapour cloud explosion, tank and bund fires⁴. Such emergency scenarios are of low probability but potentially high impact to people and property in the vicinity of the Terminals. Adverse effects of such events may include blast overpressure, fragments and heat radiation.
- 3.1.7 A key concern for the safe operation of this strategic infrastructure is the presence, or potential presence, of sensitive activities and/or potentially high numbers of people in the area in close proximity to bulk fuel storage facilities. If allowed to develop without appropriate safeguards, sensitive and some other activities have the potential to increase the risk profile of the Terminals, and result in a situation where the risks are such that the operation and development of the Terminal facilities may be compromised. This will, in turn, affect resilience and efficiency in region-wide fuel supplies.
- 3.1.8 This evaluation assesses the implications of the proposed Woolston Risk Management Area overlay, and the approach to avoiding sensitive activities and other activities not typically anticipated in the IH and IG zones, within that overlay. The proposed approach would require those other activities⁵ that would be exposed to unacceptable risk to meet risk acceptability criteria appropriate to the applicable land use.

3.2 Findings of the Independent Hearings Panel on the Christchurch District Plan Review

- 3.2.1 Following the Canterbury earthquake sequence, the Christchurch City Plan was subject to a comprehensive review under the Canterbury Earthquake Recovery Act 2011 and associated Orders in Council. An Independent Hearings Panel (IHP) was established to consider evidence and to make decisions on the proposed replacement Christchurch District Plan. Decisions on the proposed plan were released in a number of stages; of particular relevance to this plan change are the decisions on the Strategic Directions, Industrial and Hazardous Substances chapters⁶.

³ Reverse Sensitivity is defined in the District Plan to mean "means the effect on existing lawful activities from the introduction of new activities, or the intensification of existing activities in the same environment, that may lead to restrictions on existing lawful activities as a consequence of complaints".

⁴ Sherpa Consulting (June 2018), Mobil Woolston Terminal Quantitative Risk Assessment for Determination of Planning Overlay, pp26-33.

⁵ Discretionary and non-complying activities subject of Rule 16.4.1.4 D1, Rule 16.5.1.4, and Rule 16.5.1.5 NC1.

⁶ Decisions 1, 11 and 18 respectively.

Chapter 4 Hazardous Substances and Contaminated Land

- 3.2.2 In summary, the two Woolston Terminals were found by the IHP to constitute 'strategic infrastructure', which is defined in the district plan as "those necessary infrastructure facilities, services and installations which are of greater than local importance..." and includes "bulk fuel supply and storage infrastructure, including terminals, wharflines and pipelines". As such, the subsequent District Plan provisions were required to give effect to the specific Strategic Direction Objective 3.3.12 concerning protection of strategic infrastructure (this objective and the wider District Plan policy framework are discussed in more detail below).
- 3.2.3 The Oil Companies and Liquegas presented evidence in support of their submissions on the Replacement District Plan setting out the rationale for a buffer area (and associated policy direction) around the two Terminals within which sensitive activities would be classified as non-complying activities, and other activities not generally anticipated in the IG and IH Zones⁷ would be required to consider the level of risk associated with locating in close proximity to the terminals and therefore the appropriateness of establishing in that location.
- 3.2.4 The IHP agreed that, at least on an interim basis, that the use of an overlay and associated restrictions on sensitive and other activities was an appropriate method of providing for the future management of the Woolston Oil Terminal and the Liquegas Terminal. They confirmed a rule (Rule 4.1.4.1.5 NC2) that classifies all new sensitive activities within the risk management overlay, as non-complying activities.
- 3.2.5 However the Panel expressed concern that the risk management areas put forward by the bulk fuel terminal operators were based on outdated or non-quantitative risk assessments. Whilst confirming the risk management area and related provisions in Decision 18, they did so on an interim basis only, limiting the duration of Rule 4.1.4.1.5 NC2 by use of a sunset clause; such that it would cease to have effect after 31 March 2019 unless a plan change had occurred to confirm the need for, and extent of, the overlay and related provisions through new QRAs. The use of a sunset clause was seen as a tool for prompting the companies to progress QRAs in a timely manner.
- 3.2.6 The IHP noted that the sunset clause mechanism might lead to "*a number of potential outcomes including retention of the overlays and rule provisions as they are, their amendment or their deletion, and it is appropriate for these potential outcomes to be tested through a s32 process and publicly notified Plan Change which takes into account the information provided in the new QRAs and other relevant RMA factors at that time*"⁸.
- 3.2.7 In setting the timeframe for the sunset clause, the IHP considered that there was 'ample time' for this background work and plan change to occur prior to March 2019. However, the Council has to date been unable to promote this plan change under Schedule 1 of the Resource Management Act because it has been prevented from preparing district plan changes under the Canterbury Earthquake (Christchurch Replacement District Plan) Order 2014 (OIC). In forming its view regarding timeframes in 2015, the IHP could not have foreseen that the 2014 OIC would be extended from 2016 to 2021 by the Greater Christchurch Regeneration Act 2016. Government has recently announced that it will be revoking the OIC on 18 March 2019, thereby enabling this plan change to proceed from this date.

⁷ i.e. discretionary and non-complying activities in these zones.

⁸ Independent Hearings Panel (15 March 2016) Decision 18 – Hazardous Substances and Contaminated Land – Stages 1 and 2 paragraph 85.

Chapter 16 Industrial

3.2.8 The provisions of the industrial chapter (Chapter 16) were confirmed ahead of those in Chapter 4 (Hazardous Substances and Contaminated Land)⁹. Policy 16.2.1.4 in the Industrial Chapter was therefore formulated and decided upon in advance of Chapter 4 that confirmed the overlay, and related policy, rule and sunset clause.

3.2.9 Policy 16.2.1.4 sets a management-based framework. For discretionary or non-complying proposals looking to locate in close proximity to the Terminals, the IHP considered that there should be additional explicit policy direction regarding reverse sensitivity associated with such activities to help inform decision-makers when they are considering resource consent applications. The current industrial policy approach requires all applicants seeking to establish sensitive and other activities in close proximity to the Terminals, to undertake their own QRA for their particular activity and submit this with their resource consent application. The purpose of the third party QRAs was to determine if they were locating in an area that would expose them to an unacceptable level of risk. The resource consent process enables an informed assessment of the best way to manage the risks to the relevant activity from major incidents at the Terminals to be made on a case-by-case basis. Under the current framework, the consent authority can assess the appropriateness of discretionary and non-complying activities locating in the Woolston Risk Management Area and be guided by Policy 16.2.1.4(b)(ii).

3.2.10 The matter of risk acceptability is an approach adopted elsewhere by the IHP for the Christchurch District Plan (e.g. including its approach to natural hazards).

3.2.11 Given that the QRAs for the Terminals have now been undertaken by Liquigas and the Oil Companies, the Chapter 16 policy obligation on third parties to undertake QRAs is no longer necessary as the QRAs establish in a more definitive manner, the geographic extent of the area where sensitive and other activities would likely be exposed to unacceptable risk. Such activities within the overlay could therefore more simply be subject to the District Plan's policy direction that sensitive activities are to be avoided, and other activities also avoided unless they meet the relevant risk acceptance criteria.

3.3 Use of New South Wales (NSW) Hazardous Industry Planning Advisory Papers (HIPAP) Framework

3.3.1 The required new QRAs have been prepared in accordance with the NSW HIPAP risk acceptance criteria. The general guidance in HIPAP No. 4 (Risk Criteria for Land Use Planning) is used to evaluate proposed land uses in a risk context. The use of the HIPAP criteria is considered to be appropriate for the following reasons:

- There are no specific New Zealand risk criteria available for use.
- The Christchurch District Plan already references the NSW criteria as being the appropriate guide for identifying appropriate risk acceptability criteria¹⁰.

3.3.2 The HIPAP criteria have the following advantages:

- The criteria values have been set so that the risk level posed by industry (regarded as an involuntary risk exposure) is low in comparison to the voluntary risk exposures people accept in everyday life.

⁹ Formerly Chapter 12 of the proposed Replacement Christchurch District Plan.

¹⁰ Advice Note 3 to Policy 16.2.1.4, Chapter 16 Industrial.

- They set different risk criteria for different land use sensitivities.
- They set an upper limit risk target for risk at a site boundary.

3.3.3 The adopted criteria relates to individual fatality risk. Individual fatality risk represents the probability of a specified level of harm (usually fatality) occurring to a theoretical individual located permanently at a particular location, assuming no mitigating action such as escape can be taken. Hence, the criteria cover vulnerable individuals such as the very young, sick or elderly.

3.4 New Quantitative Risk Assessments

3.4.1 As mentioned above, since the release of the IHP decisions Liquigas and the Oil Companies have commissioned new QRAs for their respective sites, and these are attached as **Appendices 1 and 2**. Draft versions of the QRAs and the summary of the QRA findings in **Appendix 3** were reviewed by Council staff and updated accordingly based on feedback received. Both QRAs have adopted the risk criteria contained in the NSW HIPAP. Whilst the QRAs for the Liquigas Terminal and the Woolston Oil Terminal were undertaken by separate consultants (WorleyParsons New Zealand Limited and Sherpa Consulting Proprietary Limited, respectively), the two QRAs have adopted and applied the same criteria to enable a consistent approach between them. Worley and Sherpa peer reviewed each other's assumptions and methodology. While there are some technical differences in approach (e.g., choice of software), Worley and Sherpa agreed that:

- The approach in each QRA is appropriate for the specific facilities.
- Both QRAs have been prepared to account for a reasonable future growth case hence is representative of risk levels for each site operation over the next 10 years (up to 2028).
- The QRA results are presented and assessed in a consistent manner, i.e. both QRAs use individual fatality risk as the basis for assessment and therefore can be used cumulatively.

3.4.2 The QRA purpose and methodology are set out in the respective reports. In summary, a QRA is a technical tool for establishing the extent of risk at varying levels of social acceptability. The outer extent of the proposed Woolston Risk Management Area has been based on a 0.5×10^{-6} individual fatality risk, which under the HIPAP criteria, equates to an acceptable level of risk for a sensitive activity.

3.4.3 It is important to note that the QRAs provide concentric circles demarcating differing levels of risk. The outer circle (which forms the basis of the Woolston Risk Management Area and which will be shown on Planning Map 47A) is for sensitive activities, with various types of non-sensitive activities (having lower risk attached to them) falling inside the outer contour. Within this outer contour there exist a number of smaller contours that represent the risk associated with activities that are comparatively less sensitive to effects on, and from, the bulk fuel terminals. As there is less risk attached to non-sensitive activities, those can theoretically locate closer to the Terminals.

3.4.4 The principal outcomes of the QRA work for each respective terminal are:

- a. Changes to the geographic extent of the risk management areas; and
- b. Removal of the need for third parties to undertake their own QRAs when seeking consent to establish discretionary or non-complying activities.

3.4.5 For the Woolston Oil Terminal, the extent of the overlay has reduced in comparison to that included in the operative District Plan, as shown in **Figure 3**. This is largely due to the original extent and associated risk limit having been generated by the application of a generically derived

10

Plan Change 1 - Section 32 Evaluation

setback distance based on international research, with that generic setback now proposed to be replaced with a facility-specific QRA. The QRA for the Woolston Oil Terminal has therefore resulted in a reduction in the extent of risk and associated regulatory controls relative to the operative overlay.



Figure 3 Woolston Oil Terminal change to overlay

Key:

- Extent of existing Risk Management Area
- Extent of proposed Woolston Risk Management Area

3.4.6 The QRA for the Liquegas Terminal indicates the need for a larger overlay, as shown in **Figure 4**. The reasons underlying the increase in the geographic extent of the overlay are due primarily to changes in the modelling assumptions and improvements to the modelling software used, rather than any increase in risk/higher risk activities having recently established on the site. In short, the changes to the overlay are due to more sophisticated and up-to-date modelling rather than any physical 'on-the-ground' changes to the facility itself.



Figure 4 Liquigas Terminal change to overlay

Key:

-  Extent of existing Risk Management Area
-  Extent of proposed Woolston Risk Management Area

3.4.7 The outer edges of the two modelled QRAs now overlap. For graphical simplicity, it is proposed to show the overlay on the planning maps as a single outer boundary rather than as two overlapping areas, as shown in **Figure 5**. Collectively the area is proposed to be named the 'Woolston Risk Management Area' (**WRMA**). A summary of the QRA findings and discussion on the graphical representation as a single overlay has been prepared by the two companies responsible for the preparation of the QRAs and is attached as **Appendix 3**. Worley and Sherpa agreed that any differences in approach with respect to the assumptions for the specific terminals, the overall QRA methodology and reporting styles are not significant in the context of using the results for preparing a combined risk overlay to replace the existing risk management areas overlay.

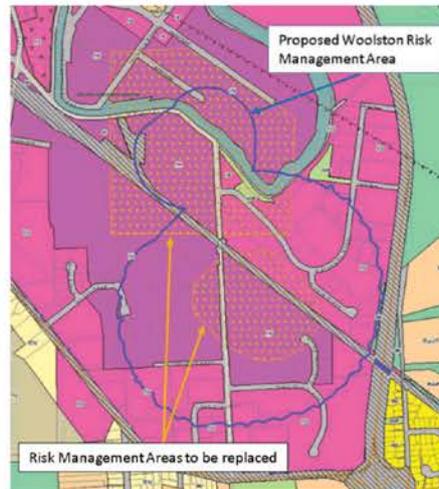


Figure 5 Combined overlay – Proposed Woolston Risk Management Area

Key:

-  Extent of existing Risk Management Area
-  Extent of proposed Woolston Risk Management Area

3.4.8 Given that the overlay boundary represents the outer extent within which sensitive activities should not locate, it disguises other contours that are located within it. These are relevant for the consideration of activities that may not be sensitive in terms of the district plan definition of a sensitive activity, but that nonetheless *may* have a significant adverse effect on, or be affected by, the presence of the existing bulk fuel terminals. Examples cited by Liquigas and the Oil Companies include large entertainment complexes (e.g. trampoline world) or large high occupancy offices that would increase the risk to, and from, the terminals, in a location where these types of activities are not anticipated.

4 Proposed Plan Change Content

4.1.1 A full set of changes proposed within the Plan Change is set out in the plan change document (and copied into **Appendix 4**). In summary the proposed changes include:

- Amendments to the geographic extent of the existing Risk Management Areas by combining the risk contours for sensitive activities of the QRAs for both sites, to create a new single Risk Management Area, shown as a change to Planning Map 47A.
- Renaming “Risk Management Areas” to “Woolston Risk Management Area” for greater clarity, and removing the “sunset clause” from Chapter 4.1 Hazardous substances, Risk Management Area policy and rule, and the planning map legend.
- Updating the policy and advice note in Chapter 16 Industrial relating to the LPG and oil depots located at Woolston, to reflect that new QRAs have been produced and are available to inform resource consent proposals for discretionary and non-complying activities.

- In Chapter 16 Industrial, changing the status of preschool activities in the part of the Woolston Risk Management Area that overlays the Industrial General zone, from permitted to non-complying, consistent with the policy and rule for sensitive activities in Chapter 4.

5 Relevant statutory context

5.1 The Requirements of the RMA

Section 31 Functions of territorial authorities

5.1.1 Any plan change must assist the Council to carry out its functions so as to achieve the purpose of the Act. The functions of a territorial authority are set out in section 31 of the Act and include:

- establishing, implementing and reviewing objectives, policies, and methods to achieve integrated management of the effects of the use and development of land; and
- controlling actual or potential effects of the use and development of land.

5.1.2 The proposed plan change accords with these stated functions. The proposal provides for the use and development of land for industrial activities in an area zoned for such use, whilst concurrently providing a framework (along with health and safety regulations) for the appropriate management of risks generated by two long-established terminals and avoiding the reverse sensitivity effects and risks that would arise if sensitive and other activities established near the Terminals. The proposed management of activities and associated effects will likewise help to ensure the ongoing operation of the Terminals as regionally significant infrastructure.

Section 74 Matters to be considered

5.1.3 Section 74 RMA requires the Council to prepare and change its district plan in accordance with its functions under section 31, the provisions of Part 2, its duty under section 32, and any regulations.

5.1.4 Section 74(2) requires the Council to also have regard to proposed regional policy statements and plans, management plans and strategies prepared under other Acts, the New Zealand Heritage List, fisheries regulations or the RMA plans of adjoining territorial authorities to the extent that these may be relevant.

5.1.5 It is noted that the proposal does not involve any cross-territorial issues, nor matters of historical relevance or relevance to fisheries, nor matters addressed by management plans or strategies prepared under other Acts. With respect to Regional Policy Statements and Plans, these are identified and addressed further below.

5.1.6 Section 74(2A) also requires the Council to take into account relevant planning documents recognised by an iwi authority, to the extent that its content has a bearing on resource management issues. In the case of Christchurch District, the relevant document is the Mahaanui Iwi Management Plan 2013, which is discussed below.

Section 75 Contents of district plans

5.1.7 Section 75 requires a District Plan to state objectives for the District, policies to implement the objectives and rules to then implement the policies.

14

Plan Change 1 - Section 32 Evaluation

- 5.1.8 The proposal does not introduce any new, or alter any existing objectives. It only proposes amendments to policies, rules, advice notes and the planning map as set out in section 3 above.
- 5.1.9 The reasons for the amendments to the policies and rules are provided in this section 32 evaluation and the form of the proposed changes is consistent with s75(2) and the current format of the District Plan.
- 5.1.10 Section 75 requires a District Plan not to be inconsistent with Regional Plans. The Canterbury Regional Policy Statement, the Canterbury Land and Water Regional Plan, and Air Regional Plan are discussed below.
- 5.1.11 Sections 75(3)(a), (b) and (c) also require a District Plan to give effect to any National Policy Statement, the New Zealand Coastal Policy Statement, and the applicable Regional Policy.

5.2 Planning documents

National Policy Statements (NPS) and New Zealand Coastal Policy Statement (NZCPS)

- 5.2.1 There are four NPS documents to which consideration must be given. These are:
- NPS for Renewable Electricity Generation
 - NPS for Electricity Transmission
 - NPS for Freshwater Management
 - NPS for Urban Development Capacity (NPS-UDC)
- 5.2.2 There is no direct connection or geographic proximity of the proposed Woolston Risk Management Area to renewable generation activities. The proposed Woolston Risk Management Area likewise does not cross or come into close proximity with strategic transmission infrastructure. The proposed District Plan amendments are limited to the management of activities within the Woolston Risk Management Area and as such do not have any relevance to the NPS for Freshwater Management. The proposed Woolston Risk Management Area is not located within the coastal environment or land adjacent to that environment and as such the NZCPS is not relevant.
- 5.2.3 The NPS-UDC requires councils in medium or high growth areas to demonstrate that there is sufficient feasible business (and housing) land to meet short, medium and long term demands. Christchurch City is a high growth area under NPS-UDC. The area within the Woolston Risk Management Area has long been zoned and largely utilised for industrial activities. Further development and intensification in the surrounding area is possible and provided for under the existing Industrial Heavy Zone and Industrial General Zone frameworks. The Woolston Risk Management Area does not limit development of sites for industrial or otherwise permitted activities and therefore does not reduce the ability of the area to accommodate future industrial growth and nor the growth of anticipated supporting activities.
- 5.2.4 In terms of the NPS-UDC, the proposed District Plan provisions would place restrictions on new sensitive and potentially some other activities and would therefore potentially displace these activities to other locations. However it is significant that the Business Capacity Assessment prepared pursuant to the NPS-UDC identifies a significant over-supply of industrial land in the City and therefore there are plenty of other locations available for any activity which is precluded from establishing within the WRMA under the proposed provisions.

15

Plan Change 1 - Section 32 Evaluation

Canterbury Regional Policy Statement (CRPS)

- 5.2.5 The strategic framework for managing and providing for the urban growth and recovery of greater Christchurch is set out in Chapter 6 of the CRPS. In summary, the CRPS seeks to provide for urban growth through a combination of greenfield expansion adjacent to the existing urban edge, and more intensive use and redevelopment of sites within the existing urban area. The recovery and development of infrastructure to support growth forms part of this broad approach, along with the need for growth to be appropriately managed so as to not give rise to either direct or reverse sensitivity effects on strategic infrastructure.
- 5.2.6 The infrastructure networks and terminals of Liquigas and the Oil Companies fall within the CRPS Chapter 6 definition of “strategic infrastructure” as they comprise “bulk fuel supply infrastructure including terminals, wharflines and pipelines”.

Objective 5.2.1(f) CRPS requires that “development is located so that it functions in a way that ... is compatible with, and will result in the continued safe, efficient and effective use of regionally significant infrastructure”. The explanation notes that regionally significant infrastructure provides considerable economic and social benefits to the region.

Objective 6.2.1 CRPS seeks that:

“Recovery, rebuilding and development are enabled within Greater Christchurch through a land use and infrastructure framework that:

...

- (9) *integrates strategic and other infrastructure and services with land use development;*
- (10) *achieves development that does not adversely affect the efficient operation, use, development, appropriate upgrade, and future planning of strategic infrastructure and freight hubs;*
- (11) *optimises use of existing infrastructure.*

- 5.2.7 **CRPS Policy 6.3.5** is an important method for implementing the above objectives. It is also the key CRPS policy concerning the management approach to infrastructure within the Greater Christchurch part of the region. Clauses (1) and (2) of this policy relate to the need to coordinate urban development with the provision of the infrastructure necessary to support that development. Clauses (3)-(5) then focus on providing for established infrastructure and the protection of such from the effects of incompatible urban growth, as follows:

“Policy 6.3.5 – Recovery of Greater Christchurch is to be assisted by the integration of land use development with infrastructure by

...

- (3) *Providing that the efficient and effective functioning of infrastructure, including transport corridors, is maintained, and the ability to maintain and upgrade that infrastructure is retained;*
- (4) *Only providing for new development that does not affect the efficient operation, use, development, appropriate upgrading and safety of existing infrastructure¹¹ ...*

¹¹ The remainder of this clause is specific to development within the air noise contours.

(5) *Managing the effects of land use activities on infrastructure, including avoiding activities that have the potential to limit the efficient and effective provision, operation, maintenance or upgrade of strategic infrastructure and freight hubs.*"

5.2.8 The CRPS includes as a method under Policy 6.3.5, a requirement that territorial authorities will, in reviewing their District Plans, include objectives, policies and rules (if any) to give effect to the Policy, including specific reference to the need to manage reverse sensitivity effects between strategic infrastructure and urban development.

5.2.9 In conclusion, the relevant strategic planning framework in the CRPS identifies the following key principles with respect to the development of strategic infrastructure:

- (a) Strategic infrastructure is to be integrated with urban growth;
- (b) Use and development of strategic infrastructure is to be provided for; and
- (c) Any significant adverse effects of incompatible land use on strategic infrastructure are to be avoided.
- (d) Conflict between incompatible activities is likewise to be avoided, especially when such will have a significant adverse effect on the health and safety of the community.

5.2.10 In order for the District Plan to give effect to the relevant strategic planning and statutory framework, the District Plan provisions therefore need to:

- (a) Recognise the benefits and role of strategic infrastructure for enabling community wellbeing and meeting the community's functional needs;
- (b) Provide for the ongoing use and development of strategic infrastructure;
- (c) Manage the effects of land use activities on infrastructure, through avoiding activities that would limit the efficient and effective provision, operation, development, maintenance and upgrade of strategic infrastructure; and
- (d) Integrate the provision of infrastructure and land use to ensure efficient and effective urban growth.

5.2.11 The proposed plan change provisions are consistent with the strategic approach set out in the CRPS. The purpose of the proposed Woolston Risk Management Area and associated District Plan policy direction and rules is to identify and manage the risk posed by existing strategic infrastructure and to make sure that incompatible activities do not locate in close proximity to the Terminals. This will mean that reverse sensitivity effects are avoided along with associated constraints on the ongoing operation and upgrading of the existing facilities.

Regional Plans

5.2.12 The Canterbury Land and Water Regional Plan is focused on regional functions and therefore has limited, if any, relevance to the land use matters under consideration in this plan change. However, it should be noted that Objective 3.3 of that regional plan recognises the significance of regionally significant infrastructure. There are no specific objectives or policies relevant to land use risks from hazardous substances in that regional plan except in relation to discharges of contaminants.

Objective

- 3.3 *Nationally and regionally significant infrastructure is enabled and is resilient and positively contributes to economic, cultural and social wellbeing through its efficient and effective operation, on-going maintenance, repair, development and upgrading.*

17

Plan Change 1 - Section 32 Evaluation

5.2.13 The Canterbury Air Regional Plan is focused on the discharge of contaminants to air. As a consequence, it has no relevant objectives or policies relevant to the land use matters the subject of this plan change. However, it has three policies (set out below) that recognise the importance of regionally significant infrastructure and are illustrative (in terms of air discharges) of how the location of sensitive and potentially other activities is important to ensure they do not alter the receiving environment.

Policies

- 6.9 *Discharges into air from new activities are appropriately located and adequately separated from sensitive activities, taking into account land use anticipated by a proposed or operative district plan and the sensitivity of the receiving environment.*
- 6.10 *If the sensitivity of the receiving environment is altered by authorised land use change so that an existing discharge results in significant adverse effects on the receiving environment, require the effects of that discharge to be reduced and provide a reasonable timeframe for achieving that reduction.*
- 6.14 *Recognise the contribution of nationally and regionally significant infrastructure to people's social and economic wellbeing and provide for discharges associated with the development, operation, and maintenance of that infrastructure.*

Iwi Planning Documents

5.2.14 Ngāi Tahu prepared the Mahaanui Iwi Management Plan 2013 (IMP), being the relevant Iwi Management Plan for Christchurch. This document does not identify any specific concerns or direction with regard to the management of the risks posed by bulk fuel storage facilities. The IMP does highlight outcomes sought across a broad range of matters of cultural interest including the management of air and water quality, mahinga kai, and land development.

5.2.15 In accordance with the boundary definitions in Ngāi Tahu Claims Act 1996, Te Rūnanga o Ngāi Tūāhuriri are the kaitiaki Rūnanga for the Woolston area. There are no statutory acknowledgement areas, silent file areas or waahi taonga sites identified in the District Plan that could be directly affected by this plan change, and the area of the proposed Woolston Risk Management Area has been zoned and developed for industrial activities for many decades.

5.2.16 The proposed plan change is not considered to impact upon any cultural values or the principles articulated in the IMP. It is noted that Ngāi Tahu will have an opportunity to consider and respond to this plan change as part of the First Schedule RMA plan change process. Initial feedback has been sought from the Rūnanga (via Maahunui Kurataiao Limited) and did not raise any concerns (refer to section 7).

Other Plans

5.2.17 Other higher order plans include the Greater Christchurch Urban Development Strategy, the Recovery Strategy for Greater Christchurch, and the Land Use Recovery Plan. For completeness, it is noted that there are no Regeneration Plans prepared under the Greater Christchurch Regeneration Act 2016 that are of relevance to this plan change.

5.2.18 These higher order plans were all in place when the District Plan was prepared, and the IHP was mindful of their responsibility to either have regard to, or not be inconsistent with, the wider statutory planning framework. The current District Plan provisions of relevance to this plan

change can therefore be deemed to be consistent with the outcomes sought in these higher order documents.

5.2.19 The proposed plan change seeks to continue the risk management framework of the District Plan, with the additional benefit of the geographic extent of that risk having been more accurately determined. As such the proposed plan change is considered to continue the risk management approach that the IHP determined as an effective tool that was consistent with the higher order framework, with minor but complementary amendments including the addition of a rule specifically to discourage pre-schools locating within the overlay area.

6 Section 32 evaluation

6.1 Introduction

6.1.1 Under Section 32 of the RMA, before the Council publicly notifies a plan change, it must carry out an evaluation to examine:

- (a) The extent to which each objective is the most appropriate way to achieve the purpose of this Act.
- (b) Whether the policies, rules, or other methods in the proposal are the most appropriate for achieving the objectives by:
 - Consideration of other reasonable practicable options for achieving appropriate management of risk and the ongoing operation of Strategic Infrastructure.
 - Assessment of the efficiency and effectiveness of the provisions in achieving the objective of the proposal. This assessment should identify the benefits and costs of environmental, economic, social and cultural effects, including opportunities for economic growth and employment.
- (c) Whether the provisions in the proposal are the most appropriate to achieve the objective of the existing District Plan, to the extent that those are relevant.
- (d) Assessment of the risks of acting or not acting.

The level of detail undertaken for the evaluation of the proposed plan change provisions must be determined by an assessment of the scale and significance of the environmental, economic, social and cultural effects that are anticipated from the implementation of the proposal (s32(1)(c)).

6.2 Scale and significance evaluation

6.2.1 The level of detail in the evaluation of the proposal has been determined by the degree of shift of the proposed provisions from the status quo and the scale of effects anticipated from the proposal. Regard has been had to the criteria outlined in the Ministry for the Environment's Section 32 guide for assessing scale and significance¹².

¹² Ministry for the Environment (2017) A guide to section 32 of the Resource Management Act: Incorporating changes as a result of the Resource Legislation Amendment Act 2017. pp31-32

<p>1. <i>Reasons for the change</i></p>	<p><i>Giving effect to higher level RMA document and district plan strategic objective to protect Strategic Infrastructure.</i></p> <p><i>Responding to a decision of the Independent Hearings Panel on the Christchurch District Plan review.</i></p> <p><i>Initiated as a priority due to the imminent lapsing of sunset clause.</i></p>
<p>2. <i>Degree of shift from the status quo (status quo defined as the current approach)</i></p>	<p><i>The degree of shift in the provisions from the status quo is not substantial because it primarily seeks to continue on a permanent basis, rules that already have effect in the district plan.</i></p> <p><i>Moreover, having regard to the controls already in place to manage the effects from and on Strategic Infrastructure and to protect the integrity of industrial zones, the proposed package of provisions doesn't significantly add to regulatory controls or the costs on communities to comply with them than presently exists.</i></p> <p><i>The plan change comprises a discrete package of provisions to deal with a single issue and which seeks largely to retain and modify existing provisions and give greater certainty that reverse sensitivity effects will be minimised and unacceptable risks from established facilities using, storing or disposing of hazardous substances will be avoided.</i></p>
<p>3. <i>Who and how many will be affected?</i></p>	<p><i>The proposed change will only affect landowners / occupiers within the Woolston Risk Management Area.</i></p> <p><i>Many of those parties are already subject to similar regulatory controls.</i></p> <p><i>Less owners will be affected by the overlay controls than under the current framework (approved by Independent Hearings Panel).¹³</i></p> <p><i>There has already been a significant amount of public engagement on the matter (through the recent district plan review).</i></p> <p><i>The extent of effects on private property rights is tempered by the existing policies and rules of the industrial zones that seek to avoid activities in industrial zones with the potential to hinder or constrain the establishment or ongoing operation or development of strategic infrastructure.</i></p>
<p>4. <i>Degree of impact on, or interest from iwi/Māori</i></p>	<p><i>The proposed plan change was discussed at a hui between MKT staff and the Kaitiaki Portfolio representatives for Te Ngāi Tūāhuriri Runanga. No concerns or recommendations were raised on the proposed plan change.</i></p>
<p>5. <i>When will effects occur?</i></p>	<p><i>The effects of the regulation will be ongoing.</i></p>

¹³ There are 54 new properties within the proposed overlay; 58 properties within the existing and proposed overlay; and 136 properties no longer within the existing overlay and outside the proposed overlay.

6. Geographic scale of impacts	<i>Spatially confined to identify Risk Management Area around the Woolston bulk fuel terminals.</i>
7. Type of effect	<p><i>The provisions seek to manage the following effects:</i></p> <ul style="list-style-type: none"> - <i>The effects on surrounding land use activities related to an emergency incident. These are low probability but high consequence.</i> - <i>Reverse sensitivity effects on Strategic Infrastructure. These effects have the potential to significantly constrain the ongoing operation and development of the terminal facilities. Any disruption to the petroleum and/or LPG supply chains would have a major impact on the availability of fuel supplies and therefore on people's ability to meet their social and economic needs.</i> <p><i>Refer to section 6 for more detail.</i></p>
8. Degree of policy risk, implementation risk, or uncertainty	<i>Sufficient information is now available through the necessary QRAs having been prepared in a consistent manner and in accordance with recognised criteria.</i>

6.3 Evaluation of proposed provisions and reasonably practicable alternative options

***Are the objectives of the proposal the most appropriate way to achieve the purpose of the Act?
[s32(1)(a)]***

- 6.3.1 The proposed plan change does not seek to alter any existing objectives of the Plan. In circumstances where objectives are not sought to be altered, s32(6)(b) states that references to 'objectives' means the 'purpose' of the proposal.
- 6.3.2 The purpose of this Plan Change is set out in Section 1.3 above. It seeks to provide amended District Plan provisions that enable the ongoing efficient use of the two bulk fuel storage facilities at Woolston, while managing low probability but potentially high impact risks to sensitive and potentially other non-industrial activities in the area. Accordingly, the evaluation must consider the extent to which the inclusion in the District Plan of the revised Woolston Risk Management Area and associated provisions in the district plan best achieve the purpose of the plan change, and ultimately the purpose of the RMA.
- 6.3.3 The purpose of the RMA is to promote sustainable management of natural and physical resources. This means managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while:
- a. Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
 - b. Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and
 - c. Avoiding, remedying, or mitigating any adverse effects of activities on the environment.
- 6.3.4 In summary, the proposal achieves the purpose of the RMA for the following reasons:

21

Plan Change 1 - Section 32 Evaluation

- It manages the use and development of sites in a location where they would be subject to an unacceptable level of risk if they were to be developed for sensitive activities (as defined in the district plan) or potentially some other non-industrial activities. Without such control, these activities would potentially unknowingly be exposed to an unacceptable level of risk and which in turn could result in undue constraints being imposed on the bulk fuel terminals (i.e. through reverse sensitivity/complaints) thereby imposing unnecessary costs and fuel supply issues to the wider community. It would therefore undermine the strategic directions in the District Plan aimed at ensuring regionally significant infrastructure operation and development is enabled.
- Provides the ongoing opportunity for individual landowners to develop their land for industrial and other permitted and appropriate activities (and thereby meet their economic needs) in accordance with the outcomes anticipated by the industrial zoning. (e.g. it doesn't constrain the activities permitted and anticipated in the industrial zones).
- In so doing, the plan change enables the community to provide for its economic wellbeing and employment, and thereby contributes to its social wellbeing, including their health and safety.
- It provides certainty in terms of the long-term operation and adaption of two existing strategic infrastructure facilities through proactively managing the potential for reverse sensitivity effects and ensuring activities (including sensitive activities) located within the Woolston Risk Management Area are compatible in terms of risk acceptance criteria.

Examine whether the provisions in the proposal are the most appropriate to achieve the objective (purpose) of the proposal by:

Identifying if there are other reasonably practicable options for achieving the proposal [s32(1)(b)(i)].

6.3.5 The provisions of the proposal are summarised in Section 3 above and a full copy of the proposed text changes is contained in **Appendix 4**.

6.3.6 Other reasonably practicable options for achieving the proposal include:

- a. Status quo / do nothing.
- b. Reliance on non-statutory methods.
- c. Reliance on Health and Safety legislation.

These options are discussed below.

a. Status Quo / Do Nothing

6.3.7 Usually when considering plan changes, retention of the status quo is an option that merits consideration. In this case the status quo provisions are in the somewhat unusual situation of being subject to a sunset clause. As such, the status quo set of provisions cannot be retained beyond 31 March 2019. For the purposes of this evaluation, the status quo therefore comprises reliance on the underlying IG and IH zone provisions (and relevant wider district plan provisions)

to manage the effects of, and on, sensitive and other activities within the Risk Management Area¹⁴ (i.e. it assumes that the sunset clause has lapsed).

- 6.3.8 For both the IH and IG zones, sensitive activities are not currently enabled as permitted activities (other than preschools in the IG Zone). Any proposals to establish a sensitive activity other than a preschool would therefore fall to be considered as a fully discretionary activity in the IG zone and non-complying in the IH zone. This enables a full range of potential effects (including reverse sensitivity and risk matters) to be considered through the consent process. Resource consent applications for DA and NCA activities would need to be assessed against all relevant district plan policies including:

Objectives 3.3.12 and 3.3.14 which, *inter alia*, aim to protect the role and function of strategic infrastructure¹⁵ from incompatible development and activities and avoid conflicts between incompatible activities where there may be significant adverse effects on the health, safety and amenity of people.

Policy 4.1.2.2.2 – Risk Management Area which seeks to avoid sensitive activities locating within the Risk Management Areas where these have the potential to be exposed to unacceptable risk and / or may otherwise constrain the development, operation, upgrading or maintenance of bulk fuel and gas terminals.

Policy 16.2.1.4 – Activities in Industrial Zones that limits the range of non-industrial activities in industrial zones to those that maintain and support the function of the zone and requires avoidance of any activity with the potential to hinder or constrain the establishment or ongoing operation or development of industrial activities and strategic infrastructure.

- 6.3.9 This policy (16.2.1.4) would continue to require proponents of new discretionary and non-complying activities to carry out their own QRAs (at their own cost) to support resource consent applications. This is despite the fact that Liquigas and the Oil Companies have now completed their own QRAs to determine the appropriate extent of the Woolston Risk Management Area and to inform the appropriateness of various land use activities locating within it.
- 6.3.10 In summary it can be seen that the even without the subset clause, there are provisions which go a long way towards achieving the plan's objectives of protecting strategic infrastructure and risks associated with the infrastructure on sensitive or otherwise incompatible activities. Significantly however, preschools would be permitted in the IG zone close to the terminals, potentially undermining the district plan's wider policy framework regarding the protection and enablement of strategic infrastructure. Additionally, other sensitive activities in the IG Zone would be classified as discretionary activities, a less onerous consent pathway than the non-complying activity status proposed in this plan change (and currently in the plan but due to expire).
- 6.3.11 This approach would be less appropriate than the proposed plan change as it would have adverse effects on strategic infrastructure, the health and safety of sensitive (and potentially other) activities and would incur unnecessary costs on applicants and councils by retaining the policy requirement for third party QRAs, contrary to plan objectives 3.3.2, 3.3.12 and 4.1.2.2.

¹⁴ Noting that the sunset clause only relates to rule 4.1.4.1.5 not the related policy (4.1.2.2.) or overlay itself which would continue to have effect.

¹⁵ Defined in the district plan as "those necessary infrastructure facilities, services and installations which are of greater than local importance. It includes infrastructure that is nationally significant. This includes (d) bulk fuel supply and storage infrastructure, including terminals, wharf lines and pipelines".

b. Reliance on Health & Safety Legislation

6.3.12 The Health and Safety at Work Act 2015 (HSWA) regulates activities in all work places by focusing on how activities at work places can be undertaken safely. The Major Hazard Facility (MHF) Regulations apply to activities being undertaken at the Terminals (being Upper Tier Facilities) under those regulations. Health and Safety legislation including the HSWA and the MHF Regulations regulate activities *within* individual sites, and do not regulate the interaction between sites or address the compatibility of land use activities on different sites.

6.3.13 The Health and Safety at Work Act 2015 (HSWA) and associated regulations, are complementary to the provisions of Policy 16.2.1.4 that seek to manage the location of risk sensitive activities within the Woolston Risk Management Area. The HSWA's focus is on the risks that can be controlled and managed in respect of each individual workplace, not for those arising from other workplaces in the vicinity.

6.3.14 Overall this method is considered to be less appropriate because it would be less effective and efficient than the package of provisions proposed by the plan change having regard to the adverse effects (costs) associated with increased risk to and from the strategic infrastructure.

c. Reliance on non-statutory methods

6.3.15 Primarily this method would focus on operators of the bulk fuel terminals seeking to manage risks to and from the terminals, by communicating with neighbours about the importance of emergency exit points and providing contact details. Aside from education, other non-statutory methods could include developing design guidelines for buildings and activities located in the Woolston Risk Management Area. However, non-statutory methods have their limits. Communication of these limits often occurs after land use activities have commenced and do not influence decision-making about site selection.

6.3.16 Without regulation, there is a greater risk of sensitive activities locating near the Terminals and being exposed to an unacceptable level of risk from them. The potential costs associated with this on those activities (low probability but high consequence) and on the terminals arising from reverse sensitive pressures, make this a less appropriate method than the proposed plan change provisions.

Assessing the efficiency and effectiveness of the proposed provisions in achieving the objective of the proposal [s32(1)(ii) and s32(2)].

6.3.17 Section 32 of the Act requires consideration of the benefits and costs of the proposal when assessing efficiency and effectiveness. These benefits and costs apply to the proposed provisions in respect of their environmental, social, cultural, and economic effects. Economic effects in particular are required to consider opportunities for economic growth [s32(2)(a)(i)] and employment [s32(2)(a)(ii)]. All effects are required to be quantified where practicable [s32(2)(b)]. The costs and benefits of the plan change package as a whole are summarised in the table below.

Economic, Social, Environmental & Cultural	
Benefits	Costs
<ul style="list-style-type: none"> Directs sensitive and (potentially) other activities to locate in areas where they won't be exposed to unacceptable risks to 	<ul style="list-style-type: none"> No material social, environmental, or cultural costs are identified. Sensitive activities will need to locate

24

Plan Change 1 - Section 32 Evaluation

<p>life and property.</p> <ul style="list-style-type: none"> • Helps maintain and support the function of industrial zones, providing for primarily industrial activities. • Promotes long-term security for strategic infrastructure and the associated security of reliable fuel supplies including the ability of the existing strategic infrastructure to expand to meet demand as required. Flow on benefits accrue to downstream activities that are reliant on existing and future fuel supplies, including the employment opportunities they provide. • Removes requirement (and associated costs) for applicants of discretionary and non-complying activities seeking to establish near the Terminals to prepare individual full QRAs. • Given the policy direction in the industrial area it could be considered unlikely that a sensitive activity or other non-industrial activity could establish that would result in constraint on Terminal operations. However, that cannot be ruled out and the proposed provisions provide additional certainty for the regionally significant Terminal infrastructure, as one inappropriate activity can lead to significant constraint. 	<p>elsewhere, reducing locational choice/opportunity, noting however that as such activities are not generally permitted by the underlying zoning, the opportunity cost is minimal.</p> <ul style="list-style-type: none"> • The proposal would strongly limit the ability for preschools to locate in proximity to the terminals however it is considered that the costs associated would be outweighed by the benefits of minimising risk to vulnerable children. It is noted that there are ample locational choices available for preschools within the wider area and therefore at a societal level the ability of local workers to access convenient child care facilities is not unduly limited by the proposed plan change. • Opportunity costs associated with the potential limitations on the establishment of other activities (such as entertainment or commercial activities) that may otherwise have been contemplated. However other district plan policies strongly limit the extent to which commercial type activities can locate in industrial zones, such that the opportunity cost would unlikely be significant.
<p>Efficiency and Effectiveness of Provisions</p> <p>The principle of an overlay as an appropriate tool for managing risk to sensitive and other discretionary and non-complying activities has already been found to be effective and efficient by the Independent Hearings Panel (IHP); at least on an interim basis. This plan change further improves the effectiveness and efficiency of the policy and rule package by updating the geographic extent of the overlay based on up-to-date QRAs.</p> <p>The Plan Change rationalises Policy 16.2.1.4 by removing the obligation on third parties to undertake full QRAs as QRAs have now been completed by Liquigas and the Oil Companies. The proposed removal of this obligation improves the overall efficiency and effectiveness of the District Plan.</p> <p>Rule 16.4.1.1 (P18) and Rule 16.4.1.5 (NC2) are proposed to manage the risk of preschools locating within that portion of the Industrial General Zone that falls within the Woolston Risk Management Area. NSW HIPAP guidance is that such activities within the risk areas would create an unacceptable level of risk through placing young children in a location where they may be exposed to the adverse consequences of an event occurring and where the nature of childcare for young children makes safe and timely evacuation out of the area challenging. As such, preschools are not contemplated as being acceptable within the risk management areas and therefore a non-complying activity status is considered to be an effective and efficient tool for managing risk.</p>	

25

Plan Change 1 - Section 32 Evaluation

Summarising the reasons for deciding on the provisions [s32(1)(b)(iii)].

- 6.3.18 The IHP process as part of the replacement Christchurch District Plan Review confirmed the need to concurrently protect and provide for strategic infrastructure and to appropriately manage the risks posed by bulk fuel storage facilities. The IHP therefore identified that there was merit, at least on an interim basis, in having a risk management area shown on the planning maps via an overlay and associated policy direction that sensitive and other discretionary and non-complying activities within the overlay would be avoided.
- 6.3.19 The proposed plan change seeks to update the geographic extent of the overlay, more efficiently and effectively apply the policy direction and controls on avoiding sensitive activities in this area and assessing the level of risk exposure for other non-industrial activities such as large scale commercial and recreational activities.
- 6.3.20 The proposed provisions are consequently considered to be more effective in managing risk than any of the available alternatives.
- 6.3.21 With respect to efficiency, it is considered that the provisions would result in a high degree of benefits while maintaining a relatively low level of cost. In summary, the provisions of the Plan Change would be efficient and effective in achieving the objective of the proposal whilst not unduly constraining the ability of anticipated industrial and otherwise permitted activities to occur in the surrounding area.

Risk of acting or not acting [s32(2)(c)]

- 6.3.22 The RMA requires assessment of the risk of acting, or not acting, if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods.
- 6.3.23 In relation to this proposed plan change there is no reason for not acting on the basis of insufficient or uncertain information. Sufficient information is now available through the necessary QRAs having been prepared in a consistent manner and in accordance with recognised criteria. The QRAs now provide an updated identification of the geographic extent of unacceptable risk for sensitive and some other non-industrial activities.
- 6.3.24 The risk of not acting, and instead maintaining the status quo (for a reversion to the underlying Industrial Zone provisions) is that sensitive and potentially other (albeit less sensitive) activities potentially occur in a location where they are subject to unacceptable risk, and/or that their establishment results in reverse sensitivity effects, that limit the ongoing operation and development of strategic infrastructure.
- 6.3.25 Furthermore, the new QRAs demonstrate that it is more appropriate to adopt the amended risk contour for planning purposes with the implication that some new properties now fall within the risk contour and some properties currently included in the risk management area will no longer be affected. A risk of not acting is that the district plan would otherwise contain a risk management area overlay that is out of date and does not manage all appropriate land and activities that ought to be managed based on best available information.

Examine whether the provisions in the proposal are the most appropriate means of to achieve the objectives of the existing District Plan to the extent that those are relevant [s32(3)]

6.3.26 In respect of each relevant existing District Plan objective (and associated policies), an assessment is provided which discusses the provisions of the plan change request and the manner in which they achieve the District Plan's operative objective and policy framework. These are assessed in the table below.

Christchurch District Plan	
Relevant Provisions	Assessment
Chapter 3 Strategic Directions	
<p>3.3.1 Objective – Enabling recovery and facilitating the future enhancement of the district</p> <p><i>a. The expedited recovery and future enhancement of Christchurch as a dynamic, prosperous and internationally competitive city, in a manner that:</i></p> <ul style="list-style-type: none"> <i>i. Meets the community's immediate and longer term needs for housing, economic development, community facilities, infrastructure, transport, and social and cultural wellbeing; and</i> <i>ii. Fosters investment certainty; and</i> <i>iii. Sustains the important qualities and values of the natural environment.</i> <p>3.3.2 Objective – Clarity of language and efficiency</p> <p><i>a. The District Plan, through its preparation, change, interpretation and implementation:</i></p> <ul style="list-style-type: none"> <i>i. Minimises:</i> <ul style="list-style-type: none"> <i>A. transaction costs and reliance on resource consent processes; and</i> <i>B. the number, extent, and prescriptiveness of development controls and design standards in the rules, in order to encourage innovation and choice; and</i> <i>C. the requirements for notification and written approval; and</i> <i>ii. Sets objectives and policies that clearly state the outcomes intended; and</i> <i>iii. Uses clear, concise language so that the District Plan is easy to understand and use.</i> 	<p>The proposed plan change seeks to meet the community's need for infrastructure and economic development through enabling the ongoing operation of existing strategic infrastructure. By avoiding the potential for reverse sensitivity effects to arise, the plan change fosters investment certainty for the ongoing operation and upgrading of strategic infrastructure. It also provides a higher level of direction for other landowners contemplating sensitive and other discretionary and non-complying activities regarding locations where such activities would not be exposed to an unacceptable level of risk.</p> <p>Investment certainty is also fostered by more accurately identifying the geographic extent of risk from the terminals.</p> <p>The proposed plan change would also remove the QRA obligations for new discretionary and non-complying activities seeking to establish in the Woolston Risk Management Area, thereby reducing transaction costs on third parties.</p>

<p>3.3.10 Objective – Commercial and industrial activities</p> <p>a. <i>The recovery and stimulation of commercial and industrial activities in a way that expedites recovery and long-term economic and employment growth through:</i></p> <p>i. <i>Enabling rebuilding of existing business areas, revitalising of centres, and provision in greenfield areas; and</i></p> <p>ii. <i>Ensuring sufficient and suitable land development capacity.</i></p> <p>3.3.12 Objective – Infrastructure</p> <p>a. <i>The social, economic, environmental and cultural benefits of infrastructure, including strategic infrastructure, are recognised and provided for, and its safe, efficient and effective development, upgrade, maintenance and operation is enabled; and</i></p> <p>b. <i>Strategic infrastructure, including its role and function, is protected from incompatible development and activities by avoiding adverse effects from them, including reverse sensitivity effects. This includes:</i></p> <p>c. <i>The adverse effects of infrastructure on the surrounding environment are managed, having regard to the economic benefits and technical and operational needs of infrastructure.</i></p> <p>3.3.14 Objective – Incompatible activities</p> <p>a. <i>The location of activities is controlled, primarily by zoning, to minimise conflicts between incompatible activities; and</i></p> <p>b. <i>Conflicts between incompatible activities are avoided where there may be significant adverse effects on the health, safety and amenity of people and communities.</i></p>	<p>The strategic objectives relating to industry and infrastructure establish a framework that recognises the role that industry will play in the recovery and growth of the City. As such, the District Plan needs to enable industrial growth and activities in appropriate locations. The proposed plan change does not limit or hinder the use of land within the Woolston Risk Management Area for industrial or otherwise permitted activities, and therefore does not frustrate this strategic direction. The terminals are therefore located in an appropriate zone for the activity.</p> <p>The strategic objectives likewise contain a clear direction regarding the role of infrastructure, and strategic infrastructure in particular, in facilitating the City's recovery. The benefits of strategic infrastructure are to be recognised and provided for, including their ongoing operation, development, and upgrading. Objective 3.3.12b makes explicit reference to the need to protect strategic infrastructure from incompatible activities, including reverse sensitivity effects.</p> <p>Objective 3.3.14 likewise seeks to avoid conflicts between incompatible activities where there may be significant adverse effects on the health and safety of people and communities.</p> <p>The proposed plan change achieves this, by clearly identifying an area around the terminals where the establishment of sensitive and other discretionary and non-complying activities may be incompatible with established bulk fuel storage facilities and where people could be exposed to an unacceptable risk to health and safety. Such activities, were they to establish, could also generate reverse sensitivity effects and could constrain their use/operations. The identification of the Woolston Risk Management Area and associated non-complying activity status for sensitive activities are effective tools to ensure that such incompatible activities are avoided.</p>
<p>Chapter 4 Hazardous Substances and Contaminated Land</p>	

<p>4.1.2.1 Objective – Adverse environmental effects</p> <p><i>a. The residual risks associated with the storage, use, or disposal of hazardous substances in the district are managed to acceptable levels to not adversely affect people, property and the environment while recognising the benefits of facilities using hazardous substances.</i></p> <p>4.1.2.2 Objective – Risk and reverse sensitivity effects</p> <p><i>a. Sensitive activities are established at suitable locations to minimise reverse sensitivity effects on and avoid unacceptable risks from established facilities using, storing or disposing of hazardous substances.</i></p>	<p>The Chapter 4 policy framework provides a three-fold direction. The first element is that hazardous substances are used and stored in locations and in a manner where they will not give rise to unacceptable effects.</p> <p>This policy direction is achieved through the identification of Industrial Heavy zones where the use and storage of hazardous substances is an anticipated component of industrial activities. The two terminals are likewise subject to a wide range of regulation to ensure that they are designed and operated in a safe manner where the risks associated with bulk fuel storage are minimised as far as practicable.</p> <p>The second policy direction is that the effects and associated residual risks of facilities using hazardous substances are identified and managed. Both Liquigas and the Oil Companies have undertaken QRAs to geographically map the extent of the residual risk posed by the facilities. The proposed Plan Change provides a tool for managing this residual risk, namely the avoidance of sensitive activities and ensuring some other discretionary and non-complying activities are located appropriately with reference to the relevant risk acceptance criteria.</p> <p>The third policy direction concerns the management of sensitive activities and the avoidance of such from locating in areas where they would be exposed to an unacceptable level of risk and/or would give rise to reverse sensitivity effects. Policy 4.1.2.2.2 makes explicit reference to this policy outcome regarding the Woolston terminals. This policy identifies the need for the extent of the Risk Management Area to be confirmed via QRAs which this plan change is seeking to achieve.</p> <p>The plan change again directly implements this policy direction by mapping the extent of the area (based on QRAs) in conjunction with a non-complying rule as a tool to avoid sensitive activities locating in an area where they would be exposed to unacceptable risk.</p>
<p>Chapter 16 Industrial</p>	

<p><i>Objective 16.2.1 – Recovery and growth</i></p> <p><i>The recovery and economic growth of the district’s industry is supported and strengthened in existing and new greenfield industrial zones.</i></p>	<p>The proposed plan change does not seek to limit industrial activities within the Woolston Risk Management Area, nor complementary supporting activities that are permitted in the IG and IH zones. The recovery and economic growth of land within the WRMA would therefore continue to be supported by the plan change proposal.</p>
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6.3.27 Overall it is considered that the proposed plan change package of provisions is the most appropriate method for achieving the objectives of the Christchurch District Plan, having regard to their efficiency and effectiveness. In particular it would more appropriately recognise and provide for the ongoing use, operation and upgrading of strategic infrastructure, ensure that sensitive and/or incompatible activities are avoided in close proximity to this infrastructure whilst continuing to enable the function of the industrial zones to provide for primarily industrial related activities.

7 Assessment of Environmental Effects

7.1 Introduction

7.1.1 It is important to emphasise that the sites and the surrounding area already have an urban industrial zoning. This plan change does not seek to change the underlying zoning. The proposed amendments likewise do not seek to restrict or prevent industrial (or other permitted) activities from occurring with the overlay. The Plan Change simply inserts an amended overlay boundary, and makes consequential changes to the policy framework and related advice notes.

7.1.2 The scope of the Assessment of Environmental Effects (AEE) is therefore limited to the effects derived from the proposed amendments:

- Avoidance of sensitive activities and ensuring other non-industrial activities are located where they meet the relevant risk acceptance criteria.
- Reverse sensitivity and constraints on Strategic Infrastructure.

7.2 Avoidance of Sensitive Activities and (potentially) other Non-Industrial Activities

7.2.1 Both terminals are equipped to ensure the safety and security of operations carried out within their own boundaries. The operation of both terminals is under continuous review to ensure that the facilities are managed to mitigate risk as far as practicable. Liquigas and the Oil Companies likewise have responsibilities to as far as practicable provide a safe working environment for their staff and to prepare a safety case or associated major accident prevention policy under the MHF Regulations 2016. There is therefore considerable focus on managing risk at source as far as practicable.

7.2.2 The nature of the facilities and the product stored does nonetheless mean that complete elimination of risk or the restriction of such to within the site boundaries is not possible. Whilst the probability of an emergency incident occurring at one of the Terminals is extremely low, the impact of such an event is potentially high. For example, the vapour cloud explosion that occurred at the Buncefield Terminal in the United Kingdom in 2005 resulted in the destruction of

30

Plan Change 1 - Section 32 Evaluation

buildings several hundred metres away from the fuel storage tank area and lesser effects, such as window breakage, up to 8km away¹⁶.

- 7.2.3 The event at Buncefield highlighted that a vapour cloud explosion, which was historically never considered credible at a terminal site due to their unconfined nature was, in fact, a credible event. As a result, industry and regulator practice around the assessment of risk at fuel terminals has changed to include consideration of the potential for large vapour cloud explosions. This in turn has affected the modelling assumptions that input into the QRAs.
- 7.2.4 In addition to managing the safety of the facility, an approach to managing life safety risk also involves managing incompatible activities in close proximity to the facility, where those activities would result in an increase in the risk posed by the facility. Risk is the sum of the likelihood of an event occurring and the consequence of that event. A new activity that involves high rates of human occupancy or vulnerable populations increases the potential impact of an event, and therefore alters the risk profile of an established facility and constrains future development options on the site.
- 7.2.5 The acceptability of risk involves many considerations but in relation to land uses in close proximity to the bulk fuel storage terminals broadly ranges between tolerable for industrial type land uses to intolerable or unacceptable for sensitive activities (e.g. residential, child care, health care). It is therefore critical to ensure that land uses surrounding the terminal sites remain compatible with the level of risk associated with these activities.
- 7.2.6 Appropriate planning controls are required to manage risks to public health and safety, while enabling the efficient and effective operation, maintenance, upgrade and future development of the terminals and surrounding land.
- 7.2.7 The proposed plan change to amend the extent of the overlay will not in itself result in any direct effects on the environment. It is in nature different from a plan change to, for example, rezone land from rural to urban activities or to intensify an existing residential neighbourhood where the change in planning controls will over time result in a markedly different physical environment. The identification of risk is not a direct physical environmental effect in the same way as, for example, noise, odour, or visual amenity. Rather it involves the consequence of an event occurring together with its associated likelihood.
- 7.2.8 The effect of the overlay does not restrict the development of industrial or (except in relation to preschools) other permitted activities in the underlying zones. The physical environment will therefore continue to be able to be developed in accordance with the environmental outcomes anticipated by the Industrial Heavy and Industrial General Zones, and in accordance with the District Plan's policy framework for the area.
- 7.2.9 The plan change retains the operative District Plan's explicit policy direction and associated non-complying rule that the establishment of new sensitive activities within the Woolston Risk Management Area overlay will result in unacceptable risk and therefore is to be avoided, other non-industrial activities will only be able to be located where they meet the relevant risk acceptance criteria. The geographic extent of the overlay identifying the extent of unacceptable risk for sensitive activities has been updated and an advice note in chapter 16 will identify that the new QRAs are publicly available.

¹⁶ Buncefield Major Incident Investigation Board (2008) The Buncefield Incident 11 December 2005: The final report of the Major Investigation Board, p10.

7.3 Reverse Sensitivity and Constraints on Strategic Infrastructure

- 7.3.1 The Liquigas Terminal and the Woolston Oil Terminal are regionally significant infrastructure and are two of the key components in the fuel supply chain for the Canterbury Region.
- 7.3.2 Proximity of sensitive activities and potentially other non-industrial activities that have a different risk profile) in and around the terminals have the potential to pose significant constraint on the ongoing operation and development of those facilities. As noted above, under the District Plan, 'reverse sensitivity' *"means the effect on existing lawful activities from the introduction of new activities, or the intensification of existing activities in the same environment, that may lead to restrictions on existing lawful activities as a consequence of complaints"*.
- 7.3.3 To date, operators consider that development in and around the terminals has largely been compatible with the terminal operations. However with the earthquake recovery and the need for substantial redevelopment across the Canterbury Region it is necessary that the District Plan includes provisions that adequately future proof and protect the resilience of the fuel supply chain to the Canterbury Region so that ongoing fuel demands can be met appropriately and safely.
- 7.3.4 The District Plan provisions need to ensure land uses in the vicinity of the terminal sites remain compatible with the level of risk associated with the terminals to avoid new sensitive and other incompatible non-industrial activities complaining about the risk that they are exposed to and thereby seeking to place restraints on the operations of strategic infrastructure.
- 7.3.5 In this regard, the District Plan needs to restrict the establishment of sensitive or other land uses that could give rise to an issue of reverse sensitivity or operational constraint due to an activity being considered to be exposed to an unacceptable level of risk from the terminals.
- 7.3.6 The nature of fuel supply means that bulk deliveries to Canterbury must come by ship and be discharged at Lyttelton. The two pipelines to transport this fuel from Lyttelton to Woolston are existing and represent significant fixed costs/value in strategic infrastructure. Operators consider that there are significant constraints on road transport of hazardous substances from Lyttelton given the loss of the Sumner Road access, the narrow, winding nature of that route when re-established, and restrictions on tunnel use. Transport by pipeline has been the most efficient, effective, and safest means of transporting these fuels in bulk.
- 7.3.7 The two terminals are located in Woolston to maximize pipeline efficiency over the Port Hills. The terminals are existing and located within an appropriate land use zone that anticipates these types of activities. The region's bulk fuel will continue to be stored and distributed from this location for the foreseeable future. As such it is critical that these terminals are able to continue to operate and be upgraded. The establishment of new sensitive or other non-industrial activities in close proximity to the terminals can lead to increased pressure to reduce operations or to prevent expansion due to both the perception and the potential reality that such works would result in increased risk to nearby properties.

8 Consultation

- 8.1.1 The principle of a Risk Management Area and associated rules were subject to the statutory submission process undertaken as part of the District Plan Review. As such, interested parties had the opportunity to become involved in the development of the operative District Plan's provisions and to present evidence through that hearing process.
- 8.1.2 On October 2018, the Linwood-Central-Heathcote Community Board was briefed on the upcoming proposed Plan Change 1 Woolston Risk Management Area. The process, timing and issues surrounding the upcoming proposed plan change was presented to Council at its meeting on December 2018.
- 8.1.3 Following direction from the Council, pre-notification consultation was held from mid-January to mid-February 2019. Letters were sent out to owners and owner-occupiers considered to be affected inviting them to comment on the draft plan change and to attend one of the public information drop-in sessions: (1) Tuesday, 5 February 2019, (2) Monday, 11 February 2019, and (3) Wednesday, 13 February 2019. Likewise, the Ministry for the Environment, Department of the Prime Minister and Cabinet (DPMC), Canterbury Regional Council and Ngāi Tahu were invited to provide comments on the draft plan change, in accordance with Clause 3(1), Schedule 1 of the RMA.
- 8.1.4 Affected parties were invited to call or email Council staff directly if unable to attend any of the scheduled drop-in sessions. Detailed information and the Quantitative Risk Assessments were made available at www.ccc.govt.nz/planchange and the Council [Have Your Say](#) webpage.
- 8.1.5 A total number of nine property owners representing 12 sites attended the scheduled public information drop-in sessions, broken down as follows into different groups:
- new properties within the proposed overlay – 5
 - properties within the existing and proposed overlay – 7
 - properties no longer within the existing overlay and outside the proposed overlay – 0
- 8.1.6 Feedback from the drop-in sessions showed general support for the plan change because they consider sensitive activities inappropriate to be located near their industrial activities.
- 8.1.7 Queries received via email were mainly clarification requests with respect to the boundary of the overlay in relation to properties. One specific query was received from the media (after seeing the plan change info at the Council Have Your Say webpage) about the process involved in revoking the OiC.
- 8.1.8 Three completed feedback forms were received via post: (1) One landowner noted no concerns as long as there are no further or additional restrictions placed on their current business use under the current plan; (2) One landowner would be very pleased to see this change take effect; and (3) the other landowner sought flexibility to operate offices in the IH Zone, within the overlay.
- 8.1.9 Feedback received via email from Mahaanui Kurataiao Ltd (MKT) stated that the proposed plan change was discussed at a recent hui between MKT staff and the Kaitiaki Portfolio representatives for Te Ngāi Tūāhuriri Rūnanga. No concerns or recommendations were raised on the proposed plan change.

8.1.10 Liquigas and the Oil Companies commented in support the draft plan change except for the change initially proposed to Policy 16.2.1.4 - Activities in industrial zones, as explained below.

8.1.11 The draft plan change made available during the informal pre-notification consultation proposed to delete the part of the policy that required discretionary and non-complying activities to prepare and submit a QRA with their resource consent application in order to demonstrate that their proposal meets the appropriate risk acceptability criteria for the type of land use. Council initially considered that this policy requirement was no longer necessary because QRAs had since been undertaken by Liquigas and the Oil Companies, and provisions in Chapter 4 (Hazardous Substances and Contaminated Land) of the District Plan now manage the location of sensitive activities within the Woolston Risk Management Area.

8.1.12 Liquigas and the Oil Companies conveyed their position that it remains appropriate for Council to consider the potential of discretionary and non-complying activities seeking consent to establish within the Woolston Risk Management Area. This is to enable an assessment of the extent to which these activities were likely to generate reverse sensitivity effects on the bulk fuel terminals and to consider the exposure of these activities to unacceptable risk. These potential effects may be relevant to all activities, not just those defined as sensitive in the District Plan¹⁷. Council staff now agree that it is appropriate to retain this policy requirement but that it is also appropriate to include reference to the existing QRAs to provide additional clarity to plan users via an advice note that:

- The QRAs prepared by the LPG and oil depot companies for the Woolston Risk Management Area will be made freely available to the public to inform the policy requirement; and
- The relevant discretionary and non-complying activities are only those the subject of Rule 16.4.1.4 D1, Rule 16.5.1.4, and Rule 16.5.1.5 NC1.

Liquigas and the Oil Companies also expressed strong support for inserting new rules relating to Site Emergency Management Plans (SEMPs) for the safety and protection of workers and visitors in the surrounding areas. However at the time of preparing the plan change and given the urgent focus of the plan change (i.e. the lapse sunset clause), Council considered that further analysis was required in order to test the SEMP provisions under section 32 of the Act.

In accordance with the 1st Schedule of the RMA, formal consultation on the proposed Plan Change will occur with all landowners within the operative Risk Management Areas and the proposed Woolston Risk Management Area. CCC is making an application to the Environment Court for Rule 4.1.4.1.5 and the associated revised overlay to have immediate legal effect on a date other than the date at which a decision on submissions to the rule is made¹⁸. The RMA requires that in such circumstances, the proposed plan change is publicly notified. Any other interested parties are able to put forward their views through the statutory public notification process.

9 Conclusion

9.1.1 This section 32 report and appendices present all of the relevant information required to enable the proposed plan change to be considered. The information provided is at a level of detail that is appropriate to the scale and significance of the issues concerned. Potential environmental effects

¹⁷ E.g. residential, care facilities, education activities and preschools, guest accommodation, health care facilities, hospitals and custodial accommodation.

¹⁸ Resource Management Act 1991, s86D

- have been identified and appropriately avoided, remedied or mitigated through the proposed provisions.
- 9.1.2 All of the matters of policy and statutory consideration have been identified and addressed, including for all relevant higher order documents. Consultation with stakeholders will be on-going as required, noting that all interested parties will have a formal opportunity to lodge submissions as part of this statutory plan change process.
- 9.1.3 The CRPS provides a framework within which the role and benefits of strategic infrastructure are recognised and provided for, along with the need to protect such infrastructure from the adverse effects of incompatible activities becoming established in locations that would result in constraints on the operation and development of strategic infrastructure.
- 9.1.4 The proposed amendments to the policy frameworks of the Industrial and Hazardous Substances Chapters likewise give effect to the higher order direction insofar as the policy direction relates to strategic infrastructure and the need to avoid incompatible activities that would have a significant adverse effect on the efficient functioning, use, and development of that infrastructure.
- 9.1.5 The proposed amended Woolston Risk Management Area boundary identifies the geographic extent of the sensitive area around the existing strategic infrastructure facilities where the location of new sensitive activities should be avoided and potentially other non-industrial activities assessed on the extent to which they meet the relevant risk criteria as an effective tool for managing incompatible activities in relation to bulk fuel storage facilities.
- 9.1.6 The proposed policy and rule amendments to remove the sunset clause and limit the establishment of preschools and other sensitive activities in the vicinity of the terminals are considered to better give effect to the CRPS and the Strategic Directions objectives than the operative District Plan provisions.

APPENDIX 1 – LIQUIGAS TERMINAL QUANTITATIVE RISK ASSESSMENT

Plan Change 1 - Section 32 Evaluation

APPENDIX 2 – WOOLSTON OIL TERMINAL QUANTITATIVE RISK ASSESSMENT

Plan Change 1 - Section 32 Evaluation

APPENDIX 3 – COMBINED SUMMARY OF QUANTITATIVE RISK ASSESSMENT

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APPENDIX 4 – COPY OF PLAN CHANGE TEXT AMENDMENTS

Plan Change 1- Section 32 Evaluation



WOOLSTON LPG DEPOT
QUANTITATIVE RISK ASSESSMENT



No.	QRA Event	Hole Size (mm)	Jet Fire Downwind Thermal Radiation Distances (m)					Pool Fire Downwind Thermal Radiation Distances (m)						
			Jet Flame length (m)	35 kW/m ²	23 kW/m ²	12.6 kW/m ²	4.7 kW/m ²	2.1 kW/m ²	Pool Fire Diameter (m)	35 kW/m ²	23 kW/m ²	12.6 kW/m ²	4.7 kW/m ²	2.1 kW/m ²
16	S09A_AUXDIS_V	2	1.3	Not reached	Not reached	Not reached	1.7	1.7						
16	S09A_AUXDIS_V	7	3.8	2.5	3.2	3.8	4.3	4.6						
16	S09A_AUXDIS_V	30	17	17	18	19	20	23						
16	S09A_AUXDIS_V	100	47	52	54	58	66	83						
16	S09A_AUXDIS_V	150	-	-	-	-	-	-						
17	S10A_RDLOAD_L	2	4.1	5.1	5.2	5.7	6.9	8.3						
17	S10A_RDLOAD_L	7	12	15	16	18	22	26						
17	S10A_RDLOAD_L	30	42	55	59	66	81	99						
17	S10A_RDLOAD_L	100	117	160	172	192	239	297	0.71	49	49	49	50	50
17	S10A_RDLOAD_L	150	165	229	246	275	428	229	5.7	74	77	78	85	98
18	S11A_RDLOAD_L	2	4.1	5.1	5.2	5.7	6.9	8.3						
18	S11A_RDLOAD_L	7	12	15	16	18	22	26						
18	S11A_RDLOAD_L	30	42	55	59	66	81	99						
18	S11A_RDLOAD_L	100	117	160	172	192	239	297	0.71	49	49	49	50	50
18	S11A_RDLOAD_L	150	165	229	246	275	428	229	5.7	74	77	78	85	98
19	S12A_VLARM1_V	2	1.0	Not reached	Not reached	Not reached	1.5	1.5						
19	S12A_VLARM1_V	7	2.9	Not reached	2.1	2.8	3.2	3.4						
19	S12A_VLARM1_V	30	13	14	14	14	15	17						
19	S12A_VLARM1_V	100	38	42	43	45	50	61						

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May 2016

Appendix



LIQUIGAS

**Woolston LPG Depot
Quantitative Risk Assessment**

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May 2018

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Rev	Description	Originator	Reviewer	WorleyParsons Approver	Date	Client Approval	Date
A	Issued for Review/Comment	Y Lee	D Phillis	D Phillis	10/2017		
0	Approved for Use	Y Lee	D Phillis	D Phillis	12/2017		
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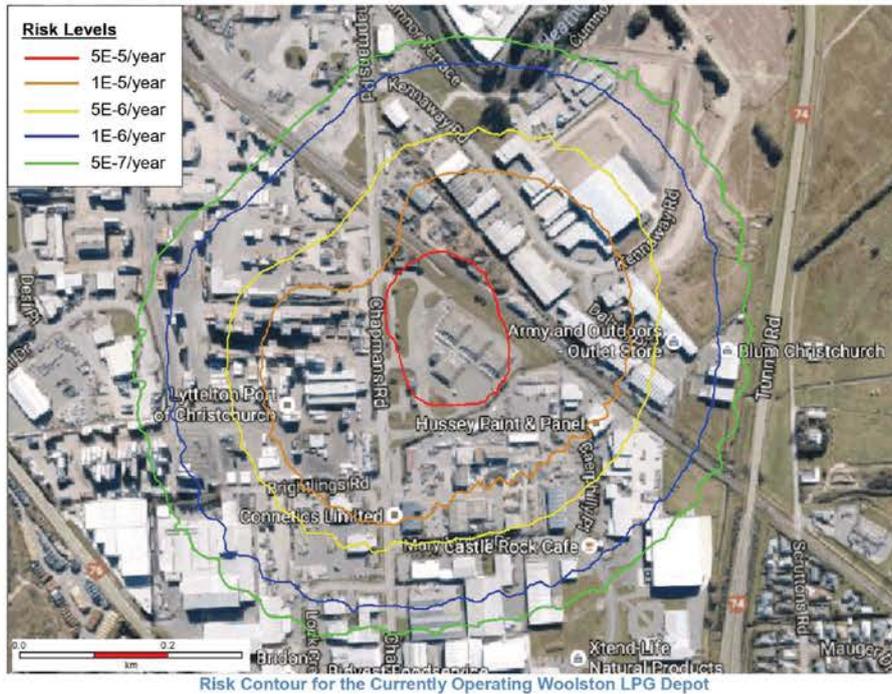


EXECUTIVE SUMMARY

A Quantitative Risk Assessment (QRA) has been conducted for the Liquigas Woolston LPG depot, which covers the currently operating Woolston LPG depot and the consented LPG storage upgrade. The key deliverable of the QRA is the individual fatality risk contours.

Base Case

The risk contour for the base case currently operating Woolston LPG depot is presented in the figure below.



The risk results as assessed against the HIPAP4 criteria are presented in the table below.

LSIR Results as compared to the HIPAP4 Land Use Criteria for the Currently Operating Woolston LPG Depot

LSIR	Risk Contour	HIPAP4 Land Use Criteria	Result
5E-05 / year	Red	5E-05 / year risk contour should, as a target, be contained within the boundaries of the industrial site where applicable.	The 5E-05 / year risk contour extends beyond the site boundary at the North East direction on to the railway line and the recycling centre.



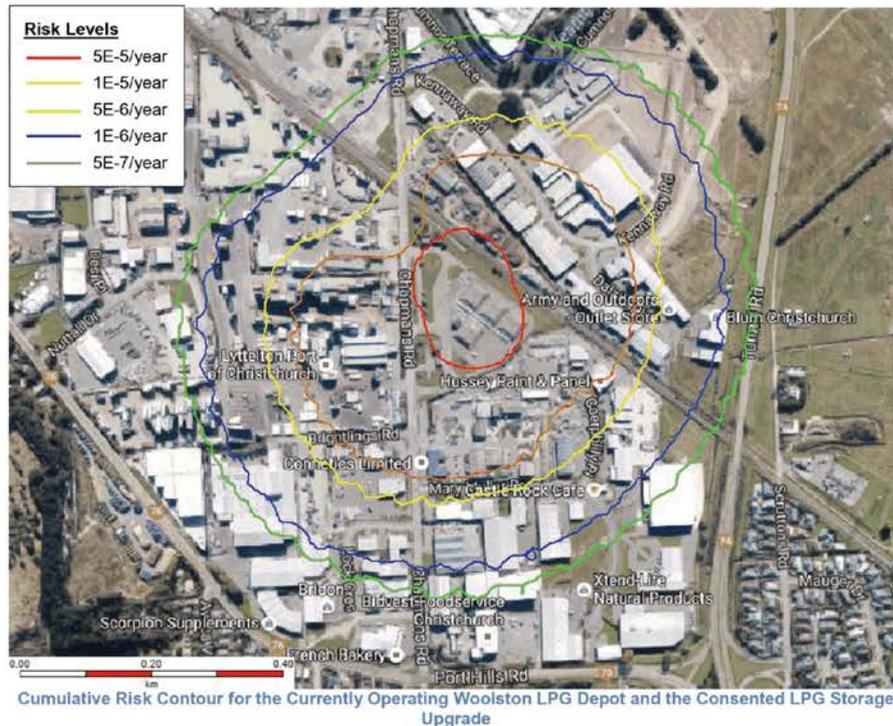
WOOLSTON LPG DEPOT
QUANTITATIVE RISK ASSESSMENT

LSIR	Risk Contour	HIPAP4 Land Use Criteria	Result
1E-05 / year	Orange	1E-05 / year risk contour should not extend to sporting complexes and active open space	No impact. There are no sporting complexes and active open space within the proximity. However, the 1E-05 / year risk contour is impacting on the Chapmans Road on the western side.
5E-06 / year	Yellow	5E-06 / year risk contour should not extend to commercial developments including retail centres, offices and entertainment centres	The 5E-06 / year risk contour extends beyond the site boundary onto a few neighbouring facilities offices, including the Contact Energy Regional Office to the east, the Lyttelton Port of Christchurch offices to the west, and various commercial premises across the railway line to the north and north east. However, the area is zoned "industrial" as per the Christchurch District Plan. HIPAP4 [Ref. 7] states that a higher level of risk is generally considered acceptable in industrial areas (HIPAP4, p8) in comparison to commercial land use areas. In the context of the report this is mentioned to differentiate between offices located in a 'commercial' area/zone and offices in an 'industrial' zone (where a higher level of risk acceptance may be appropriate).
1E-06 / year	Blue	1E-06 / year risk contour should not extend to residential, hotels, motels, tourist resorts	No impact. There are no residential, hotels, motels or tourist resorts within the proximity.
5E-07 / year	Green	5E-07 / year risk contour should not extend to hospitals, schools, childcare facilities, old age housing	No impact. There are no hospitals, schools, childcare facilities or old age housing within the proximity.

The results show that the near-field risks are mainly contributed by jet fires, whereas the far-field risks are mainly contributed by flash fires.

Consented LPG Storage Upgrade

The risk contour for the consented LPG storage upgrade is presented in the figure below.



The consented LPG storage upgrade only generated negligible incremental risk. The LSIR assessment against the HIPAP4 criteria is the same as for the currently operating Woolston LPG depot.

Sensitivity Analysis

Sensitivity analyses have been conducted for the following aspects of the QRA modelling, including:

- Different ignition probabilities – the QRA model were repeated by using (1) the “large plant gas LPG” ignition probability correlation; (2) Cox, Lees and Ang ignition probability. The results found that the risk contours generated by using the Cox, Lees and Ang ignition probability is significantly lower than the base case.
- Uniform wind profile – Phast Risk software generally applies Power Law to the wind profile where the wind speed is lower when nearer to the ground level. A sensitivity analysis was performed by applying uniform wind profile. The risk contour is similar to the base case with negligible risk increment. This shows that the wind speed changes with height do not have significant impact on the risk results.
- Different representative hole sizes – the QRA were repeated by using a different representative hole sizes that are also commonly used in QRA studies were considered. The result shows mixed impact on the risk levels, where the highest risk level (5E-05 / year) has extended further offsite but the 1E-05 / year risk and 5E-06 / year risk levels distances have reduced. There are negligible differences for the lower risk levels (1E-06 / year and 5E-07 / year).



TABLE OF CONTENTS

1. ABBREVIATIONS AND DEFINITIONS 1
1.1 Abbreviations 1
1.2 Definitions 1
2. INTRODUCTION 2
2.1 Objectives 2
2.2 Facility Description 2
3. METHODOLOGY 6
3.1 Assessment Tools 7
3.2 Assumptions 7
3.3 Weather Parameters 7
3.4 Release Hole Sizes and Conditions 8
3.5 Ignition Probability 9
3.6 Radiant Heat 10
3.7 Flash Fire 10
3.8 Explosion 10
4. HAZARD IDENTIFICATION 11
4.1 Hazardous Materials 11
4.2 Release Scenarios 11
5. FREQUENCY ANALYSIS 14
5.1 Currently Operating Woolston LPG Depot 14
5.2 Consented LPG Storage Upgrade 15
6. RISK ANALYSIS 17
6.1 Risk Criteria 17
6.2 Risk Assessment Results 17
7. SENSITIVITY ANALYSIS 24
7.1 Sensitivity Analysis 1: Ignition Probabilities 24
7.2 Sensitivity Analysis 2: Uniform Wind Profile 27
7.3 Sensitivity Analysis 3: Representative Hole Sizes 28
8. CONCLUSIONS 29
9. REFERENCES 30

APPENDICES

- APPENDIX 1. PARTS COUNT P&IDS
- APPENDIX 2. CONSEQUENCE MODELLING RESULTS
- APPENDIX 3. IGNITION PROBABILITIES
- APPENDIX 4. ASSUMPTIONS REGISTER (INC. APPROVAL CORRESPONDENCE)

1. ABBREVIATIONS AND DEFINITIONS

1.1 Abbreviations

BLEVE	Boiling Liquid Expanding Vapour Explosion
DNV GL	Det Norske Veritas Germanischer Lloyd
HIPAP4	Hazardous Industry Planning Advisory Paper No. 4
IRPA	Individual Risk Per Annum
LFL	Lower Flammable Limit
LPG	Liquefied Petroleum Gas
LSIR	Location Specific Individual Risk
MEM	Multi-Energy Method
P&ID	Piping and Instrumentation Diagram
PLL	Potential Loss of Life
QRA	Quantitative Risk Assessment
UKOOA	UK Offshore Operators Association
VCE	Vapour Cloud Explosion

1.2 Definitions

BLEVE	Event whereby a vessel containing a pressurised liquid such as LPG is subjected to fire impingement, causing buildup of vapour pressure and subsequent dropping of the liquid level in the vessel as the safety valve opens to relieve the pressure buildup. Eventual failure of the tank due to fire impingement on the vapour space of the vessel results in a damaging explosion and fireball, with missile generation likely over some distance.
Consequence	Outcome or impact of a hazardous incident, including the potential for escalation.
Flammability limit range	Concentration range over which a flammable mixture of gas or vapour in air can be ignited at a given temperature and pressure.
Flash fire	The combustion of a flammable vapour and air mixture in which flame passes through that mixture at low velocity, such that negligible overpressure is generated.
Flash point	The lowest temperature, corrected to a barometric pressure of 101.3 kPa, at which application of a test flame causes the vapour of the test portion to ignite under the specified conditions of test (AS 1940–2004).
Heat radiation	The propagation of energy in the infra-red region of the radiation electromagnetic spectrum, commonly 'heat'.
Jet/spray fire	An intense directional fire resulting from ignition of a vapour or two phase release with significant momentum (i.e. pressurised) from an orifice (can occur at pressure 2 barg or above).
Location Specific Individual Risk (LSIR)	The risk of fatality at a point in space to a hypothetical individual at that location for 365 days per year, 24 hours a day.
Vapour Cloud Explosion	The explosion resulting from the ignition of a cloud of flammable vapour, gas, or mist in which flame speeds accelerate to sufficiently high velocities to produce significant overpressure.



2. INTRODUCTION

Liquigas Limited (Liquigas) operates a liquefied petroleum gas (LPG) storage and distribution facility in Woolston Christchurch. LPG is delivered by sea tanker to the wharf in the Port of Lyttelton and then pipelined over the Port Hills, via a pumping station at Lyttelton, to mounded storage vessels located at the Woolston depot in Christchurch. It is then loaded out into LPG road tankers for distribution throughout the region.

Liquigas also has a resource consent to increase the LPG storage capacity from 2,000 tonnes to 3,575 tonnes through the installation of new vessels contained within a new mound.

WorleyParsons New Zealand Ltd has been engaged to undertake a Quantitative Risk Assessment (QRA), which covers the currently operating Woolston LPG depot and the consented LPG storage upgrade.

2.1 Objectives

The objectives of the QRA are to determine the location specific individual risk (LSIR) associated with the currently operating Woolston LPG depot, including the consented LPG storage upgrade. The QRA is likely to be used for a future update of the site major hazard facility risk management overlays as required by the Christchurch Replacement District Plan.

2.1.1 Exclusions

The following are excluded from this study:

- Third party risk contributors (external risks, e.g. from the Contact LPG Terminal).
- Loss of containment from pipeline sections outside the plant boundaries (pipeline inventories are included in scenarios within the plant boundary).
- Non-hydrocarbon risks (e.g. transportation risk, earthquake risk). The industry generic leak frequency database [Ref. 5] incorporates the frequency of equipment failure and loss of hydrocarbon containment due to seismic activities. Hence to avoid overestimating the leak frequencies, earthquake was not included in the leak frequency calculation as a standalone cause of loss of containment. It is noted that the tanks and equipment are designed to withstand seismic loading with a specific return period in accordance with AS/NZS 1170.5. Some pipework deformation or flange leak may be expected but catastrophic ruptures or structural collapse should not occur. This is consistent with the site effects from the February 2011 Christchurch earthquake where some pipework deformation was experienced but no leaks were experienced.
- Calculation of individual risk per annum (IRPA) and potential loss of life (PLL) for onsite personnel, and calculation of societal risk for offsite personnel.
- Calculation of injury risk, risk of property damage and accident propagation, and societal risk.

2.2 Facility Description

The Woolston LPG depot is located at 50 Chapmans Road in an industrial area at the foot of the Port Hills, and within a triangle of land formed by Chapmans Road, a railway line and an open drain. The depot receives LPG via the cross country pipeline from the pump station at Lyttelton. The LPG is routed to a series of mounded storage vessels on the site. Two loading bays facilitate the distribution of LPG

from the site via road tankers. The LPG is also distributed to the adjacent Contact LPG Terminal and Elgas filling station via separate pipelines.



Figure 2-1: Woolston LPG Depot (Looking Southeast)

2.2.1 Currently Operating Woolston LPG Depot

The key facilities at the currently operating Woolston LPG depot include:

- Storage mounds – Four mounds with each containing 5 x 100 tonne LPG vessels, (20 vessels; 2000 tonnes in total). The LPG vessels have two turrets, one housing process pipework penetrations and the other housing the instrumentations. Manway entry is through the top of the vessel.
- Liquid header - used for the dispatch of LPG (generally "propane rich mix" when available), to the road load-out bays from dispatch vessels V-0511 to V-0515 (24 hr mode), bottle fill plants and internal transfers from vessel to vessel. This line also incorporates a 25 mm take off to the pipeline jockey pump (static leak detection) system.
- Liquid load-out header – used for the dispatch of LPG from mound one dispatch vessels V-0501 to V-0505 via the road tanker load-out bay, and bottle fill plants. Generally designated 60/40 mix product.
- Vapour headers – headers used to distribute LPG vapour, high and low pressure between storage vessels, and to and from the road tanker load-out bay.
- LPG compression – 5 Corken reciprocating compressors used to transfer product between vessels and the loading bay. Can be used in two modes of operation: pressurizing (product transferring/load out duty) and de-pressuring (vessel de-commissioning).
- Road tanker load-out – two load-out bays with spray cage fire protection.



- Utilities systems (e.g. utility header and water separation vessel, instrument air, drainage and firewater supply).

The LPG is odourised at the Lyttelton pumping station. As such, there is no odorant system on site.

The control building incorporates the control room, offices, workshop, switch gear room, toilets and lunch room. There is a garage adjacent to the control building which is used for storage. These are located outside LPG hazardous areas.

2.2.2 Consented LPG Storage Upgrade

The existing facility has capacity for storing 2,000 tonnes of LPG and has a resource consent to increase this capacity up to 3,575 tonnes through the installation of new LPG vessels. The key facilities for the consented LPG storage upgrade include:

- One storage mound – containing 3 x 500 tonne LPG vessels.
- Header extensions – Liquid and vapour headers to be extended by approximately 20 – 25 m to connect with new vessels.

The site layout is shown in Figure 2-2.

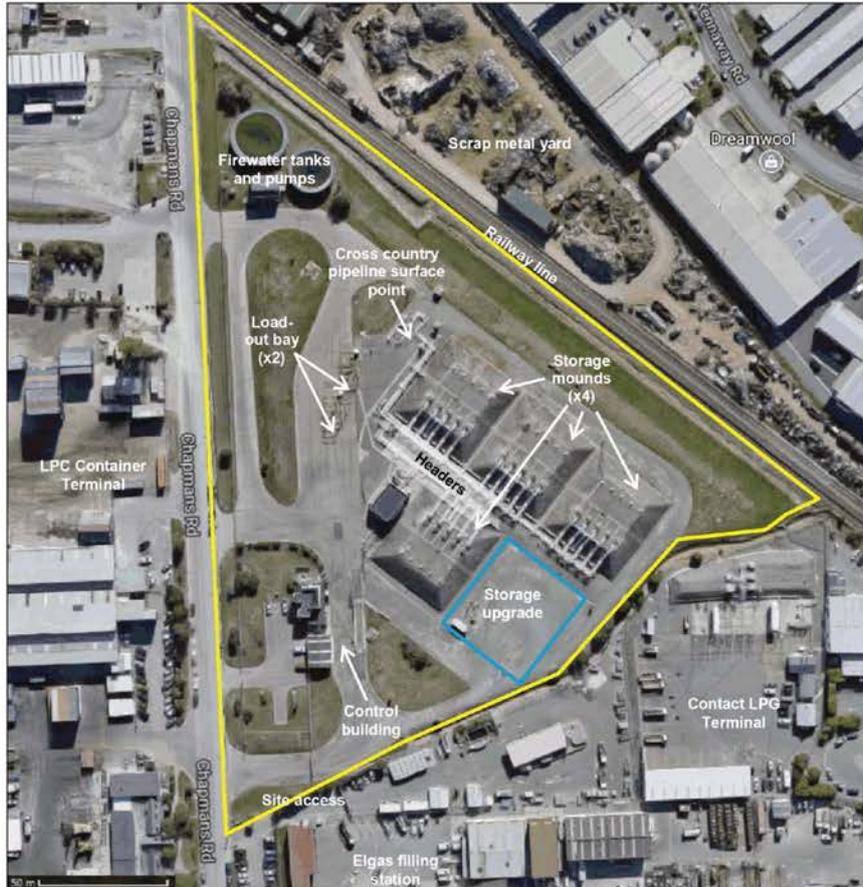


Figure 2-2: Woolston LPG Depot Layout

3. METHODOLOGY

The methodology followed for completing the QRA is aligned with good industry practice, and specified in the WorleyParsons' Onshore QRA Method Statement [Ref. 1]. The generic process is illustrated in Figure 3-1 with the slight modification in that it does not include the calculation of individual risk per annum (IRPA) and potential loss of life (PLL).

Note that the reference to 'personnel' in Figure 3-1 should be interpreted as inclusive of both on- and off-site parties.

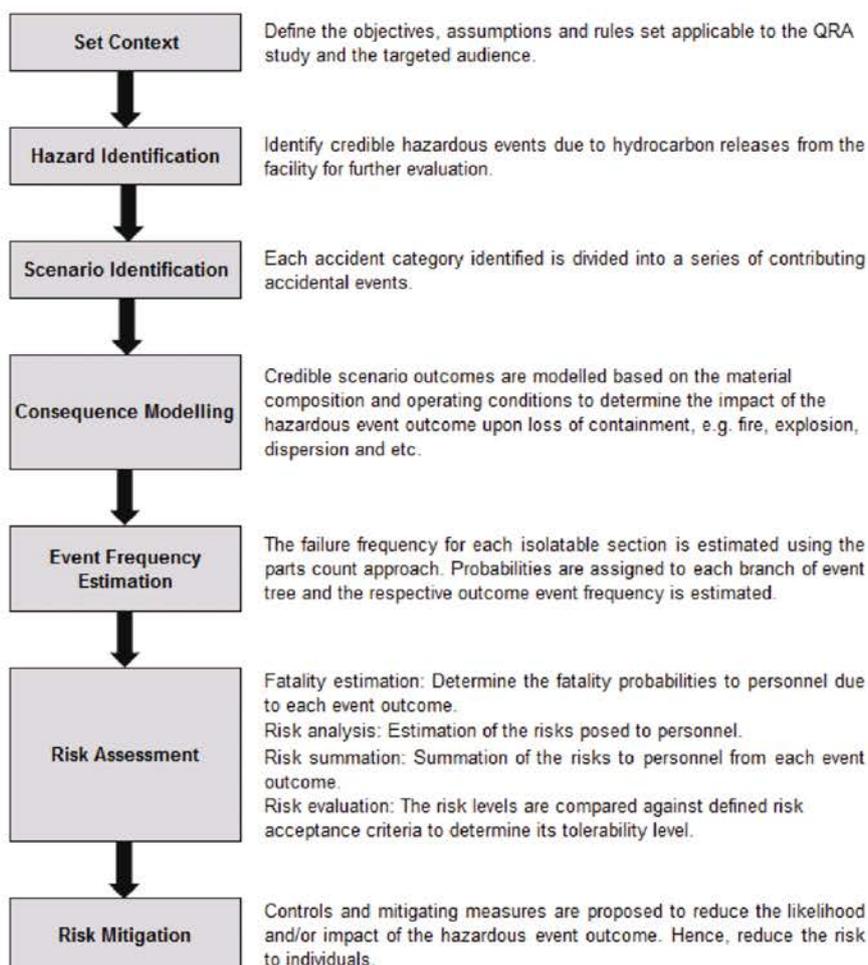


Figure 3-1: QRA Methodology



3.1 Assessment Tools

Phast Risk [Ref. 2] is an integrated consequence and risk modelling package developed by DNV GL Software aimed at the onshore petrochemical and chemical process industry for assessing process plant risks via comprehensive QRA. It is designed to perform all the analytical, data processing and results presentation elements of a QRA within a structured framework.

3.2 Assumptions

An assumptions register [Ref. 3] was generated which outlines the basis of all assumptions and the input bases inherent in the QRA study. The assumptions register was issued to Liquigas for review and prior approval. Refer to Appendix 4 for the Assumptions Register and email correspondence confirming Liquigas approval.

3.3 Weather Parameters

Meteorological conditions impact the outcomes of release modelling, including downwind dispersion distance (influenced by atmospheric stability and wind speed), rate of vaporisation (ambient temperature), and atmospheric attenuation of radiant heat (temperature and relative humidity).

Wind data was obtained from the New Zealand National Climate Database [Ref. 4] for Christchurch Aerodrome station (station number 4843) for time period 2008 – 2012, and is presented in the form of a windrose in Figure 3-2.

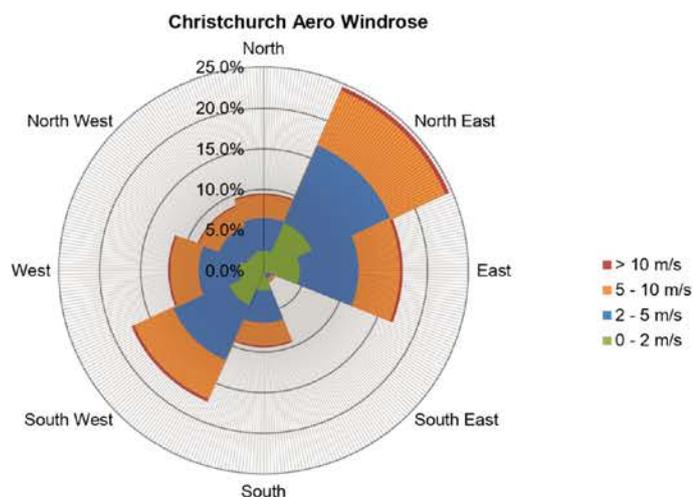


Figure 3-2: Christchurch Aero Windrose

The wind speed and atmospheric stability (Pasquill Stability) combinations is also presented in tabular format in Table 3-1 for input into the QRA model.



Table 3-1: Christchurch Aero Wind Data

Wind Speed / Pasquill Stability	North	North East	East	South East	South	South West	West	North West	Total
0 - 2 m/s / F	2.5%	6.4%	4.4%	0.4%	2.5%	4.6%	3.0%	2.3%	26.1%
2 - 5 m/s / D	4.0%	10.3%	7.1%	0.7%	4.0%	7.4%	4.9%	3.7%	42.1%
5 - 10 m/s / D	3.0%	7.8%	5.4%	0.5%	3.0%	5.6%	3.7%	2.8%	31.9%
Total	9.5%	24.6%	17.0%	1.6%	9.4%	17.5%	11.6%	8.7%	100.0%

Note:

- Pasquill Stability class F – stable, night with moderate clouds and light/moderate wind
- Pasquill Stability class D – neutral, little sun and high wind or overcast/windy night

The following weather parameters are also taken for the same weather station:

- Mean air temperature: 11.5°C
- Relative humidity: 82.2%

In this study, no allowance for solar radiation is included.

The surface roughness is the roughness of the ground (over which a flammable vapour cloud is moving). Degree of surface roughness depends on the size and number of roughness elements, which can range in size from blades of grass to buildings. Surface roughness generates air turbulence, which acts to mix air to the flammable vapour cloud and dilute the vapour. A higher surface roughness generally gives smaller hazard zone due to more dilution. For this study, a surface roughness of 0.1 m is applied, which generally representative of an area of "low crops, occasional large obstacles".

3.4 Release Hole Sizes and Conditions

For every component failure, there is a range of credible hole sizes ranging from pinhole leak to full bore rupture. The hole size grouping from the DNV Failure Frequency Guidance [Ref. 5] together with the representative hole sizes used in the QRA are as given in Table 3-2.

Table 3-2: Hole Size Distribution

DNV Hole Size Group (mm)	Hole Representation (mm)
1 - 3	2
3 - 10	7
10 - 50	30
50 - 150	100
> 150	150

The height of release from all scenarios is assumed to be at 1 m above ground with the exception of releases from the mounded vessels where the height of release are assumed to be 5 m above ground. It is considered reasonable to assume 70% of the releases are horizontal release and 30% of the releases are vertical release.

3.5 Ignition Probability

Given a release, the probability of ignition is dependent on a range of factors including:

- Release rate
- Material state (liquid or gas)
- Material physical properties (flash point, density, flammability limits)
- Ignition sources present (hot work, uncertified equipment)

There are a range of correlations for applying an ignition probability to a release, and most are based on release rate and state. Oil and Gas UK (formerly UK Offshore Operators Association (UKOOA)) has generated a model for predicting ignition probability which takes into account the above, as well as the nature of the surrounding area with respect to potential ignition sources [Ref. 6]. This model has been used to generate a range of typical correlations. For this QRA, the following scenario is used:

- Tank Gas LPG Storage Industrial (Gas or LPG release from onshore tank farm sited adjacent to a plant or away from the plant in an industrial area), which is applicable to releases of flammable gases, vapour or liquids significantly above their normal boiling point from onshore outdoor storage tanks located in a 'tank farm' adjacent to plants or situated away from plants in an industrial or urban area.

The graph of ignition probabilities as a function of mass release rates is shown in Figure 3-3.

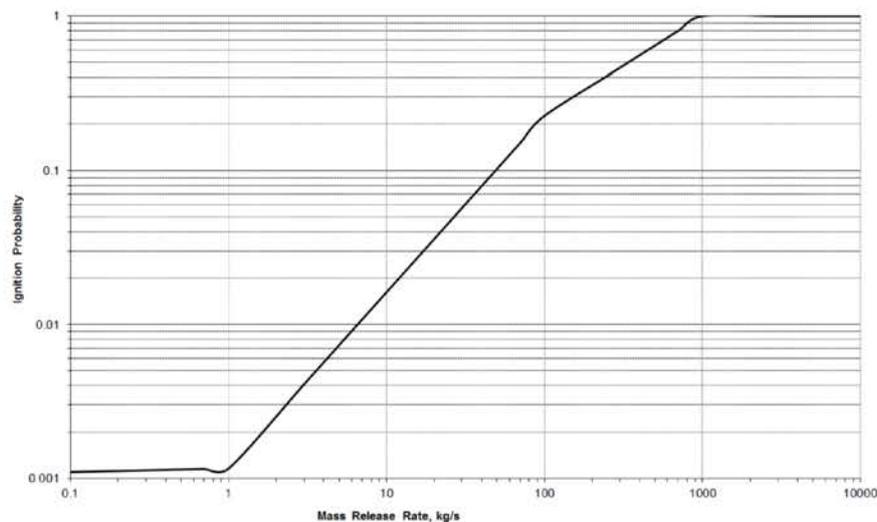


Figure 3-3: Ignition Probabilities

The graph represents the total ignition probability. An overall distribution for early to delayed ignition ratio of 30:70 to 50:50 split are typically applied. The timing of ignition is used as a means to predict the nature of the ignited event. Early ignition is taken to indicate a jet fire or a pool fire (depending on the released material). Delayed ignition is taken to indicate that the ignition would initially result in a flash fire or



explosion. For this QRA, a 50:50 split for immediate:delayed ignition probability is used. The ignition probabilities for each scenario are listed in Appendix 3.

3.6 Radiant Heat

The method of calculating the probability of fatality for an individual in Phast Risk, given known exposure duration and thermal heat radiation levels, is undertaken by using a probit function. The probit function is a general formula which takes the same form, but with various constants used. The probit function is defined as follows:

$$\text{Probit} = -36.38 + 2.56 \ln(t \times q^{4/3})$$

Where:

t = exposure duration in seconds

q = thermal radiation level in W/m^2

Phast Risk program calculates the probit values during the analysis.

An exposure duration of 20 seconds has been used as a base case, although it is noted that personnel are likely to find some form of shielding protection within this time frame.

Note that Phast Risk also assumes that if a continuous release has a very short duration, the immediate ignition of the release may give effects which are closer to a fireball than to a jet fire, because a jet fire would not have time to establish itself. The cut-off time in Phast Risk is 20 seconds.

3.7 Flash Fire

If personnel are within the 100% lower flammable limit (LFL) of the gas plume, 100% fatality is assumed.

3.8 Explosion

Vapour cloud explosions (VCE) are modelled by using Extended Explosion Modelling, which is an extension in Phast Risk. The extended explosion method allows the definition of regions of congestion and confinement. The calculations then consider the interactions between the dispersing cloud and these regions, and calculate the pattern of overpressure across these regions. The relationship between overpressure and fatality probability for different groups of people (e.g. for people in different types of building) can also be defined. The Multi-Energy Method (MEM) is selected for the explosion modelling in this study.

4. HAZARD IDENTIFICATION

4.1 Hazardous Materials

The hazardous material considered in the QRA is LPG (propane and butane). The composition of LPG varies between winter and summer. The Woolston LPG depot normally handles propane in winter as it is more suitable for the South Island winter market, but it can also handle product from 50/50 (propane/butane) mix to 100% propane. For the purpose of QRA, it is assumed that the depot is handling 100% propane for 6 months per year, and 60/40 propane/butane (mole fraction) mix for the other 6 months.

Propane and butane are flammable materials. Propane has a flash point of -156°C with the flammability limit ranges from 2.1% to 9.5%. Butane has a flash point of -76°C with the flammability limit ranges from 1.8% to 8.4%.

LPG is normally stored as liquid under pressure. Accidental releases can either be liquid, which quickly vaporises, or in the gaseous mixture. As LPG gas is heavier than air, it will flow along grounds and tend to settle in low spots. Should the flammable vapour find an ignition source, the flame can flash back to the leak source and result in a jet fire. LPG releases were modelled as jet fire (in the event of early ignition) and flash fire and/or vapour cloud explosion (VCE) (in the event of delayed ignition). VCE was modelled within the expected congestion area.

As the LPG vessels are mounded, liquid releases from the vessels are not considered credible due to containment within the mounded structure protecting the vessels. There are no flanges or connections in the liquid phase. Flanges, instrumentation and connections are in the vapour phase (i.e. from the top of the mounded vessels). Hence releases from the vessels were modelled in the vapour phase only. The mounded nature of the LPG storage vessels also significantly reduces the credibility of a boiling liquid expanding vapour explosion (BLEVE).

4.2 Release Scenarios

Isolatable hydrocarbon inventories have been identified based on the location of isolation valves (e.g. closed valves and emergency shutdown valves) shown on piping and instrumentation diagrams (P&IDs). The release scenarios and the respective operating conditions considered in the QRA are given in Table 4-1. The highlighted sections in P&IDs are attached in Appendix 1.

Table 4-1: Release Scenarios and Operating Conditions

No.	Description	Pressure (barg)		Temp. ($^{\circ}\text{C}$)	Inventory
		LPG	Propane		
<i>Currently Operating Woolston LPG Depot</i>					
S01A	Aboveground pipeline section to SDV-0212A (LPG, during discharge)	28	28	12	230 m ³
S01B	Aboveground pipeline section to SDV-0212A (no discharge, resting on LPG)	38	38	12	230 m ³
S02A	LPG Scraper Receiver (LYT-V-0213)	28	28	12	230 m ³
S03A	LPG liquid ship unloading line from SDV-0212A to PCV-0216A	28	28	12	5 m ³
S03B	LPG liquid ship unloading line PCV-0216A to PCV-0217A	15	20	12	5 m ³



WOOLSTON LPG DEPOT
QUANTITATIVE RISK ASSESSMENT

No.	Description	Pressure (barg)		Temp. (°C)	Inventory
		LPG	Propane		
S03C	Rundown Header from PCV-0217A to SDVs on top of all LPG vessels	13	13	12	5 m ³
S04A	Liquid Loadout Header from SDV-0541C and SDV-0542C to SDVs on top of LPG Despatch Vessels (V-0501 to V-0505), British Oxygen Co and Rockgas, and Liquid Header from SDV-0501F to SDVs on top of LPG Storage Vessels (V-0506 to V-0510 and V-0516 to V-0520)	8	13	12	3 m ³
S05A	Liquid Header from SDV-0501F and SDV-0501G to road tanker SDVs (SDV-0541B and SDV-0542B)	8	13	12	2 m ³
S06A	Liquid Header from SDV-0501G to SDVs on top of LPG Storage Vessels (V-0511 to V-0515)	8	13	12	2 m ³
S07A	Loadout supply from SDV-0641A and SDV-0642A to Auxiliary Despatch Header and Auxiliary Storage Header	6.5	8.5	12	2 m ³
S07B	Loadout return to Compressor Suction Header (Loadout), to LPG Compressor Suction Vessels (V-0615 & V-0616) and SDV-0616A	3	6.5	12	2 m ³
S07C	Compressor Discharge Header (Loadout) from SDV-0616B to SDVs on top of the LPG Despatch Vessels	6.5	8.5	30	2 m ³
S07D	Liquid drainage from LPG Compressor Suction Vessel (V-0615 & V-0616) to Utility Header	3	8.5	12	2 m ³
S08A	Compressor Suction Header (Loadout) from SDV-0616A to LPG Loadout Compressors (K-0601/3/5/6) and LPG Auxiliary Compressor (K-0607)	3	6.5	12	2 m ³
S08B	Loadout Compressors (K-0601/3/5/6) and LPG Auxiliary Compressor (K-0607) discharge to Compressor Discharge Header (Loadout) to SDV-0616B	4	10.5	20	2 m ³
S09A	Auxiliary Despatch Header (Discharge) to SDV-0616C	6.5	8.5	12	2 m ³
S10A	Liquid loadout arm from SDV-0541A to SDV-0541B and SDV-0541C	6.5	8.5	12	2 m ³
S11A	Liquid loadout arm from SDV-0542A to SDV-0542B and SDV-0542C	6.5	8.5	12	2 m ³
S12A	Road loadout arm (vapour) (LA-0641) to SDV-0641A	3	6.5	20	2 m ³
S13A	Road loadout arm (liquid) (LA-0541) to SDV-0541A	6.5	8.5	20	2 m ³
S14A	Road loadout arm (vapour) (LA-0642) to SDV-0642A	3	6.5	20	2 m ³
S15A	Road loadout arm (liquid) (LA-0542) to SDV-0542A	6.5	8.5	20	2 m ³
S16A	LPG Despatch Vessel (V-0501)	3	8.5	12	100 tonne
S17A	LPG Despatch Vessel (V-0502)	3	8.5	12	100 tonne
S18A	LPG Despatch Vessel (V-0503)	3	8.5	12	100 tonne
S19A	LPG Despatch Vessel (V-0504)	3	8.5	12	100 tonne
S20A	LPG Despatch Vessel (V-0505)	3	8.5	12	100 tonne
S21A	LPG Storage Vessel (V-0506)	3	8.5	12	100 tonne
S22A	LPG Storage Vessel (V-0507)	3	8.5	12	100 tonne

No.	Description	Pressure (barg)		Temp. (°C)	Inventory
		LPG	Propane		
S23A	LPG Storage Vessel (V-0508)	3	8.5	12	100 tonne
S24A	LPG Storage Vessel (V-0509)	3	8.5	12	100 tonne
S25A	LPG Storage Vessel (V-0510)	3	8.5	12	100 tonne
S26A	LPG Storage Vessel (V-0516)	3	8.5	12	100 tonne
S27A	LPG Storage Vessel (V-0517)	3	8.5	12	100 tonne
S28A	LPG Storage Vessel (V-0518)	3	8.5	12	100 tonne
S29A	LPG Storage Vessel (V-0519)	3	8.5	12	100 tonne
S30A	LPG Storage Vessel (V-0520)	3	8.5	12	100 tonne
S31A	LPG Storage Vessel (V-0511)	3	8.5	12	100 tonne
S32A	LPG Storage Vessel (V-0512)	3	8.5	12	100 tonne
S33A	LPG Storage Vessel (V-0513)	3	8.5	12	100 tonne
S34A	LPG Storage Vessel (V-0514)	3	8.5	12	100 tonne
S35A	LPG Storage Vessel (V-0515)	3	8.5	12	100 tonne
Consented LPG Storage Upgrade					
S03C_MOD	Rundown Header from PCV-0217A to SDVs on top of all LPG vessels	13	13	12	5 m ³
S04A_MOD	Liquid Loadout Header from SDV-0541C and SDV-0542C to SDVs on top of LPG Despatch Vessels (V-0501 to V-0505), British Oxygen Co and Rockgas, and Liquid Header from SDV-0501F to SDVs on top of LPG Storage Vessels (V-0506 to V-0510 and V-0516 to V-0520)	8	13	12	3 m ³
S07A_MOD	Loadout supply from SDV-0641A and SDV-0642A to Auxiliary Despatch Header and Auxiliary Storage Header	6.5	8.5	12	2 m ³
S07B_MOD	Loadout return to Compressor Suction Header (Loadout), to LPG Compressor Suction Vessels (V-0615 & V-0616) and SDV-0616A	3	6.5	12	2 m ³
S07C_MOD	Compressor Discharge Header (Loadout) from SDV-0616B to SDVs on top of the LPG Despatch Vessels	6.5	8.5	30	2 m ³
S36A	LPG Despatch Vessel (V-0521)	3	8.5	12	500 tonne
S37A	LPG Despatch Vessel (V-0522)	3	8.5	12	500 tonne
S38A	LPG Despatch Vessel (V-0523)	3	8.5	12	500 tonne

In this study, it is assumed that the equipment and headers are always in use, i.e. always pressurised. The pressure within the process equipment and header might be lower when not in operation.

5. FREQUENCY ANALYSIS

Parts counts were completed for each QRA event (see Appendix 1) and the leak frequencies are given in the following sections. The most significant leak contributors are indicated in red. Parts counts were conducted based on the valve configurations as shown on the P&IDs, e.g. it is assumed that the pumps are not isolated when not in use, unless stated otherwise.

5.1 Currently Operating Woolston LPG Depot

The leak frequencies from each QRA events are given in Table 5-1 for the currently operating Woolston LPG depot only.

Table 5-1: Hydrocarbon Release Frequencies for the Currently Operating Woolston LPG Depot

No.	QRA Events	Leak Frequencies (per annum)					TOTAL	% Contri.
		1 - 3 mm	3 - 10 mm	10 - 50 mm	50 - 150 mm	> 150 mm		
1	S01A	2.69E-04	9.27E-05	4.00E-05	4.20E-06	3.42E-06	4.10E-04	0.1%
2	S01B	2.32E-03	7.98E-04	3.44E-04	3.61E-05	2.95E-05	3.53E-03	0.5%
3	S02A	8.98E-06	3.95E-06	1.90E-06	5.60E-07	2.50E-07	1.56E-05	0.0%
4	S03A	1.20E-02	4.63E-03	2.14E-03	3.31E-04	2.33E-04	1.93E-02	2.6%
5	S03B	3.37E-03	1.14E-03	4.66E-04	3.97E-05	6.79E-05	5.08E-03	0.7%
6	S03C	6.02E-02	2.00E-02	7.17E-03	1.69E-03	1.51E-03	9.06E-02	12.0%
7	S04A	3.47E-02	1.20E-02	4.62E-03	8.45E-04	1.43E-03	5.36E-02	7.1%
8	S05A	9.69E-03	3.67E-03	1.74E-03	1.72E-04	3.48E-04	1.56E-02	2.1%
9	S06A	9.64E-03	3.28E-03	1.26E-03	2.16E-04	3.75E-04	1.48E-02	2.0%
10	S07A	3.05E-02	1.10E-02	4.14E-03	1.26E-03	1.46E-03	4.84E-02	6.4%
11	S07B	2.48E-02	9.63E-03	4.39E-03	1.30E-03	2.04E-04	4.03E-02	5.4%
12	S07C	2.55E-02	1.03E-02	4.36E-03	2.24E-03	-	4.24E-02	5.6%
13	S07D	4.51E-02	1.58E-02	5.52E-03	2.58E-03	-	6.89E-02	9.2%
14	S08A	5.68E-03	2.31E-03	1.20E-03	1.74E-04	7.13E-05	9.44E-03	1.3%
15	S08B	9.17E-02	3.68E-02	1.51E-02	4.95E-03	6.85E-05	1.49E-01	19.8%
16	S09A	2.15E-03	7.59E-04	2.87E-04	1.45E-04	-	3.34E-03	0.4%
17	S10A	3.92E-03	1.25E-03	4.34E-04	1.40E-04	3.05E-06	5.75E-03	0.8%
18	S11A	3.92E-03	1.25E-03	4.34E-04	1.40E-04	3.05E-06	5.75E-03	0.8%
19	S12A	1.49E-03	6.84E-04	3.04E-04	5.09E-05	-	2.53E-03	0.3%
20	S13A	1.72E-03	8.97E-04	3.10E-04	6.94E-05	-	2.99E-03	0.4%
21	S14A	1.49E-03	6.84E-04	3.04E-04	5.09E-05	-	2.53E-03	0.3%
22	S15A	1.82E-03	9.33E-04	3.22E-04	7.25E-05	-	3.14E-03	0.4%
23	S16A	5.05E-03	1.87E-03	8.07E-04	2.06E-04	6.22E-06	7.94E-03	1.1%
24	S17A	5.05E-03	1.87E-03	8.07E-04	2.06E-04	6.22E-06	7.94E-03	1.1%
25	S18A	5.20E-03	1.94E-03	8.52E-04	1.96E-04	6.22E-06	8.20E-03	1.1%
26	S19A	5.28E-03	1.98E-03	8.61E-04	2.10E-04	6.22E-06	8.34E-03	1.1%
27	S20A	5.28E-03	1.98E-03	8.61E-04	2.10E-04	6.22E-06	8.34E-03	1.1%
28	S21A	5.28E-03	1.98E-03	8.61E-04	2.10E-04	6.22E-06	8.34E-03	1.1%

No.	QRA Events	Leak Frequencies (per annum)					TOTAL	% Contri.
		1 - 3 mm	3 - 10 mm	10 - 50 mm	50 - 150 mm	> 150 mm		
29	S22A	5.28E-03	1.98E-03	8.61E-04	2.10E-04	6.22E-06	8.34E-03	1.1%
30	S23A	5.28E-03	1.98E-03	8.61E-04	2.10E-04	6.22E-06	8.34E-03	1.1%
31	S24A	5.28E-03	1.98E-03	8.61E-04	2.10E-04	6.22E-06	8.34E-03	1.1%
32	S25A	5.28E-03	1.98E-03	8.61E-04	2.10E-04	6.22E-06	8.34E-03	1.1%
33	S26A	5.28E-03	1.98E-03	8.61E-04	2.10E-04	6.22E-06	8.34E-03	1.1%
34	S27A	5.28E-03	1.98E-03	8.61E-04	2.10E-04	6.22E-06	8.34E-03	1.1%
35	S28A	5.28E-03	1.98E-03	8.61E-04	2.10E-04	6.22E-06	8.34E-03	1.1%
36	S29A	5.28E-03	1.98E-03	8.61E-04	2.10E-04	6.22E-06	8.34E-03	1.1%
37	S30A	5.28E-03	1.98E-03	8.61E-04	2.10E-04	6.22E-06	8.34E-03	1.1%
38	S31A	5.28E-03	1.98E-03	8.61E-04	2.10E-04	6.22E-06	8.34E-03	1.1%
39	S32A	5.28E-03	1.98E-03	8.61E-04	2.10E-04	6.22E-06	8.34E-03	1.1%
40	S33A	5.06E-03	1.88E-03	8.22E-04	1.88E-04	6.22E-06	7.95E-03	1.1%
41	S34A	5.28E-03	1.98E-03	8.61E-04	2.10E-04	6.22E-06	8.34E-03	1.1%
42	S35A	5.28E-03	1.98E-03	8.61E-04	2.10E-04	6.22E-06	8.34E-03	1.1%
TOTAL		4.77E-01	1.77E-01	7.20E-02	2.07E-02	5.93E-03	7.53E-01	100%
		63%	24%	9.6%	2.7%	0.8%		

The total leak frequency is 0.75 per annum, or equivalent to one leak every 1.33 years. The leak contribution is predominantly from the 1 - 3 mm hole size, which contributes to 63% of the total leak frequency.

The sections with the highest leak frequencies are:

- S08B (19.8%) – the section covers the loadout compressors (K-0601/3/5/6) and LPG auxiliary compressor (K-0607). The high leak frequency is mainly contributed by compressors.
- S03C (12.0%) – the section covers rundown header connecting all the LPG vessels.
- S07D (9.2%) – the section covers utility header.
- S04A (7.1%) – the section covers the liquid loadout header.
- S07A (6.4%) – the section covers the auxiliary despatch header and auxiliary storage header.

The leak frequencies from these scenarios contribute to approximately 55% of the total leak frequency. The common reason for the high leak frequencies for all the above QRA scenarios is mainly contributed by the significant length of aboveground pipework and the numbers of associated equipment (e.g. valves and flanges).

5.2 Consented LPG Storage Upgrade

The consented LPG storage upgrade project increases the overall leak frequencies with the addition of three (3) LPG storage vessels and header extensions. Table 5-2 shows the revised leak frequencies for the header extension sections and the leak frequencies for the additional QRA events.

Table 5-2: Hydrocarbon Release Frequencies for the Consented LPG Storage Upgrade



WOOLSTON LPG DEPOT
QUANTITATIVE RISK ASSESSMENT

No.	QRA Events	Leak Frequencies (per annum)					TOTAL	% Contri.
		1 - 3 mm	3 - 10 mm	10 - 50 mm	50 - 150 mm	> 150 mm		
6	S03C_MOD ^{Note 1}	6.71E-02	2.22E-02	7.98E-03	1.91E-03	1.60E-03	1.01E-01	12.5%
7	S04A_MOD ^{Note 1}	4.10E-02	1.42E-02	5.43E-03	1.12E-03	1.53E-03	6.06E-02	7.5%
10	S07A_MOD ^{Note 1}	3.23E-02	1.16E-02	4.39E-03	1.35E-03	1.54E-03	4.97E-02	6.1%
11	S07B_MOD ^{Note 1}	2.77E-02	1.07E-02	4.90E-03	1.48E-03	2.04E-04	4.33E-02	5.4%
12	S07C_MOD ^{Note 1}	2.91E-02	1.15E-02	4.77E-03	2.49E-03	-	4.79E-02	5.9%
43	S36A	5.02E-03	1.89E-03	7.77E-04	2.80E-04	1.24E-05	7.98E-03	1.0%
44	S37A	5.02E-03	1.89E-03	7.77E-04	2.80E-04	1.24E-05	7.98E-03	1.0%
45	S38A	5.02E-03	1.89E-03	7.77E-04	2.80E-04	1.24E-05	7.98E-03	1.0%
TOTAL ^{Note 2}		5.13E-01	1.90E-01	7.71E-02	2.25E-02	6.23E-03	8.09E-01	
		63%	23%	10%	3%	0.8%		

Note 1: Leak frequencies from these sections have been revised to include the header extensions.

Note 2: inclusive of the total leak frequencies from the currently operating Woolston LPG depot.

The total leak frequency increases to 0.81 per annum, or equivalent to one leak every 1.24 years. The leak contribution is still predominantly from the 1 - 3 mm hole size, which contributes to 63% of the total leak frequency.

6. RISK ANALYSIS

6.1 Risk Criteria

LSIR is the risk of fatality at a point in space to a hypothetical individual at that location for 365 days per year, 24 hours a day. As there is no standard risk criteria which have been developed for the New Zealand context, this deliverable is assessed against the suggested risk criteria in the New South Wales Hazardous Industry Planning Advisory Paper No. 4 (HIPAP4) "Risk Criteria for Land Use Planning" [Ref. 7]. Table 6-1 summarises the HIPAP4 Individual Fatality Risk criteria and provides an interpretation for the risk assessment.

Table 6-1: Location Specific Individual Fatality Risk Criteria

Land Use	Risk Criteria Adopted (per annum)	Interpretation for QRA
Industrial	5E-05 (1 in 20,000)	5E-05 risk contour should, as a target, be contained within the boundaries of the industrial site where applicable.
Sporting complexes and active open space	1E-05 (1 in 100,000)	1E-05 risk contour should not extend to these areas.
Commercial developments including retail centres, offices and entertainment centres	5E-06 (1 in 200,000)	5E-06 risk contour should not extend to these areas.
Residential, hotels, motels, tourist resorts	1E-06 (1 in 1 million)	1E-06 risk contour should not extend to these areas.
Hospitals, schools, childcare facilities, old age housing	5E-07 (1 in 2 million)	5E-07 risk contour should not extend to these areas.

6.2 Risk Assessment Results

6.2.1 Currently Operating Woolston LPG Depot

The overall LSIR in the form of the risk contour for the currently operating Woolston LPG depot is presented in Figure 6-1.

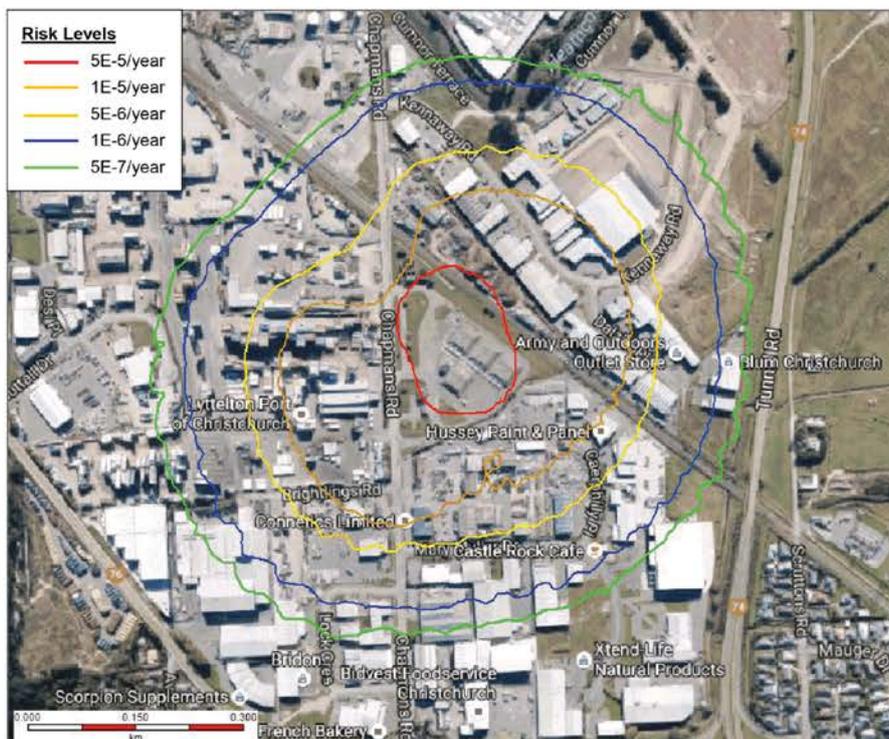


Figure 6-1: Risk Contour for the Currently Operating Woolston LPG Depot

The LSIR results as assessed against the HIPAP4 criteria are given in Table 6-2.

Table 6-2: LSIR Results as compared to HIPAP4 Land Use Criteria

LSIR	Risk Contour	HIPAP4 Land Use Criteria	Result
5E-05 / year	Red	5E-05 / year risk contour should, as a target, be contained within the boundaries of the industrial site where applicable.	The 5E-05 / year risk contour extends beyond the site boundary at the North East direction on to the railway line and the recycling centre.
1E-05 / year	Orange	1E-05 / year risk contour should not extend to sporting complexes and active open space	No impact. There are no sporting complexes and active open space within the proximity. However, the 1E-05 / year risk contour is impacting on of the Chapmans Road on the western side.



LSIR	Risk Contour	HIPAP4 Land Use Criteria	Result
5E-06 / year	Yellow	5E-06 / year risk contour should not extend to commercial developments including retail centres, offices and entertainment centres	<p>The 5E-06 / year risk contour extends beyond the site boundary onto a few neighbouring facilities offices, including the Contact Energy Regional Office to the east, the Lyttelton Port of Christchurch offices to the west, and various commercial premises across the railway line to the north and north east. However, the area is zoned "industrial" as per the Christchurch District Plan.</p> <p>HIPAP4 [Ref. 7] states that a higher level of risk is generally considered acceptable in industrial areas (HIPAP4, p.8) in comparison to commercial land use areas. In the context of the report this is mentioned to differentiate between offices located in a 'commercial' area/zone and offices in an 'industrial' zone (where a higher level of risk acceptance may be appropriate).</p>
1E-06 / year	Blue	1E-06 / year risk contour should not extend to residential, hotels, motels, tourist resorts	<p>No impact.</p> <p>There are no residential, hotels, motels or tourist resorts within the proximity.</p>
5E-07 / year	Green	5E-07 / year risk contour should not extend to hospitals, schools, childcare facilities, old age housing	<p>No impact.</p> <p>There are no hospitals, schools, childcare facilities or old age housing within the proximity.</p>

Specific Fire Scenario Risk Contribution

The risks contributed by different consequence scenarios are also presented separately. Figure 6-2 shows the risk contributed by jet fires only. The jet fire risk is high at the centre of the depot.

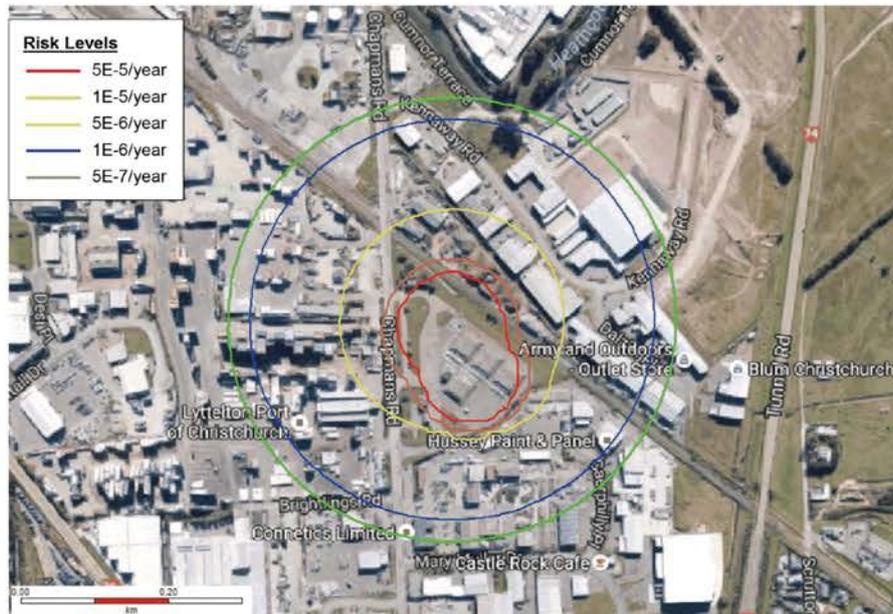


Figure 6-2: LSIR Contributed by Jet Fire Risk only

The jet fire risk is likely to be conservative as it is assumed that the equipment and headers are always in use, i.e. pressurised. The pressure within the process equipment and header might be lower when not in operation hence the extent of the jet fire would be less.

Figure 6-3 shows the risk contributed by flash fires only. The shape of the flash fire contours is particularly influenced by wind direction. The flash fire risk is lower at the plant but extends further offsite as the spread of flammable vapour cloud cannot be constrained.

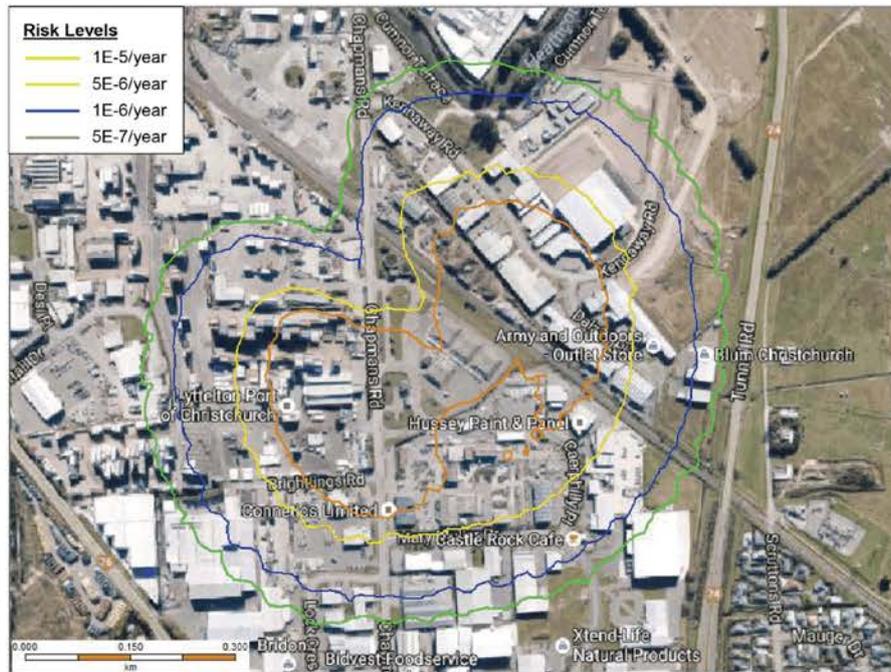


Figure 6-3: LSIR Contributed by Flash Fire Risk only

There is also risk contributed by pool fire events. The pool fire risk is shown in Figure 6-4. The risk is low and only localised at the depot. These are contributed by large LPG releases where the release rates are higher than the LPG flashing / evaporation rates. However, the size of the pool is small and evaporates rapidly.

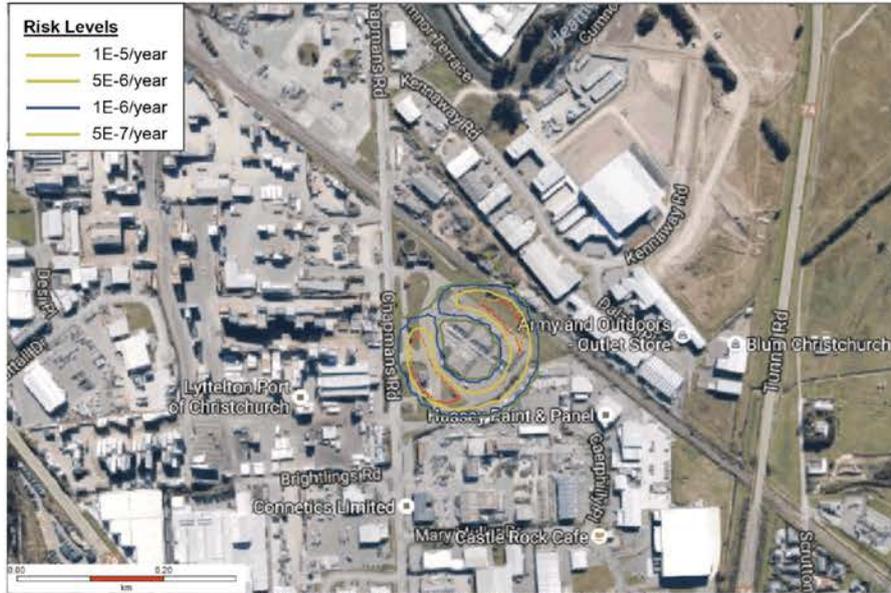


Figure 6-4: LSIR Contained by Pool Fire Risk only

The breakdown of fire events show that the onsite risk is mainly contributed by jet fires, and the far-field offsite risk is mainly contributed by flash fires.

Risk Contributors Analysis

Risk ranking points can be located on the model, which are used to identify the risk contributors at various locations. For this model, the risk contributors at three locations are identified. The risk contributor analysis shows that:

- North east side (railway line) - The near-field offsite risk is contributed by fireball events due to large releases (100 mm and 150 mm hole sizes) and immediate ignition from S03A event (onsite ship unloading line). The fireballs are short duration events; however, these would cause immediate fatality to nearby personnel.
- West side (Chapmans Road) - The offsite risk is contributed by the flash fires from the rundown header and the utility header.
- South side (Contact LPG) - The offsite risk is contributed by the jet fire from S01B (aboveground pipeline section) and the flash fire event from the rundown header.

6.2.2 Consented LPG Storage Upgrade

The cumulative LSIR in the form of the risk contour for the currently operating Woolston LPG depot and the consented LPG storage upgrade is presented in Figure 6-5.

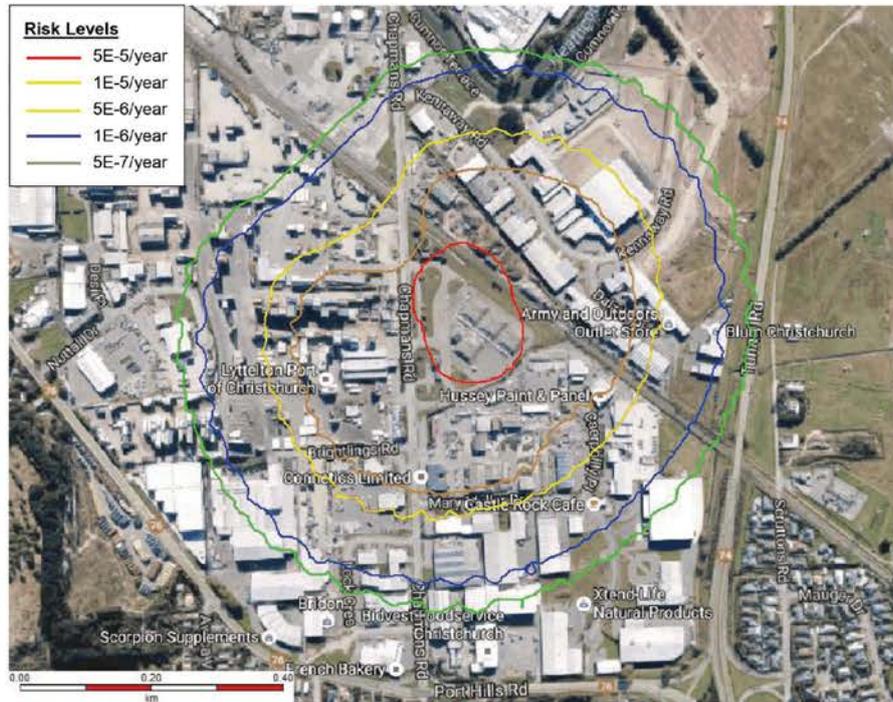


Figure 6-5: Cumulative Risk Contour for the Currently Operating Woolston LPG Depot and the Consented LPG Storage Upgrade

There is only negligible incremental risk due to the consented LPG storage upgrade. The LSIR assessment against the HIPAP4 criteria is the same as per given in Table 6-2 for the currently operating Woolston LPG depot, hence it is not repeated here.

7. SENSITIVITY ANALYSIS

Sensitivity analyses have been conducted for the currently operating Woolston LPG depot base case to study the impact of various modelling assumptions on the base case.

7.1 Sensitivity Analysis 1: Ignition Probabilities

In the base case, the ignition probability correlation from the Oil and Gas UK for "tank gas LPG storage industrial" was used. As sensitivity analyses, two other different ignition probability correlations were used, which include:

- Large plant gas LPG (gas or LPG release from large onshore plant).
- The conventional Cox, Lees and Ang ignition probability correlations for gas and liquid releases.

The ignition probabilities as a function of mass release rates for the different correlations are shown in Figure 7-1 for comparison purposes.

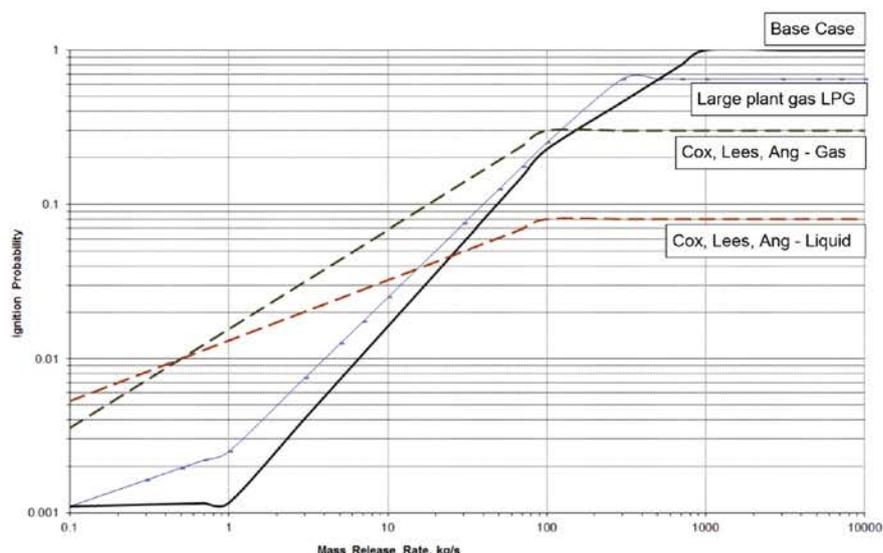


Figure 7-1: Different Ignition Probabilities Correlations

7.1.2 Cox, Lees and Ang

The Cox, Lees and Ang ignition probabilities were widely used prior to the introduction of the Oil and Gas UK ignition probability correlations. The Cox, Lees and Ang ignition probabilities was also used in the previous Woolston LPG depot QRA for the resource consent. The risk contour for the sensitivity analysis using the Cox, Lees and Ang ignition probabilities is shown in Figure 7-3.

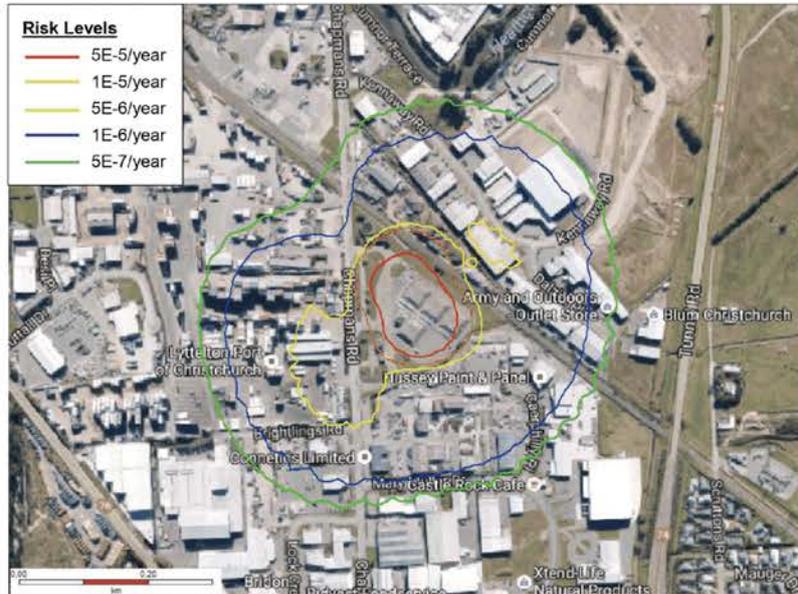


Figure 7-3: Risk Contour for using the Cox, Lees and Ang Ignition Probabilities

The risk contour for the sensitivity analysis is significantly smaller compared to the base case as the maximum ignition probabilities are significantly lower for the Cox, Lees and Ang ignition probabilities. However, as the Oil and Gas UK correlations also takes into account the types of plant, material of release, ignition source densities, offsite area, etc., it is considered a more appropriate means to assign ignition probabilities than the more generic approaches such as that proposed by Cox, Lees and Ang.

7.2 Sensitivity Analysis 2: Uniform Wind Profile

The Phast Risk model applies Power Law to the wind profile as the default, where the wind speed varies with height according to a power-law profile. The windspeed reference height, which is the datum-point for setting the profile as function of height, was set at 10 m above ground. The wind speed near the ground level is generally lower than the wind speed at the datum height. As a sensitivity analysis, a uniform wind profile was used, where Phast Risk used the same wind speed at all heights. The risk contour is shown in Figure 7-4.

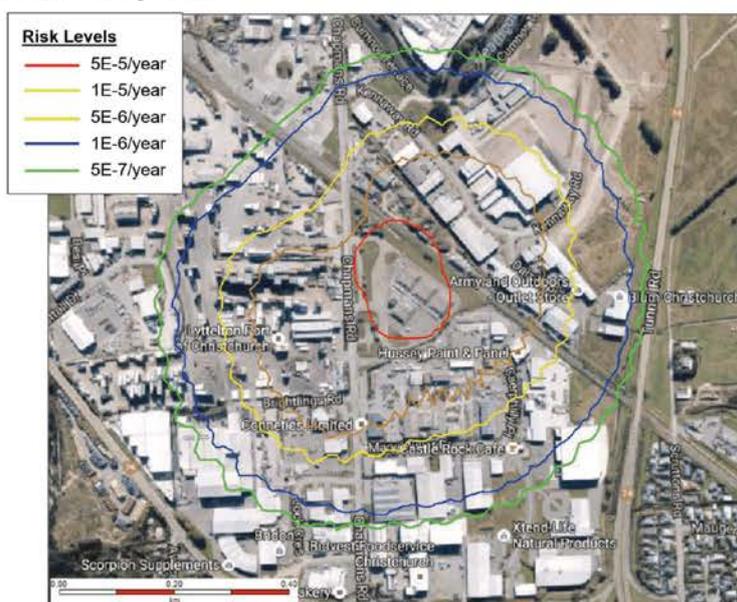


Figure 7-4: Risk Contour under the Uniform Wind Profile

The risk contour is similar to the base case with negligible risk increment. This shows that the wind speed changes with height do not have significant impact on the risk results.

7.3 Sensitivity Analysis 3: Representative Hole Sizes

The release hole sizes modelled in the QRA are discussed in Section 3.4. The ranges of release hole sizes were grouped and representative sizes were selected for each hole size range. In the base case, the median of each range were used. For the sensitivity analysis, different representative hole sizes that are also commonly used in QRA studies were considered. The hole sizes are as given in Table 7-1.

Table 7-1: Hole Size Distribution

Hole Size Group (mm)	Representative Hole Size (mm)	
	Base Case	Sensitivity
1 - 3	2	2
3 - 10	7	6
10 - 50	30	22
50 - 150	100	85
> 150	150	150

The risk contour is given in Figure 7-5.

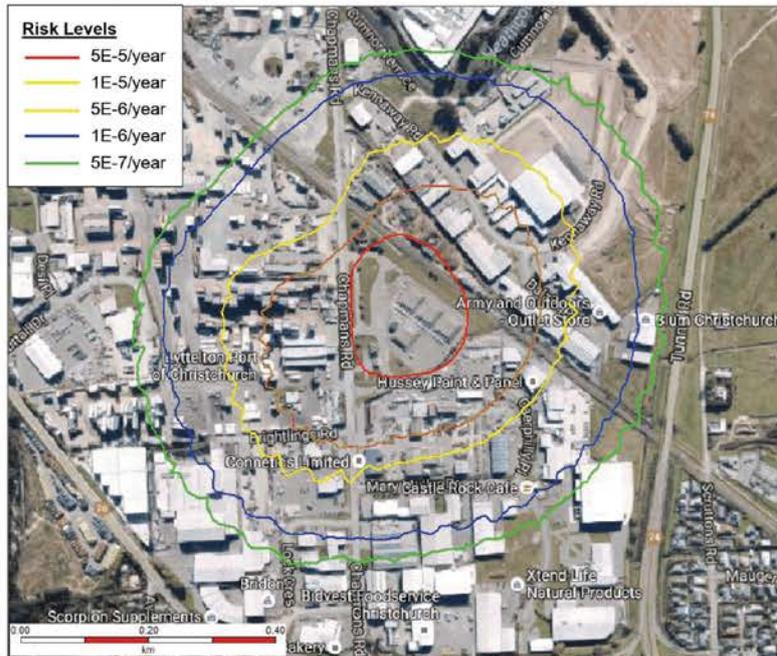


Figure 7-5: Risk Contour for the Reduced Release Hole Sizes

The change in the release hole sizes have mixed impact on the risk levels, where the highest risk level (5E-05 / year) has extended further offsite but the 1E-05 / year risk and 5E-06 / year risk levels distances have reduced. There are negligible differences for the lower risk levels (1E-06 / year and 5E-07 / year).



8. CONCLUSIONS

A QRA has been conducted for the Liquigas Woolston LPG depot, which covers the currently operating Woolston LPG depot and the consented LPG storage upgrade. The key deliverable of the QRA is the individual fatality risk contours. The risk results as assessed against the HIPAP4 criteria. The results show that:

- The 5E-05 / year risk contour extends beyond the site boundary at the North East direction on to the railway line and the recycling centre.
- The 1E-05 / year risk contour is impacting on the Chapmans Road on the western side.
- The 5E-06 / year risk contour extends beyond the site boundary onto a few neighbouring facilities offices, including the Contact Energy Regional Office to the east, the Lyttelton Port of Christchurch offices to the west, and various commercial premises across the railway line to the north and north east. However, the area is zoned "industrial" as per the Christchurch District Plan.

HIPAP4 [Ref. 7] states that a higher level of risk is generally considered acceptable in industrial areas in comparison to commercial land use areas. In the context of the report this is mentioned to differentiate between offices located in a 'commercial' area/zone and offices in an 'industrial' zone (where a higher level of risk acceptance may be appropriate).

- Near-field risks are mainly contributed by jet fires, whereas far-field risks are mainly contributed by flash fires.

The consented LPG storage upgrade only generated negligible incremental risk. The LSIR assessment against the HIPAP4 criteria is the same as for the currently operating Woolston LPG depot.

Sensitivity analyses have been conducted for the following aspects of the QRA modelling, including:

- Different ignition probabilities – the QRA model were repeated by using (1) the "large plant gas LPG" ignition probability correlation; (2) Cox, Lees and Ang ignition probability. The results found that the risk contours generated by using the Cox, Lees and Ang ignition probability is significantly lower than the base case.
- Uniform wind profile – Phast Risk software generally applies Power Law to the wind profile where the wind speed is lower when nearer to the ground level. A sensitivity analysis was performed by applying uniform wind profile. The risk contour is similar to the base case with negligible risk increment. This shows that the wind speed changes with height do not have significant impact on the risk results.
- Different representative hole sizes – the QRA were repeated by using a different representative hole sizes that are also commonly used in QRA studies were considered. The result shows mixed impact on the risk levels, where the highest risk level (5E-05 / year) has extended further offsite but the 1E-05 / year risk and 5E-06 / year risk levels distances have reduced. There are negligible differences for the lower risk levels (1E-06 / year and 5E-07 / year).



9. REFERENCES

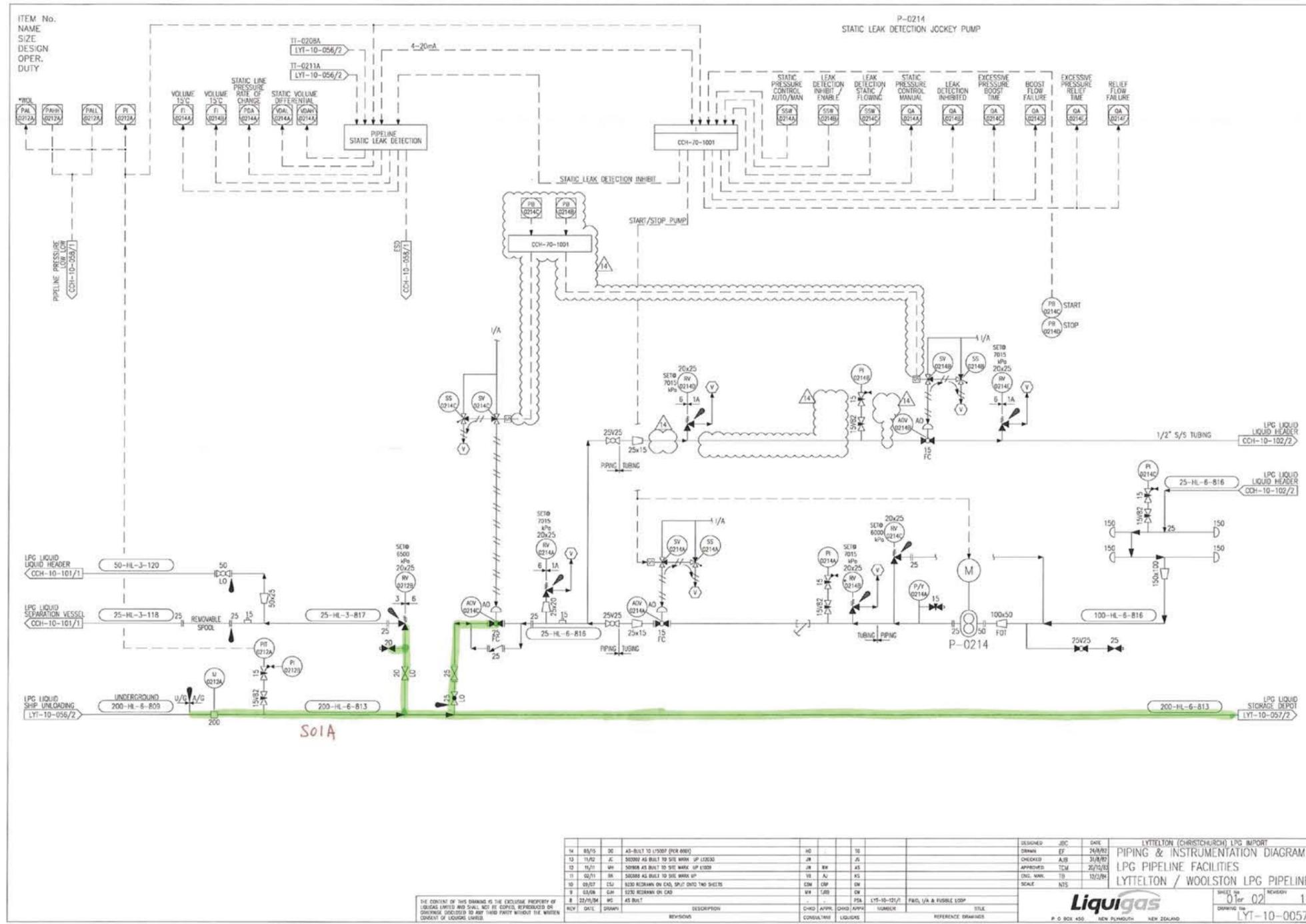
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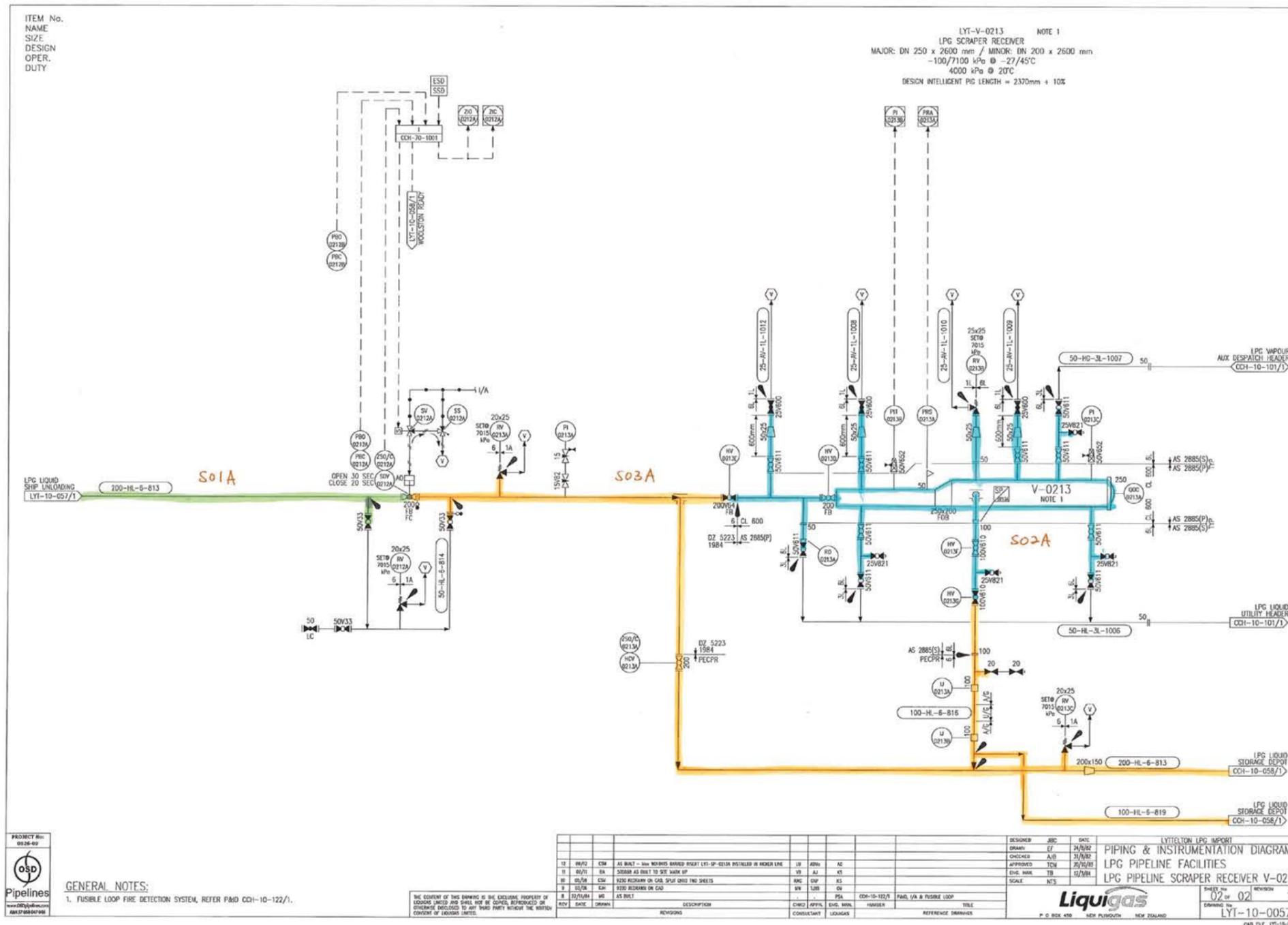
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Parts Count P&IDs

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May 2018

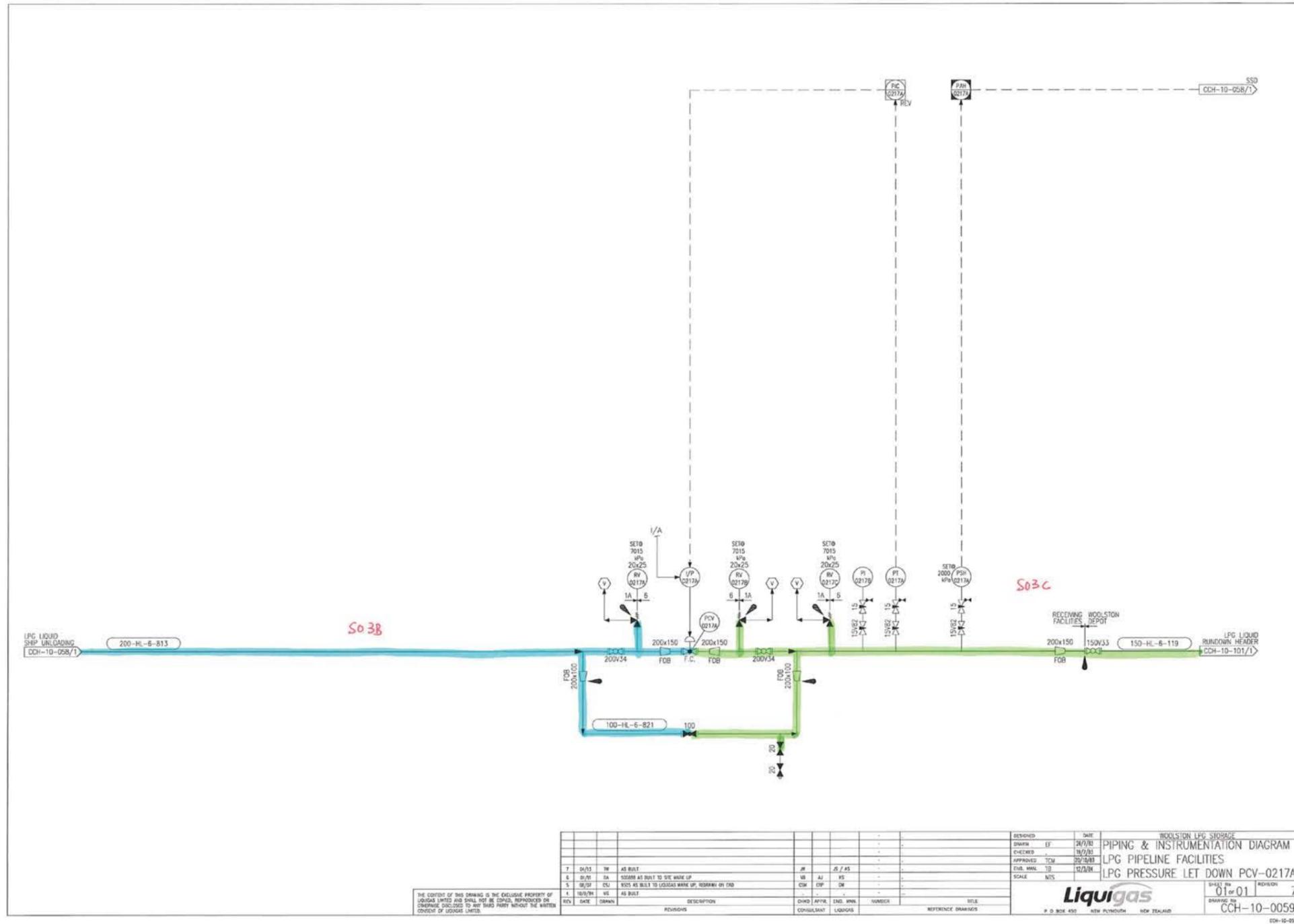
Appendix



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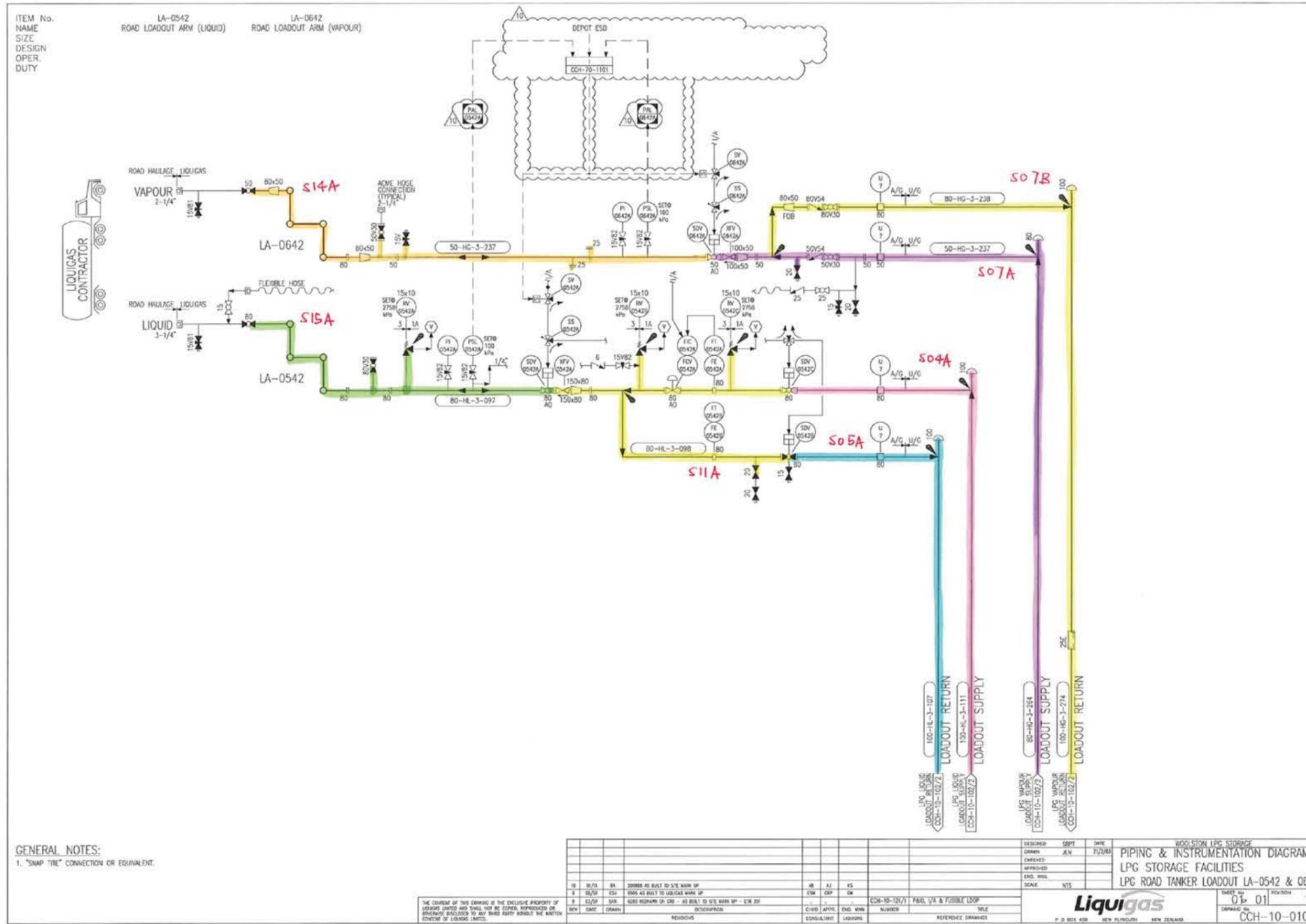


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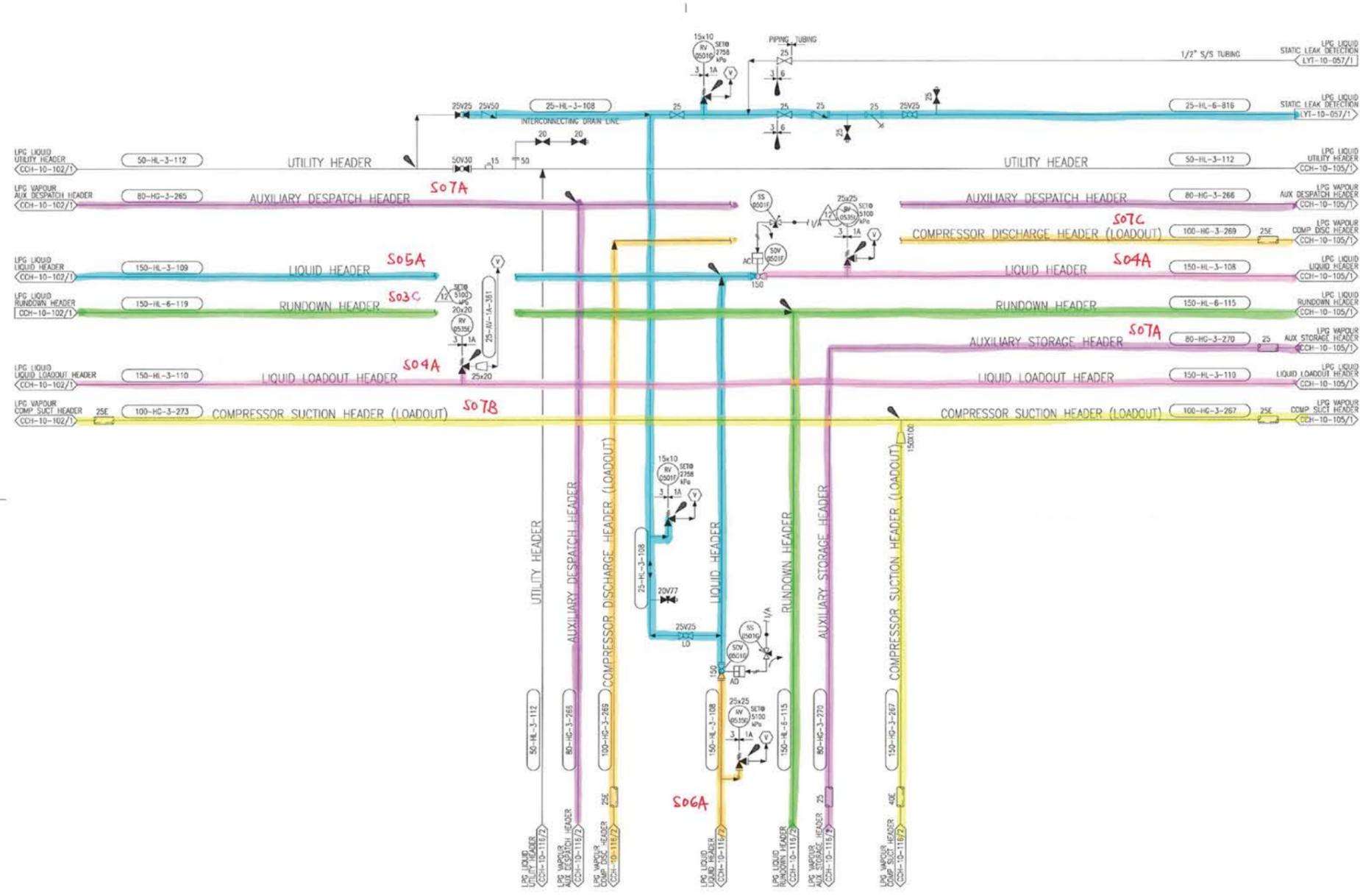


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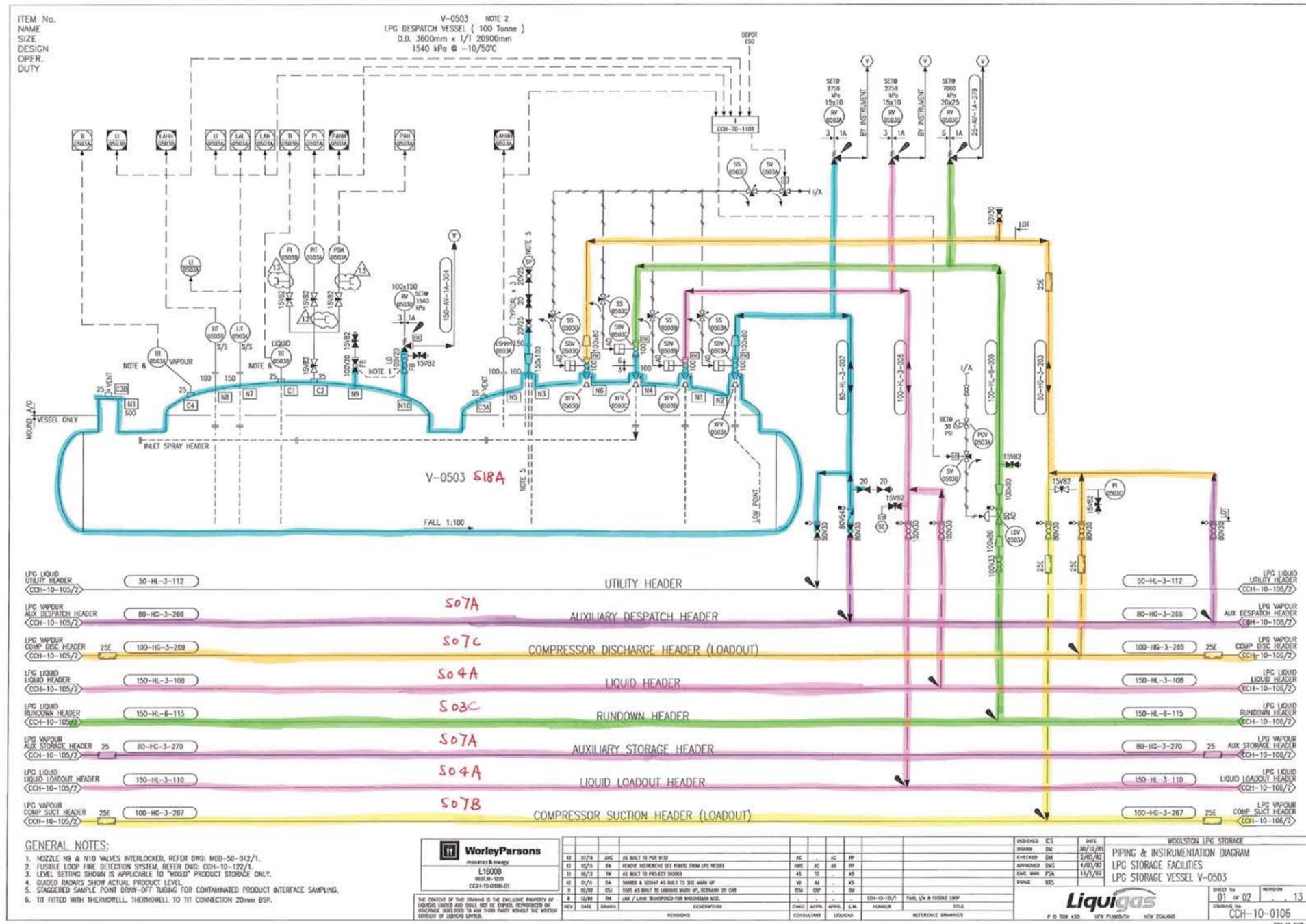
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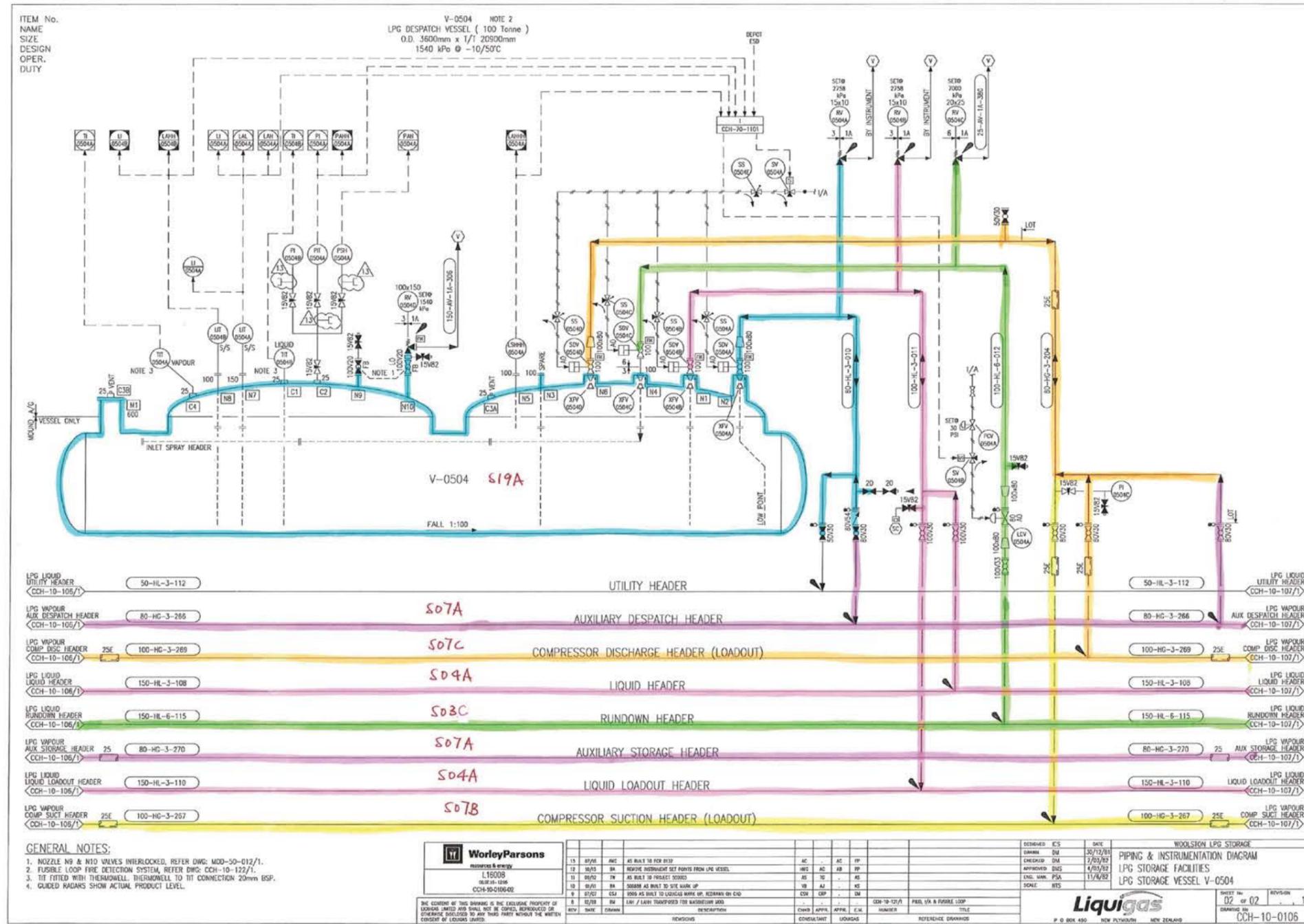
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12	08/01	ON		LIQUID HEADER VALVES ADDED	ON	DN			CCH-10-10/1	PIG, VA & PURGE LOOP
13		BY	PROJ		CHD	APPR	CHD	APPR		
This drawing is confidential and is the property of LIQUIGAS LIMITED. It must not be disclosed to any third party or left without written consent from LIQUIGAS LIMITED.										

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CHECKED	EM	DATE	17/02/18
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APPROVED	PSA	DATE	11/08/18
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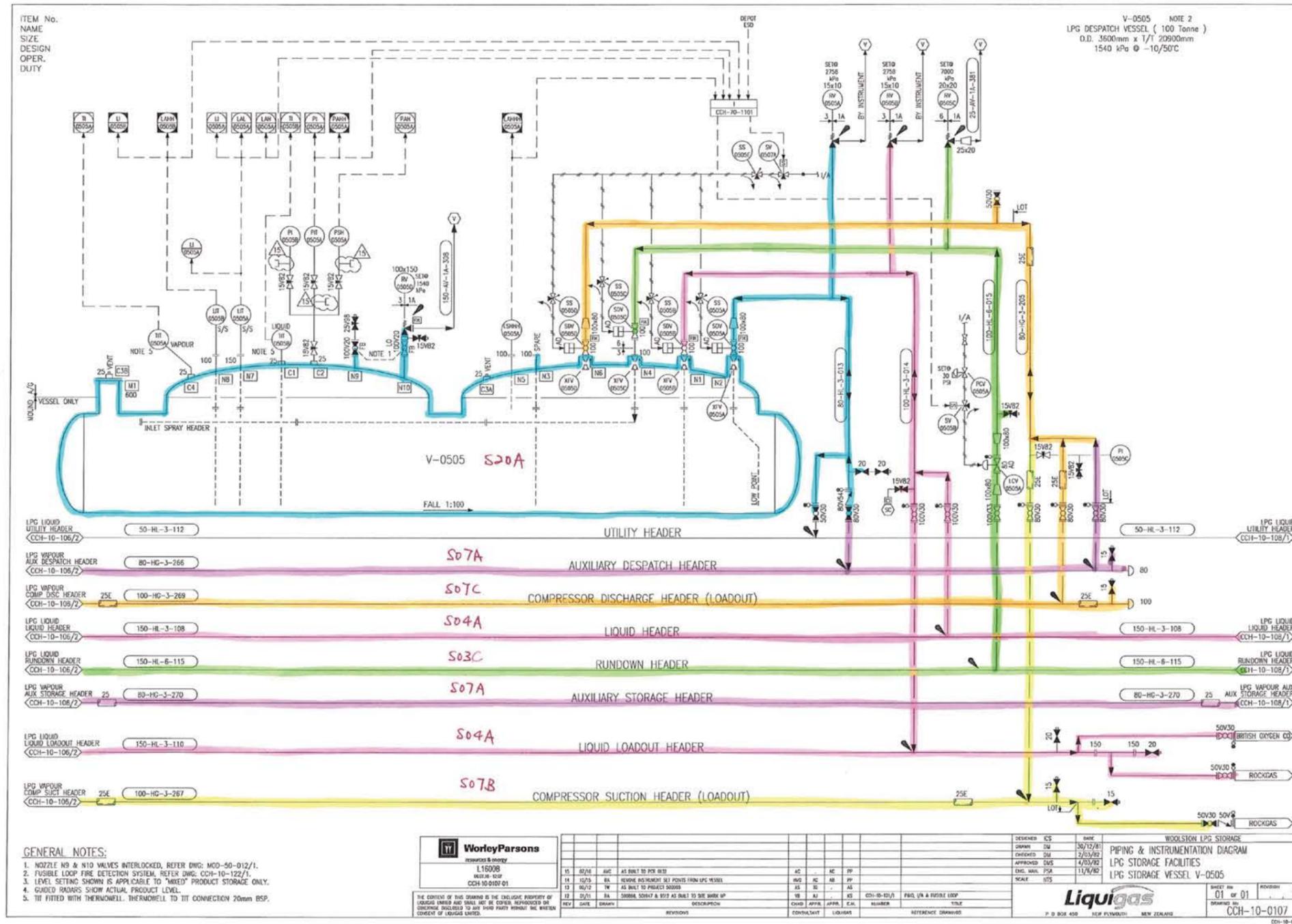
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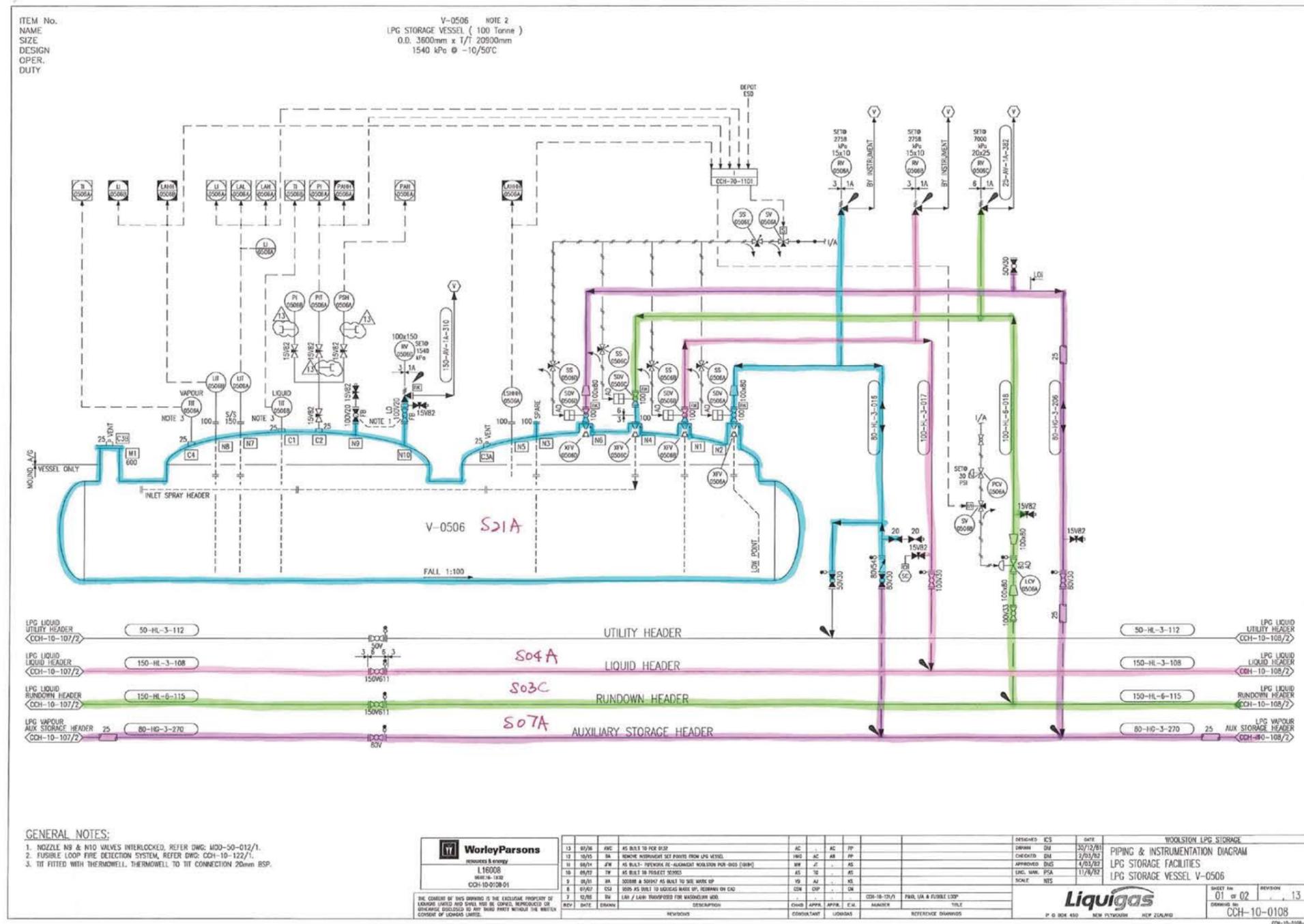
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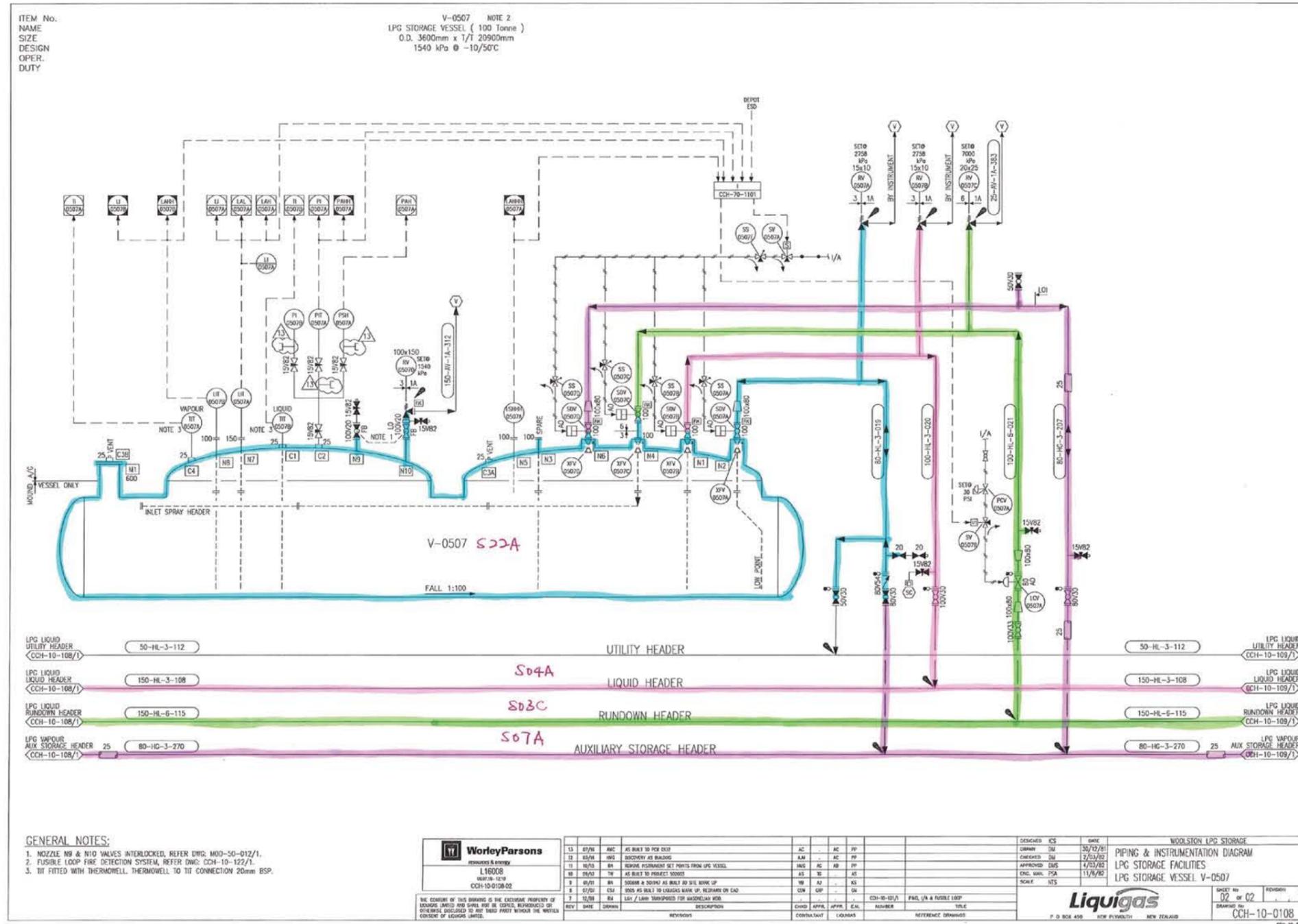
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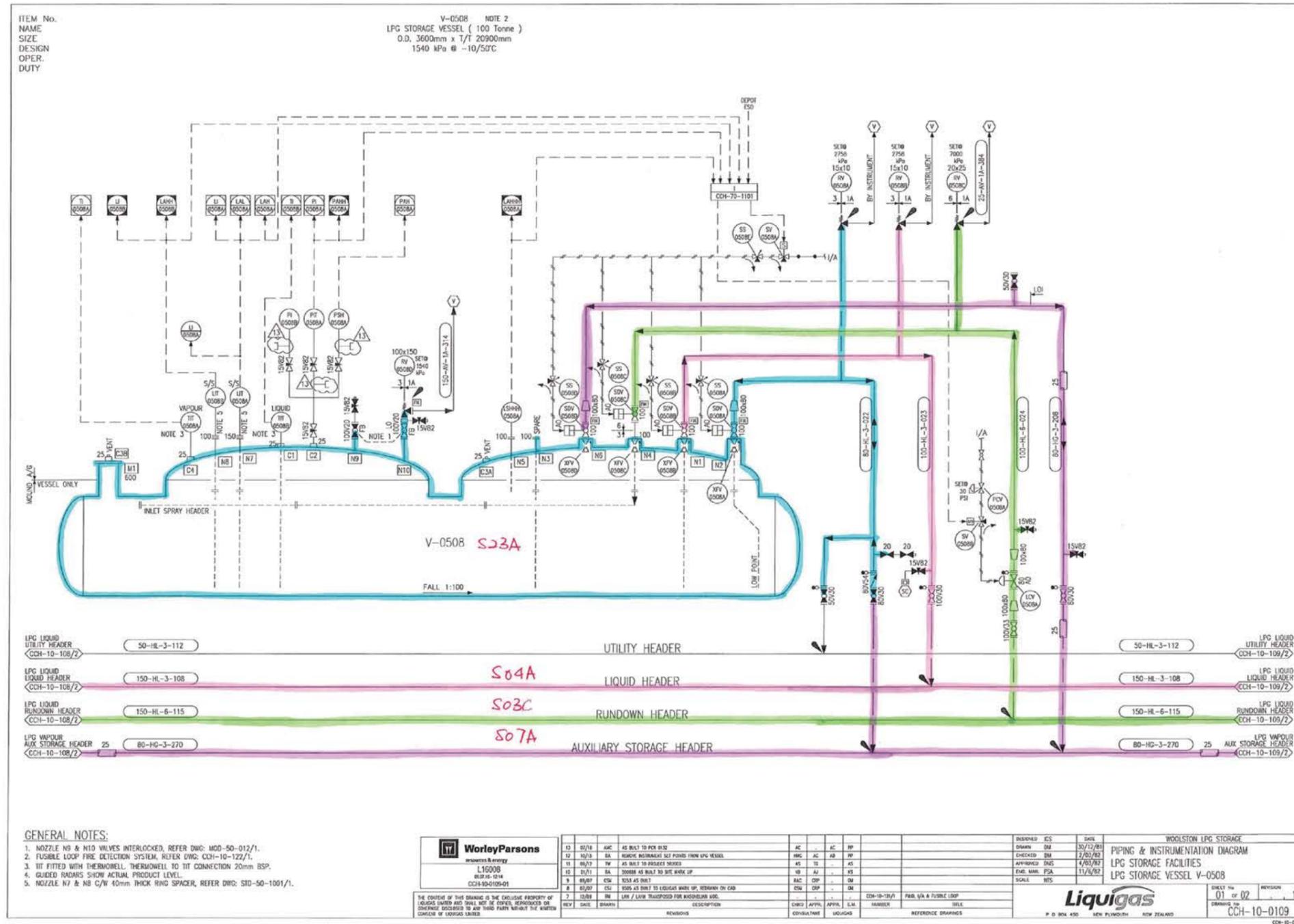
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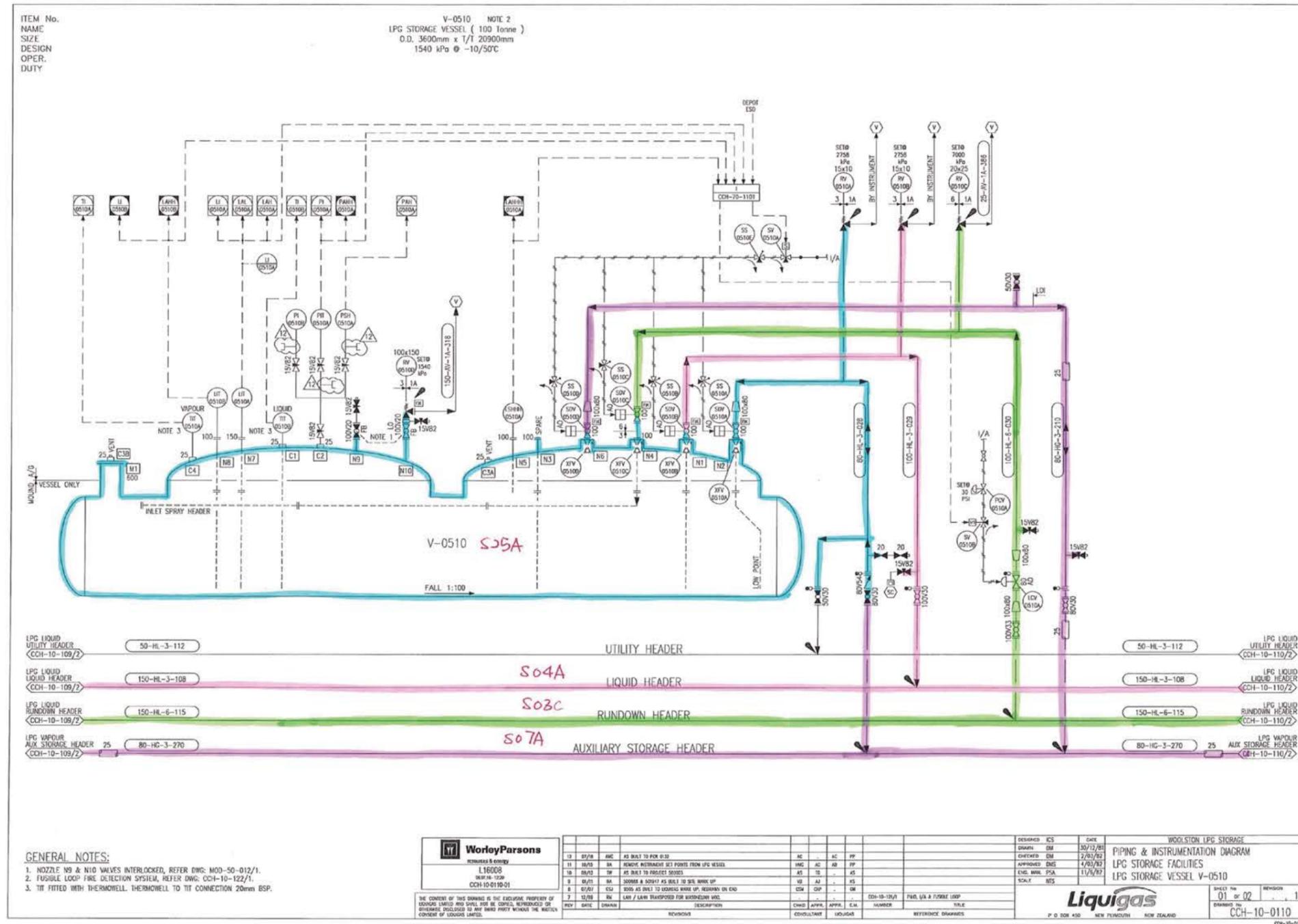
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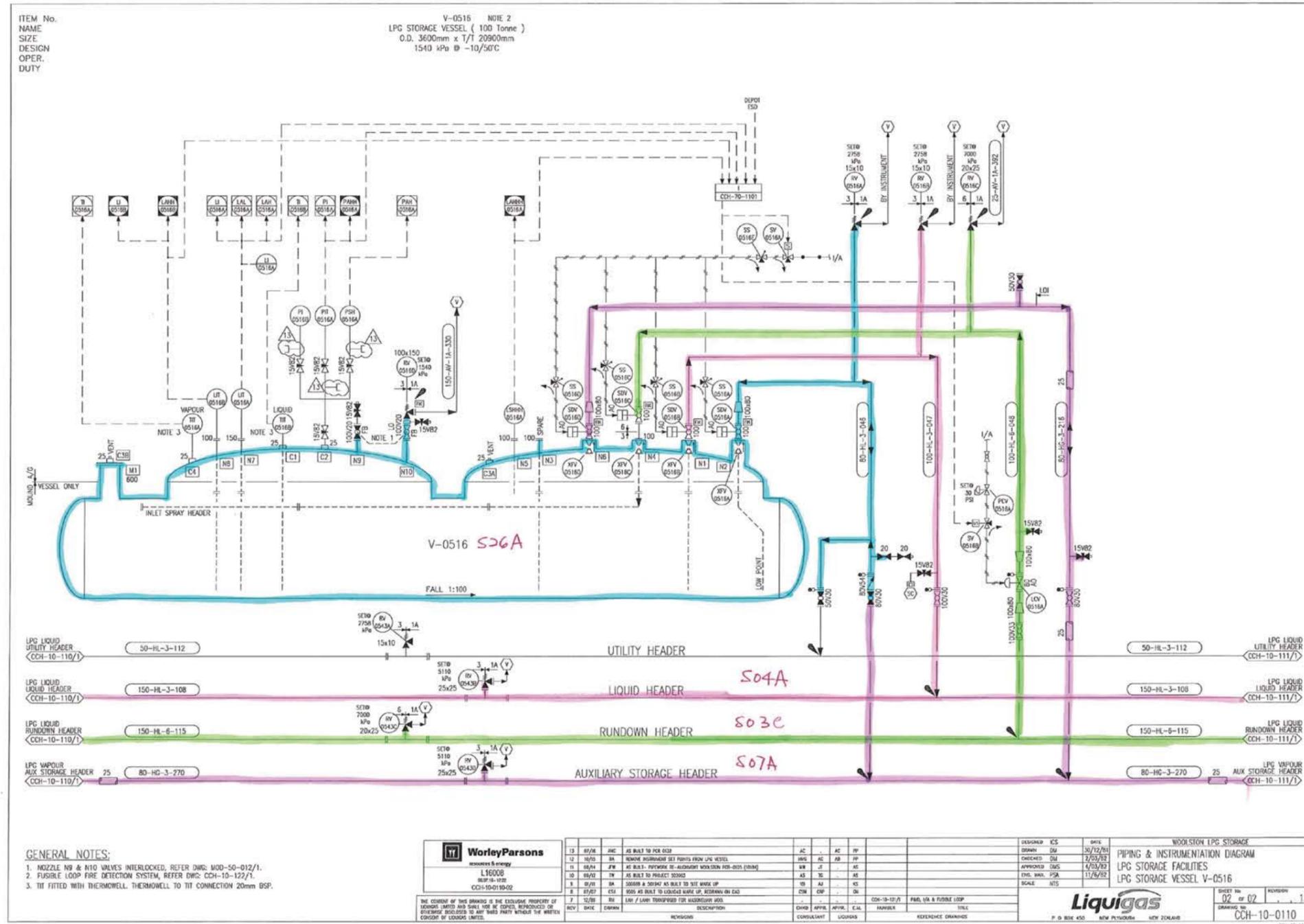
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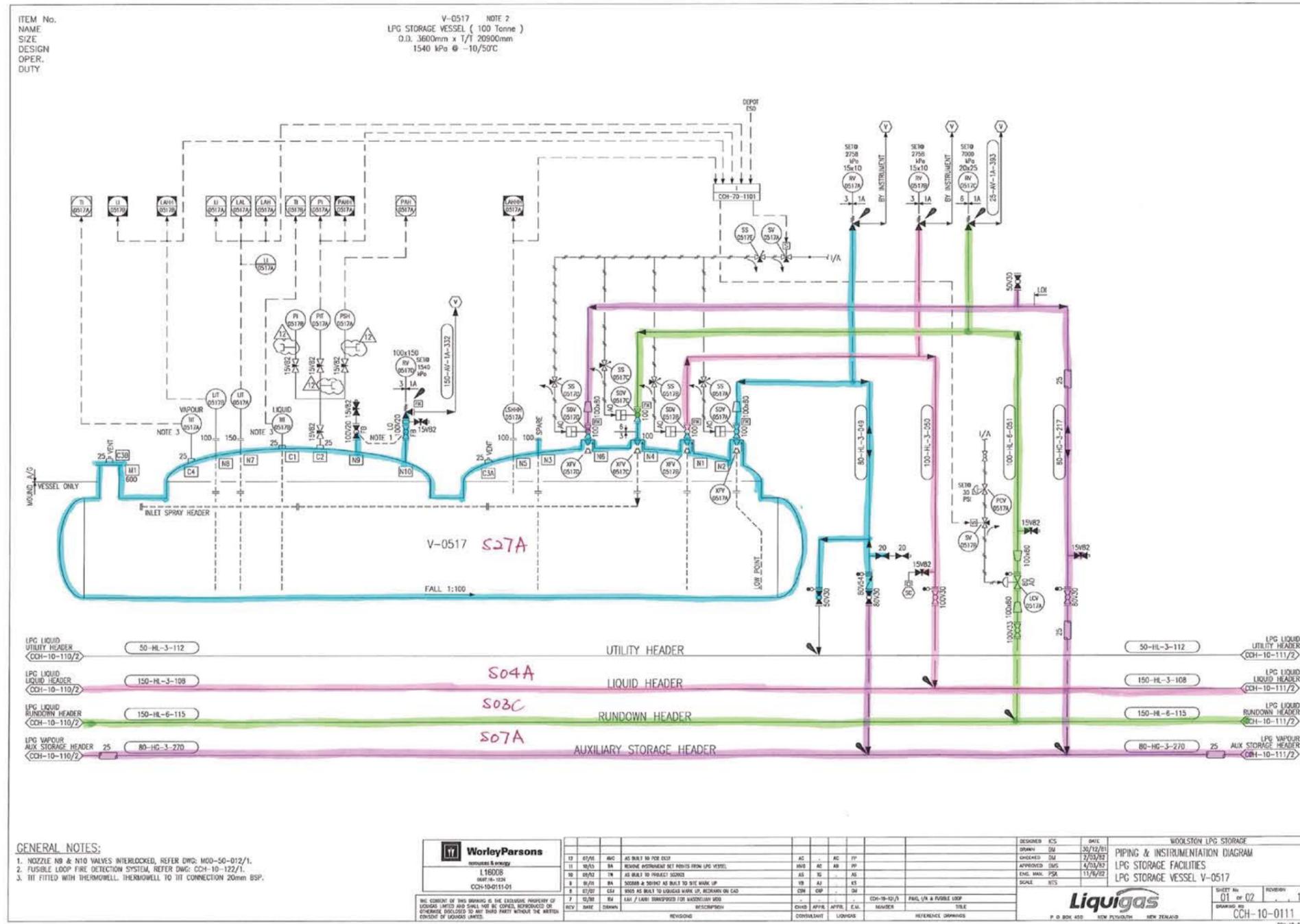
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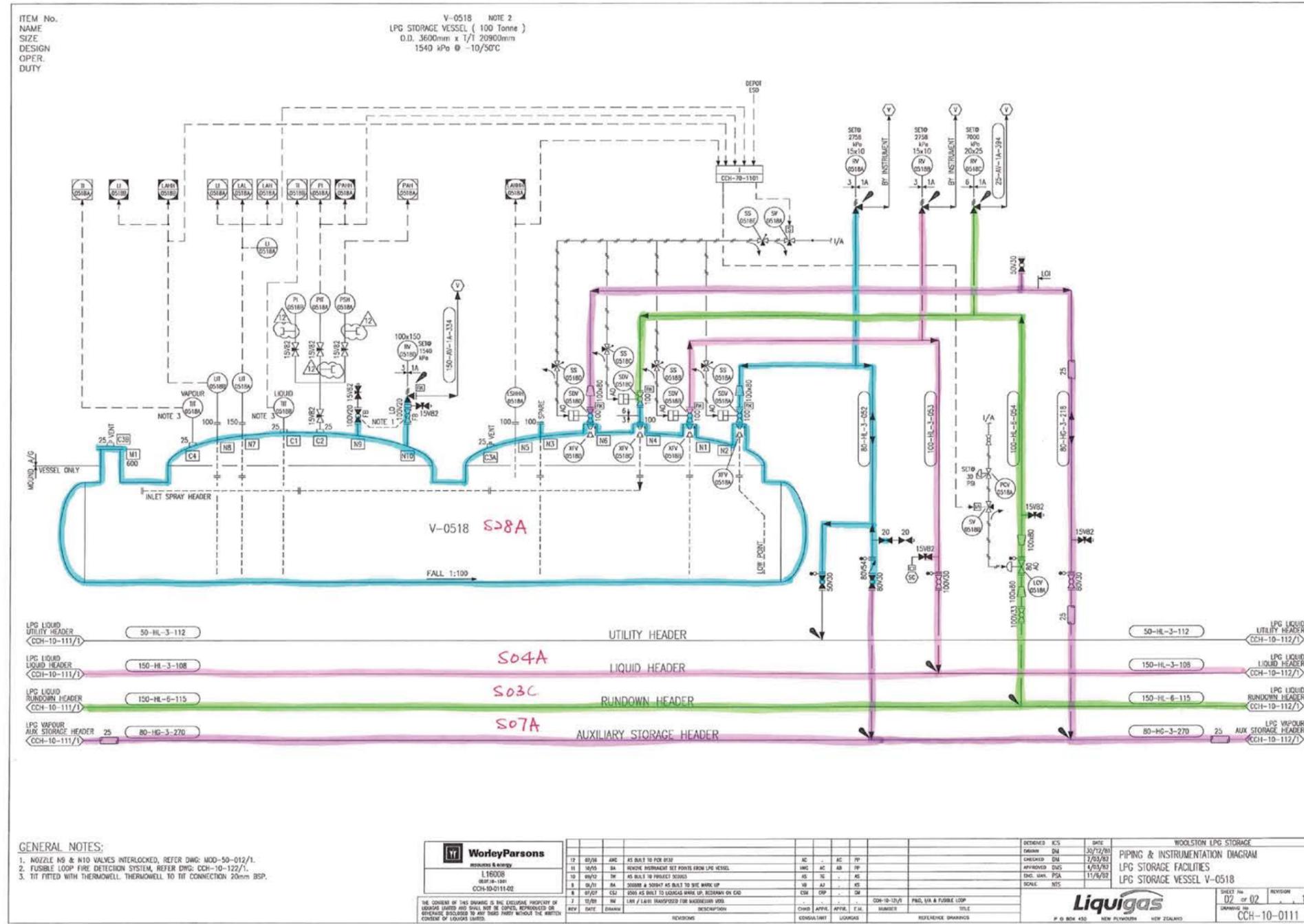
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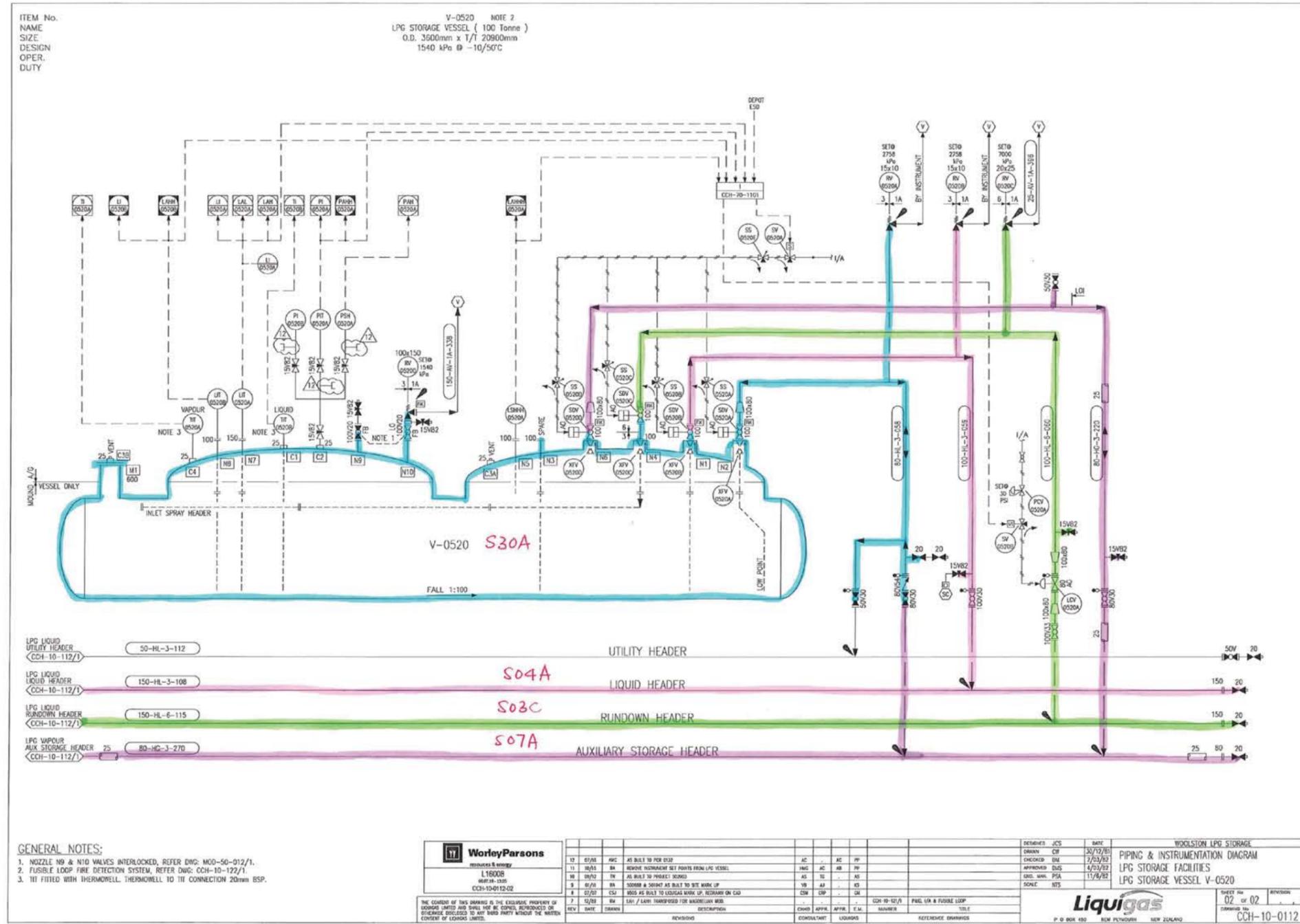
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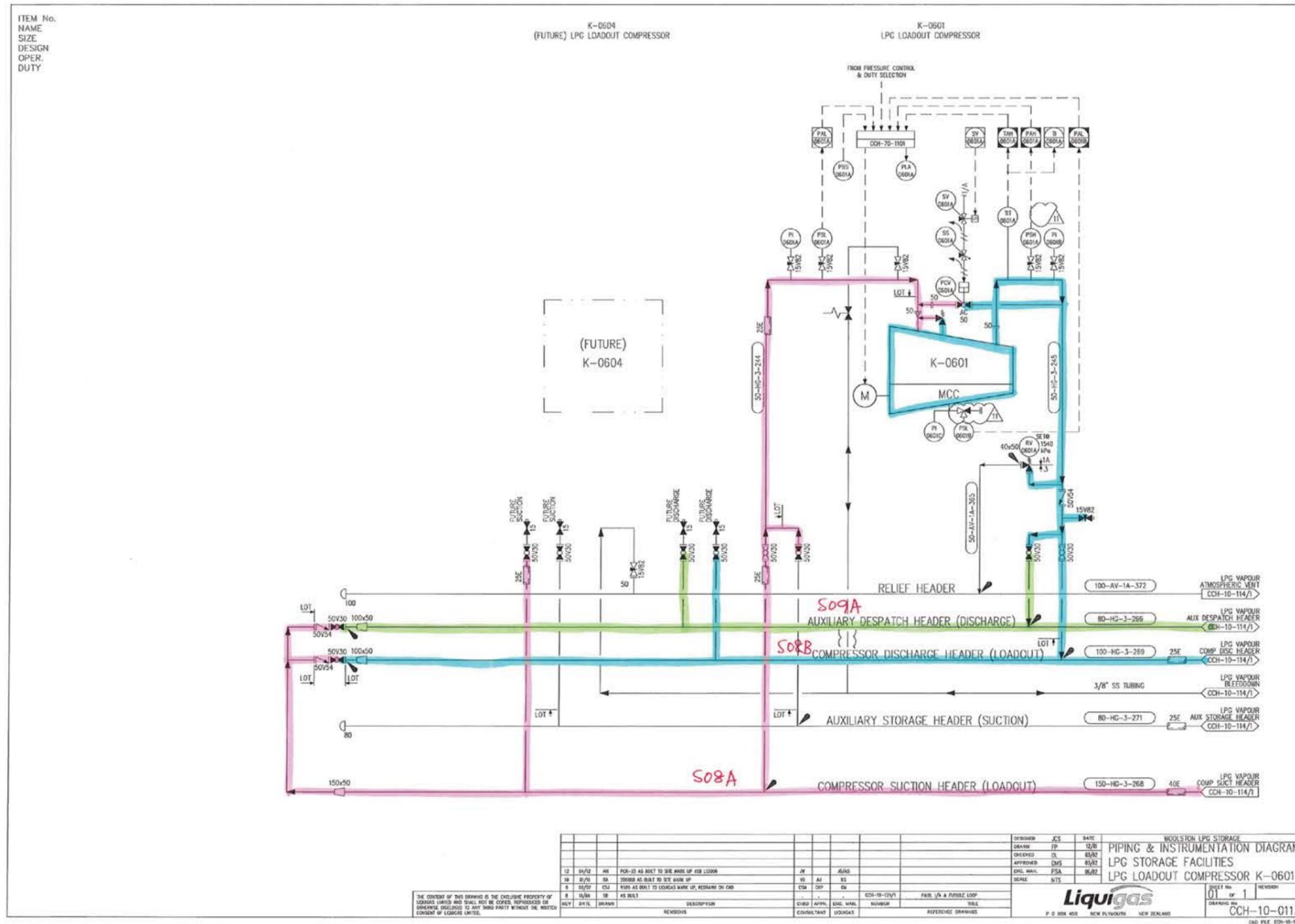
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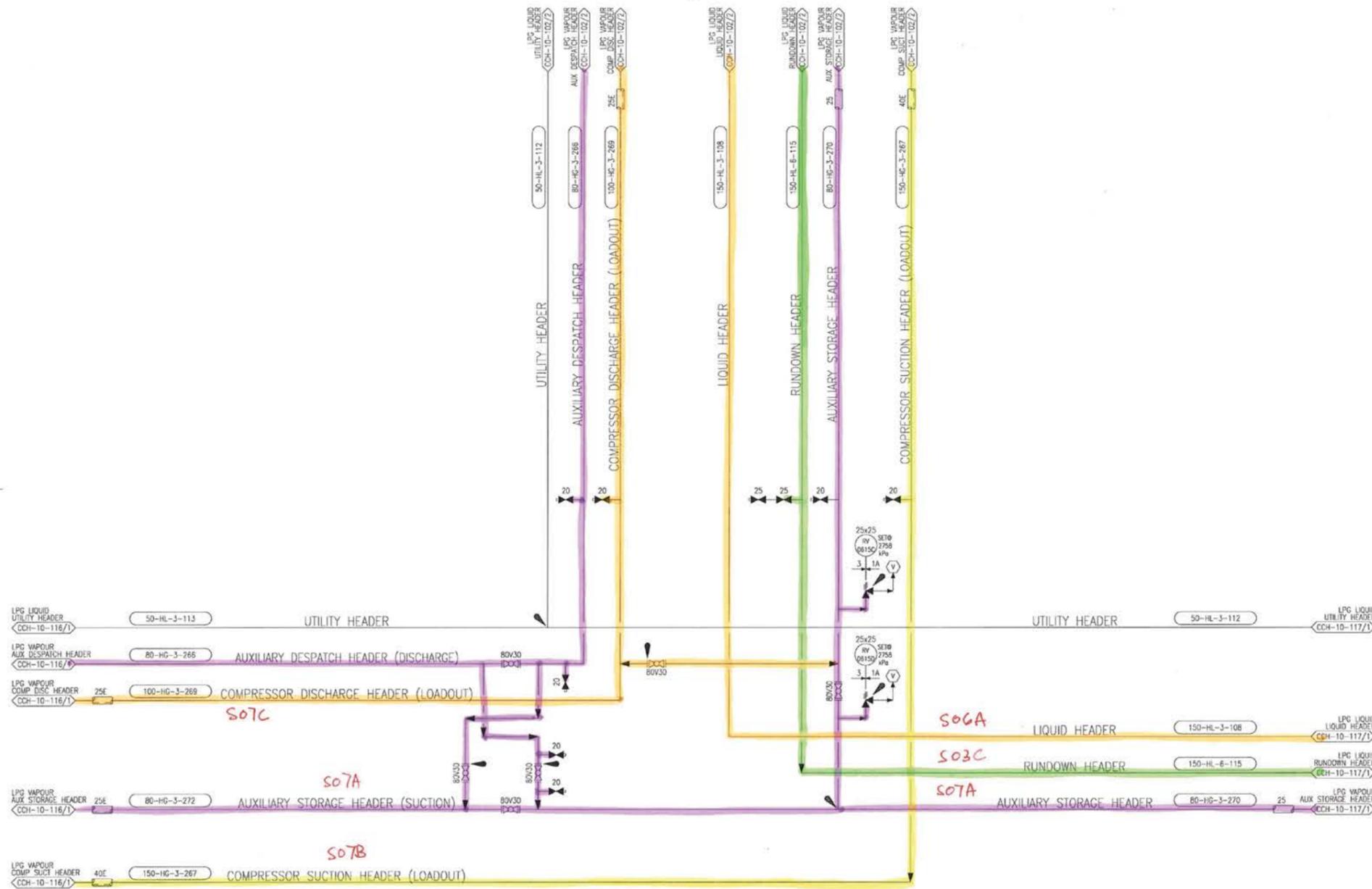
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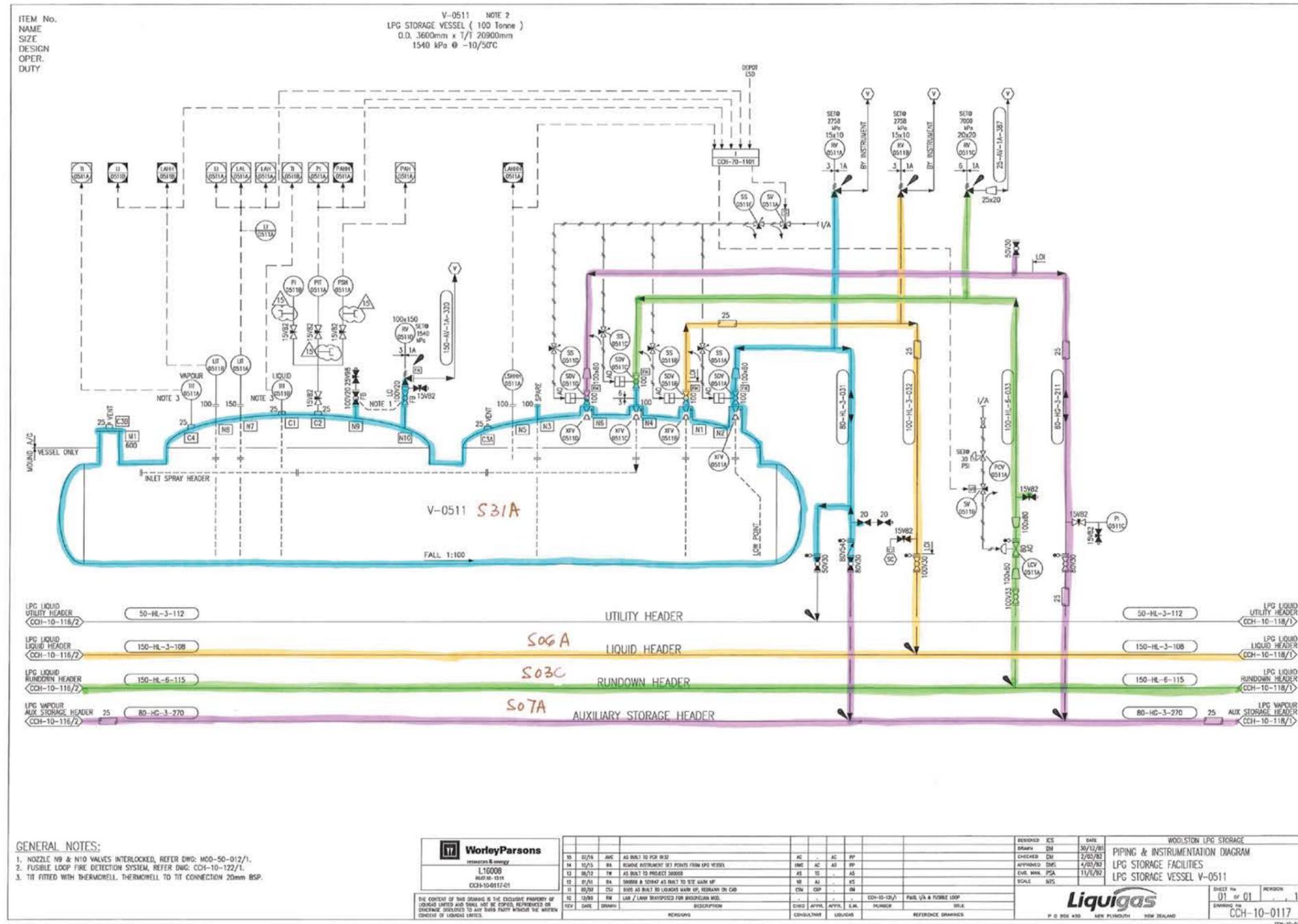


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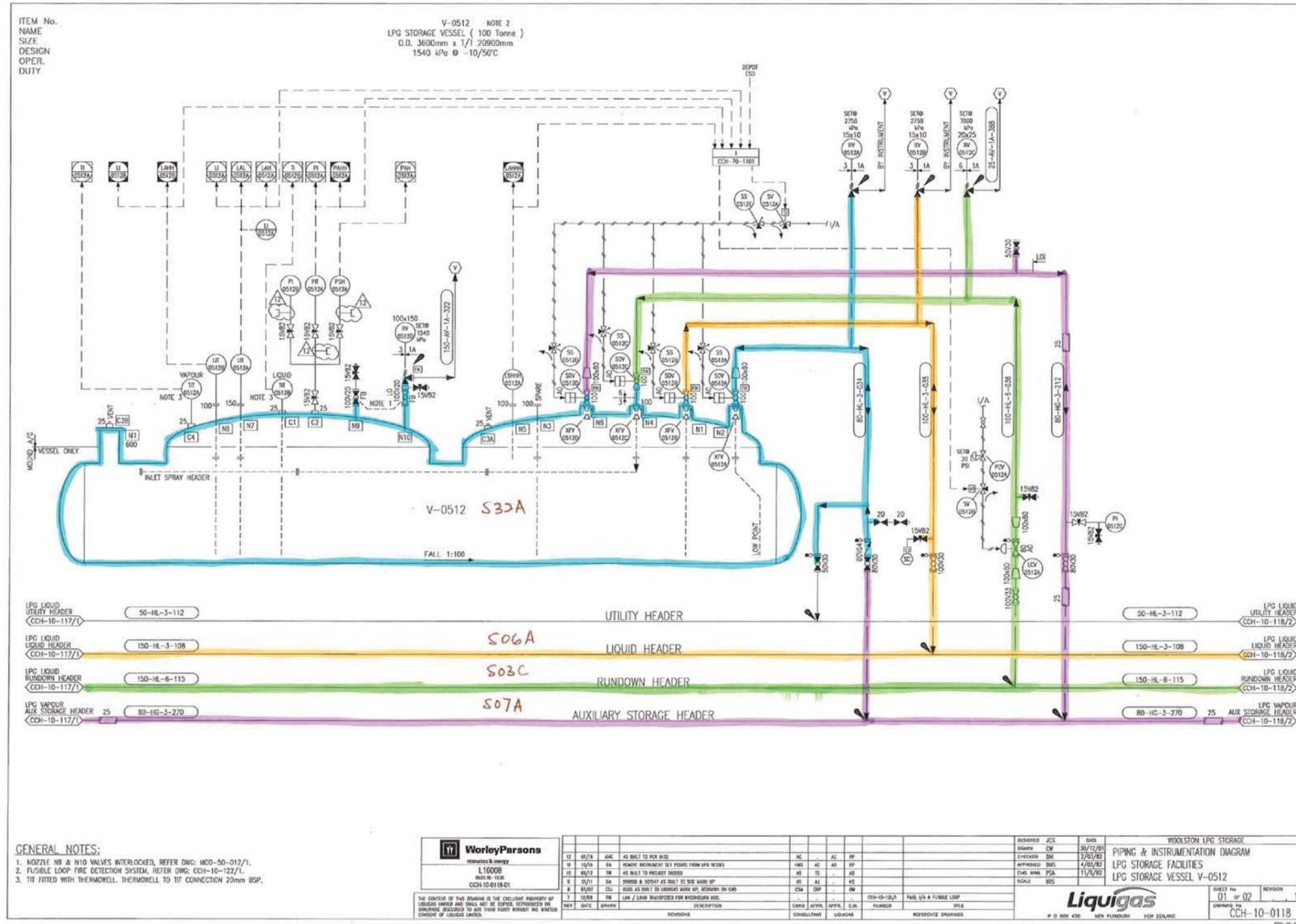
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9	02/07	CSJ	5703		CSW	CSW	11	LPG STORAGE PIPERACK JUNCTION
8	02/07	CSJ	5703		CSW	CSW	11	
7	02/07	CSJ	5703		CSW	CSW	11	
6	02/07	CSJ	5703		CSW	CSW	11	
5	02/07	CSJ	5703		CSW	CSW	11	
4	02/07	CSJ	5703		CSW	CSW	11	
3	02/07	CSJ	5703		CSW	CSW	11	
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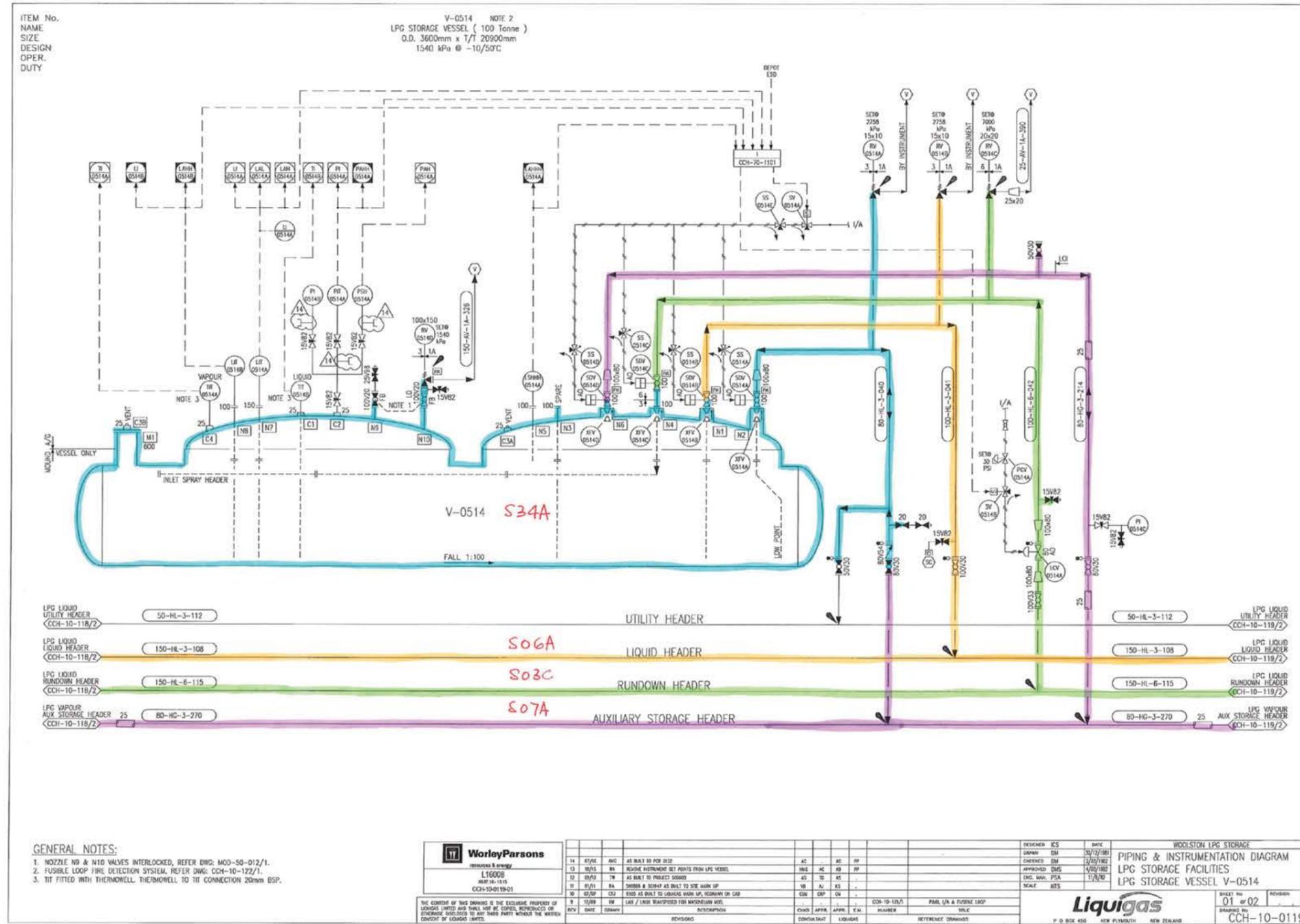
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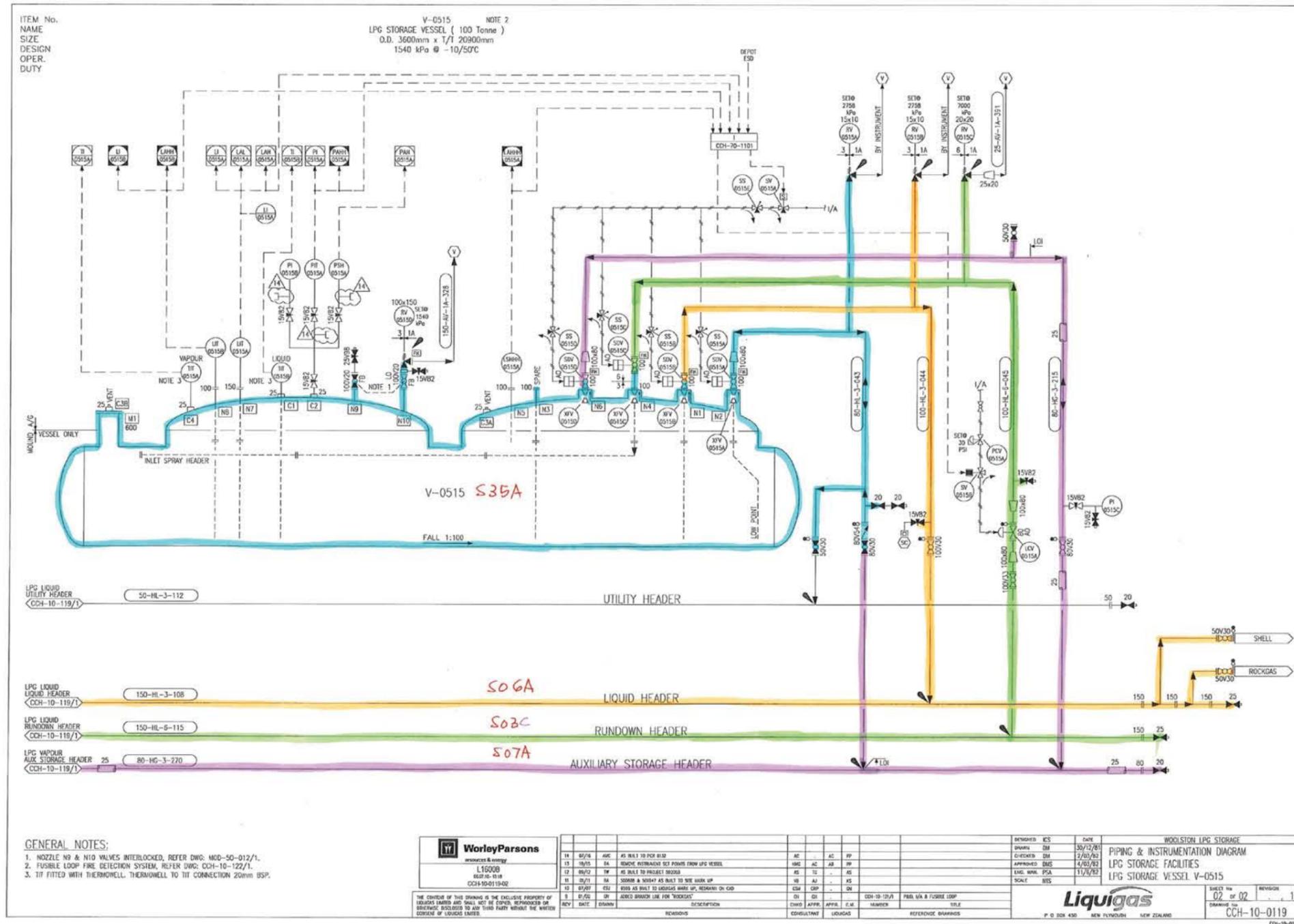
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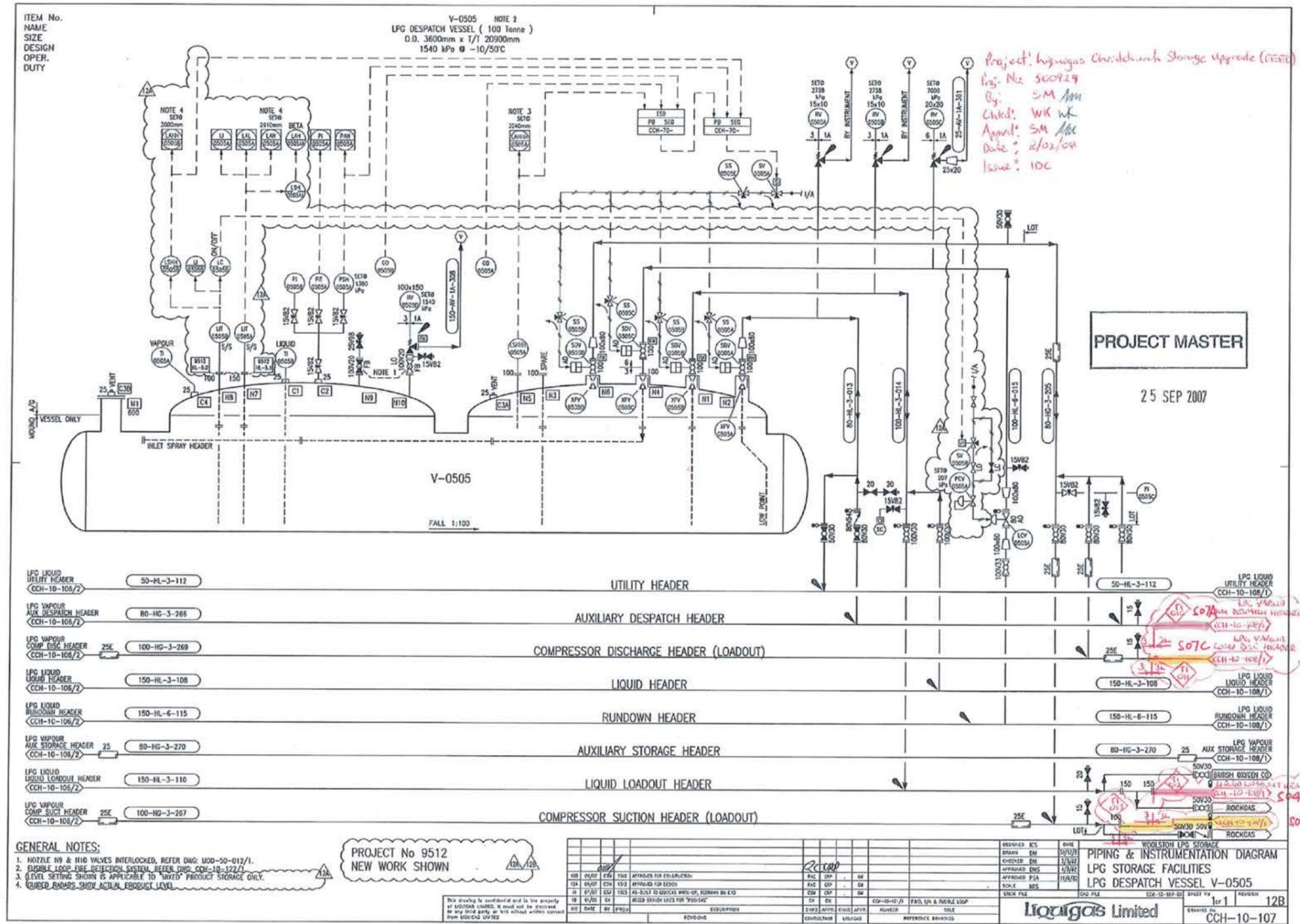
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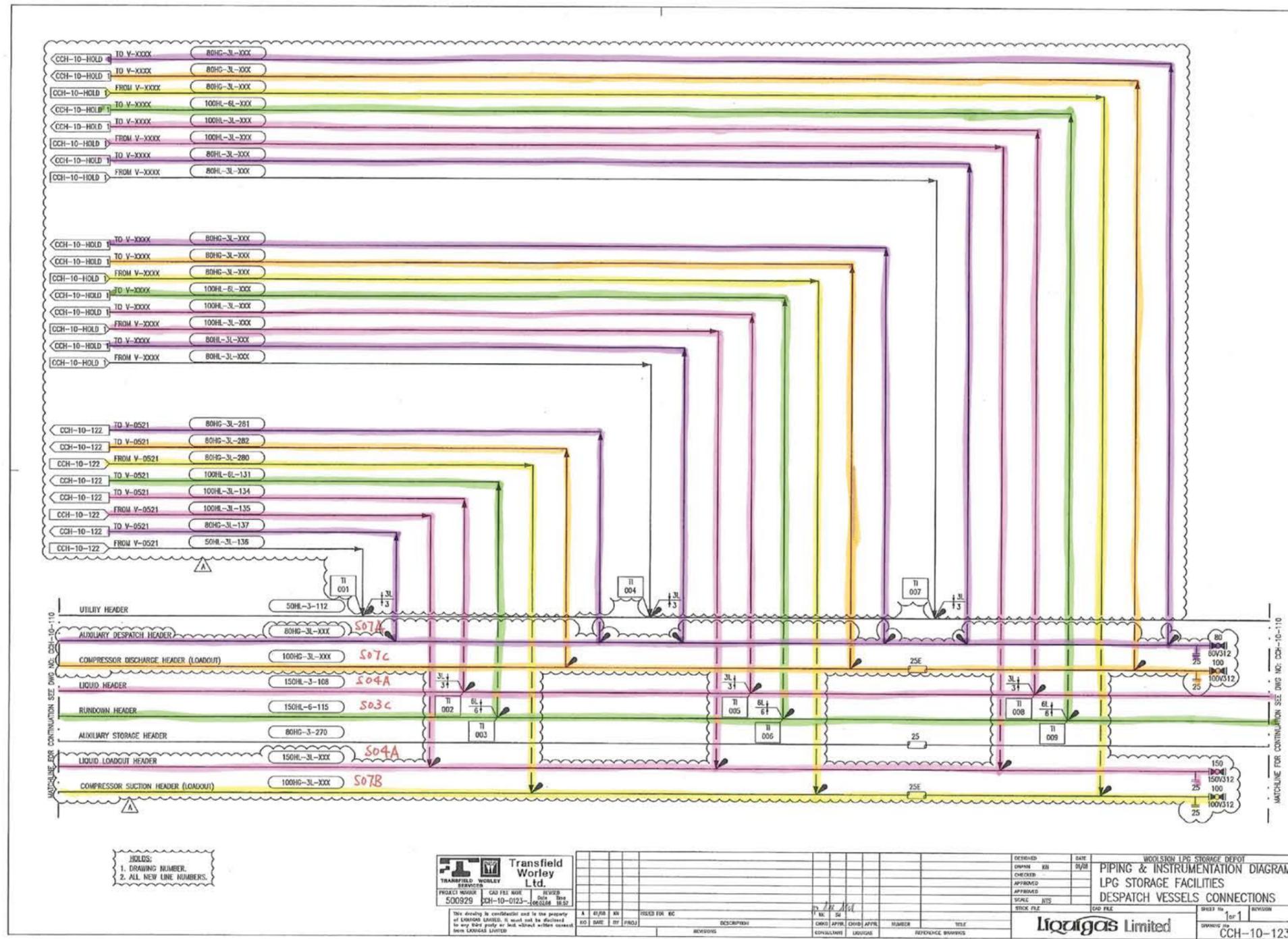


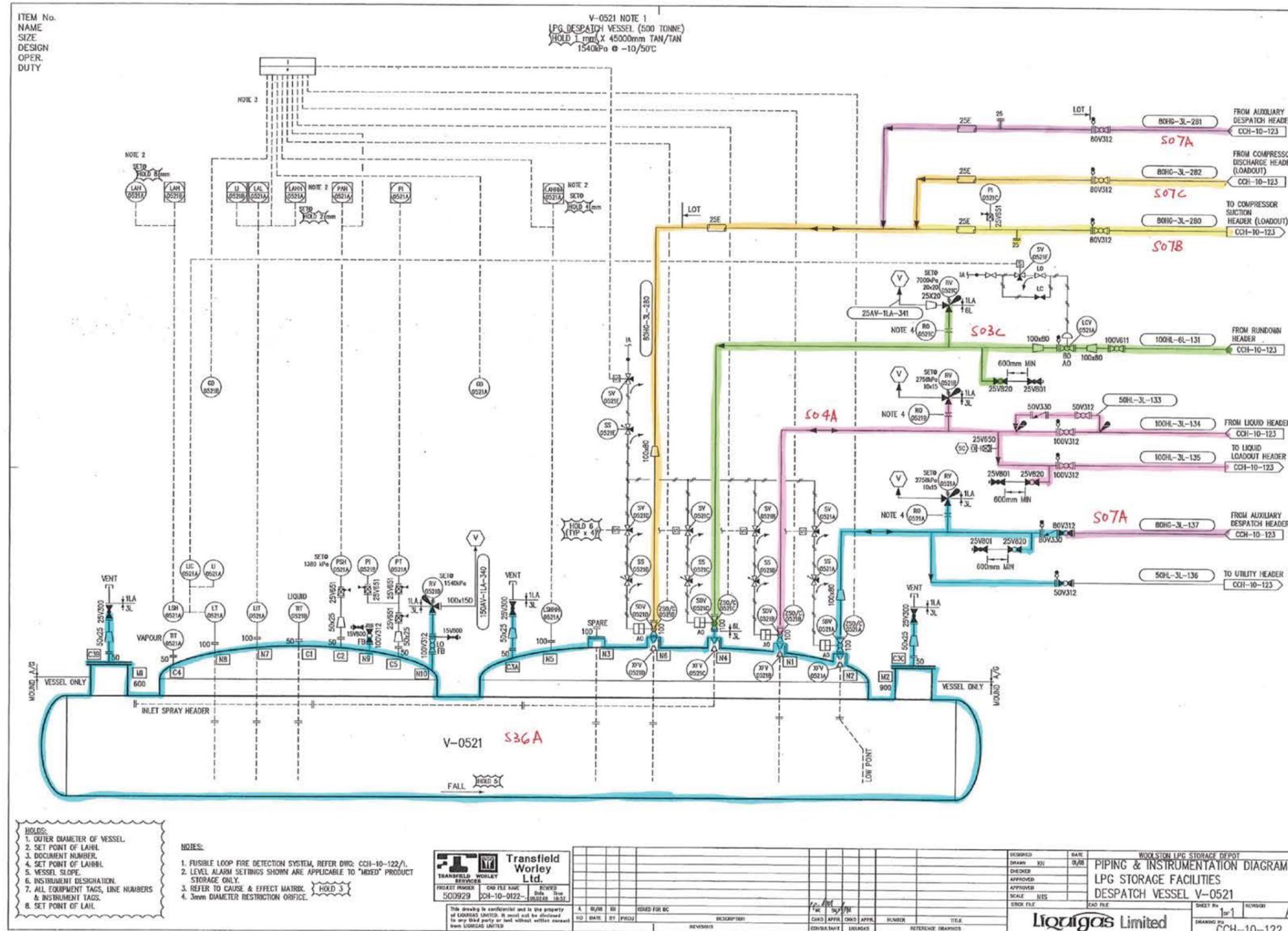
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Appendix 2.
Consequence Modelling Results



The consequence results for each QRA event for LPG and propane are presented in the tables below. Only the results for horizontal releases are presented as the horizontal releases generally generates the worse results compared to vertical releases.

Table 1 below gives the release rate and flammable gas dispersion distances for propane releases.

Table 1: Release Rates and LFL Dispersion Distances for Propane Release

No.	QRA Event	Pressure (barg)	Temp. (°C)	Hole Size (mm)	Propane	
					Release Rate (kg/s)	LFL Distance (m)
1	S01A_PNLPGD_L	28	12	2	0.10	3.6
1	S01A_PNLPGD_L	28	12	7	1.3	13
1	S01A_PNLPGD_L	28	12	30	24	86
1	S01A_PNLPGD_L	28	12	100	262	344
1	S01A_PNLPGD_L	28	12	150	589	522
2	S01B_PNLPGR_L	38	12	2	0.12	3.8
2	S01B_PNLPGR_L	38	12	7	1.5	14
2	S01B_PNLPGR_L	38	12	30	27	93
2	S01B_PNLPGR_L	38	12	100	305	371
2	S01B_PNLPGR_L	38	12	150	686	563
3	S02A_LPGPIG_L	28	12	2	0.10	3.6
3	S02A_LPGPIG_L	28	12	7	1.3	13
3	S02A_LPGPIG_L	28	12	30	24	86
3	S02A_LPGPIG_L	28	12	100	262	344
3	S02A_LPGPIG_L	28	12	150	589	522
4	S03A_SHPUN1_L	28	12	2	0.10	3.6
4	S03A_SHPUN1_L	28	12	7	1.3	13
4	S03A_SHPUN1_L	28	12	30	24	86
4	S03A_SHPUN1_L	28	12	100	262	336
4	S03A_SHPUN1_L	28	12	150	589	376
5	S03B_SHPUN2_L	20	12	2	0.09	3.4
5	S03B_SHPUN2_L	20	12	7	1.06	12
5	S03B_SHPUN2_L	20	12	30	20	77
5	S03B_SHPUN2_L	20	12	100	221	315
5	S03B_SHPUN2_L	20	12	150	498	367
6	S03C_RUNDWN_L	13	12	2	0.07	3.1
6	S03C_RUNDWN_L	13	12	7	0.88	11
6	S03C_RUNDWN_L	13	12	30	16	69
6	S03C_RUNDWN_L	13	12	100	179	282
6	S03C_RUNDWN_L	13	12	150	402	353



No.	QRA Event	Pressure (barg)	Temp. (°C)	Hole Size (mm)	Propane	
					Release Rate (kg/s)	LFL Distance (m)
7	S04A_LDOHDR_L	13	12	2	0.07	3.1
7	S04A_LDOHDR_L	13	12	7	0.88	11
7	S04A_LDOHDR_L	13	12	30	16	69
7	S04A_LDOHDR_L	13	12	100	179	282
7	S04A_LDOHDR_L	13	12	150	402	313
8	S05A_LQDHDR_L	13	12	2	0.07	3.1
8	S05A_LQDHDR_L	13	12	7	0.88	11
8	S05A_LQDHDR_L	13	12	30	16	69
8	S05A_LQDHDR_L	13	12	100	179	252
8	S05A_LQDHDR_L	13	12	150	402	287
9	S06A_LDHDR2_L	13	12	2	0.07	3.1
9	S06A_LDHDR2_L	13	12	7	0.88	11
9	S06A_LDHDR2_L	13	12	30	16	69
9	S06A_LDHDR2_L	13	12	100	179	252
9	S06A_LDHDR2_L	13	12	150	402	287
10	S07A_AUXHDR_V	8.5	12	2	0.01	0.74
10	S07A_AUXHDR_V	8.5	12	7	0.09	2.5
10	S07A_AUXHDR_V	8.5	12	30	1.7	10
10	S07A_AUXHDR_V	8.5	12	100	19	47
10	S07A_AUXHDR_V	8.5	12	150	42	81
11	S07B_SUCHDR_V	6.5	12	2	0.01	0.67
11	S07B_SUCHDR_V	6.5	12	7	0.07	2.3
11	S07B_SUCHDR_V	6.5	12	30	1.3	9.3
11	S07B_SUCHDR_V	6.5	12	100	15	42
11	S07B_SUCHDR_V	6.5	12	150	33	71
12	S07C_DISHDR_V	8.5	30	2	0.01	0.73
12	S07C_DISHDR_V	8.5	30	7	0.09	2.5
12	S07C_DISHDR_V	8.5	30	30	1.7	10
12	S07C_DISHDR_V	8.5	30	100	18	46
12	S07C_DISHDR_V	8.5	30	150	-	-
13	S07D_UTIHDR_L	8.5	12	2	0.06	2.8
13	S07D_UTIHDR_L	8.5	12	7	0.71	9.4
13	S07D_UTIHDR_L	8.5	12	30	13	61
13	S07D_UTIHDR_L	8.5	12	100	144	245
13	S07D_UTIHDR_L	8.5	12	150	-	-
14	S08A_LDOHDR_V	6.5	12	2	0.01	0.67
14	S08A_LDOHDR_V	6.5	12	7	0.07	2.3

503402-RPT-R0001-R1.docx
May 2018

Appendix



WOOLSTON LPG DEPOT
QUANTITATIVE RISK ASSESSMENT

No.	QRA Event	Pressure (barg)	Temp. (°C)	Hole Size (mm)	Propane	
					Release Rate (kg/s)	LFL Distance (m)
14	S08A_LDOHDR_V	6.5	12	30	1.3	9.3
14	S08A_LDOHDR_V	6.5	12	100	15	42
14	S08A_LDOHDR_V	6.5	12	150	33	71
15	S08B_COMDIS_V	10.5	20	2	0.01	0.80
15	S08B_COMDIS_V	10.5	20	7	0.11	2.7
15	S08B_COMDIS_V	10.5	20	30	2.0	12
15	S08B_COMDIS_V	10.5	20	100	23	52
15	S08B_COMDIS_V	10.5	20	150	51	91
16	S09A_AUXDIS_V	8.5	12	2	0.01	0.74
16	S09A_AUXDIS_V	8.5	12	7	0.09	2.5
16	S09A_AUXDIS_V	8.5	12	30	1.7	10
16	S09A_AUXDIS_V	8.5	12	100	19	47
16	S09A_AUXDIS_V	8.5	12	150	-	-
17	S10A_RDLOAD_L	8.5	12	2	0.06	2.8
17	S10A_RDLOAD_L	8.5	12	7	0.71	9.4
17	S10A_RDLOAD_L	8.5	12	30	13	61
17	S10A_RDLOAD_L	8.5	12	100	144	245
17	S10A_RDLOAD_L	8.5	12	150	325	278
18	S11A_RDLOAD_L	8.5	12	2	0.06	2.8
18	S11A_RDLOAD_L	8.5	12	7	0.71	9.4
18	S11A_RDLOAD_L	8.5	12	30	13	61
18	S11A_RDLOAD_L	8.5	12	100	144	245
18	S11A_RDLOAD_L	8.5	12	150	325	278
19	S12A_VLARM1_V	6.5	20	2	0.01	0.65
19	S12A_VLARM1_V	6.5	20	7	0.07	2.2
19	S12A_VLARM1_V	6.5	20	30	1.3	9.1
19	S12A_VLARM1_V	6.5	20	100	14	40
19	S12A_VLARM1_V	6.5	20	150	-	-
20	S13A_LLARM1_L	8.5	20	2	0.06	2.8
20	S13A_LLARM1_L	8.5	20	7	0.71	9.4
20	S13A_LLARM1_L	8.5	20	30	13	61
20	S13A_LLARM1_L	8.5	20	100	144	245
20	S13A_LLARM1_L	8.5	20	150	-	-
21	S14A_VLARM2_V	6.5	20	2	0.01	0.65
21	S14A_VLARM2_V	6.5	20	7	0.07	2.2
21	S14A_VLARM2_V	6.5	20	30	1.3	9.1
21	S14A_VLARM2_V	6.5	20	100	14	40

503402-RPT-R0001-R1.docx
May 2018

Appendix



No.	QRA Event	Pressure (barg)	Temp. (°C)	Hole Size (mm)	Propane	
					Release Rate (kg/s)	LFL Distance (m)
21	S14A_VLARM2_V	6.5	20	150	-	-
22	S15A_LLARM2_L	8.5	20	2	0.06	2.8
22	S15A_LLARM2_L	8.5	20	7	0.71	9.4
22	S15A_LLARM2_L	8.5	20	30	13	61
22	S15A_LLARM2_L	8.5	20	100	144	245
22	S15A_LLARM2_L	8.5	20	150	-	-
23	S16A_DESPV1_V ^{Note 1}	8.5	12	2	0.01	No hazard ^{Note 2}
23	S16A_DESPV1_V ^{Note 1}	8.5	12	7	0.09	No hazard ^{Note 2}
23	S16A_DESPV1_V ^{Note 1}	8.5	12	30	1.7	No hazard ^{Note 2}
23	S16A_DESPV1_V ^{Note 1}	8.5	12	100	19	No hazard ^{Note 2}
23	S16A_DESPV1_V ^{Note 1}	8.5	12	150	42	No hazard ^{Note 2}

Note 1: S16A to S38A are the LPG storage vessels events and the consequences are the same, hence the consequences for S17A to S38A are not repeated.

Note 2: The LFL distances are read at 1 m above ground, which is the human impact height. For releases from the LPG storage vessels, the releases were modelled at 5 m above ground. Hence there are no hazards registered at 1 m above ground.

Table 2 below gives the release rate and flammable gas dispersion distances for LPG releases.

Table 2: Release Rates and LFL Dispersion Distances for LPG Release

No.	QRA Event	Pressure (barg)	Temp. (°C)	Hole Size (mm)	LPG	
					Release Rate (kg/s)	LFL Distance (m)
1	S01A_PNLPGD_L	28	12	2	0.11	4.1
1	S01A_PNLPGD_L	28	12	7	1.3	15
1	S01A_PNLPGD_L	28	12	30	24	99
1	S01A_PNLPGD_L	28	12	100	269	398
1	S01A_PNLPGD_L	28	12	150	606	593
2	S01B_PNLPGR_L	38	12	2	0.13	4.3
2	S01B_PNLPGR_L	38	12	7	1.5	16
2	S01B_PNLPGR_L	38	12	30	28	104
2	S01B_PNLPGR_L	38	12	100	314	412
2	S01B_PNLPGR_L	38	12	150	705	607
3	S02A_LPGPIG_L	28	12	2	0.11	4.1
3	S02A_LPGPIG_L	28	12	7	1.3	15
3	S02A_LPGPIG_L	28	12	30	24	99
3	S02A_LPGPIG_L	28	12	100	269	398
3	S02A_LPGPIG_L	28	12	150	606	593
4	S03A_SHPUN1_L	28	12	2	0.11	4.1



No.	QRA Event	Pressure (barg)	Temp. (°C)	Hole Size (mm)	LPG	
					Release Rate (kg/s)	LFL Distance (m)
4	S03A_SHPUN1_L	28	12	7	1.3	15
4	S03A_SHPUN1_L	28	12	30	24	99
4	S03A_SHPUN1_L	28	12	100	269	330
4	S03A_SHPUN1_L	28	12	150	606	468
5	S03B_SHPUN2_L	15	12	2	0.08	3.6
5	S03B_SHPUN2_L	15	12	7	0.97	13
5	S03B_SHPUN2_L	15	12	30	18	88
5	S03B_SHPUN2_L	15	12	100	197	302
5	S03B_SHPUN2_L	15	12	150	444	531
6	S03C_RUNDWN_L	13	12	2	0.07	3.5
6	S03C_RUNDWN_L	13	12	7	0.90	12
6	S03C_RUNDWN_L	13	12	30	17	85
6	S03C_RUNDWN_L	13	12	100	184	291
6	S03C_RUNDWN_L	13	12	150	413	515
7	S04A_LDOHDR_L	8	12	2	0.06	3.2
7	S04A_LDOHDR_L	8	12	7	0.71	11
7	S04A_LDOHDR_L	8	12	30	13	76
7	S04A_LDOHDR_L	8	12	100	144	267
7	S04A_LDOHDR_L	8	12	150	324	461
8	S05A_LQDHDR_L	8	12	2	0.06	3.2
8	S05A_LQDHDR_L	8	12	7	0.71	11
8	S05A_LQDHDR_L	8	12	30	13	76
8	S05A_LQDHDR_L	8	12	100	144	267
8	S05A_LQDHDR_L	8	12	150	324	461
9	S06A_LDHDR2_L	8	12	2	0.06	3.2
9	S06A_LDHDR2_L	8	12	7	0.71	11
9	S06A_LDHDR2_L	8	12	30	13	76
9	S06A_LDHDR2_L	8	12	100	144	267
9	S06A_LDHDR2_L	8	12	150	324	461
10	S07A_AUXHDR_V	6.5	12	2	0.006	0.69
10	S07A_AUXHDR_V	6.5	12	7	0.07	2.3
10	S07A_AUXHDR_V	6.5	12	30	1.4	9.7
10	S07A_AUXHDR_V	6.5	12	100	15	44
10	S07A_AUXHDR_V	6.5	12	150	34	75
11	S07B_SUCHDR_V	3	12	2	0.003	0.5
11	S07B_SUCHDR_V	3	12	7	0.04	1.8
11	S07B_SUCHDR_V	3	12	30	0.7	7.4

503402-RPT-R0001-R1.docx
May 2018

Appendix



No.	QRA Event	Pressure (barg)	Temp. (°C)	Hole Size (mm)	LPG	
					Release Rate (kg/s)	LFL Distance (m)
11	S07B_SUCHDR_V	3	12	100	8.0	32
11	S07B_SUCHDR_V	3	12	150	18	52
12	S07C_DISHDR_V	6.5	30	2	0.006	0.7
12	S07C_DISHDR_V	6.5	30	7	0.07	2.3
12	S07C_DISHDR_V	6.5	30	30	1.4	10
12	S07C_DISHDR_V	6.5	30	100	15	44
12	S07C_DISHDR_V	6.5	30	150	-	-
13	S07D_UTIHDR_L	3	12	2	0.039	2.7
13	S07D_UTIHDR_L	3	12	7	0.48	8.7
13	S07D_UTIHDR_L	3	12	30	8.8	61
13	S07D_UTIHDR_L	3	12	100	98	229
13	S07D_UTIHDR_L	3	12	150	-	-
14	S08A_LDOHDR_V	3	12	2	0.003	0.53
14	S08A_LDOHDR_V	3	12	7	0.04	1.8
14	S08A_LDOHDR_V	3	12	30	0.7	7.4
14	S08A_LDOHDR_V	3	12	100	8	32
14	S08A_LDOHDR_V	3	12	150	18	52
15	S08B_COMDIS_V	4	20	2	0.004	0.58
15	S08B_COMDIS_V	4	20	7	0.05	2.0
15	S08B_COMDIS_V	4	20	30	0.9	8.0
15	S08B_COMDIS_V	4	20	100	10	35
15	S08B_COMDIS_V	4	20	150	23	59
16	S09A_AUXDIS_V	6.5	12	2	0.006	0.69
16	S09A_AUXDIS_V	6.5	12	7	0.07	2.4
16	S09A_AUXDIS_V	6.5	12	30	1.4	9.7
16	S09A_AUXDIS_V	6.5	12	100	15	44
16	S09A_AUXDIS_V	6.5	12	150	-	-
17	S10A_RDLOAD_L	6.5	12	2	0.05	3.1
17	S10A_RDLOAD_L	6.5	12	7	0.64	10
17	S10A_RDLOAD_L	6.5	12	30	12	72
17	S10A_RDLOAD_L	6.5	12	100	130	257
17	S10A_RDLOAD_L	6.5	12	150	292	439
18	S11A_RDLOAD_L	6.5	12	2	0.05	3.1
18	S11A_RDLOAD_L	6.5	12	7	0.64	10
18	S11A_RDLOAD_L	6.5	12	30	12	72
18	S11A_RDLOAD_L	6.5	12	100	130	257
18	S11A_RDLOAD_L	6.5	12	150	292	439

503402-RPT-R0001-R1.docx
May 2018

Appendix



No.	QRA Event	Pressure (barg)	Temp. (°C)	Hole Size (mm)	LPG	
					Release Rate (kg/s)	LFL Distance (m)
19	S12A_VLARM1_V	3	20	2	0.003	0.53
19	S12A_VLARM1_V	3	20	7	0.04	1.8
19	S12A_VLARM1_V	3	20	30	0.7	7.4
19	S12A_VLARM1_V	3	20	100	8	32
19	S12A_VLARM1_V	3	20	150	-	-
20	S13A_LLARM1_L	6.5	20	2	0.05	3.1
20	S13A_LLARM1_L	6.5	20	7	0.64	10
20	S13A_LLARM1_L	6.5	20	30	12	72
20	S13A_LLARM1_L	6.5	20	100	130	257
20	S13A_LLARM1_L	6.5	20	150	-	-
21	S14A_VLARM2_V	3	20	2	0.003	0.53
21	S14A_VLARM2_V	3	20	7	0.04	1.8
21	S14A_VLARM2_V	3	20	30	0.7	7.4
21	S14A_VLARM2_V	3	20	100	8	32
21	S14A_VLARM2_V	3	20	150	-	-
22	S15A_LLARM2_L	6.5	20	2	0.05	3.1
22	S15A_LLARM2_L	6.5	20	7	0.64	10
22	S15A_LLARM2_L	6.5	20	30	12	72
22	S15A_LLARM2_L	6.5	20	100	130	257
22	S15A_LLARM2_L	6.5	20	150	-	-
23	S16A_DESPV1_V ^{Note 1}	3	12	2	0.004	No hazard ^{Note 2}
23	S16A_DESPV1_V ^{Note 1}	3	12	7	0.05	No hazard ^{Note 2}
23	S16A_DESPV1_V ^{Note 1}	3	12	30	0.8	No hazard ^{Note 2}
23	S16A_DESPV1_V ^{Note 1}	3	12	100	9.4	No hazard ^{Note 2}
23	S16A_DESPV1_V ^{Note 1}	3	12	150	21	No hazard ^{Note 2}

Note 1: S16A to S38A are the LPG storage vessels events and the consequences are the same, hence the consequences for S17A to S38A are not repeated.

Note 2: The LFL distances are read at 1 m above ground, which is the human impact height. For releases from the LPG storage vessels, the releases were modelled at 5 m above ground. Hence there are no hazards registered at 1 m above ground.

Table 3 below gives the jet fire downwind thermal radiation distances for propane releases.

Table 3: Jet Fire Downwind Thermal Radiation Distances for Propane Releases

No.	QRA Event	Hole Size (mm)	Jet Flame length (m)	Jet Fire Downwind Thermal Radiation Distances (m)				
				35 kW/m ²	23 kW/m ²	12.6 kW/m ²	4.7 kW/m ²	2.1 kW/m ²
1	S01A_PNLPGD_L	2	5.2	6.3	6.7	7.3	8.7	10
1	S01A_PNLPGD_L	7	16	20	21	23	28	33



WOOLSTON LPG DEPOT
QUANTITATIVE RISK ASSESSMENT

No.	QRA Event	Hole Size (mm)	Jet Flame length (m)	Jet Fire Downwind Thermal Radiation Distances (m)				
				35 kW/m ²	23 kW/m ²	12.6 kW/m ²	4.7 kW/m ²	2.1 kW/m ²
1	S01A_PNLPGD_L	30	55	72	76	85	103	127
1	S01A_PNLPGD_L	100	155	209	223	248	306	379
1	S01A_PNLPGD_L	150	218	298	319	355	440	547
2	S01B_PNLPGR_L	2	5.5	6.7	7.1	7.7	9.3	11
2	S01B_PNLPGR_L	7	17	21	22	24	29	35
2	S01B_PNLPGR_L	30	59	76	81	90	110	135
2	S01B_PNLPGR_L	100	164	222	237	263	325	403
2	S01B_PNLPGR_L	150	232	317	339	377	467	582
3	S02A_LPGPIG_L	2	5.2	6.3	6.7	7.3	8.7	10
3	S02A_LPGPIG_L	7	16	20	21	23	28	33
3	S02A_LPGPIG_L	30	55	72	76	85	103	127
3	S02A_LPGPIG_L	100	155	209	223	248	306	379
3	S02A_LPGPIG_L	150	218	298	319	355	440	547
4	S03A_SHPUN1_L	2	5.2	6.3	6.7	7.3	8.7	10
4	S03A_SHPUN1_L	7	16	20	21	23	28	33
4	S03A_SHPUN1_L	30	55	72	76	85	103	127
4	S03A_SHPUN1_L	100	107	209	223	248	306	379
4	S03A_SHPUN1_L	150	218	298	319	355	440	547
5	S03B_SHPUN2_L	2	4.9	5.8	6.2	6.7	8.1	9.7
5	S03B_SHPUN2_L	7	15	18	19	21	25	18
5	S03B_SHPUN2_L	30	51	67	71	78	96	117
5	S03B_SHPUN2_L	100	145	195	208	231	285	353
5	S03B_SHPUN2_L	150	204	279	298	331	410	510
6	S03C_RUNDWN_L	2	4.5	5.5	5.7	6.2	7.4	8.9
6	S03C_RUNDWN_L	7	13	17	18	19	23	28
6	S03C_RUNDWN_L	30	47	61	65	72	88	108
6	S03C_RUNDWN_L	100	133	178	190	211	261	322
6	S03C_RUNDWN_L	150	187	255	272	303	375	465
7	S04A_LDOHDR_L	2	4.5	5.5	5.7	6.2	7.4	8.9
7	S04A_LDOHDR_L	7	13	17	18	19	23	28
7	S04A_LDOHDR_L	30	47	61	65	72	88	108
7	S04A_LDOHDR_L	100	133	178	190	211	261	322
7	S04A_LDOHDR_L	150	187	255	272	303	375	465
8	S05A_LQDHDR_L	2	4.5	5.5	5.7	6.2	7.4	8.9
8	S05A_LQDHDR_L	7	13	17	18	19	23	28
8	S05A_LQDHDR_L	30	47	61	65	72	88	108
8	S05A_LQDHDR_L	100	133	178	190	211	261	322

503402-RPT-R0001-R1.docx
May 2018

Appendix



WOOLSTON LPG DEPOT
QUANTITATIVE RISK ASSESSMENT

No.	QRA Event	Hole Size (mm)	Jet Flame length (m)	Jet Fire Downwind Thermal Radiation Distances (m)				
				35 kW/m ²	23 kW/m ²	12.6 kW/m ²	4.7 kW/m ²	2.1 kW/m ²
8	S05A_LQDHDR_L	150	187	255	272	303	375	465
9	S06A_LDHDR2_L	2	4.5	5.5	5.7	6.2	7.4	8.9
9	S06A_LDHDR2_L	7	13	17	18	19	23	28
9	S06A_LDHDR2_L	30	47	61	65	72	88	108
9	S06A_LDHDR2_L	100	133	178	190	211	261	322
9	S06A_LDHDR2_L	150	187	255	272	303	375	465
10	S07A_AUXHDR_V	2	1.4	Not reached	Not reached	Not reached	1.4	1.5
10	S07A_AUXHDR_V	7	4.1	2.9	3.9	4.1	4.6	5.1
10	S07A_AUXHDR_V	30	15	19	19	20	22	26
10	S07A_AUXHDR_V	100	51	56	59	63	72	91
10	S07A_AUXHDR_V	150	68	77	81	87	105	134
11	S07B_SUCHDR_V	2	1.2	1.4	1.5	1.6	1.9	2.3
11	S07B_SUCHDR_V	7	3.8	4.8	4.8	5.3	6.3	7.5
11	S07B_SUCHDR_V	30	14	17	18	20	24	29
11	S07B_SUCHDR_V	100	40	52	55	60	73	89
11	S07B_SUCHDR_V	150	57	74	79	87	106	130
12	S07C_DISHDR_V	2	1.4	Not reached	Not reached	Not reached	1.4	1.5
12	S07C_DISHDR_V	7	4.1	2.9	3.9	4.1	4.6	5.0
12	S07C_DISHDR_V	30	15	18	19	20	22	25
12	S07C_DISHDR_V	100	44	49	53	59	72	90
12	S07C_DISHDR_V	150	-	-	-	-	-	-
13	S07D_UTIHDR_L	2	4.1	5.1	5.2	5.7	6.8	8.1
13	S07D_UTIHDR_L	7	12	15	16	18	21	26
13	S07D_UTIHDR_L	30	43	56	60	66	80	98
13	S07D_UTIHDR_L	100	122	163	174	193	238	294
13	S07D_UTIHDR_L	150	-	-	-	-	-	-
14	S08A_LDOHDR_V	2	1.2	1.4	1.5	1.6	1.9	2.3
14	S08A_LDOHDR_V	7	3.8	4.8	4.8	5.3	6.3	7.5
14	S08A_LDOHDR_V	30	14	17	18	20	24	29
14	S08A_LDOHDR_V	100	40	52	55	60	73	89
14	S08A_LDOHDR_V	150	57	74	79	87	106	130
15	S08B_COMDIS_V	2	1.5	Not reached	Not reached	Not reached	1.8	1.8
15	S08B_COMDIS_V	7	4.5	3.1	3.5	4.5	5.1	5.6
15	S08B_COMDIS_V	30	16	20	21	22	24	28
15	S08B_COMDIS_V	100	54	61	63	68	79	99

503402-RPT-R0001-R1.docx
May 2018

Appendix



WOOLSTON LPG DEPOT
QUANTITATIVE RISK ASSESSMENT

No.	QRA Event	Hole Size (mm)	Jet Flame length (m)	Jet Fire Downwind Thermal Radiation Distances (m)				
				35 kW/m ²	23 kW/m ²	12.6 kW/m ²	4.7 kW/m ²	2.1 kW/m ²
15	S08B_COMDIS_V	150	73	83	87	93	114	146
16	S09A_AUXDIS_V	2	1.4	Not reached	Not reached	Not reached	1.4	1.5
16	S09A_AUXDIS_V	7	4.1	2.9	3.9	4.1	4.7	5.1
16	S09A_AUXDIS_V	30	15	19	19	20	22	26
16	S09A_AUXDIS_V	100	51	56	59	63	72	91
16	S09A_AUXDIS_V	150	-	-	-	-	-	-
17	S10A_RDLOAD_L	2	4.1	5.1	5.2	5.7	6.8	8.1
17	S10A_RDLOAD_L	7	12	15	16	18	21	26
17	S10A_RDLOAD_L	30	43	56	60	66	80	98
17	S10A_RDLOAD_L	100	122	163	174	193	238	294
17	S10A_RDLOAD_L	150	172	233	249	277	342	424
18	S11A_RDLOAD_L	2	4.1	5.1	5.2	5.7	6.8	8.1
18	S11A_RDLOAD_L	7	12	15	16	18	21	26
18	S11A_RDLOAD_L	30	43	56	60	66	80	98
18	S11A_RDLOAD_L	100	122	163	174	193	238	294
18	S11A_RDLOAD_L	150	172	233	249	277	342	424
19	S12A_VLARM1_V	2	1.2	Not reached	Not reached	Not reached	1.7	1.7
19	S12A_VLARM1_V	7	3.7	2.5	3.1	3.7	4.1	4.5
19	S12A_VLARM1_V	30	16	16	17	18	19	22
19	S12A_VLARM1_V	100	46	51	53	56	64	80
19	S12A_VLARM1_V	150	-	-	-	-	-	-
20	S13A_LLARM1_L	2	4.1	5.1	5.2	5.7	6.8	8.1
20	S13A_LLARM1_L	7	12	15	16	18	21	26
20	S13A_LLARM1_L	30	43	56	60	66	80	98
20	S13A_LLARM1_L	100	122	163	174	193	238	294
20	S13A_LLARM1_L	150	-	-	-	-	-	-
21	S14A_VLARM2_V	2	1.2	Not reached	Not reached	Not reached	1.7	1.7
21	S14A_VLARM2_V	7	3.7	2.5	3.1	3.7	4.1	4.5
21	S14A_VLARM2_V	30	16	16	17	18	19	22
21	S14A_VLARM2_V	100	46	51	53	56	64	80
21	S14A_VLARM2_V	150	-	-	-	-	-	-
22	S15A_LLARM2_L	2	4.1	5.1	5.2	5.7	6.8	8.1
22	S15A_LLARM2_L	7	12	15	16	18	21	26
22	S15A_LLARM2_L	30	43	56	60	66	80	98
22	S15A_LLARM2_L	100	122	163	174	193	238	294

503402-RPT-R0001-R1.docx
May 2018

Appendix



WOOLSTON LPG DEPOT
QUANTITATIVE RISK ASSESSMENT

No.	QRA Event	Hole Size (mm)	Jet Flame length (m)	Jet Fire Downwind Thermal Radiation Distances (m)				
				35 kW/m ²	23 kW/m ²	12.6 kW/m ²	4.7 kW/m ²	2.1 kW/m ²
22	S15A_LLARM2_L	150	-	-	-	-	-	-
23	S16A_DESPV1_V <small>Note 1</small>	2	1.4	Not reached	Not reached	Not reached	Not reached	Not reached
23	S16A_DESPV1_V <small>Note 1</small>	7	4.1	Not reached	Not reached	Not reached	Not reached	Not reached
23	S16A_DESPV1_V <small>Note 1</small>	30	15	Not reached	Not reached	17	22	25
23	S16A_DESPV1_V <small>Note 1</small>	100	41	54	58	63	73	88
23	S16A_DESPV1_V <small>Note 1</small>	150	56	76	80	87	105	134

Note 1: S16A to S38A are the LPG storage vessels events and the consequences are the same, hence the consequences for S17A to S38A are not repeated.

Note 2: Results are shown as "Not reached" as the jet fires flame emissive power is lower than the thermal radiation levels of interest. Also, for LPG storage vessels event, the results are read at 1 m aboveground, whereas the releases were modelled at 5 m above ground. Hence there were no thermal radiation impacts at 1 m.

Table 4 below gives the jet fire downwind thermal radiation distances for LPG releases. For QRA events where pool fire is likely to form, the pool diameter and downwind distances are also presented.

No.	QRA Event	Hole Size (mm)	Jet Fire Downwind Thermal Radiation Distances (m)					Pool Fire Downwind Thermal Radiation Distances (m)						
			Jet Flame length (m)	35 kW/m ²	23 kW/m ²	12.6 kW/m ²	4.7 kW/m ²	2.1 kW/m ²	Pool Fire Diameter (m)	35 kW/m ²	23 kW/m ²	12.6 kW/m ²	4.7 kW/m ²	2.1 kW/m ²
1	S01A_PNLPGD_L	2	5.4	6.6	7.0	7.6	9.2	11						
1	S01A_PNLPGD_L	7	16	20	22	24	29	35						
1	S01A_PNLPGD_L	30	56	74	79	88	109	134						
1	S01A_PNLPGD_L	100	156	215	230	258	321	401						
1	S01A_PNLPGD_L	150	291	307	330	369	461	579	19	109	119	134	164	201
2	S01B_PNLPGR_L	2	5.7	6.9	7.4	8.1	9.7	12						
2	S01B_PNLPGR_L	7	17	21	23	25	31	37						
2	S01B_PNLPGR_L	30	59	79	84	93	115	142						
2	S01B_PNLPGR_L	100	164	228	244	273	340	425						
2	S01B_PNLPGR_L	150	232	326	349	391	488	614						
3	S02A_LPGPIG_L	2	5.4	6.6	7.0	7.6	9.2	11						
3	S02A_LPGPIG_L	7	16	20	22	24	29	35						
3	S02A_LPGPIG_L	30	56	74	79	88	109	134						
3	S02A_LPGPIG_L	100	156	215	230	258	321	401						
3	S02A_LPGPIG_L	150	291	307	330	369	461	579	19	109	119	134	164	201
4	S03A_SHPUN1_L	2	5.4	6.6	7.0	7.6	9.2	11						
4	S03A_SHPUN1_L	7	16	20	22	24	29	35						
4	S03A_SHPUN1_L	30	56	74	79	88	109	134						

No.	QRA Event	Hole Size (mm)	Jet Fire Downwind Thermal Radiation Distances (m)					Pool Fire Downwind Thermal Radiation Distances (m)						
			Jet Flame length (m)	35 kW/m ²	23 kW/m ²	12.6 kW/m ²	4.7 kW/m ²	2.1 kW/m ²	Pool Fire Diameter (m)	35 kW/m ²	23 kW/m ²	12.6 kW/m ²	4.7 kW/m ²	2.1 kW/m ²
4	S03A_SHPUN1_L	100	156	215	230	258	321	401						
4	S03A_SHPUN1_L	150	291	307	330	369	461	579	19	109	119	134	164	201
5	S03B_SHPUN2_L	2	4.8	5.8	6.2	6.8	8.2	9.9						
5	S03B_SHPUN2_L	7	14	18	19	21	26	31						
5	S03B_SHPUN2_L	30	50	66	70	78	96	119						
5	S03B_SHPUN2_L	100	138	191	204	228	284	354						
5	S03B_SHPUN2_L	150	195	272	292	327	408	511	7.7	85	87	92	106	122
6	S03C_RUNDWN_L	2	4.7	5.7	6.0	6.6	7.9	9.6						
6	S03C_RUNDWN_L	7	14	17	19	21	25	30						
6	S03C_RUNDWN_L	30	48	64	68	76	93	115						
6	S03C_RUNDWN_L	100	134	185	198	221	276	344						
6	S03C_RUNDWN_L	150	189	264	283	317	396	496	8.1	84	87	91	105	123
7	S04A_LDOHDR_L	2	4.2	5.2	5.4	6.0	7.2	8.6						
7	S04A_LDOHDR_L	7	13	16	17	19	23	27						
7	S04A_LDOHDR_L	30	44	58	62	69	84	104						
7	S04A_LDOHDR_L	100	122	168	179	200	249	310	0.49	<i>Not reached</i>	<i>Note reached</i>	13	50	50
7	S04A_LDOHDR_L	150	172	239	256	287	358	448	6.9	78	81	83	93	109
8	S05A_LQDHDR_L	2	4.2	5.2	5.4	6.0	7.2	8.6						
8	S05A_LQDHDR_L	7	13	16	17	19	23	27						
8	S05A_LQDHDR_L	30	44	58	62	69	84	104						
8	S05A_LQDHDR_L	100	122	168	179	200	249	310	0.49	<i>Not</i>	<i>Note</i>	13	50	50

No.	QRA Event	Hole Size (mm)	Jet Fire Downwind Thermal Radiation Distances (m)					Pool Fire Downwind Thermal Radiation Distances (m)						
			Jet Flame length (m)	35 kW/m ²	23 kW/m ²	12.6 kW/m ²	4.7 kW/m ²	2.1 kW/m ²	Pool Fire Diameter (m)	35 kW/m ²	23 kW/m ²	12.6 kW/m ²	4.7 kW/m ²	2.1 kW/m ²
										reached	reached			
8	S05A_LQDHDR_L	150	172	239	256	287	358	448	6.9	78	81	83	93	109
9	S06A_LDHDR2_L	2	4.2	5.2	5.4	6.0	7.2	8.6						
9	S06A_LDHDR2_L	7	13	16	17	19	23	27						
9	S06A_LDHDR2_L	30	44	58	62	69	84	104						
9	S06A_LDHDR2_L	100	122	168	179	200	249	310	0.49	Not reached	Note reached	13	50	50
9	S06A_LDHDR2_L	150	172	239	256	287	358	448	6.9	78	81	83	93	109
10	S07A_AUXHDR_V	2	1.3	Not reached	Not reached	Not reached	1.7	1.7						
10	S07A_AUXHDR_V	7	3.8	2.5	3.2	3.8	4.3	4.6						
10	S07A_AUXHDR_V	30	17	17	18	19	20	23						
10	S07A_AUXHDR_V	100	47	52	54	58	66	83						
10	S07A_AUXHDR_V	150	63	72	74	80	91	114						
11	S07B_SUCHDR_V	2	1.0	Not reached	Not reached	Not reached	1.5	1.5						
11	S07B_SUCHDR_V	7	2.9	Not reached	2.1	2.8	3.2	3.4						
11	S07B_SUCHDR_V	30	13	14	14	14	15	17						
11	S07B_SUCHDR_V	100	38	42	43	45	50	61						
11	S07B_SUCHDR_V	150	51	60	59	62	72	91						
12	S07C_DISHDR_V	2	1.3	Not reached	Not reached	Not reached	1.7	1.7						

No.	QRA Event	Hole Size (mm)	Jet Fire Downwind Thermal Radiation Distances (m)					Pool Fire Downwind Thermal Radiation Distances (m)						
			Jet Flame length (m)	35 kW/m ²	23 kW/m ²	12.6 kW/m ²	4.7 kW/m ²	2.1 kW/m ²	Pool Fire Diameter (m)	35 kW/m ²	23 kW/m ²	12.6 kW/m ²	4.7 kW/m ²	2.1 kW/m ²
12	S07C_DISHDR_V	7	3.8	2.5	3.2	3.8	4.3	4.6						
12	S07C_DISHDR_V	30	17	17	18	19	20	23						
12	S07C_DISHDR_V	100	47	52	54	58	66	83						
12	S07C_DISHDR_V	150	-	-	-	-	-	-						
13	S07D_UTIHDR_L	2	3.6	4.6	4.6	5.1	6.1	7.3						
13	S07D_UTIHDR_L	7	11	13	14	16	19	23						
13	S07D_UTIHDR_L	30	38	49	52	58	72	88						
13	S07D_UTIHDR_L	100	104	142	152	170	211	262	0.68	45	45	45	45	46
13	S07D_UTIHDR_L	150	-	-	-	-	-	-						
14	S08A_LDOHDR_V	2	0.98	Not reached	Not reached	Not reached	1.5	1.5						
14	S08A_LDOHDR_V	7	2.9	Not reached	2.1	2.8	3.2	3.4						
14	S08A_LDOHDR_V	30	13	14	14	14	15	17						
14	S08A_LDOHDR_V	100	38	42	43	45	50	61						
14	S08A_LDOHDR_V	150	51	60	59	62	72	91						
15	S08B_COMDIS_V	2	1.1	Not reached	Not reached	Not reached	1.6	1.6						
15	S08B_COMDIS_V	7	3.2	Not reached	2.4	3.2	3.5	3.8						
15	S08B_COMDIS_V	30	12	15	15	16	17	19						
15	S08B_COMDIS_V	100	32	45	46	49	55	68						
15	S08B_COMDIS_V	150	44	61	64	68	80	101						

No.	QRA Event	Hole Size (mm)	Jet Fire Downwind Thermal Radiation Distances (m)					Pool Fire Downwind Thermal Radiation Distances (m)						
			Jet Flame length (m)	35 kW/m ²	23 kW/m ²	12.6 kW/m ²	4.7 kW/m ²	2.1 kW/m ²	Pool Fire Diameter (m)	35 kW/m ²	23 kW/m ²	12.6 kW/m ²	4.7 kW/m ²	2.1 kW/m ²
19	S12A_VLARM1_V	150	-	-	-	-	-	-						
20	S13A_LLARM1_L	2	4.1	5.1	5.2	5.7	6.9	8.3						
20	S13A_LLARM1_L	7	12	15	16	18	22	26						
20	S13A_LLARM1_L	30	42	55	59	66	81	99						
20	S13A_LLARM1_L	100	117	160	172	192	239	297	0.71	49	49	49	50	50
20	S13A_LLARM1_L	150	-	-	-	-	-	-						
21	S14A_VLARM2_V	2	1.0	Not reached	Not reached	Not reached	1.5	1.5						
21	S14A_VLARM2_V	7	2.9	Not reached	2.1	2.8	3.2	3.4						
21	S14A_VLARM2_V	30	13	14	14	14	15	17						
21	S14A_VLARM2_V	100	38	42	43	45	50	61						
21	S14A_VLARM2_V	150	-	-	-	-	-	-						
22	S15A_LLARM2_L	2	4.1	5.1	5.2	5.7	6.9	8.3						
22	S15A_LLARM2_L	7	12	15	16	18	22	26						
22	S15A_LLARM2_L	30	42	55	59	66	81	99						
22	S15A_LLARM2_L	100	117	160	172	192	239	297	0.71	49	49	49	50	50
22	S15A_LLARM2_L	150	-	-	-	-	-	-						
23	S16A_DESPV1_V <small>Note 1</small>	2	1.1	Not reached	Not reached	Not reached	Not reached	Not reached						
23	S16A_DESPV1_V <small>Note 1</small>	7	3.1	Not reached	Not reached	Not reached	Not reached	Not reached						
23	S16A_DESPV1_V	30	12	Not	Not	Not	14	18						

No.	QRA Event	Hole Size (mm)	Jet Fire Downwind Thermal Radiation Distances (m)					Pool Fire Downwind Thermal Radiation Distances (m)						
			Jet Flame length (m)	35 kW/m ²	23 kW/m ²	12.6 kW/m ²	4.7 kW/m ²	2.1 kW/m ²	Pool Fire Diameter (m)	35 kW/m ²	23 kW/m ²	12.6 kW/m ²	4.7 kW/m ²	2.1 kW/m ²
	IS06 ¹			reached	reached	reached								
23	S16A_DESPV1_V <small>Note 1</small>	100	32	41	44	47	54	67						
23	S16A_DESPV1_V <small>Note 1</small>	150	43	58	61	66	77	98						

Note 1: S16A to S38A are the LPG storage vessels events and the consequences are the same, hence the consequences for S17A to S38A are not repeated.

Note 2: Results are shown as "Not reached" as the jet fires flame emissive power is lower than the thermal radiation levels of interest. Also, for LPG storage vessels event, the results are read at 1 m aboveground, whereas the releases were modelled at 5 m above ground. Hence there were no thermal radiation impacts at 1 m.



Appendix 3.
Ignition Probabilities



WOOLSTON LPG DEPOT
QUANTITATIVE RISK ASSESSMENT

The ignition probabilities for the QRA scenarios are given in the table below.

QRA Event	Hole Size	Propane		LPG	
		Release Rate (kg/s)	Probability of Ignition	Release Rate (kg/s)	Probability of Ignition
S01A	2 mm	0.1	1.10E-03	0.11	1.10E-03
S01A	7 mm	1.3	1.54E-03	1.3	1.59E-03
S01A	30 mm	24	4.34E-02	24	4.47E-02
S01A	100 mm	262	4.23E-01	269	4.31E-01
S01A	150 mm	589	7.16E-01	606	7.29E-01
S01B	2 mm	0.1	1.11E-03	0.13	1.11E-03
S01B	7 mm	1.5	1.84E-03	1.5	1.90E-03
S01B	30 mm	27	5.16E-02	28	5.33E-02
S01B	100 mm	305	4.67E-01	314	4.76E-01
S01B	150 mm	686	7.90E-01	705	8.04E-01
S02A	2 mm	0.1	1.10E-03	0.11	1.10E-03
S02A	7 mm	1.3	1.54E-03	1.3	1.59E-03
S02A	30 mm	24	4.34E-02	24	4.47E-02
S02A	100 mm	262	4.23E-01	269	4.31E-01
S02A	150 mm	589	7.16E-01	606	7.29E-01
S03A	2 mm	0.1	1.10E-03	0.11	1.10E-03
S03A	7 mm	1.3	1.54E-03	1.3	1.59E-03
S03A	30 mm	24	4.34E-02	24	4.47E-02
S03A	100 mm	262	4.23E-01	269	4.31E-01
S03A	150 mm	589	7.16E-01	606	7.29E-01
S03B	2 mm	0.1	1.10E-03	0.08	1.09E-03
S03B	7 mm	1.1	1.24E-03	0.97	1.16E-03
S03B	30 mm	20	3.49E-02	18	3.13E-02
S03B	100 mm	221	3.80E-01	197	3.52E-01
S03B	150 mm	498	6.42E-01	444	5.95E-01
S03C	2 mm	0.1	1.09E-03	0.07	1.09E-03
S03C	7 mm	0.9	1.16E-03	0.90	1.16E-03
S03C	30 mm	16	2.80E-02	17	2.88E-02
S03C	100 mm	179	3.30E-01	184	3.36E-01
S03C	150 mm	402	5.59E-01	413	5.69E-01
S04A	2 mm	0.1	1.09E-03	0.06	1.09E-03
S04A	7 mm	0.9	1.16E-03	0.71	1.15E-03
S04A	30 mm	16	2.80E-02	13	2.18E-02
S04A	100 mm	179	3.30E-01	144	2.87E-01
S04A	150 mm	402	5.59E-01	324	4.86E-01
S05A	2 mm	0.1	1.09E-03	0.06	1.09E-03
S05A	7 mm	0.9	1.16E-03	0.71	1.15E-03
S05A	30 mm	16	2.80E-02	13	2.18E-02
S05A	100 mm	179	3.30E-01	144	2.87E-01
S05A	150 mm	402	5.59E-01	324	4.86E-01

503402-RPT-R0001-R1.docx
May 2018

Appendix



WOOLSTON LPG DEPOT
QUANTITATIVE RISK ASSESSMENT

QRA Event	Hole Size	Propane		LPG	
		Release Rate (kg/s)	Probability of Ignition	Release Rate (kg/s)	Probability of Ignition
S06A	2 mm	0.1	1.09E-03	0.06	1.09E-03
S06A	7 mm	0.9	1.16E-03	0.71	1.15E-03
S06A	30 mm	16	2.80E-02	13	2.18E-02
S06A	100 mm	179	3.30E-01	144	2.87E-01
S06A	150 mm	402	5.59E-01	324	4.86E-01
S07A	2 mm	0.01	1.04E-03	0.01	1.03E-03
S07A	7 mm	0.1	1.10E-03	0.07	1.09E-03
S07A	30 mm	1.7	2.10E-03	1.4	1.67E-03
S07A	100 mm	19	3.32E-02	15.27	2.63E-02
S07A	150 mm	42	8.40E-02	34	6.67E-02
S07B	2 mm	0.01	1.03E-03	0.003	1.02E-03
S07B	7 mm	0.1	1.09E-03	0.04	1.08E-03
S07B	30 mm	1.3	1.60E-03	0.72	1.15E-03
S07B	100 mm	15	2.53E-02	8.0	1.26E-02
S07B	150 mm	33	6.41E-02	18	3.20E-02
S07C	2 mm	0.01	1.04E-03	0.01	1.03E-03
S07C	7 mm	0.1	1.10E-03	0.07	1.09E-03
S07C	30 mm	1.7	2.07E-03	1.4	1.67E-03
S07C	100 mm	18	3.27E-02	15	2.63E-02
S07C	150 mm	-	-	-	-
S07D	2 mm	0.1	1.09E-03	0.04	1.08E-03
S07D	7 mm	0.7	1.15E-03	0.48	1.14E-03
S07D	30 mm	13	2.19E-02	8.8	1.40E-02
S07D	100 mm	144	2.88E-01	98	2.22E-01
S07D	150 mm	-	-	-	-
S08A	2 mm	0.01	1.03E-03	0.003	1.02E-03
S08A	7 mm	0.1	1.09E-03	0.04	1.08E-03
S08A	30 mm	1.3	1.60E-03	0.72	1.15E-03
S08A	100 mm	15	2.53E-02	8.0	1.26E-02
S08A	150 mm	33	6.41E-02	18	3.20E-02
S08B	2 mm	0.01	1.04E-03	0.004	1.02E-03
S08B	7 mm	0.1	1.10E-03	0.05	1.08E-03
S08B	30 mm	2.0	2.61E-03	0.91	1.16E-03
S08B	100 mm	23	4.12E-02	10	1.63E-02
S08B	150 mm	51	1.04E-01	23	4.14E-02
S09A	2 mm	0.01	1.04E-03	0.01	1.03E-03
S09A	7 mm	0.1	1.10E-03	0.07	1.09E-03
S09A	30 mm	1.7	2.10E-03	1.4	1.67E-03
S09A	100 mm	19	3.32E-02	15	2.63E-02
S09A	150 mm	-	-	-	-

503402-RPT-R0001-R1.docx
May 2018

Appendix



WOOLSTON LPG DEPOT
QUANTITATIVE RISK ASSESSMENT

QRA Event	Hole Size	Propane		LPG	
		Release Rate (kg/s)	Probability of Ignition	Release Rate (kg/s)	Probability of Ignition
S10A	2 mm	0.1	1.09E-03	0.05	1.08E-03
S10A	7 mm	0.7	1.15E-03	0.64	1.15E-03
S10A	30 mm	13	2.19E-02	12	1.94E-02
S10A	100 mm	144	2.88E-01	130	2.69E-01
S10A	150 mm	325	4.87E-01	292	4.54E-01
S11A	2 mm	0.1	1.09E-03	0.05	1.08E-03
S11A	7 mm	0.7	1.15E-03	0.64	1.15E-03
S11A	30 mm	13	2.19E-02	12	1.94E-02
S11A	100 mm	144	2.88E-01	130	2.69E-01
S11A	150 mm	325	4.87E-01	292	4.54E-01
S12A	2 mm	0.01	1.03E-03	0.003	1.02E-03
S12A	7 mm	0.1	1.09E-03	0.04	1.08E-03
S12A	30 mm	1.3	1.56E-03	0.72	1.15E-03
S12A	100 mm	14	2.47E-02	8.0	1.26E-02
S12A	150 mm	-	-	-	-
S13A	2 mm	0.1	1.09E-03	0.05	1.08E-03
S13A	7 mm	0.7	1.15E-03	0.64	1.15E-03
S13A	30 mm	13	2.19E-02	12	1.94E-02
S13A	100 mm	144	2.88E-01	130	2.69E-01
S13A	150 mm	-	-	-	-
S14A	2 mm	0.01	1.03E-03	0.003	1.02E-03
S14A	7 mm	0.1	1.09E-03	0.04	1.08E-03
S14A	30 mm	1.3	1.56E-03	0.72	1.15E-03
S14A	100 mm	14	2.47E-02	8.0	1.26E-02
S14A	150 mm	-	-	-	-
S15A	2 mm	0.1	1.09E-03	0.05	1.08E-03
S15A	7 mm	0.7	1.15E-03	0.64	1.15E-03
S15A	30 mm	13	2.19E-02	12	1.94E-02
S15A	100 mm	144	2.88E-01	130	2.69E-01
S15A	150 mm	-	-	-	-
S16A – S38A	2 mm	0.01	1.04E-03	0.004	1.02E-03
S16A – S38A	7 mm	0.1	1.10E-03	0.05	1.08E-03
S16A – S38A	30 mm	1.7	2.10E-03	0.84	1.16E-03
S16A – S38A	100 mm	19	3.32E-02	9.4	1.50E-02
S16A – S38A	150 mm	42	8.40E-02	21	3.81E-02

503402-RPT-R0001-R1.docx
May 2018

Appendix



Appendix 4.
Assumptions Register (inc. approval correspondence)

503402-RPT-R0001-R1.docx
May 2018

Appendix



LIQUIGAS

**Woolston LPG Depot
Assumptions Register for QRA**

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September 2017

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WOOLSTON LPG DEPOT
ASSUMPTIONS REGISTER FOR QRA

TABLE OF CONTENTS

1	ABBREVIATIONS	1
2	ASSUMPTIONS	2
2.1	Introduction	2
2.2	Scope of Work	2
2.3	Parts Count Methodology	2
2.4	Failure Frequency Data and Hole Size Distributions	3
2.5	Pigging Frequency	5
2.6	Hazardous Material on-site and Consequences	5
2.7	Release Scenarios	5
2.8	Environmental Conditions for Modelling	7
2.9	Ignition Probabilities	8
2.10	Fatality Criteria	9
2.11	Risk Criteria	12
3	REFERENCE	13



1 ABBREVIATIONS

BLEVE	Boiling Liquid Expanding Vapour Explosion
DNV GL	Det Norske Veritas Germanischer Lloyd
ESDV	Emergency Shutdown Valve
HCRD	Hydrocarbon Releases Database
HIPAP4	Hazardous Industry Planning Advisory Paper No. 4
LFL	Lower Flammable Limit
LOC	Loss of containment
LPG	Liquefied Petroleum Gas
LSIR	Location Specific Individual Risk
ME	Multi-Energy
NAP	Normal Atmospheric Pressure
P&ID	Piping and Instrumentation Diagrams
QRA	Quantitative Risk Assessment
UK HSE	United Kingdom Health and Safety Executive
UKOOA	UK Offshore Operators Association
VCE	Vapour Cloud Explosion



2 ASSUMPTIONS

2.1 Introduction

This document sets out the assumptions to be used for a Quantitative Risk Assessment (QRA) for the Liquigas Woolston Liquefied Petroleum Gas (LPG) Depot. The overall methodology and general assumptions for the QRA shall be consistent with the WorleyParsons Onshore QRA Method Statement – using Phast Risk (PCD-473) [Ref. 1].

2.2 Scope of Work

The scope for the Liquigas Woolston LPG Depot QRA covers the following:

1. Existing Woolston LPG depot facilities
2. Proposed LPG Storage Upgrade facilities

The scope for the QRA begins at the first pipeline section that emerges from underground within the plant boundary. The QRA model will be set up using DNV GL Phast Risk version 6.7 [Ref. 2].

2.3 Parts Count Methodology

2.3.1 Definition of Parts Count Sections

Each potential leak source will be associated with a particular isolatable inventory. Primarily the isolatable inventories will be defined by emergency shutdown valve (ESDV) boundaries. These sections may be further broken down where warranted; however, the entire contained inventory will be considered as available for release. Further breakdown may be warranted due to:

- Significant change in operating parameters (temperature and pressure)
- Significant change in stream composition
- Change in stream phase
- Equipment location

At isolatable boundaries, the valve will be assumed as the last component of the upstream inventory.

The following potential release points are excluded from the parts count:

- For normally closed valves, both the valve and upstream flange will be counted, but not any equipment items downstream of the valve unless this is exposed to a live inventory (e.g. on a bypass line).
- If a cap or blind flange is shown against a valve, it is assumed to be closed, even if not indicated as such.

2.3.2 Components

The definition of components within the parts count will be aligned with failure rate data published in the DNV Failure Frequency Guidance [Ref. 3]. The parts count will consider the following:

- Equipment items
- Valves
- Flanges



- Instrumentation and small bore fittings
- Pipework

The parts count will be recorded in an MS Excel spreadsheet, with each section broken down by piping and instrumentation diagrams (P&IDs). Marked up P&IDs will be attached with the QRA report. The P&IDs will be sourced from the following references:

- Woolston LPG Depot facilities – BlueCielo Meridian Web database for Liquigas.
- Proposed LPG storage upgrade facilities – Woolston LPG Depot Storage Upgrade project (WorleyParsons Project Number 500929).

Equipment that are on standby are normally not considered in the QRA, this includes:

- Only two LPG compressors (out of five) (K-0601/3/5/6/7) will be considered.

Note 1: As per P&ID CCH-15-0116, Rev. 10 (sheet 1 of 2), the LPG Compressor Suction Vessels (V-0615/V-0616) were shown as in duty/standby configuration. However, as confirmed with the Woolston depot supervisor [Ref. 4], both suction vessels are in used and hence will be included.

2.4 Failure Frequency Data and Hole Size Distributions

2.4.1 General Leak Frequencies

The leak frequencies for process equipment, pressurized storage vessel and tanks in general will be taken from the DNV Failure Frequency Guidance [Ref. 3]. DNV's data is derived from the Hydrocarbon Release Database (HCRD) which has been compiled by the UK HSE over a 20 year period, and is subsequently amended (smoothed) by DNV.

Failure frequency data from the HCRD contains detailed historical information on offshore hydrocarbon release incidents occurring in the UK offshore environment, and is considered an industry standard for offshore QRA applications. The database categorises failure rates on a detailed basis of equipment type and size, and provides a probabilistic hole size distribution associated with the failure.

The HCRD data are also normally used for QRA at onshore facilities, although the use of offshore failure rate may be considered to be conservative for use in most onshore applications, on the basis that:

- Offshore environments tend to be harsher, both external (saliferous environment) and internal (produced sand), increasing the rate of equipment corrosion and erosion;
- Congestion at offshore facilities increases the likelihood of damage through impact; and
- Restricted access to offshore facilities may limit maintenance campaigns, increasing the likelihood of failure.

There is inadequate industry data to estimate the frequencies of failures of buried or mounded vessels/tanks. Industry guidance also notes that a leak from a buried or mounded vessel/tank is likely first to be into the surrounding soil and may not reach the open air; even if it does, it may not eject the intervening soil and so be limited in rate and velocity by this [Ref. 5]. Given this uncertainty in release frequency data for a mounded vessel and the expected insignificant contribution to the risk profile of the site, a release frequency from the body of the mounded LPG vessel has not been assigned. However, releases from nozzles, piping connections and instrumentation connected to the mounded vessel will be included.



DNV Failure Frequency Guidance (or HCRD) does not contain leak information for road transport units for loading/unloading activities that may be present in an establishment. Frequencies of loss of containment (LOC) for road tankers will be taken from the TNO Purple Book [Ref. 6], which are shown in Table 2-1.

Table 2-1: Frequencies of LOCs for Road Tankers and Tank Wagons in an Establishment

LOC for Road Tankers and Tank Wagons in an establishment	Tanker, Pressurised
Instantaneous release of the complete inventory	5×10^{-7} per year
Continuous release from a hole size of the largest connection	5×10^{-7} per year
Full bore rupture of the loading/unloading arm	3×10^{-8} per hour
Leak of the loading/unloading arm (10% of the nominal diameter, with a maximum of 50 mm)	3×10^{-7} per hour
External impact	In general, LOC for road tanker accident do not have to be considered if measures have been taken to reduce road accidents, e.g. speed limits.
Fire under tank	Note 1

Note 1: Fire under a road tanker may lead to the instantaneous release of the complete inventory of the road tanker. Various causes of failure may lead to a fire under a tanker:

- Leakage of the connections under the tanker followed by ignition:
 - 1×10^{-6} per year (pressurised tanker)
- Fire in the surroundings of the tanker. The failure frequency is determined by the local situation. Important aspects are the presence of flammable inventories nearby and failure during loading/unloading of flammable substances. This will be considered on case-by-case basis.

For LPG road tanker unloading, 45 loading operations per week is assumed with each loading operation taking up to 45 minutes. The loading arms remain pressurised up to the SDVs even when not loading.

Hole Sizes

For every component failure, there is a range of credible hole sizes ranging from pinhole leak to full bore rupture. The hole size grouping from the DNV Failure Frequency Guidance together with the representative hole sizes to be used in the QRA is as follows:

Table 2-2: Hole Size Distribution

DNV Hole Size Group (mm)	QRA Hole Representation (mm)
1 - 3	2
3 - 10	7
10 - 50	30
50 - 150	100
>150	Full bore rupture



2.5 Pigging Frequency

A pig receiver (LYT-V-0213) is located at the Woolston facility for retrieval of the pig or sphere used to clean, condition and/or monitor the pipeline from the port. Pigging is assumed to be a half day operation that is performed once a year [Ref. 7].

Table 2-3: Pigging Frequency and Modification Factor

Description	Average Pigging Frequency (per year)	Average Pigging Duration (hours)	Modification Factor
Pig Receiver (LYT-V-0213)	1	12	0.0014

2.6 Hazardous Material on-site and Consequences

The only hazardous material considered in the QRA is LPG (propane and butane). The composition of LPG varies between winter and summer. The facility normally handles propane in winter as it is more suitable for the South Island winter market, but it can also handle product from 50/50 (propane/butane) mix to 100% propane. For the purpose of QRA, it is assumed that the facility is handling 100% propane for 6 months per year, and 60/40 propane/butane (mole fraction) mix for the other 6 months. Propane has a flash point of -156°C with the flammability limit ranges from 2.1% to 9.5%. Butane has a flash point of -76°C with the flammability limit ranges from 1.8% to 8.4%.

LPG is normally maintained as liquid under pressure. Pressurised release can either be liquid, which quickly vaporises, or in the gaseous mixture (2-phase). LPG releases will be modelled as flash fire and jet fire (spray fire) with the possibility of rainout or pool fire. LPG gas is heavier than air, once ignited, the flame can flash back to the leak source. Vapour cloud explosion (VCE) will be modelled with reference to the expected level of congestion (see Section 2.10.4).

2.7 Release Scenarios

Release Rates

Release rates will be calculated based on the release hole sizes and fluid pressure. Table 2-4 shows the approximate isolatable hydrocarbon inventories contained within the LPG equipment together with the operating conditions (pressure and temperature).

Table 2-4: Operating Conditions and Inventory

System	Operating Pressure ^{Note 1} (barg)	Operating Temperature (°C)	Material Phase	Volume (m ³)
<i>Existing Woolston LPG Depot Facilities</i>				
Aboveground liquid pipeline (LPG) – during ship discharge (assume 38 ship discharges per year)	28	12	Liquid	230
Aboveground liquid pipeline (LPG) – no ship discharge (pipeline resting on LPG for 327 days per year)	38	12	Liquid	230
Ship unloading line (upstream of PCV-0216A)	28	12	Liquid	5
Ship unloading line (downstream of PCV-0216A)	15 - 20	12	Liquid	5
Ship unloading line (downstream of PCV-0217A)	13	12	Liquid	5
Liquid rundown header	10.3	12	Liquid	2
Road tanker loadout (liquid) – during loading	6.5 - 8.5	20	Liquid	0.1

System	Operating Pressure ^{Note 1} (barg)	Operating Temperature (°C)	Material Phase	Volume (m ³)
Road tanker loadout (vapour) – during loading	3 - 6.5	20	Vapour	0.1
Road tanker loadout (liquid) – when not loading	6.5 - 8.5	20	Liquid	0.1
Road tanker loadout (vapour) – when not loading	3 - 6.5	20	Vapour	0.1
Auxiliary despatch header	6.5 - 8.5	12	Vapour	4.5
Compressor suction header	3 - 6.5	12	Vapour	0.72
Compressor discharge header	6.5 - 8.5	20	Vapour	0.72
LPG compressors	4 - 10.5	20	Vapour	0.72
Storage and Despatch Vessels (each)	3 - 8.5	12	Vapour ^{Note 2}	171 (100 tonne)
Note 1: The lower pressure is for handling 60/40 propane/butane mixed LPG whereas the higher pressure is for handling propane.				
Note 2: Releases from the LPG vessels will be modelled as vapour phase only.				
Proposed Storage Upgrade Facilities				
Storage Vessels (V-0521, V-0522 and V-0523) (each)	8.5	12	Vapour ^{Note 2}	500 tonne
Header extensions (liquid and vapour headers to be extended by approximately 20 – 25 m to connect with new vessels)	As per the conditions for the respective headers as above.			

The total volume released is driven by either the release rate prior to isolation or the stored volume available for release post isolation (estimated by equipment sizes and locations of isolation valves). For each release case, the worst case scenario (release at operating pressure until detection) is determined and used as representative for the release cases. For modelling purposes, the following release assumptions will be applied:

- Release of the entire inventory is assumed (implying the release is at the low point)
- Jet fires are modelled based on the initial release conditions, and do not take into account of the depressurisation that occurs over time

It is important to note that regardless of volume, the LPG release rate from a mounded vessel or a header is essentially constant, given that the pressure in the equipment will be maintained at the saturated vapour pressure. As the volume of vapour in the equipment decreases due to outflow (through the release point), the LPG will vaporise (boil) to maintain the containment pressure.

Release Location and Containment

Releases from the LPG vessels will be modelled as releases from the vapour space only. As the LPG vessels are mounded, release in liquid phase will not be modelled due to containment within the mounded structure protecting the vessels. Flanges, instrumentation and connections are in the vapour space of the vessel and there are no flanges or connections in the liquid space.

The height of release from all scenarios will be assumed to be at 1 m above ground with the exception of releases from the mounded vessels where the height of release will be assumed to be at 5 m above ground. It is considered reasonable to assume 70% of the releases are horizontal release and 30% of the releases are vertical release.

2.8 Environmental Conditions for Modelling

Meteorological conditions impact the outcomes of release modelling, including downwind flammable and toxic vapour cloud dispersion distance (influenced by atmospheric stability and wind speed), rate of pool vaporisation (ambient temperature), and atmospheric attenuation of radiant heat (temperature and relative humidity).

The weather data for Christchurch Aerodrome station (station number 4843) was obtained from the New Zealand National Climate Database [Ref. 8] for time period 2008 - 2012. The windrose is shown in Figure 2-1.

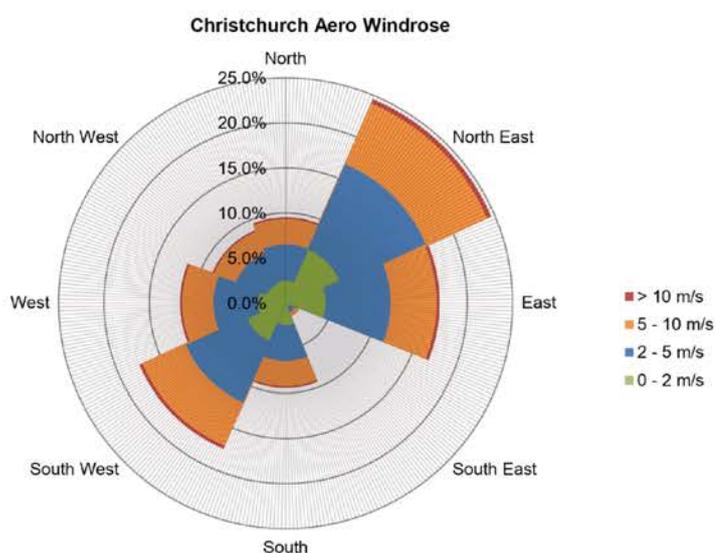


Figure 2-1: Christchurch Aero Windrose

The following wind speed and atmospheric stability (Pasquill stability) combinations will be used in the QRA. The wind data in tabular format is given in Table 2-5.

Table 2-5: Christchurch Aero Wind Data

Wind Speed / Pasquill Stability	North	North East	East	South East	South	South West	West	North West	Total
0 - 2 m/s / F	2.5%	6.4%	4.4%	0.4%	2.5%	4.6%	3.0%	2.3%	26.1%
2 - 5 m/s / D	4.0%	10.3%	7.1%	0.7%	4.0%	7.4%	4.9%	3.7%	42.1%
5 - 10 m/s / D	3.0%	7.8%	5.4%	0.5%	3.0%	5.6%	3.7%	2.8%	31.9%
Total	9.5%	24.6%	17.0%	1.6%	9.4%	17.5%	11.6%	8.7%	100.0%



Note:

1. Pasquill Stability F – stable, night with moderate clouds and light/moderate wind
2. Pasquill Stability D – neutral, little sun and high wind or overcast/windy night

The following weather parameters taken from the same weather station will also be used for modelling in the QRA:

- Mean air temperature: 11.5°C
- Relative humidity: 82.2%

For dispersion modelling, surface roughness of 0.10 m will be applied, representative of an area with "low crops, occasional large obstacles".

In this study, no allowance for solar radiation will be included.

2.9 Ignition Probabilities

Given a release, the probability of ignition is dependent on a range of factors, including:

- Release rate
- Material state (liquid or gas)
- Material physical properties (flash point, density, flammable limits)
- Ignition sources present

There are a range of correlations for applying an ignition probability to a release, and most are based on release rate and state. The UK Offshore Operators Association (UKOOA) has generated a model for predicting ignition probability [Ref. 9] which takes into account the above, as well as the nature of the surrounding area with respect to potential ignition sources. This model has been used to generate a range of typical correlations. For this QRA, the following scenario will be used:

- Scenario 8 - "Large plant gas LPG (gas or LPG release from large onshore plant)", which is applicable for releases of flammable gases, vapour or liquids significantly above their normal (normal atmospheric pressure (NAP)) boiling point from large onshore plants (plant area above 1200 m², site area above 35,000 m²).

Note that Scenario 8 is assumed to particularly apply to LPG 'plant' whereby LPG processing takes place. This may be a conservative correlation for the Woolston Depot as it is a storage facility only. An alternative correlation model from the same reference is Scenario 5 – "Small plant gas LPG (gas or LPG release from small onshore plant; plant area below 1200 m², site area above 35,000 m²). However, for the purpose of this QRA Scenario 8 is considered more representative of the Woolston site due to the size of the site and the proximity of neighbouring facilities and Chapmans Road.

The graphs for ignition probabilities as a function of mass release rates are shown in Figure 2-2. For comparison, Figure 2-2 includes the correlations for Scenario 5 and it shows that the ignition probabilities for the two scenarios are similar and hence are not expected to lead to significant differences in the risk results. Also included are the Cox, Lee, Ang ignition probability correlations which are sometimes used in QRA studies, but have been questioned by the UKOOA guidance.

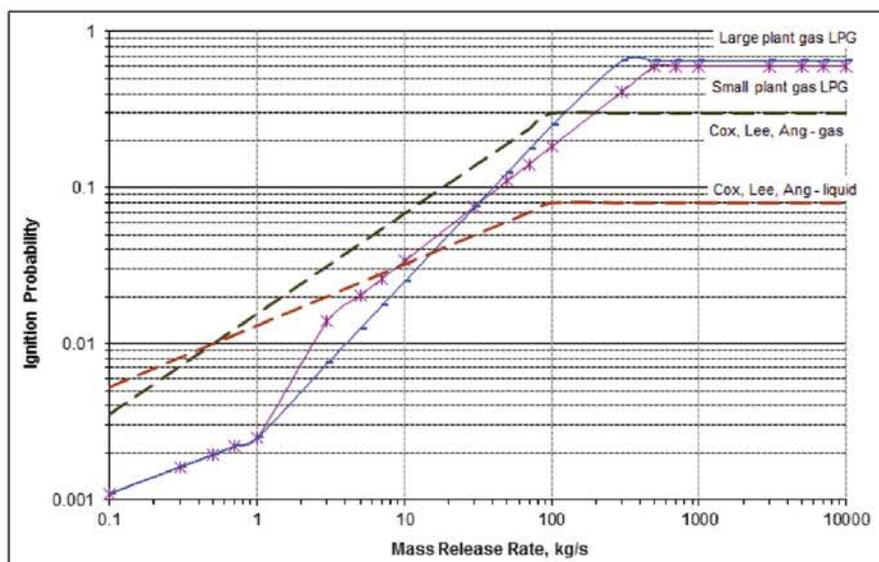


Figure 2-2: Ignition Probability

The graphs represent total ignition probability. An overall distribution for early to delayed ignition ratio of 30:70 to 50:50 split is considered reasonable. For this QRA, a 50:50 split for immediate: delayed ignition probability will be used given the location in an industrial area and the proximity of Chapmans Road.

The timing of ignition is used as a means to predict the nature of the ignited event. Early ignition is taken to indicate a jet fire or pool fire depending on the material concerned. Delayed ignition is taken to indicate that the ignition would initially result in a flash fire or explosion.

2.10 Fatality Criteria

2.10.1 Thermal Radiation

The method of calculating the probability of fatality for an individual, given known exposure duration and thermal heat radiation levels, is undertaken in Phast Risk by using a probit function. The probit function is a general formula which takes the same form, but with various constants used. The probit used for lethality calculations is taken from the TNO Green Book [Ref. 10]. The probit function is defined as follows:

$$\text{Probit} = -36.38 + 2.56 \ln(t \times q^{4/3})$$

Where:

t = exposure duration in seconds

q = thermal radiation level in W/m^2

An exposure duration of 20 seconds has been used as a base case, although it is noted that personnel are likely to find some form of shielding protection within this time frame.

The NSW Hazardous Industry Planning Advisory Paper No. 4 (HIPAP4) [Ref. 11] provides the following

broadly qualitative consequences to thermal radiation for information:

- 2.1 kW/m² – Minimum to cause pain after 1 minute
- 4.7 kW/m² – Will cause pain in 15 – 20 s and injury (at least 2nd degree burns) after 30s exposure. Considered the criterion for injury risk, at a tolerable frequency of 50 chances in a million per year
- 12.6 kW/m² – Significant chance of fatality for extended exposure. High chance of injury
- 23 kW/m² – Likely fatality for extended exposure, and chance of fatality for instantaneous exposure
- 35 kW/m² – Significant chance of fatality for people exposed instantaneously

2.10.2 Flash Fire

If personnel are within the 100% lower flammable limit (LFL) of the gas plume, 100% fatality is assumed.

2.10.3 Boiling Liquid Expanding Vapour Explosion (BLEVE)

BLEVE is an escalation event due to prolonged flame impingement onto pressurised vessels. The probability of BLEVE is dependent on various factors including the types of flammable material and liquid inventory in the vessel, material of construction for the vessel, types and numbers of fire protection systems (e.g. relief valves, cooling systems), mechanism of vessel failure (external impact, jet fire impingement or pool fire impingement), etc. As such, there is no clear guideline or criteria to determine if a BLEVE is credible on a pressure vessel, and the following assumptions will be adapted.

For mounded vessels, escalations to the LPG storage vessels due to flame impingement or mechanical impact are not considered credible due to the protection provided by the mound. In this QRA, mounded vessels BLEVE will not be considered.

For a road tanker, the external impact loss of containment is determined by the local situation. As per TNO Purple Book [Ref. 6], in general, the loss of containment for road tanker accidents do not have to be considered in the QRA model in a location if measures have been taken to reduce road accidents, like speed limits. Drainage will be provided for the truck loading bay, therefore prolonged pool fire impingement onto the truck is not likely. Deluge cages are also provided for the loading bays for cooling of the road tankers. Therefore the probability of BLEVE for a road tanker will be excluded in the QRA.

2.10.4 Vapour Cloud Explosion

VCE are modelled in Phast Risk using Extended Explosion Modelling, which is an extension in Phast Risk. The extended explosion method allows the definition of regions of congestion and confinement. The calculations then consider the interactions between the dispersing cloud and these regions, and calculate the pattern of overpressure across these regions. The relationship between overpressure and fatality probability for different groups of people (e.g. for people in different types of building) can also be defined. The Multi-Energy Method (ME) is selected for the explosion modelling.

A potential congested area has been identified around the piperack area as shown in Figure 2-3.



Figure 2-3: Congested Area on site

The dimensions and other inputs are given in Table 2-6.

Table 2-6: Inputs for Multi-Energy Explosion Congested Area

Congested Area	Dimensions (m)			Multi-Energy Curve	Volume Blockage Ratio
	Width	Length	Height		
1	12	65	2.5	5	0.2

Where:

- Multi-Energy Curve – describes the behaviour of an explosion in terms of the explosion strength. There are ten multi-energy blast curves, between 1 for the weakest explosion and 10 for the strongest. Blast strength number 7 is normally representative of a strong deflagration and blast strength number 10 is normally representative of a detonation.

The TNO Yellow Book [Ref. 12] provides the guidance in the choice of the source strength base on the three factors: the degree of obstruction by obstacles inside the vapour cloud, ignition energy and degree of confinement. Nonetheless, the Yellow Book also recommends to be conservative in the choice of a source strength for the initial blast.

For this study, blast strength number 5 is assumed to represent the average explosion strength.

- Volume Blockage Ratio – fraction of the volume of the obstructed region that is occupied by obstructions; or the ratio between volume of all obstacles and total volume of the obstructed region.

For this study, a blockage ratio of 0.2 is assumed to represent an area of low blockage.



2.11 Risk Criteria

The key deliverable for this study is the location specific individual risk (LSIR) in the form of risk contours. LSIR is the risk of fatality at a point in space to a hypothetical individual at a location for 365 days per year, 24 hours a day, unprotected and unable to escape.

As there are no standard risk criteria which have been developed for the NZ context, this deliverable will be assessed against the suggested risk criteria in the NSW Hazardous Industry Planning Advisory Paper No. 4 (HIPAP4) "Risk Criteria for Land Use Planning" [Ref. 11] as shown in Table 2-7.

Table 2-7: HIPAP4 Individual Fatality Risk criteria

Land Use	Risk Criteria Adopted (per annum)	Interpretation for QRA
Hospitals, schools, childcare facilities, old age housing	0.5×10^{-6} (or 5×10^{-7}) (1 in 2 million)	5×10^{-7} risk contour should not extend to these areas
Residential, hotels, motels, tourist resorts	1×10^{-6} (1 in 1 million)	1×10^{-6} risk contour should not extend to these areas
Commercial developments including retail centres, offices and entertainment centres	5×10^{-6} (1 in 200,000)	5×10^{-6} risk contour should not extend to these areas
Sporting complexes and active open space	10×10^{-6} (or 1×10^{-5}) (1 in 100,000)	1×10^{-5} risk contour should not extend to these areas
Industrial	50×10^{-6} (or 5×10^{-5}) (1 in 20,000)	5×10^{-5} risk contour should, as a target, be contained within the boundaries of the industrial site where applicable



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From: [Gary Heaven](#)
To: [Phillis, Damian \(New Plymouth\)](#); [Les Nelson](#)
Cc: [Lee, Yvette \(New Plymouth\)](#)
Subject: RE: 503402-TCN-R0001
Date: Wednesday, 13 September 2017 7:31:51 p.m.
Attachments: [image001.jpg](#)

Thanks Damian, it all looks good to me.

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Cc: Lee, Yvette (New Plymouth) <Yvette.Lee@WorleyParsons.com>
Subject: FW: 503402-TCN-R0001

Gary/Les,
Can you please review the attached Assumptions Register for the Woolston QRA Update. This is based on information agreed for some previous QRA work at Woolston for Project Gateway; however, a key purpose of this Register is to align these QRA assumptions with those being adopted for the QRA of the Woolston Mobil Terminal so that the basis for the Risk Management Areas in the District Plan are consistent.
Cheers – Damian.

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Cc: [Phillis, Damian \(New Plymouth\)](#); Gary Heaven
Subject: RE: 503402-TCN-R0001
Date: Monday, 18 September 2017 3:58:15 p.m.
Attachments: [image001.jpg](#)
[image002.jpg](#)

All looks good thanks Y'vette.

Les.

Les Nelson | Depot Supervisor | **Liquigas Ltd**

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Cc: Phillis, Damian (New Plymouth) <Damian.Phillis@WorleyParsons.com>; Gary Heaven <Gary.Heaven@liquigas.co.nz>
Subject: RE: 503402-TCN-R0001

Hi Les,

Just to follow up with you whether you have any comments on the Assumptions for the Woolston QRA update? The assumptions are basically the same for the previous QRA that we discussed last year.

Please let me know if you need any clarification.

Thank you.

Regards,

Y'vette Lee

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From: Phillis, Damian (New Plymouth)
Sent: Wednesday, 13 September 2017 4:04 p.m.
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Cheers – Damian.

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MOBIL WOOLSTON TERMINAL

QUANTITATIVE RISK ASSESSMENT

FOR DETERMINATION OF PLANNING OVERLAY

MOBIL OIL NEW ZEALAND LIMITED

PREPARED FOR: Christchurch Terminals
Manager

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Page 2

CONTENTS

ABBREVIATIONS 6

TERMINOLOGY 7

1. SUMMARY 9

 1.1. Background 9

 1.2. Objective 9

 1.3. Scope 9

 1.4. Method 10

 1.5. Conclusions 10

2. INTRODUCTION 13

 2.1. Background and scope 13

 2.2. Exclusions and limitations 13

3. SITE DESCRIPTION 15

 3.1. Location 15

 3.2. Surrounding land uses 15

 3.3. Operations 15

 3.4. Transfer pipeline 16

 3.5. Tank storage 16

 3.6. ESD and fire protection 17

 3.7. Gantry export 17

 3.8. Future operation 18

4. METHODOLOGY 22

 4.1. Overview 22

 4.2. Hazard identification 23

 4.3. Consequence analysis 23

 4.4. Frequency analysis 23

 4.5. Risk analysis 23

 4.6. Risk criteria 24

5. HAZARD IDENTIFICATION 26

 5.1. Hazardous materials 26

 5.2. Hazard identification 26

 5.3. External factors 26

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 3

6.	QRA BASIS	34
6.1.	Basis	34
6.2.	Representative scenarios	34
7.	CONSEQUENCE ANALYSIS	37
7.1.	Methodology	37
7.2.	Vulnerability	41
7.3.	Results	42
8.	FREQUENCY ANALYSIS	44
9.	RISK ASSESSMENT	45
9.1.	Individual fatality risk	45
9.2.	Major risk contributors	49
9.3.	Injury risk	52
9.4.	Property damage and propagation risk	55
9.5.	Conclusions	58
APPENDIX A.	METEOROLOGICAL DATA	
APPENDIX B.	CONSEQUENCE ANALYSIS	
APPENDIX C.	FREQUENCY ANALYSIS	
APPENDIX D.	LAND USES	
APPENDIX E.	SENSITIVITY STUDIES	
APPENDIX F.	REFERENCES	

Document: 21086-RP-002
Revision: 0
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Page 4

TABLES

Table 1.1: Terminal operations	10
Table 1.2: QRA results against HIPAP 4 risk criteria	12
Table 2.1: Study assumptions and limitations.....	13
Table 3.1: Surrounding land uses of the Terminal	15
Table 3.2: LWPL details	16
Table 3.3: Fuel storage tanks	19
Table 3.4: Additive storage tanks	19
Table 4.1: Risk assessment criteria (HIPAP 4, Ref (2))	25
Table 5.1: HSNO classifications	26
Table 5.2: Material properties.....	27
Table 5.3: Hazard scenarios.....	28
Table 5.4: External factors.....	32
Table 6.1: Summary of QRA data.....	35
Table 6.2: Scenario summary.....	36
Table 7.1: Representative hole sizes for modelling loss of containment	38
Table 7.2: Scenario rule set for releases	40
Table 7.3: Weather conditions for consequence modelling.....	41
Table 7.4: Vulnerability criteria for fire scenarios	42
Table 9.1: Comparison with individual fatality risk criteria	46
Table 9.2: Major risk contributors at analysis points (Current Case)	50
Table 9.3: Major risk contributors at analysis points (Future Case).....	51
Table 9.4: Comparison with injury risk criteria	52
Table 9.5: Comparison with damage and propagation risk criteria.....	55

FIGURES

Figure 3.1: Overall Terminal layout.....	20
Figure 3.2: Hydrocarbon storage area layout.....	21
Figure 4.1: Overview of QRA process	22
Figure 9.1: Individual fatality risk contour (Current Case)	47
Figure 9.2: Individual fatality risk contour (Future Case).....	48
Figure 9.3: Analysis point locations (Current Case).....	49
Figure 9.4: Analysis point locations (Future Case)	51
Figure 9.5: Injury risk contour (Current Case).....	53
Figure 9.6: Injury risk contour (Future Case)	54
Figure 9.7: Damage and propagation risk contour (Current Case).....	56
Figure 9.8: Damage and propagation risk contour (Future Case)	57

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 5

ABBREVIATIONS

AGO	Automotive Gasoline Oil (diesel)
ATG	Automatic Tank Gauging
AWS	Automatic Weather Station
CCC	Christchurch City Council
CCPS	Center for Chemical Process Safety
CDP	Christchurch District Plan
CFD	Computational Fluid Dynamics
DPE	Department of Planning and Environment (NSW)
ESD	Emergency Shutdown
GSQ	George Seymour Quay
HHLA	High High Level Alarm
HIPAP	Hazardous Industry Planning Advisory Paper
IBC	Intermediate Bulk Container
IFR	Internal Floating Roof
LFL	Lower Flammability Limit
LWPL	Lyttelton–Woolston Pipeline
MAPP	Major Accident Protection Policy
MHF	Major Hazard Facility
NB	Nominal Bore
NSW	New South Wales
NZ	New Zealand
OGP	Oil and Gas Producers
PGA	Peak Ground Acceleration
PULP	Premium Unleaded Petroleum
QRA	Quantitative Risk Assessment
SFARP	So Far As Reasonably Practicable
UFL	Upper Flammability Limit
UK HSE	United Kingdom Health and Safety Executive
ULP	Unleaded Petroleum
VCA	Vapour Cloud Assessment
VCE	Vapour Cloud Explosion

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 6

TERMINOLOGY

Annual Individual Fatality Risk (natural hazards)	<p>The term "annual individual fatality risk (AIFR)" is commonly used in various natural hazards risk assessments in NZ. This is the risk of fatality to a person at a location including factors for probability of presence/exposure.</p> <p>Note: The natural hazards AIFR has a different basis to the individual fatality risk definition used in land use safety planning in the vicinity of hazardous facilities (as defined below) as the natural hazards AIFR calculation includes factors for probability of exposure/probability of presence. The term AIFR is <u>not</u> used in this QRA report.</p>
Combustible liquid	<p>Any liquid, other than a flammable liquid, that has a flash point, and has a fire point that is less than its boiling point (AS 1940–2004). AGO (i.e. diesel) is an example of a combustible liquid considered in this study.</p>
Consequence	<p>Outcome or impact of a hazardous incident, including the potential for escalation.</p>
Flammable liquid	<p>Liquids [...] which give off a flammable vapour at temperatures of not more than 60.5°C, closed cup test, or not more than 65.6°C, open cup test, normally referred to as the flash point (AS 1940–2004). PMS and RMS (i.e. gasoline) are examples of flammable liquids considered in this study.</p>
Flash fire	<p>The combustion of a flammable vapour and air mixture in which flame passes through that mixture at low velocity, such that negligible overpressure is generated.</p>
Flash point	<p>The lowest temperature, corrected to a barometric pressure of 101.3 kPa, at which application of a test flame causes the vapour of the test portion to ignite under the specified conditions of test (AS 1940–2004).</p>
Gasoline	<p>Synonymous with petrol, gasoline is the common term used in the refining industry to cover all grades of petrol, e.g. premium, regular.</p>
Heat radiation	<p>The propagation of energy in the infra-red region of the radiation electromagnetic spectrum, commonly 'heat'.</p>
Individual fatality risk	<p>For land use safety planning this is the annual risk of fatality to a notional person at a particular point assuming exposure to the risk 24 hours a day and 365 days per year, i.e. it does not account for probability of presence.</p> <p>Note: This is a different basis to the term AIFR used in natural hazards risk assessment which includes factors for probability of exposure/probability of presence. To avoid confusion with the natural hazards work, the term AIFR is not used in this QRA.</p>
Individual risk	<p>The frequency at which an individual may be expected to sustain a given level of harm from the realization of specified hazards. In this study the level of harm assessed is fatality.</p>
Injury risk	<p>The frequency of injury occurring to a theoretical individual located permanently at a particular location, assuming no mitigating action such as escape can be taken. For fire events this corresponds to a heat radiation level of 4.7 kW/m² (HIPAP 4).</p>
Jet/spray fire	<p>An intense directional fire resulting from ignition of a vapour or two phase release with significant momentum (i.e. pressurised) from an orifice (can occur at pressure 2barg or above).</p>

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 7

Lower Flammability Limit (LFL)	That concentration in air of a flammable material below which combustion will not propagate.
Offsite	Areas outside the bulk storage sites boundaries. This includes both public and private holdings, roadways, recreational facilities.
Onsite	Within any bulk storage facility site boundary.
Pool fire	The combustion of material evaporating from a layer of liquid at the base of the fire i.e. ignited vapours on the surface of a liquid pool.
Property Damage and Accident Propagation Risk	The frequency of escalation to neighbouring equipment or property occurring assuming no mitigating action such as application of firewater or ESD is undertaken, corresponding to a heat radiation level of 23 kW/m ² (HIPAP 4).
Risk	The likelihood of a specified undesired event occurring within a specified period or in specified circumstances. It may be either a frequency (the number of specified events occurring in unit time) or a probability (the probability of a specified event following a prior event), depending on the circumstances. In this case, the risk under analysis is the likelihood of fatality per year due to loss of containment of hazardous materials resulting in fire exposure.
Tank top full surface fires	Ignited vapours on the surface of a liquid at liquid surface in tank, covering the full surface area of the tank (i.e. a sunk roof for a floating roof tank)
Vapour Cloud Explosion (VCE)	The combustion of a flammable vapour and air mixture in an environment where factors exist (for example equipment causing congestion or confinement of the flammable cloud) that result in a high flame speed, consequently causing damaging pressure due to the inertia of the unburnt mixture in front of the flame.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 8

1. SUMMARY

1.1. Background

Mobil Oil New Zealand Ltd (Mobil) operates a hydrocarbon fuel storage and handling terminal in Woolston, New Zealand (NZ). The Mobil Woolston Terminal (referred to in this report as 'the Terminal') is currently subject to a planning overlay in the Christchurch District Plan (CDP). The overlay extends 250 m from the fuel storage compound at the Terminal and covers industrial land only. The overlay was a temporary measure to prevent incompatible development occurring in the vicinity of the Terminal. It was based on land use planning guidance published by the UK Health and Safety Executive (UK HSE) for separation distances from fuel terminals handling gasoline. The CDP overlay provisions expire in 2019.

Future protection provisions are subject to completion of a Quantitative Risk Assessment (QRA) to assess the risk from both Current and Future Case operations at the Terminal. The QRA results will be used by Mobil as input to Christchurch City Council (CCC) to drive a Plan Change Process with the aim of producing a revised overlay with rules attached that protect the Terminal from encroachment by incompatible land uses.

Sherpa Consulting Pty Ltd (Sherpa) has been retained by Mobil to undertake a QRA for the Terminal for both a Current and Future Case.

1.2. Objective

The overall objectives of the QRA study were to:

- Determine the offsite fatality risk levels from the Terminal for the Current and Future Cases.
- Assess the risk against the HIPAP 4 risk criteria.
- Provide recommendations regarding the extent of a future overlay. The QRA and proposed overlay will be used by Mobil as an input to the associated planning provisions around the Terminal in the CDP for discussion with CCC.

1.3. Scope

As summarised in Table 1.1, the QRA scope covers both the Current and Future Cases for the Terminal and includes:

- Transfer pipeline: aboveground sections of the Lyttelton–Woolston Pipeline (LWPL) import pipeline from Lyttelton within the site boundary (i.e. from the battery limit valve station).
- Terminal storage and processing: storage tanks, additive storage and handling, pumps, aboveground pipework and manifolds.
- Road tanker loading gantry: tanker filling operations and export of fuels.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 9

Table 1.1: Terminal operations

Activity	Scope
Import of hydrocarbon liquid fuels via pipeline	Receive fuels from Mobil's terminal at George Seymour Quay (GSQ), Lyttelton Port via the Lyttelton–Woolston Pipeline (LWPL). Fuels include gasoline, diesel. The Future Case will also include jet fuel.
Storage of fuels	Storage of fuels in atmospheric storage tanks.
Export of fuels	Export of fuels via road tanker gantries. (There is no export by pipeline).
Miscellaneous	Additive storage and handling.
Exclusions: Only the Terminal and pipelines up to the first battery limit isolation valve are covered. Pipelines outside the site boundary and road transport outside the Terminal gates are excluded from the scope. The QRA does not cover operations of the LWPL outside the Terminal boundary.	

1.4. Method

Hydrocarbon loss of containment scenarios were assessed quantitatively. Scenarios considered were:

- Spills into storage tank bunds, or piping and manifold areas resulting in pool fires or flash fires
- Tank top fires
- Spray fires (pumped liquid systems only)
- Formation of large flammable clouds and potential flashfires or vapour cloud explosions (VCE) resulting from overfills of gasoline from storage tanks ("the Buncefield scenario").

The effect of earthquakes resulting in an elevated frequency and consequence of tank damage was also assessed.

TNO Riskcurves v9 was used to generate individual fatality risk, injury risk and escalation risk contours.

There are no specific NZ land use safety planning risk criteria, however the decisions version of the CDP (Ref (1), Section 16.2.1.4) suggests that the risk acceptability criteria in the Australian New South Wales Department of Planning and Environment (NSW DPE) Hazardous Industry Planning Advisory Paper (HIPAP) No 4 *Risk Criteria for Land Use Safety Planning*, (HIPAP 4, Ref (2)) should be referred to. Therefore the HIPAP 4 criteria were adopted for this QRA.

Note that identification of any potential additional risk reduction measures is outside the scope of this QRA.

1.5. Conclusions

The study showed that for both the Current and Future Cases, all of the HIPAP 4 risk criteria are met as shown in Table 1.2.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 10

A sensitivity study covering the effect of earthquakes on the overall risk showed very little change to the individual fatality risk results.

Based on these results:

- The existing 250 m overlay in the CDP provides adequate protection from encroachment of incompatible land uses whilst allowing for a future growth scenario at the Terminal and could be retained.
- If the overlay is to be revised, the minimum extent that the planning overlay can be reduced to, whilst still allowing for a credible future increase in throughput at the Terminal, is 170 m from the Terminal boundary. This distance is based on the HIPAP 4 individual fatality risk contour for sensitive land use for the Future Case.

Sensitive or residential uses, and any land uses involving large populations, should not be established within the extent of the overlay.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 11

Table 1.2: QRA results against HIPAP 4 risk criteria

Item assessed	Description and land use	Criteria (per year)	Meets criteria?	
			Current Case	Future Case
Individual fatality risk	Hospitals, child-care facilities and old age housing (sensitive land uses)	0.5×10^{-6}	Yes	Yes
	Residential developments and places of continuous occupancy such as hotels and tourist resorts (residential land use)	1×10^{-6}	Yes	Yes
	Commercial developments, including offices, retail centres and entertainment centres (commercial land use)	5×10^{-6}	Yes	Yes
	Sporting complexes and active open space areas (recreational land use)	10×10^{-6}	Yes	Yes
	Target for site boundary (boundary limit)	50×10^{-6}	Yes	Yes
Injury risk ^(a)	Heat radiation exceeding 4.7 kW/m^2 (residential and sensitive uses)	50×10^{-6}	Yes	Yes
	Explosion overpressures exceeding 7kPa (residential and sensitive uses)	50×10^{-6}	Yes	Yes
Risk of property damage and accident propagation	Heat radiation exceeding 23 kW/m^2 (neighbouring potentially hazardous installations or at land zoned to accommodate such installations)	50×10^{-6}	Yes	Yes
	Explosion overpressures exceeding 14 kPa neighbouring potentially hazardous installations or at land zoned to accommodate such installations)	50×10^{-6}	Yes	Yes
Notes: (a) HIPAP 4 injury risk criteria due to acute toxic exposure was not assessed in this study as hydrocarbons fuels are not acutely toxic (see Section 4.6).				

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 12

2. INTRODUCTION

2.1. Background and scope

Mobil operates a hydrocarbon fuel storage and handling terminal in Woolston, NZ. The Terminal is currently subject to a planning overlay in the CDP. The overlay extends 250 m and was a temporary measure based on industry guidance from the United Kingdom Health and Safety Executive (UK HSE) for separation distances from fuel terminals handling gasoline. The distance was selected based on the "Inner Zone" distance given in the UK HSE *Land use planning advice around large scale petrol storage sites*, Ref (3), developed from investigations into the 2005 incident at Buncefield.

Future protection provisions beyond 2019 are subject to completion of a QRA to assess the risk from both Current and Future Case operations at the Terminal.

Sherpa Consulting Pty Ltd (Sherpa) has been retained by Mobil to undertake a QRA for the Terminal for both a Current and Future Case.

The QRA covers Terminal storage and processing, i.e. import into storage tanks, storage of bulk fuels, additive storage and handling, pumps, road tanker export and any pipework and manifolds within the Terminal boundary. Equipment outside the Terminal boundary (e.g. the import pipeline from the Lyttelton Port) is not within the scope of the QRA.

2.2. Exclusions and limitations

Limitations for this study are listed in Table 2.1.

Table 2.1: Study assumptions and limitations

Assumption/limitation	Comments
1. Future Case operations	Two cases of the risk profile are included: 1. Current Case operations and 2. Future Case operations. The Future Case has been developed based on increased fuel throughputs, and increased pipeline and terminal utilisation advised by Mobil consistent with economic growth over the next 10 years (i.e. to 2027, approximately the same timeframe as the CDP).
2. Transportation risks	The boundary of the risk assessment is the Terminal gate. Transport on public roads is not covered. For pipeline risks, the boundary of the risk assessment is the logical shutoff valve at battery limits of the Terminal. The LWPL outside the Terminal is not covered.
3. Onsite/employee risk	Onsite/employee risk is not covered in the QRA.
4. Environmental risk	Environmental risk is not covered in the QRA.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 13

Assumption/ limitation	Comments
5. Natural hazards risks – sensitivity study	The QRA includes an assessment of the effect of an earthquake event causing a significant loss of containment at the Terminal. This is based on publicly available likelihood of earthquake information sources for Christchurch and industry damage correlations for atmospheric tanks related to peak ground acceleration (PGA). This approach does not include any detailed structural assessment of tank response to earthquakes.
6. Current and future land uses	Sherpa has relied on the information supplied by Mobil and on Council zoning in determining land uses allowable under planning instruments for both the Current and Future Cases.
7. Risk reduction measures	Sensitivity studies around the effect of any risk reduction measures are outside the scope of the QRA report.
8. MHF tasks (Safety Case, MAPP, demonstration of SFARP)	The Terminal is a lower tier Major Hazards Facility under the NZ Health and Safety at Work Act Major Hazards Facilities (MHF) Regulations 2016. The QRA does not include preparation of an MHF Safety Case or Major Accident Prevention Policy (MAPP). The QRA does not cover a demonstration that the controls implemented at the Terminal are adequate and the risk has been reduced So Far As Reasonably Practicable (SFARP). However Mobil may use the QRA results as an input to these processes.
9. Societal risk	Societal risk is not included in this report. The existing populations are low density, associated with industrial land uses and not typically present overnight. The purpose of the overlay is to prevent future encroachment of incompatible populations into the area affected by the fatality risk contours, therefore only the fatality risk contours are required for input to development of the overlay.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 14

3. SITE DESCRIPTION

3.1. Location

The Terminal is located at 79 Chapmans Road, Woolston, Christchurch, NZ. The Terminal is supplied from the Lyttelton Port via an underground import pipeline from the south-east of the Terminal.

Layouts of the overall Terminal and the hydrocarbon fuel storage areas are shown in Figure 3.1 and Figure 3.2.

3.2. Surrounding land uses

A map showing the surrounding land uses to the Terminal is shown in APPENDIX D, Figure D.1 which is based on the CDP, Ref (4).

3.2.1. Current land use

The land uses surrounding the Terminal are summarised in Table 3.1. The surrounding area is primarily industrial. The nearest residential areas are located approximately 350 m north from the nearest Terminal site boundary. There are no sensitive land uses (as defined in relevant land use safety planning risk criteria given in Table 4.1) within 1 km of the Terminal.

The nearest known surrounding land use with significant quantities of hazardous material is the Liquigas site to the south of the Terminal. However the liquefied petroleum gas (LPG) storage is mounded and at least 350 m from the Terminal storage tanks.

3.2.2. Future land use

The only proposed change in land use that has been identified is the Heathcote Expressway bicycle route along the northern side of the Terminal.

Table 3.1: Surrounding land uses of the Terminal

Direction	Surrounding land use
North	Proposed Heathcote Expressway bicycle route along northern boundary. Heathcote River and industrial areas. Nearest residential areas (350 m from northern boundary).
East	Industrial sites (e.g. caravan servicing facility) Proposed Heathcote Expressway bicycle route along south-west bank of the Heathcote River.
South	Railway line Shipping container storage yard
West	Industrial sites (e.g. chilled food storage warehouse, steel fabrications)

3.3. Operations

The Terminal receives bulk hydrocarbon fuels from the Mobil Lyttelton George Seymour Quay (GSQ) terminal via the LWPL. The fuel is stored in atmospheric storage tanks and

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 15

distributed by road tanker from the Terminal. Terminal throughputs are shown in the QRA basis in Section 6.

Mobil operates the Terminal which handles gasoline (91 ULP, 95 PULP) and diesel (Automotive gas oil, AGO). There is no jet fuel or ethanol stored or handled at the Terminal.

The Terminal is continuously manned 24 hours/day for seven days a week by a pipeline operator. Day and night operations shifts are 12.5 hours. Office staff are also present for 10.5 hrs/day for five days a week (Monday to Friday).

3.4. Transfer pipeline

All bulk fuel storage tanks at the Terminal are filled via the LWPL. Some fuel is transferred on behalf of the other bulk liquid operators BP and Z Energy, with operations overseen by Mobil. The details of the LWPL are provided in Table 3.2 for completeness although the LWPL outside the Terminal boundary is not covered in the QRA.

Table 3.2: LWPL details

Item	LWPL
Description	Liquid pipeline (multiple types of hydrocarbon fuels). Fully welded main pipeline with flanges at various points may contain screwed small bore fittings (i.e. 25NB and 20NB).
Aboveground/underground	Combination of aboveground and underground sections between Lyttelton and Woolston. Underground section of pipeline runs into the Woolston terminal inlet manifold.
Service fluids	Current Case: 91 ULP, 95 ULP, AGO. Future Case: 91 ULP, 95 ULP, 98 SPULP, AGO.
Length	Approximately 6.5 km between GSQ and Woolston terminals.
Diameter	Combination of 100NB and 150NB pipeline sections.
Operations	Operational 24 hours/day for seven days a week.
Pipeline shutoff valves	Remote isolation valves at GSQ terminal, Heathcote Valley valve chamber, Harmans Road and Woolston terminal.
Maximum pressure	68.9 barg
Estimated inventory when isolated	59.8 m ³

3.5. Tank storage

A summary of the Terminal fuel storage tanks and the typical materials stored is provided in Table 3.3. All tanks are stored in a single common compound at the northern section of the Terminal.

All tanks are fitted with an automatic tank gauging (ATG) radar (Saab) gauging system with high and high-high level alarms (HHLA) provided through the TankMaster and SCADA system. The tanks also provided with independent high and high-high level indicator probes which are calibrated and tested every six months. High level alarms

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 16

have a dedicated alarm siren regardless of whether it is activated by the Saab radar gauge or the independent probe.

HHLAs triggered by the Saab radar gauge or the independent probe also trigger Emergency Shutdown (ESD). ESD is interlocked with the HHLA such that the ESD cannot be reset until the tank level is reduced below HHLA level, or the HHLA is bypassed.

Tank to tank transfer between product tanks is not conducted as part of normal operations at the Terminal as the storages are dedicated to particular products.

Interface blending into AGO is undertaken via a controlled dosing unit directly injecting into the pipeline upon receipt at the Terminal manifold.

Additives are stored in horizontal storage tanks as summarised in Table 3.4.

3.6. ESD and fire protection

ESD buttons are provided around the Terminal. ESD disables pump drive units and stops road tanker loading pumps, additives pumps and the LWPL pumps at the GSQ terminal. It also shuts any open tank outlet valves (air operated), and the LWPL control valves at Heathcote Valley, Harmans Road and Woolston will all close.

The Terminal's fire protection is provided by a manually operated fire water ring main which is filled from the town mains. There is no fire water storage onsite and the fire brigade is required to boost the water pressure from the mains. Foam is stored in a warehouse south of the site office.

The bulk liquids tanks at the Terminal are not fitted with in-tank foam pourers. Manually operated fire monitors are located around the exterior of the tank farm.

Heat detection and alarm is provided at the road tanker loading gantry. Foam deluge is currently provided to the loading gantry and must be activated via a manual call point.

3.7. Gantry export

Road tankers filled at the Terminal loading gantry include: rigid trucks, and rigid trucks and trailers. The gantry comprises four loading bays in total but only three are currently in use. All tankers are bottom loaded. Compartments for the different types of road tankers are typically between 3,000-8,000 L depending on the truck configuration.

In the loading gantry, there are dry-break couplings on road tankers which limit spills caused by road tanker drive-away.

The loading gantry is fitted with a scully interlock system which protects against loss of earthing and overflow.

Foam deluge is provided at the loading gantry as discussed in Section 3.6.

Spills in the loading gantry drain to a 30 m³ underground vessel.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 17

3.8. Future operation

A Future Case is considered for the Terminal which accounts for growth in fuels throughput over the next 10 years up until approximately 2027. In developing the Future Case the following assumptions were made:

- The LWPL is currently almost fully utilised and any increase in overall fuel throughputs would require some increase in pipeline capacity. Note that the feasibility of achieving any increase in import rate via the LWPL has not been assessed in the QRA, i.e. there is no specific LWPL uprate proposal.
- Gasoline will not be permitted through the Lyttelton road tunnel and it is not desirable to drive through Evans Pass due to the landslip and rock fall risk to the road. Therefore all gasoline will all be transferred to the Terminal via the LWPL.
- Jet fuel will not be permitted through the Lyttelton road tunnel and is not desired to be driven through Evans Pass. Therefore all jet fuel will be transferred to the Terminal via the LWPL.
- Diesel can be driven through either/both the Lyttelton road tunnel and Evans Pass.
- Data tables produced by the Ministry of Business, Innovation & Employment, Ref (5), record fuel demand in NZ each year. Based on data since 2012, an average 2% growth rate per year for all hydrocarbons is anticipated. This corresponds to a 20% increase in the throughput of fuel over a 10 year period. For the purposes of the QRA, a 25% growth in the total volumes of products from all fuel companies in Lyttelton was assumed as this provides a reasonable level of margin over NZ wide prediction. This corresponds to 500,000 m³/yr of gasoline and 375,000 m³/yr of jet fuel.
- The LWPL is assumed to be utilised at 90% per year.

To achieve the increased gasoline and jet fuel throughput via the LWPL, the pipeline flow rate would be expected to increase from around 98 m³/hr to 120 m³/hr. The practical and economic feasibility of achieving this 22% increase in import rate has not been assessed. (However it would be technically feasible to achieve this, and involve replacing some sections of the pipeline with larger diameter piping and larger pumps at the GSQ site. It is also noted that this is still a low import rate compared to other terminals where pipeline rates typically range from 400 to 800 m³/hr and ship import rates could exceed 1000 m³/hr).

Given jet fuel is not transferred via the LWPL currently, two of the out of service tanks (i.e. Tanks 3 and 14) and the bulk AGO storage tank (Tank 1) were assumed to be converted to jet fuel service as per Table 3.3. No changes were assumed to be made to the tank types.

The changes to the operations at the Terminal between the Current and Future Cases are summarised in the QRA basis in Section 6.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 18

Table 3.3: Fuel storage tanks

Tank no.	Diameter (m)	Height (m)	Max. operating volume (m ³)	Max. fill rate (m ³ /hr)	Type	Tank overfill safeguards	Class	Typical materials stored	
								Current	Future
Tank 1	18.3	10.2	2,364	82.2	Fixed roof	Gauge, IHHLA	C1	AGO	Jet Fuel
Tank 2	15.2	13.6	2,133	94.8	IFR	Gauge, IHHLA	3	91 ULP	91 ULP
Tank 3	15.2	13.0	966	82.2	Fixed roof	Gauge, IHHLA	-	Out of Service	Jet Fuel
Tank 4	8.3	10.3	480	82.2	Fixed roof	Gauge, IHHLA	C1	AGO	AGO
Tank 5	3.6	9.4	52	94.8	Fixed roof	Gauge, IHHLA	C1	Interface	Interface
Tank 11	21.3	13.8	3,502	94.8	IFR	Gauge, IHHLA	3	91 ULP	91 ULP
Tank 14	9.1	11.2	655	94.8	IFR	Gauge, IHHLA	3	Out of Service	Jet Fuel
Tank 15	16.3	14.7	2,728	94.8	IFR	Gauge, IHHLA	3	95 PULP	95 PULP

Table 3.4: Additive storage tanks

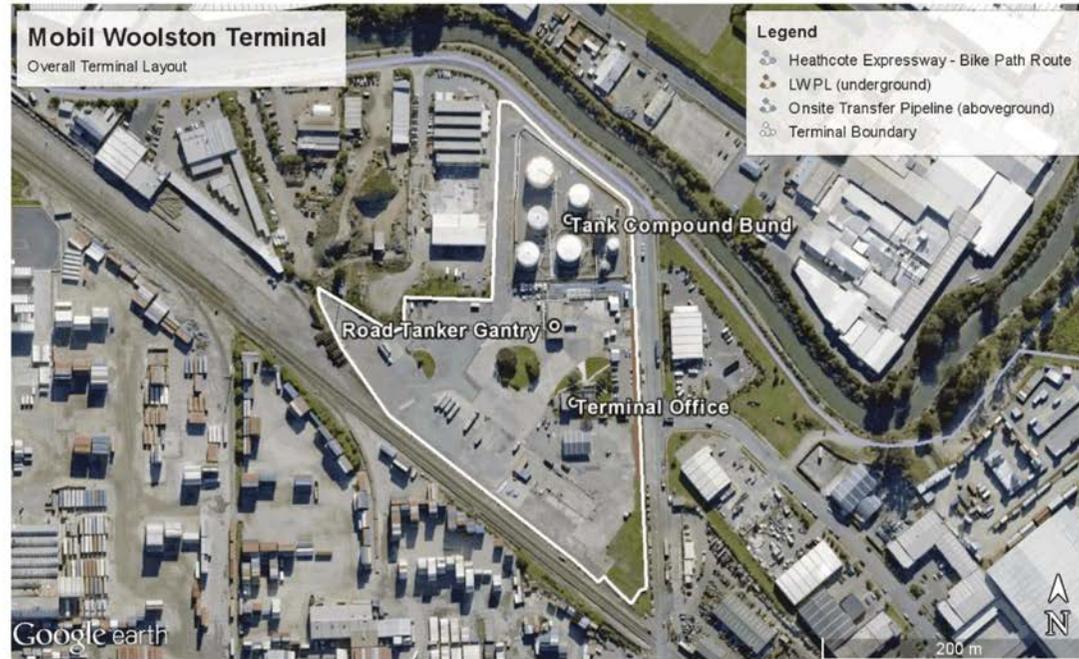
Tank no.	Max. operating volume (m ³)	Average fill rate (m ³ /hr) ^(a)	Class	Typical materials stored	
				Current	Future (No changes)
Tank 17	3.1	67.1	3	Additive – Mixing Tank	Additive – Mixing Tank
Tank 18	3.1	67.1	3	Additive – MOA Petrol	Additive – MOA Petrol
Tank 19	3.1	67.1	3	Additive – BP Petrol	Additive – BP Petrol
Tank 20	3.1	67.1	3	Additive – Shell Petrol	Additive – Shell Petrol
Tank 21	3.1	67.1	3	Additive – Caltex Petrol	Additive – Caltex Petrol
Tank 22	3.1	67.1	C1	Additive – Mixing Tank	Additive – Mixing Tank
Tank 23	3.1	67.1	C1	Additive – Mobil AGO	Additive – Mobil AGO
Tank 24	3.4	67.1	C1	Additive – BP AGO	Additive – BP AGO
Tank 25	3.1	67.1	C1	Additive – Shell AGO	Additive – Shell AGO

Notes:
(a) Average fill rate calculated based on time taken for manual procedure of lancing additive from 1,000 L intermediate bulk containers (IBCs) into the tanks.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 19

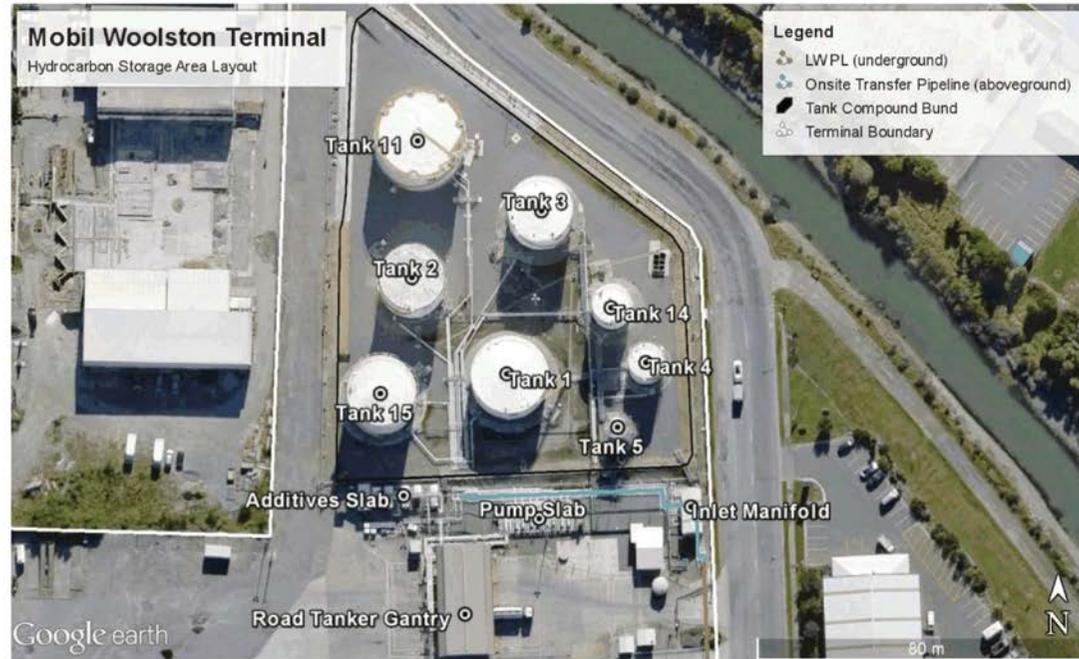
Figure 3.1: Overall Terminal layout



Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 20

Figure 3.2: Hydrocarbon storage area layout



Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

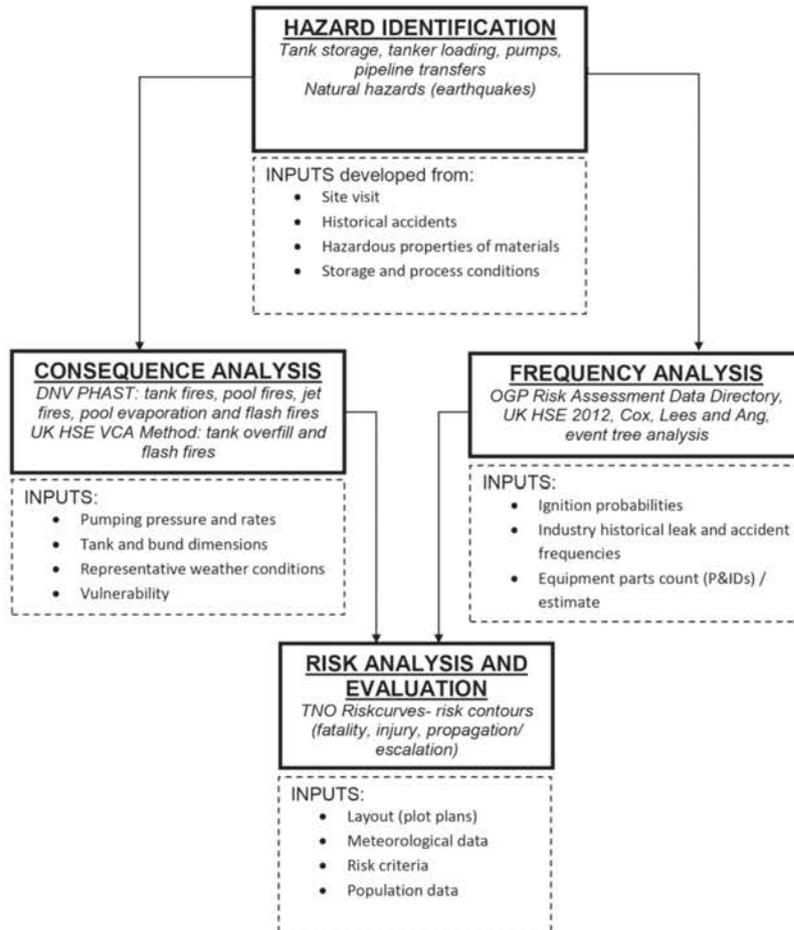
Page 21

4. METHODOLOGY

4.1. Overview

An overview of the QRA process, including the steps and inputs for this study is shown in Figure 4.1. The subsequent sections provide further information.

Figure 4.1: Overview of QRA process



Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 22

4.2. Hazard identification

Hazard identification is the process of identifying hazardous incidents that could result in an adverse impact, together with their causes, consequences and existing safeguards.

Hazard identification was undertaken as a desktop activity based on the consultant's experience with bulk liquids storage and distribution terminals, review of previous risk studies, together with input from the site operator.

The main hazard at the Terminal is the storage and handling of large quantities of flammable and combustible liquids.

Flammable consequences due to a loss of containment of flammable and combustible materials are considered in the QRA.

Toxic consequences (i.e. dispersion of unignited hydrocarbon vapours) are not considered in the QRA for the Terminal as whilst having some toxic properties, hydrocarbon fuels are not acutely toxic by inhalation and so do not have significant toxic onsite effects (refer to Table 5.2).

4.3. Consequence analysis

Consequence modelling of identified scenarios were undertaken to determine the impact area (as heat radiation or as area within a flammable cloud) and the resulting extent of injury or fatality effects. Consequence modelling of identified hazardous events was undertaken using DNV PHAST v7.2 (PHAST).

The overall approach is explained in Section 7.1 and APPENDIX B.

4.4. Frequency analysis

Hazardous scenarios involve loss of containment of hydrocarbon fuels and subsequent ignition. The likelihood of these scenarios was estimated using historical data for both loss of containment and for potential ignition. Loss of containment frequencies were calculated using an estimated count of equipment items ('parts count') combined with historical leak frequency data for each equipment type and adjusted for the proportion of time equipment is in use.

The overall approach is explained in Section 8 and APPENDIX C.

4.5. Risk analysis

Risk analysis was performed using TNO Riskcurves v9 (Riskcurves), which combines the consequences and frequencies to produce contours of equal risk values. The following measures of risk were assessed:

- Individual fatality risk
- Injury risk
- Escalation/propagation risk.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 23

4.5.1. Individual fatality risk

Individual fatality risk represents the probability of some specified level of harm (in this case fatality) occurring to a theoretical individual located permanently at a particular location, assuming no mitigating action such as escape can be taken. This is shown as contours on a map of the area which show the probability of fatality per million per year at a location.

4.5.2. Injury risk

Injury risk represents the probability of injury occurring to a theoretical individual located permanently at a particular location, assuming no mitigating action such as escape can be taken. There are several types of consequences that may result in injury but the most relevant for bulk hydrocarbon liquids storage is from heat radiation.

A heat radiation level of 4.7 kW/m² corresponding to the level high enough to result in injury is shown as a contour on a map of the area which shows the probability of injury per million per year at a location.

4.5.3. Propagation/escalation risk

Propagation/escalation risk represents the probability of an escalation to neighbouring equipment or property occurring assuming no mitigating action such as application of firewater or ESD is undertaken. There are several types of consequences that may result in damage or escalation but the most relevant for bulk hydrocarbon liquids storage is from heat radiation. The 23 kW/m² heat radiation level, corresponding to the level high enough to result in escalation to neighbouring installations, is shown as a contour on a map of the area which shows the probability of escalation per million per year at a location.

4.6. Risk criteria

4.6.1. HIPAP 4 criteria

There are no specific NZ risk criteria, however the decisions version of the CDP (Ref (1) Section 16.2.1.4) suggests that the risk acceptability criteria in HIPAP 4, Ref (2), should be referred to.

Therefore the HIPAP 4 criteria have been adopted for this assessment. The HIPAP 4 individual risk criteria are shown in Table 4.1.

Note that criteria relating to toxic concentrations resulting in injury were not assessed as the hydrocarbon fuel materials are not acutely toxic by inhalation and hence do not contribute to offsite risk, as discussed in Section 5.1.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 24

Table 4.1: Risk assessment criteria (HIPAP 4, Ref (2))

Description and land use	Criteria (per year)	Assessed in study?
Individual fatality risk		
Hospitals, child-care facilities and old age housing (sensitive land uses)	0.5 x 10 ⁻⁶	Yes
Residential developments and places of continuous occupancy such as hotels and tourist resorts (residential land use)	1 x 10 ⁻⁶	Yes
Commercial developments, including offices, retail centres and entertainment centres (commercial land use)	5 x 10 ⁻⁶	Yes
Sporting complexes and active open space areas (recreational land use)	10 x 10 ⁻⁶	Yes
Target for site boundary (boundary limit)	50 x 10 ⁻⁶	Yes
Injury risk		
Heat radiation exceeding 4.7 kW/m ² (residential and sensitive uses)	50 x 10 ⁻⁶	Yes
Explosion overpressure exceeding 7 kPa (residential and sensitive uses)	50 x 10 ⁻⁶	Yes
Toxic concentrations exceeding a level which would be seriously injurious to sensitive members of the community following a relatively short period of exposure (residential and sensitive uses)	10 x 10 ⁻⁶	No – not applicable as fuels are not acutely toxic
Toxic concentrations exceeding a level which would cause irritation to eyes or throat or other acute physiological responses in sensitive members of the community (residential and sensitive uses)	50 x 10 ⁻⁶	No – not applicable as fuels are not acutely toxic
Risk of property damage and accident propagation		
Heat radiation exceeding 23 kW/m ² (neighbouring potentially hazardous installations or at land zoned to accommodate such installations)	50 x 10 ⁻⁶	Yes
Explosion overpressure exceeding 14 kPa (neighbouring potentially hazardous installations or at land zoned to accommodate such installations)	50 x 10 ⁻⁶	Yes

4.6.2. Alternative criteria

There is some variation in risk criteria adopted in different jurisdictions. For example, the Victorian (Australia) risk criteria set a more onerous target for land uses other than low density industrial (0.1 x 10⁻⁶ per year, see Ref (6)) compared to HIPAP 4 (0.5 to 10 x 10⁻⁶ per year for non-industrial land uses).

Individual fatality risk results are presented for alternative criteria as well as the HIPAP 4 criteria (refer to APPENDIX E, Section E2) as an example of how choice of criteria could affect the conclusions of the QRA.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 25

5. HAZARD IDENTIFICATION

5.1. Hazardous materials

The properties of materials stored at the Terminal are summarised in Table 5.2. The explanations of the Hazardous Substances and New Organisms (HSNO) classifications for each material are outlined in Table 5.1.

Table 5.1: HSNO classifications

Classification no.	Hazard description
3.1	Substances that are flammable liquids
6.1	Substances that are acutely toxic
6.3	Substances that are skin irritants
6.7	Substances that are carcinogenic
9.1	Substances that have aquatic ecotoxicity

The flammable consequences due to a loss of containment of any of these materials are considered in the QRA. Toxicity effects are not modelled in the QRA.

Gasoline is the only material with a significant fraction of 'light' components hence the only material where a loss of containment has potential to generate a large flammable vapour cloud. The properties of the different grades of gasoline are very similar.

For the purposes of the QRA, representative materials as shown in Table 5.2 have been used in modelling.

Various additives are handled on-site and are not included in Table 5.2 since they are stored in small quantities. They are assumed have the same properties as gasoline for the purpose of the QRA modelling.

5.2. Hazard identification

Hazard identification for the Terminal was undertaken as a desktop activity based on the consultant's experience with bulk liquids storage and distribution terminals, review of previous risk studies, a site visit and input from the site operations team.

The hazard identification table is shown in Table 5.3.

5.3. External factors

For a specific site, a QRA generally includes a review of external factors that may elevate the likelihood of an incident compared to the statistical failure frequency data.

External factors (e.g. natural hazards) relevant to the Christchurch area and means of inclusion of effect in the QRA for the Terminal are summarised in Table 5.4.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 26

Table 5.2: Material properties

Property	Gasoline (91 ULP, 95 PULP, 98 SPULP)	Diesel (AGO)	Jet Fuel (Future Case only)
HSNO Classification	3.1A, 6.1E, 6.3B, 6.7B, 9.1B	3.1D, 6.1E, 6.3B, 6.7B, 9.1B	3.1C, 6.1E, 6.3A, 9.1B
Boiling Point (atm.) (°C)	25-210	180-360	140-280
Density (kg/m ³ at 15°C)	720-775	830	775-840
Vapour pressure (kPa at 20°C)	30-90	<0.07	<0.1
Auto-ignition temperature (°C)	>250	230	>220
Flash Point (°C)	<-40	80	>38
Lower Flammability Limit (LFL) (ppm)	10,000	6,000	10,000
Upper Flammability Limit (UFL) (ppm)	80,000	70,000	60,000
Flammable	Yes	Combustible	Yes
Toxic ^(a)	Yes	Yes	Yes
Representative material used for quantitative modelling	ULP Summer	Dodecane	Decane

Note: (a) In QRA, 'toxic' means a substance that is acutely toxic by inhalation and is in a form where a spill may disperse outside the immediate area of the spill in concentrations capable of causing injury or fatality.

Hydrocarbon fuels are not acutely toxic by inhalation hence do not contribute to offsite fatality risk when unignited. Some hydrocarbons have potential chronic toxicity and carcinogenic health effects. These types of effects are outside the scope of the QRA as they are most relevant to worker hygiene and health, but not offsite risk to the public.

Large black smoke plumes from hydrocarbon fires can occur. These are thermally buoyant and may have respiratory irritation effects if they slump back to ground as may occur under certain meteorological conditions such as inversions. There are numerous examples of tank fires (including Buncefield) which demonstrate that one off exposure to these smoke plumes do not pose a significant injury or fatality hazard, Ref (7). Hence smoke plume effects are not covered in this QRA.

In summary toxicity effects are not modelled in the QRA.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 27

Table 5.3: Hazard scenarios

Area	Hazard scenario	Causes/threats	Consequences	Safeguards	Carried forward to QRA
Tank Farm	Tank overflow	- Human error (incorrect dip prior to start of fill or missed maximum safe fill level)	- Pool fire and potential full-surface bund fire. - Tank roof fire and escalation to adjacent tanks. - Tank vent fire. - Pool evaporation and flammable gas dispersion and flash fire.	- High level alarm and operator shutdown. - Fire fighting (Emergency Services). NOTE: Tank to tank transfer between bulk tanks is not routinely conducted at the Terminal as they are dedicated to particular products.	Yes - Rim seal fires for internal floating roof (IFR) tanks not modelled as the consequence is localised. A scenario is included for escalation of rim seal fires to full surface fires. Vent fires not modelled for all tanks.
		- Level gauge error /failure	- Pool fire and potential full-surface bund fire. - Tank roof fire and escalation to adjacent tanks. - Tank vent fire. - Pool evaporation and flammable gas dispersion and flash fire / VCE (all grades gasoline only).	- Manual dips of tanks (monthly). - Fire fighting (Emergency Services).	
	Leak from tank	- Minor tank leak from mechanical integrity failure - dewatering system leaks - Fitting leak	- Pool fire and potential full-surface bund fire. - Pool evaporation and flammable gas dispersion and flash fire.	- Tank farm operator patrols (daily). - Fire fighting (Emergency Services).	Yes
	Tank roof fire	- Lightning	- Tank roof fire and escalation to adjacent tanks.	- Fire fighting (Emergency Services). Fire water is supplied directly off the town water supply into the ring main.	Yes

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 28

Area	Hazard scenario	Causes/threats	Consequences	Safeguards	Carried forward to QRA
	Major mechanical failure of tank	<ul style="list-style-type: none"> - Metal fatigue - Faulty fabrication - Corrosion of tank base/ weld - Tank explosion due to lightning strike/breach of hazardous area ignition source controls - Adjacent tank on fire - Blocked vent - Fitting leak on tank connection. 	<ul style="list-style-type: none"> - Large spillage of flammable materials in bund. Fire if ignited. - Potential full surface bund fire if rupture of tank or connection. - Flash fire and vapour cloud explosion (gasoline all grades only). 	<ul style="list-style-type: none"> - Remote actuated emergency shutdown valves on tank outlet line. - Daily operational check of the Terminal. - Leaks observed by operator during manual opening and closing of valves during tank filling. - Regular tank inspection and tests. - Ignition source control onsite (tank bunds classified Zone 2 hazardous areas). - Regular maintenance and inspection procedures. - Fire fighting (Emergency Services). 	Yes
	Flammable atmosphere in tank vapour space between external dome and IFR	<ul style="list-style-type: none"> - Damage to floating roof resulting in sinking or partial sinking (e.g. nitrogen blowthrough from clearing import line or pontoon damage). - Vents blocked during filling procedure. 	<ul style="list-style-type: none"> - Ignition by lightning/breach of hazardous area ignition source controls/ hot work on tank/high velocity filling resulting in static during filling tank. Results in: <ul style="list-style-type: none"> - Initial explosion in tank vapour space - Rim seal fire (floating roof tanks) <ul style="list-style-type: none"> - leading to a tank full surface area fire. - Potential for spill into the bund with a bund fire. - Boil over possible if water layer exists. - Impact to people (radiant heat and/or exposure to products), property and the environment (products of combustion). 	<ul style="list-style-type: none"> - IFR with mechanical shoe seal minimises vapour egress. - External domed roof protects IFR from rain water accumulation and minimises likelihood of lightning leading to rim seal fires. - Regular tank dewatering minimises water in tanks. - Permit to work controls. - Regular maintenance and inspection procedures. - Level alarms, controlled tank filling. - Filling rate is less than 7 m/s to avoid excessive pipe flow and product entry turbulence. - Site earthing of equipment. - Regular tank inspection and tests including roof inspection. 	Yes – Internal explosion and rim seal fires not modelled as the consequence is localised. A scenario is included for escalation of rim seal fires to full surface fires.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 29

Area	Hazard scenario	Causes/threats	Consequences	Safeguards	Carried forward to QRA
	Flammable atmosphere in fixed roof tank vapour space (interface tank only)	- Air ingress to vapour space	- Tank vent fire	- High level alarm and operator shutdown. - PV vent on interface tank. - Fixed fire fighting and Emergency Services. NOTE: Tank to tank transfer between bulk tanks is not routinely conducted at the Terminal as they are dedicated to particular products.	Yes - Vent fires not modelled for all tanks as the consequence is localised. A scenario is included for escalation of vent fires to full surface fires.
	Fire involving additive storage	- Container rupture due to handling error during delivery to site. - Impact by road tanker. - Pump leak during blending.	- Pool fire if ignited.	- All additives delivered in 44 gallon drums, limiting inventory size. Additives are pumped from drums to the additives storage tanks. - Low pump dosing rate. - Location in close proximity to bulk storage tanks	Yes
Tanker Truck Load Rack	Tanker leak during loading	- Hose rupture - Hose, tanker or piping fitting leak.	- Pool fire - Pool evaporation and flammable gas dispersion and flash fire.	- Operator in attendance (activates ESD). - Drained to single interceptor and separator system. - Heat detection. - Foam deluge. - Fixed fire fighting and Emergency Services.	Yes

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 30

Area	Hazard scenario	Causes/threats	Consequences	Safeguards	Carried forward to QRA
	Tanker overfill	- Human error	- Pool fire - Pool evaporation and flammable gas dispersion and flash fire.	- Operator in attendance (checks ullage in tanker prior to loading and Scully system stops loading based on metered quantity – invalid barrier since it is not independent of initiating event/cause). - Operator in attendance (activates ESD). - Ignition control. - Foam deluge. - Fire fighting (Emergency Services).	Yes
	Road tanker drive-away incident	- Failure of procedures and hardware interlocks	- Leak of petroleum product in loading area. - Fire if ignited - Impact to people (radiant heat and/or exposure to products), property and the environment (products of combustion).	- Driver training. - Driver not in cab during filling. - "Dry-break" couplings.	Yes
Product Transfer Pumps	Leak from pump during road tanker loading	- Seal leak - Flange leak - Pump rupture	- Pool fire. - Pool evaporation and flammable gas dispersion and flash fire.	- Tank farm operator patrols (daily). - Bunding around pump bay. - Fixed fire fighting and Emergency Services.	Yes
Pipework	Pipework failure (within the Terminal)	- Corrosion - Incorrect maintenance - Overpressure	- Major spillage of flammable/ combustible material.	- Regular maintenance and inspection procedures. - The piping is designed to relevant codes and standards to resist the combined effects on internal pressure due to contents, wind loads, and hydrostatic test loads.	Yes

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 31

Table 5.4: External factors

External factors	Damage/outcome	Comments	Inclusion in Terminal QRA
Earthquake	Ground movement damaging/ collapsing tanks	Strength of earthquake and the frequency/return period and probability of significant damage to tanks assessed based on fragility curves. Potential for multiple tank failures simultaneously, or damage to the bunds as well as tanks with larger scale release that is not contained in the bunded areas.	Yes, additional scenario accounting for loss of containment from tanks and bund (see Section B8 for consequence and Section C5 for frequency)
	Liquefaction of ground damaging/collapsing tanks	Liquefaction did occur in the area of the Terminal following the 2011 earthquake, Ref (8).	No adjustment to QRA, as any damage due to liquefaction effects is assumed to be at the same impact scale as earthquake damage due to ground movement/shaking already being accounted for.
Tsunami	Inundation and tank movement/damage	The risk of fatality from a tsunami due directly to inundation is substantially higher than any incremental fatality risk due to secondary effects from a loss of containment of hazardous materials and resulting fire.	No adjustment to QRA.
Strong winds	Loss of containment leading to a fire if ignited (as above) due to equipment damage from strong winds	The tanks are designed to resist the combined effects on internal pressure due to contents, weight of platforms, ladders, live loads, wind loads, and hydrostatic test loads. Operations stopped in adverse weather conditions.	No adjustment to QRA.
Cyclone	High wind speeds	Included in the strong winds component. Christchurch is not identified as a major cyclone area.	No adjustment to QRA.
Storm event/ flood (high rain)	Inundation due to storm surge. High rainfall resulting in flooding impacting tanks.	The terminal boundary is located 20 m from the southern bank of the Heathcote River and is located within the Christchurch Flood Management Area, Ref (4). Inundation due to flooding may lead to asset damage issue if uplifting occurs for empty tanks. Site drainage adequate to prevent onsite flooding.	No adjustment to QRA.
Lightning	Ignition resulting in tank top full surface fire	Christchurch is not identified as a high lightning strike area. LASTFIRE data includes tank top full surface fires started by lightning strikes.	No adjustment to QRA.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 32

External factors	Damage/outcome	Comments	Inclusion in Terminal QRA
Bushfire	External fire escalating to bulk storage tanks	Not relevant – no significant surrounding vegetation	No adjustment to QRA.
Aircraft crash due to pilot error, bad weather or plane fault	Propagation to tank/ bund fires Impact to people (radiant heat and/or exposure to products), property and the environment (products of combustion)	Separation distances to flight path as per aviation standards.	No adjustment to QRA.
Fire/explosion on adjacent site	Escalation to storage tanks	Nearest adjacent sites are industrial warehouses to the east and west of the Terminal. The area has buildings which may be on-site protected places. Fire protection. ERP.	No adjustment to QRA.
Breach of security/ sabotage	Possible release of product with consequences as per above	Security measures include fencing, CCTV, perimeter walks of terminal at night by security guards, operator/driver vigilance (as per MHF security plan). Continuous 24 hr manning by pipeline operator. Process SCADA computer alarms monitored and alarm sounded for urgent operator response.	No adjustment to QRA.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 33

6. QRA BASIS

6.1. Basis

A number of simplifying assumptions need to be made to prepare a QRA and the results are dependent on the assumptions made in defining the input scenarios. This is particularly true of bulk fuel terminals due to the potential variety of products and throughputs. It is therefore important to understand any limiting assumptions in conjunction with the QRA results.

The QRA has been prepared on the following basis:

- Hazardous materials are allocated into representative fuel types (see Table 5.2).
- Existing tanks and infrastructure for the Current and Future Case operations are included with the product allocation shown in Table 3.3. No provision for potential additional tankage is allowed for in the QRA although recommissioning of out of service tanks in the Future Case is provided for.

Terminal throughputs were developed based on 2017 throughput levels for the Current Case, and a future growth case developed by Mobil for to allow for some growth in terminal usage (Future Case).

The operational data used in the QRA is summarised in Table 6.1. Values are defined for both the Current and Future Cases.

6.2. Representative scenarios

Representative scenarios were developed from the hazard identification based on location and materials.

A summary of the scenarios modelled in the QRA is given in Table 6.2.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 34

Table 6.1: Summary of QRA data

Parameter	Current Case	Future Case	Unit	Comments
LWPL import				
Max transfer rate (m ³ /hr)	95	120	Gasoline	Provided by Mobil: Current filling rate varies and is 94.8 m ³ /hr for gasoline and 82.2 m ³ /hr for diesel. A modification is underway to install a modern pump which would increase the filling rates to 99 m ³ /hr for gasoline and 88 m ³ /hr for diesel, however this change is only minor and does not impact the QRA results.
	82	104	Diesel	
	-	111	Jet Fuel	
Pressure at Woolston inlet manifold	10	10	barg	Provided by NZOSL: 9.65-9.75 barg.
Online time	7,884	7,884	hrs/yr	Provided by Mobil: Pipeline operates 24/7 (i.e. 24 hrs/day x 365 days/yr) with an assumed 90% utilisation.
Annual throughput (m ³ /yr)	336,000	500,000	Gasoline	Current Case: calculated based on average monthly totals: 23,000 m ³ (91 ULP), 5,000 m ³ (95 PULP), 26,000 m ³ (AGO). Future Case: based on 22% increase and flammables through pipeline. Annual totals 500,000 m ³ (total gasoline), 22,000 m ³ (AGO), 376,000 m ³ .
	312,000	22,000	AGO	
	-	376,000	Jet Fuel	
Road tanker loadout				
Road tanker compartment size	5	5	m ³	Provided by Mobil: There are 6 compartments on average per road tanker, where compartments are likely to be in quantities of 3 m ³ , 4 m ³ , 6 m ³ or 8 m ³ , depending on the configuration. Average size estimate 5m ³ .
Max transfer rate (m ³ /hr)	115	115	Gasoline	Provided by Mobil
	118	118	Diesel	
	-	115	Jet Fuel	
Max loadout pressure	5	5	barg	Assumed maximum as no online pressure gauge in place.
Total number of road tanker compartments loaded per year	67,200	100,000	Gasoline	Calculated assuming an average road tanker compartment size of 5 m ³ .
	62,400	4,400	Diesel	
	-	75,200	Jet Fuel	

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 35

Table 6.2: Scenario summary

Scenario	Materials	Main physical inputs	Modelled for:
1. Tank top full surface fire – IFR and fixed roof tanks	Flammables and combustibles	<ul style="list-style-type: none"> Tank diameter Tank height 	Each flammable and combustible tank
2. Pool fire – intermediate bund (not applicable at this Terminal as there is a single common bund) or equilibrium pool size if this is smaller than bund	Flammables and combustibles	<ul style="list-style-type: none"> intermediate bund dimension (length, width, intermediate bund wall height) intermediate bund total surface area 	Each intermediate bund (tank overfill and minor tank leaks)
3. Pool fire – full bund	Flammables and combustibles	<ul style="list-style-type: none"> Bund dimension (length, width, bund wall height) Bund total surface area 	Each full bund (tank rupture)
4. Pool fire – import pipeline, manifold, pumps, pipework, tanker loading bays	Flammables and combustibles	<ul style="list-style-type: none"> Total surface area (length, width) 	All flammable and combustible areas not inside main storage bund
5. Spray fire – import pipeline, manifold, pumps, pipework, tanker loading bays	Flammables and combustibles	<ul style="list-style-type: none"> Operating pressure Leak/hole size 	All flammable and combustible areas not inside main storage bund
6. Flash fire (development of unignited cloud to Lower Flammability Limit (LFL), delayed ignition) – Leaks from process equipment, intermediate/full bund, pipework, tanker loading bays ^(b)	Relevant to gasoline (any grade) only	<ul style="list-style-type: none"> Operating pressure Leak/hole size Surface area and evaporation rate from pool 	All gasoline areas
7. Overfill – Flashfire/explosion (development of cloud to LFL, delayed ignition in an environment that results in high flame speeds generating overpressure, or a flashfire if there are no factors causing flame acceleration). This is the “Buncefield” scenario.	Flashfire / VCE is relevant to gasoline (any grade) only (Overfill of other materials result in a pool in bund)	<ul style="list-style-type: none"> Size of spill (from tank fill rates^(a) and bund surface area) Development of cloud to LFL, ignition in an environment that results in high flame speeds Degree of confinement Explosion strength 	Gasoline overfill only As per Ref (9), for gasoline tanks where: - vertical height exceeds 5 m - gasoline filling rate exceeds ~75 tonnes/hr
Notes:			
(a) The maximum pipeline import rates were used in the modelling to represent tank filling rates.			
(b) Overpressures for these type of scenarios from leaks in process equipment, intermediate/full bund, pipework, tanker loading bays are not explicitly modelled due to small flammable cloud sizes and limited congestion / confinement			

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 36

7. CONSEQUENCE ANALYSIS

7.1. Methodology

Consequence analysis involves qualitative and/or quantitative review of the identified hazardous incidents to estimate the potential to cause injury or fatalities, damage to property or damage to the environment.

The materials are flammable and combustible fuels with minimal acute toxicity issues. Ignited event scenarios only are modelled as follows:

- Pool/bund fires. Ignited vapours on the surface of a liquid pool.
- Tank top full surface fires. Ignited vapours on the surface of a liquid at liquid surface in tank.
- Jet/spray fires. This is an intense directional fire resulting from ignition of a vapour or two phase release with significant momentum (i.e. pressurised).
- Flash fires/vapour cloud explosion. An ignited flammable vapour cloud. Dimensions typically taken to be the extent of the LFL.

The following assumptions relating to the consequences modelled have been made:

- Following a flash fire event a residual pool or jet fire may remain. This is not explicitly modelled as the effect distances are smaller than the flash fire.
- Not all onsite process piping was explicitly considered due to minimal leak points with lower leak frequencies relative to other equipment items. The LWPL import manifold and pipework onsite were quantitatively accounted for. Piping within the banded areas is assumed to be covered by the statistical leak data for tanks and associated equipment and was not explicitly modelled.
- All scenarios were included in the frequency assessment, i.e. even if the consequence assessment showed that there was no significant impact outside the site boundary (e.g. small leak sizes).

A full set of consequence modelling results for the Terminal is provided in APPENDIX B and additional details of assumptions are provided in the following sections.

7.1.1. Software and models

Consequence modelling of identified hazardous events was undertaken using DNV PHAST v7.2 (PHAST). PHAST is a commercial software package that is widely used in the process and oil and gas industries for calculating the physical effects and consequences of the loss of containment of hazardous materials in hazard analysis.

For gasoline tank overfill scenarios, the extent of the flammable cloud envelope was modelled following the UK HSE Vapour Cloud Assessment (VCA) method, Ref (10), which provides a means of calculating the rate at which the volume of a vapour cloud increases during an overfilling incident, hence predicting the distance to the LFL of the

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 37

cloud. The distance to LFL is then used as the extent of the flashfire and overpressure impact area if an ignition occurs.

This is an empirical model that can be set up in a spreadsheet and was developed after significant research as part of the incident investigation into the Buncefield incident in 2005. It is regarded as best practice for estimating the effect areas for this type of event without undertaking detailed site specific Computational Fluid Dynamics (CFD) modelling.

The model provides a means of calculating the rate at which the volume of a vapour cloud increases during an overfilling incident, hence predicting the distance to the LFL of the cloud. The model also allows overpressure effect distances from an ignited flammable vapour cloud due to a gasoline tank overfill event to be assessed.

The distance to LFL is then used in the risk model as the extent of the flashfire and overpressure impact area if an ignition occurs. Fatality or property damage effects from overpressure are not explicitly modelled in the risk calculations unless these affect a larger area than the extent of the flammable cloud (refer to Section 7.3.1 for details).

7.1.2. Releases

Loss of containment from equipment was modelled for the representative range of hole sizes in Table 7.1.

The hole size selected for the ranges are the geometric means, which give a weighting towards the lower band, since smaller sized leaks tend to occur more frequently.

The hole sizes were assigned as relevant to specific process equipment as per the data in APPENDIX C, Table C.1.

Table 7.1: Representative hole sizes for modelling loss of containment

Representative hole size used for QRA (mm)	Process equipment hole diameter range (mm), Ref (11)
2	1 to 3
6	3 to 10
22	10 to 50
85	50 to 150
Full bore	>150

The following constraints were applied:

- For loss of containment downstream of a pump, restriction orifice or control valve, the maximum release rate was limited to the normal pumping rate or the process flow rate if predicted flow rate from hole size exceeded the limiting process flow rate.
- For piping with a diameter less than or equal to 100 mm diameter, a full bore rupture case was set equal to the pipe diameter instead of the 85 mm.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 38

- For overfill scenarios the maximum import rate was used. The maximum import rate is set by the Terminal to avoid exceeding a velocity of 7 m/s in the smallest diameter section along the import path.

7.1.3. Scenarios

When released at pressure, a liquid may form an airborne aerosol and/or fall to the ground. The pressure, hole size and fluid properties including vapour pressure all are factors in whether an aerosol, pool or combination of the two will form. Only the light components from gasoline such as C4s and C5s will tend to form a vapour cloud from evaporation or an aerosol release. The formation of a vapour cloud depends on the release characteristics and weather.

For liquid releases at low pressure, such as from a tank leak, an evaporating pool and pool fire (given ignition) were modelled.

For loss of containment within a bund, the size of the pool (whether a pool fire or evaporating pool) is limited by the equilibrium pool diameter.¹ Where the equilibrium pool diameter exceeded the bund diameter, the pool was restricted to the size of the bund.

Loss of containment of gasoline due to tank overfill ('the Buncefield scenario') and the extent of the flammable cloud envelope was modelled following the UK HSE's VCA method, Ref (12), which provides a means of calculating the rate at which the volume of a vapour cloud increases during an overfilling incident, hence predicting the distance to the LFL of the cloud.

The model selected based on the material, scenario and ignition is shown in Table 7.2.

¹ For immediately ignited events (early pool fires), the equilibrium pool diameter is defined as the diameter at which the burn rate of the pool is equal to the release rate. For delayed ignited events (late pool fires and flash fires from pool evaporation), the equilibrium pool diameter is defined as the diameter at which the evaporation rate of the pool is equal to the release rate.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 39

Table 7.2: Scenario rule set for releases

Material	Scenario	Pressure range (barg)	Hole size (mm)	Ignition timing	Consequence modelled
Gasoline (91 ULP, 95 PULP, 98 PULP)	Pumped liquid in pipeline	0-10	2, 6, 22	Immediate	Jet fire
				Delayed	Flash fire
			85, rupture	Immediate	Early pool fire
				Delayed	Flash fire
	Storage tank – mechanical failure	Atmospheric	Rupture	Immediate	Bund fire
				Delayed	Flash fire
Storage tank – overfill	Atmospheric	Maximum import rate	Immediate	Early pool fire	
			Delayed	Flash fire (UK HSE VCA method)	
Diesel (AGO)	Pumped liquid in pipeline	0-10	2, 6, 22	Immediate	Early pool fire
				Delayed	Late pool fire
			85, rupture	Immediate	Early pool fire
				Delayed	Late pool fire
	Storage tank – mechanical failure	Atmospheric	Rupture	Immediate	Early pool fire
				Delayed	Bund fire
Storage tank – overfill	Atmospheric	Maximum import rate	Immediate	Early pool fire	
			Delayed	Late pool fire	

7.1.4. Weather conditions

Historical meteorological weather data for the Terminal was obtained from the New Zealand National Climate Database CliFlo system, Ref (13) The acquired data set was based on readings from the Automatic Weather Station (AWS) on Kyle St, Christchurch (Station no. 24120) approximately 7 km north-west of the Terminal over the period of May 2012 – May 2017.

From the acquired data sets, representative weather conditions were consolidated for consequence modelling, as outlined in Table 7.3. The analysis of the data, which is an input to the risk model, is included in APPENDIX A.

Jet and pool fires consequences were only modelled under a high wind speed case, D5.0, since they are less influenced by the prevailing wind and weather conditions and higher wind speeds are more conservative as they result in slightly larger effect distances than lower wind speeds.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 40

Table 7.3: Weather conditions for consequence modelling

Name	Pasquill stability class	Wind speed (m/s)	Description
B2.2	B	2.2	Sunny day, low wind speed
D5.0	D	5.0	Cloudy or moderate wind speed
E3.2	E	3.2	Night time and moderate wind speed
F1.4	F	1.4	Night time/early morning, low wind speed

7.1.5. Modelling approaches

A standard set of models and modelling parameters were used in the software as outlined in APPENDIX B.

7.2. Vulnerability

The assessment criteria for exposure to hazardous scenarios (e.g. fires) are given by vulnerability relationships and are summarised in Table 7.4.

For fire scenarios, people are vulnerable to fire through:

- engulfment by fire
- thermal radiation from a fire
- inside buildings exposed to fire.

The vulnerability relationship for heat radiation is from the TNO Green Book, Ref (14), which is defined by the Probit shown below:

$$Pr = -36.38 + 2.56(Q^{4/3}t)$$

where, Pr probit corresponding to probability of death (-)
 Q heat radiation level (W/m²)
 t exposure time (s)

There is a range of guidance in industry and regulator advice regarding exposure durations in QRA. For heat radiation exposures this typically ranges from 20 to 60 seconds. TNO (Dutch guidelines) recommends 20 seconds for heat radiation exposures on the basis that the average escape time is 20 seconds which includes 5 seconds reaction time and then escaping at 4 metres per second, Ref (15). This is the default setting in Riskcurves.

The Singapore government recommends that anything less than 30 seconds requires justification, but also sets a minimum fatality threshold of 4 kW/m² at 3% fatality probability regardless of exposure duration, Ref (16). HIPAP 4 does not specify but says "The interpretation of 'fatal' should not rely on any one dose-effect relationship, but involve a review of available data", Ref (2).

Document: 21086-RP-002
 Revision: 0
 Revision Date: 22-Jun-2018
 File name: 21086-RP-002-Rev0 Mobil Woolston QRA

For this study, 30 seconds has been adopted as the maximum heat radiation exposure duration and used to determine heat radiation levels for consequence modelling.

Table 7.4: Vulnerability criteria for fire scenarios

Event	Level	Probability of fatality assumed in QRA (30 secs exposure)	Other effects	Reference
Spray fire Pool fire	Within fire envelope	100%	Escalation due to direct impingement	OGP Risk Assessment Data Directory, Ref (17)
	23 kW/m ²	95%	Escalation due to heat radiation	HIPAP 4, Ref (2)
	12.5 kW/m ²	33%	Possible fatality indoors if line of sight exposure occurs.	TNO probit, Ref (14)
	7.3 kW/m ²	1%	-	TNO probit, Ref (14)
	4.7 kW/m ²	Injury	Injury only	HIPAP 4, Ref (2)
Flash fire	Within LFL (assumed to be flashfire envelope)	100%	No escalation – very short duration event	UK HSE Research Report 084, Ref (18)

7.3. Results

A full set of consequence modelling results for the Terminal is provided in APPENDIX B.

7.3.1. Tank overfills - overpressure effects from explosions

Overpressure is generally regarded as a function of congestion and confinement with the conventional approach being that high overpressures are sustained only in congested areas. The Terminal area has a relatively open layout with minimal congested areas (limited areas around the tanker loading rack and manifold only). The conventional approach suggests that overpressures are very unlikely at the Terminal.

The UK HSE has also recently published a review of vapour cloud explosion incidents that shows for very large gasoline clouds there is evidence that high overpressures are sustained outside congested areas, Ref (19). This review suggests that there is another factor such as high temperatures or dust resuspension that is involved in generating overpressure in large flammable gasoline clouds. Therefore even though congestion/confinement at the Terminal appears limited, the potential for overpressure effects is still assessed as a potential consequence of a gasoline tank overflow.

As per the findings of the Buncefield investigation, Ref (20), overpressure diminishes very rapidly outside flammable clouds resulting from overfills (large shallow clouds). A correlation for estimating the overpressure from edge of cloud has been published. In this case the overpressure effects causing fatality (14 kPa) are a very similar magnitude

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 42

as the flashfire extent and hence do not affect the fatality calculations as the probability of fatality within the LFL is assumed to be 100% (as per Table 7.4).

Therefore for this study, all delayed ignition events from tank overfills have been included in the QRA model as flash fires. The overpressure fatality or damage effects have not been explicitly quantified in the QRA model, and the extent of the overpressure footprint that could result in a fatality (or damage to equipment/escalation) was set equal to the LFL envelope of the flash fire.

The modelling results for the Current Case indicated that the combination of filling rates (maximum LWPL import rate is 95 m³/hr) and tank dimensions were not sufficient for a large flammable cloud to form. This is consistent with guidance from the UK HSE, Ref (3), which defines large gasoline storage facilities (i.e. Buncefield type depots) that land use planning separation distances are applicable to, as vertical tanks of a height greater than 5 m with filling rates for gasoline of more than 100 m³/hr.

A "Buncefield" type scenario has been considered in the Future Case for the Terminal and the extent of the flammable vapour cloud estimated as per Section B8, with the LFL extending approximately 230 m.

7.3.2. Largest impact distance

The maximum extent of the worst case scenario for the Current Case is the flashfire resulting from a gasoline pool evaporation scenario from the bund after a major rupture of tank 11, with the LFL extending 220 m (as per results in APPENDIX B, Section B5). This extends to the surrounding industrial sites areas but does not extend to any residential areas or sensitive land uses.

For the Future Case, the worst case scenario is the overfill from gasoline tanks, and delayed ignition of a flammable cloud with the LFL extending 230 m (as per results in APPENDIX B, Section B8), extending to the surrounding industrial site areas but not to any residential areas or sensitive land uses.

7.3.3. Potential for escalation to neighbouring sites

The heat radiation level of interest is 23 kW/m², at which escalation to equipment in the vicinity of a fire could occur, or rapid escalation to a tank inventory. The maximum extent of the 23 kW/m² from a gasoline pool fire is 40 m from the tank top full surface scenario for Tank 11.

There are no neighbouring hazardous industries or facilities in the vicinity within the 23 kW/m² effect area hence no escalation events were identified.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 43

8. FREQUENCY ANALYSIS

The frequency of an event is defined as the number of occurrences of the event over a specified time period; with the period in risk analysis generally taken as one year.

The following data was used to estimate frequencies:

- Historical equipment leak frequencies from recently available industry data such as LASTFIRE, Ref (21; 22), and Oil and Gas Producers (OGP), Ref (11; 17).
- Parts count
- Operational error frequencies
- External factors frequencies – earthquakes
- Ignition probability
- Effect of safeguards
- Online time
- Storage tank fire frequencies.

The resulting frequency of each scenario is detailed in APPENDIX C.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 44

9. RISK ASSESSMENT

The risk results are presented as risk contours for both the Current and Future Case operations. Risk contours for individual fatality, injury and property damage and propagation were assessed and presented in the following sections.

9.1. Individual fatality risk

The risk contours for the existing and future increased throughput operations are shown in Figure 9.1 and Figure 9.2, respectively.

Comparison of the risk against the risk criteria is presented in Table 9.1. It shows that all of the individual fatality risk criteria for offsite land uses are complied with for the Current and Future Cases.

A sensitivity study was also completed on the Current and Future Cases to determine the effect of earthquakes on the overall individual fatality risk contours. The results of the assessment, outlined in APPENDIX E, Section E1, show that the effects of earthquakes only has a minor contribution and the results of the assessment against the HIPAP 4 risk criteria in Table 9.1 are unaffected.

Individual fatality risk results are also presented for the Victorian risk criteria as per APPENDIX E, Section E2. The conclusions are the same as against HIPAP 4, i.e. all criteria are met.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 45

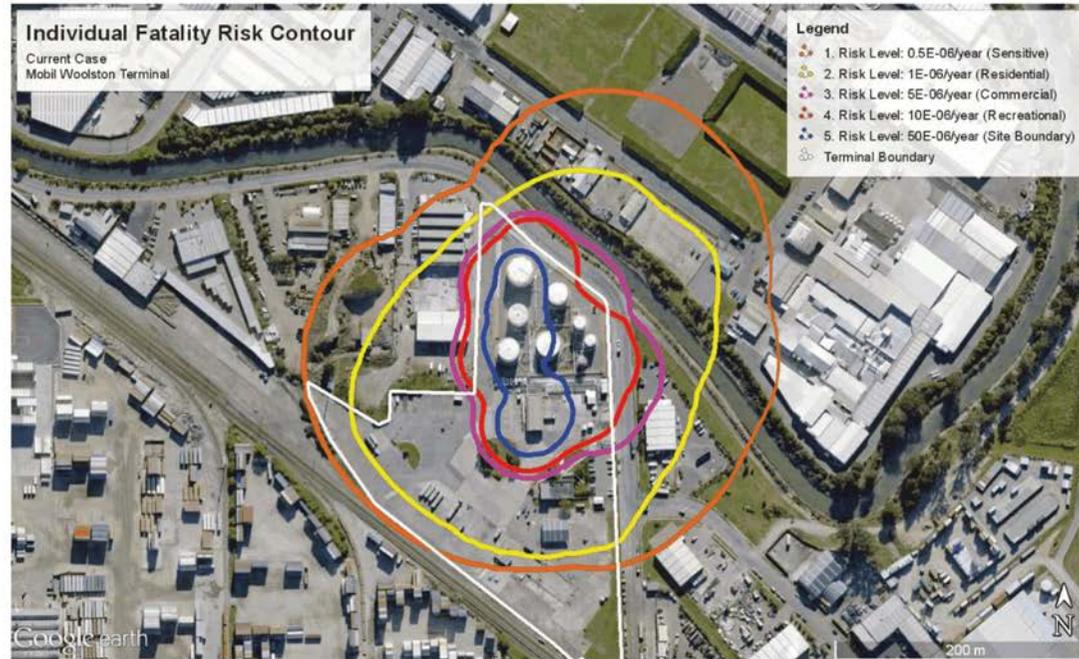
Table 9.1: Comparison with individual fatality risk criteria

Description	Risk criteria (per year)	Meets criteria?		Comments
		Current Case	Future Case	
Hospitals, child-care facilities and old age housing (sensitive land uses).	0.5 x 10 ⁻⁶	Yes	Yes	The risk contours extend up to approximately 155 m (for the Current Case) and 170 m (for the Future Case) from the north-eastern Terminal boundary. However, there are no sensitive land uses in this area.
Residential developments and places of continuous occupancy such as hotels and tourist resorts (residential land use).	1 x 10 ⁻⁶	Yes	Yes	The risk contours extend up to approximately 90 m (for the Current Case) and 125 m (for the Future Case) from the north-eastern Terminal boundary. However, there are no residential land uses in this area.
Commercial developments, including offices, retail centres and entertainment centres (commercial land use).	5 x 10 ⁻⁶	Yes	Yes	The risk contours extend up to approximately 40 m (for the Current Case) and 45 m (for the Future Case) from the eastern Terminal boundary. However, there are no commercial land uses in this area.
Sporting complexes and active open space areas.	10 x 10 ⁻⁶	Yes	Yes	The risk contours extend up to approximately 20 m (for the Current Case) and 35 m (for the Future Case) from the northern and eastern Terminal boundaries. The contour extends to the boundary of an area to the east of the Terminal marked as "Open Space Community Park" in the context of the CDP, Ref (4).
Target for site boundary.	50 x 10 ⁻⁶	Yes	Yes	The risk contours remain within the site boundary for the Current and Future Cases.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 46

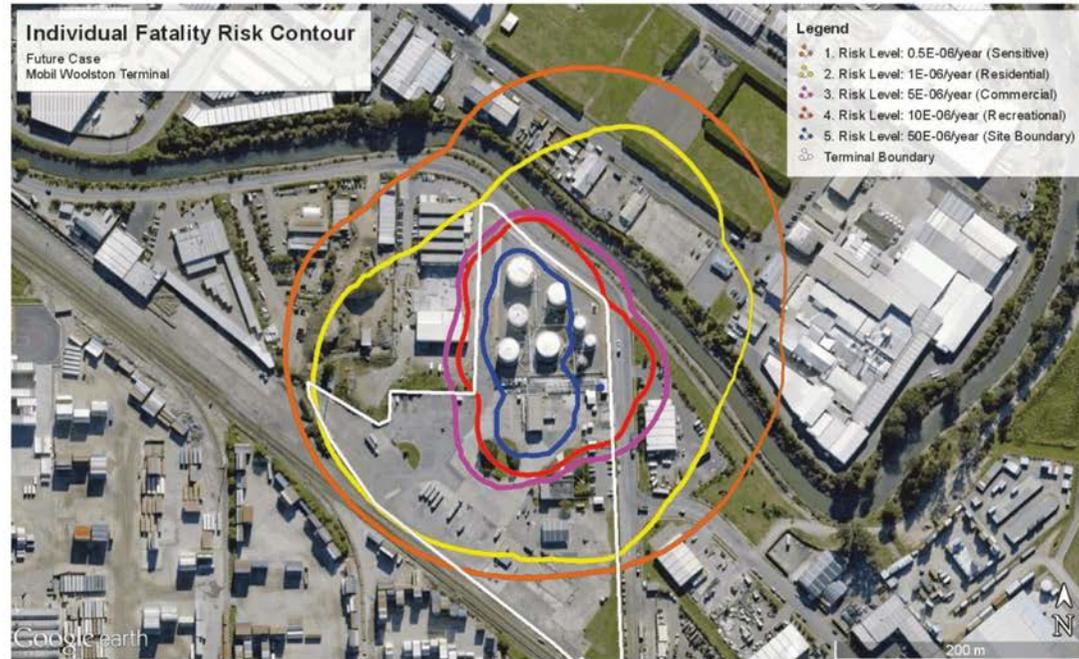
Figure 9.1: Individual fatality risk contour (Current Case)



Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 47

Figure 9.2: Individual fatality risk contour (Future Case)



Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 48

9.2. Major risk contributors

9.2.1. Current Case

For the current operations, the major risk contributors at three points were extracted from the individual fatality risk model (Current Case) and summarised in Table 9.2. The locations of these analyses points are shown in Figure 9.3.

The three points were selected to provide an overview of the major contributing scenarios to the offsite risk at the site boundary and at different locations surrounding the Terminal corresponding to a risk level of approximately 1×10^{-6} per year.

Risk analyses of major risk contributors at these selected points indicate that:

- Analysis Point 1: Northern boundary of the Terminal.

The pool fire resulting from tank roof fire of Tank 11 is the major risk contributor to the offsite risk at the northern boundary of the Terminal.

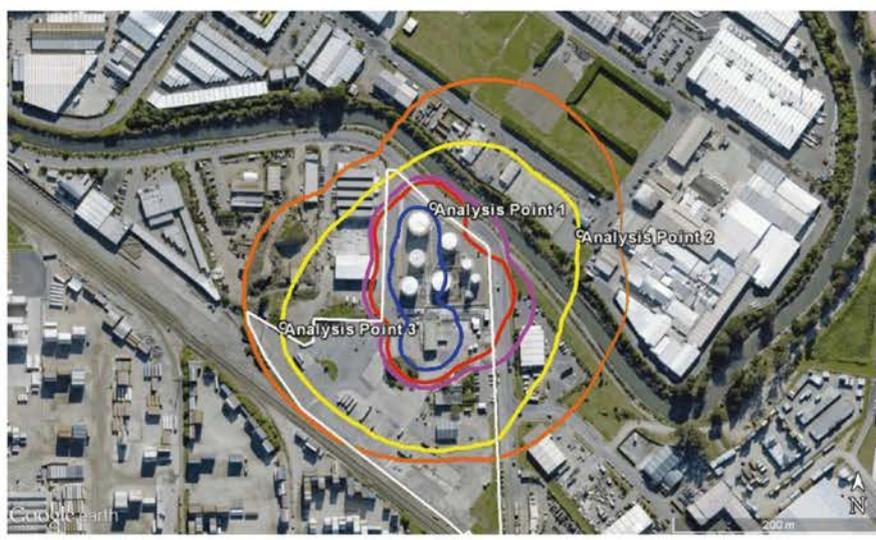
- Analysis Point 2: Eastern limit of 1×10^{-6} per year contour

Flash fires from the inlet manifold and minor ignited leaks from the gasoline tanks are the major risk contributors to the offsite risk at the 1×10^{-6} per year contour to the east of the Terminal.

- Analysis Point 3: Western limit of 1×10^{-6} per year contour

Flash fires from minor leaks from the gasoline tanks are the major risk contributors to the offsite risk at the 1×10^{-6} per year contour to the west of the Terminal.

Figure 9.3: Analysis point locations (Current Case)



Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 49

Table 9.2: Major risk contributors at analysis points (Current Case)

Location	Main risk contributors	Contribution at location
Northern Terminal boundary Risk: 3.19×10^{-5} per year (Analysis Point 1)	Tank roof fire – Tank 11 (ULP)	62%
	Pool fire – Mechanical failure of tank (ULP) and spill from bund due to ground movement (earthquake)	14%
	Pool fire – Tank 11 (ULP) overfill	8%
	Pool fire – Tank 11 (ULP) minor leak	8%
	Flash fire – Tank 11 (ULP) minor leak	1%
Eastern limit of 1×10^{-6} per year contour Risk: 9.89×10^{-7} per year (Analysis Point 2)	Flash fire – Inlet manifold 22 mm leak (ULP)	20%
	Flash fire – Tank 11 (ULP) minor leak	17%
	Flash fire – Tank 2 (ULP) minor leak	17%
	Flash fire – Tank 15 (ULP) minor leak	16%
	Flash fire – Tank 11 (ULP) major rupture	9%
Western limit of 1×10^{-6} per year contour Risk: 1.02×10^{-6} per year (Analysis Point 3)	Flash fire – Tank 11 (ULP) minor leak	22%
	Flash fire – Tank 15 (ULP) minor leak	22%
	Flash fire – Tank 2 (ULP) minor leak	22%
	Flash fire – Tank 11 (ULP) major rupture	13%
	Flash fire – Tank 15 (ULP) major rupture	11%

9.2.2. Future Case

For the future operations, the major risk contributors, at the same three locations considered in the Current Case, were extracted from the individual fatality risk model (Future Case) and summarised in Table 9.3. The locations of these analyses points are the same as the Current Case. The major risk contributors for the Future Case were very similar to the Current Case with the exception of the increase in risk due to overfill of gasoline tanks. This is due to the filling rate of the gasoline tanks increasing to a rate at which Buncefield-type scenario may result.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 50

Figure 9.4: Analysis point locations (Future Case)

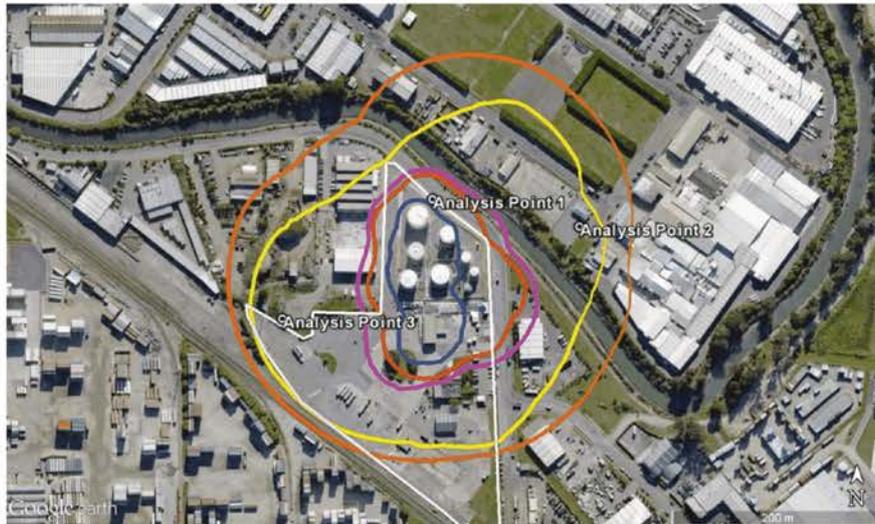


Table 9.3: Major risk contributors at analysis points (Future Case)

Location	Main risk contributors	Contribution at location
Northern Terminal boundary Risk: 3.29×10^{-5} per year (Analysis Point 1)	Tank roof fire – Tank 11 (ULP)	62%
	Pool fire – Mechanical failure of tank (ULP) and spill from bund due to ground movement (earthquake)	14%
	Pool fire – Tank 11 (ULP) minor leak	8%
	Pool fire – Tank 11 (ULP) overfill	7%
	Flash fire – Tank 11 (ULP) minor leak	1%
Eastern limit of 1×10^{-6} per year contour Risk: 1.25×10^{-6} per year (Analysis Point 2)	Flash fire – Inlet manifold 22 mm leak (ULP)	18%
	Flash fire – Tank 11 (ULP) minor leak	13%
	Flash fire – Tank 2 (ULP) minor leak	13%
	Flash fire – Tank 15 (ULP) minor leak	13%
	Flash fire – Tank 11 (ULP) overfill	7%
Western limit of 1×10^{-6} per year contour Risk: 1.50×10^{-6} per year (Analysis Point 3)	Flash fire – Tank 11 (ULP) minor leak	15%
	Flash fire – Tank 15 (ULP) minor leak	15%
	Flash fire – Tank 2 (ULP) minor leak	15%
	Flash fire – Tank 11 (ULP) overfill	13%
	Flash fire – Tank 15 (ULP) overfill	10%

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 51

9.3. Injury risk

Injury risk due to heat radiation impacts were assessed for both Current and Future Case operations. Injury risk contours are shown for the heat radiation impacts only as the frequency of events with any potential to generate an overpressure (i.e. gasoline tank overfills) are well below the relevant frequency criterion.

The injury risk contours (4.7 kW/m² heat radiation level) for the Current and Future Case operations are presented in Figure 9.5 and Figure 9.6, respectively.

Comparison of the risk against the risk criteria is presented in Table 9.4.

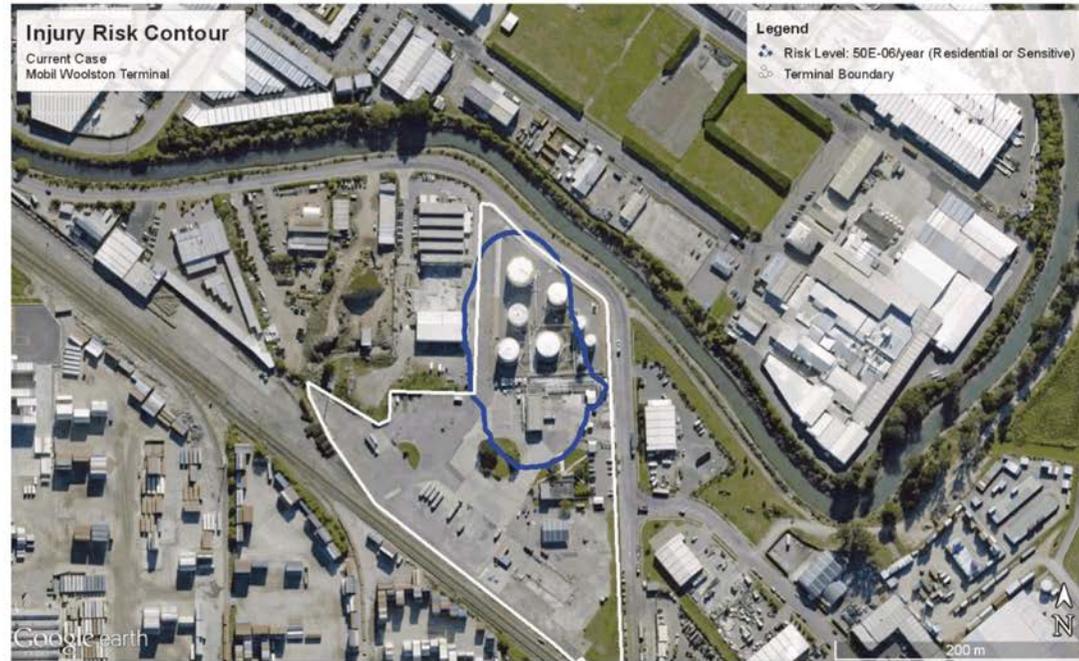
Table 9.4: Comparison with injury risk criteria

Description	Risk criteria (per year)	Meets criteria?		Comments
		Current Case	Future Case	
Heat radiation of 4.7 kW/m ² at residential or sensitive land uses.	50 x 10 ⁻⁶	Yes	Yes	The risk contours extend up to approximately 10 m from the north-eastern and western Terminal boundaries for the Current and Future Cases. However, there are no residential or sensitive land uses in this area.
Overpressure of 7 kPa at residential or sensitive land uses.	50 x 10 ⁻⁶	Yes	Yes	A risk contour is not generated. The only events with potential overpressures of 7 kPa extending a significant distance are VCEs resulting from gasoline tank overfills. The cumulative frequency (as per APPENDIX C, Section C9.2) of a delayed ignition event is well below 50 x 10 ⁻⁶ per year so a contour cannot be generated and this criteria is met.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 52

Figure 9.5: Injury risk contour (Current Case)



Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 53

Figure 9.6: Injury risk contour (Future Case)



Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 54

9.4. Property damage and propagation risk

Damage and propagation risk due to heat radiation impacts were assessed for both Current and Future Case operations. Escalation risk models were prepared only for the heat radiation impacts, as the cumulative frequency of events with the potential to cause explosion overpressures is less than 50×10^{-6} per year hence below the HIPAP 4 acceptability criteria.

The damage and propagation risk contours (23 kW/m² heat radiation level) for the Current and Future Case operations are presented in Figure 9.7 and Figure 9.8, respectively.

Comparison of the risk against the risk criteria is presented in Table 9.5.

Table 9.5: Comparison with damage and propagation risk criteria

Description	Risk criteria (per year)	Meets criteria?		Comments
		Current Case	Future Case	
Heat radiation of 23 kW/m ² at neighbouring potentially hazardous installations or at land zoned to accommodate such installations.	50×10^{-6}	Yes	Yes	The risk contours remain within the site boundary for the Current and Future Cases.
Overpressure of 14 kPa at neighbouring potentially hazardous installations or at land zoned to accommodate such installations.	50×10^{-6}	Yes	Yes	A risk contour is not generated. The only events with potential overpressures of 14 kPa extending a significant distance are VCEs resulting from gasoline tank overfills. The cumulative frequency (as per APPENDIX C, Section C9.2) of a delayed ignition event is well below 50×10^{-6} per year so this criteria is met.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 55

Figure 9.7: Damage and propagation risk contour (Current Case)



Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 56

Figure 9.8: Damage and propagation risk contour (Future Case)



Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 57

9.5. Conclusions

The study showed that for both the Current and Future Cases, all HIPAP 4 individual risk criteria are met as shown in Table 1.2.

A sensitivity study of the effect of earthquakes on the overall risk contours in APPENDIX E, Section E1, showed very little change to the individual fatality risk results if the earthquake contribution is removed.

Based on these results:

- The existing 250 m overlay in the CDP provides adequate protection from encroachment of incompatible land uses whilst allowing for a future growth scenario at the Terminal and could be retained.
- If the overlay is to be revised, the minimum extent that the planning overlay can be reduced to, whilst allowing for a credible future increase in throughput at the Terminal, is 170 m from the Terminal boundary based on the HIPAP 4 sensitive land use contour for the Future Case.

Sensitive or residential uses, and any land uses involving large populations should not be established within the extent of the overlay.

Document: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

Page 58

APPENDIX A. METEOROLOGICAL DATA

Historical meteorological weather data for the Terminal was obtained from the New Zealand National Climate Database CliFlo system, Ref (13). The acquired data set was based on readings from the AWS on Kyle St, Christchurch (Station no. 24120) approximately 7 km north-west of the Terminal over the period of May 2012 – May 2017.

Analysis of the data was performed using the methodology outlined in the TNO Purple Book to obtain the representative weather conditions (including wind speed and stability classes) appropriate for the QRA, Ref (23).

As cloud cover data was unavailable, representative weather conditions were determined based on the wind speed and whether occurrence was during the day or at night. An overview of the rule set used to determine the representative weather conditions using the Purple Book approach is shown in Table A.1.

Table A.1: Rule set for representative weather conditions

Time of day	Wind speed range (m/s)	Pasquill stability class	Average wind speed (m/s)
Day	< 4	B	2.2
	> 4	D	5.0
Night	< 2.5	F	1.4
	2.5 – 4	E	3.2
	> 4	D	5.0

For the QRA model, the data were consolidated into five different representative weather conditions which are:

- Pasquill Stability Class: B; wind speed 2.2 m/s (B2.2)
- Pasquill Stability Class: D; wind speed 5.0 m/s (D5.0)
- Pasquill Stability Class: E; wind speed 3.2 m/s (E3.2)
- Pasquill Stability Class: F; wind speed 1.4 m/s (F1.4).

A summary of the meteorological data sets used for the hazard assessment are presented in Table A.2. Additionally, the wind rose map is also provided in Figure A.1.

Note that there are no high wind speeds at this Terminal, as 99% of the data readings are below 7 m/s as shown in Table A.3. Hence, no high wind speed case is defined in the representative weather conditions.

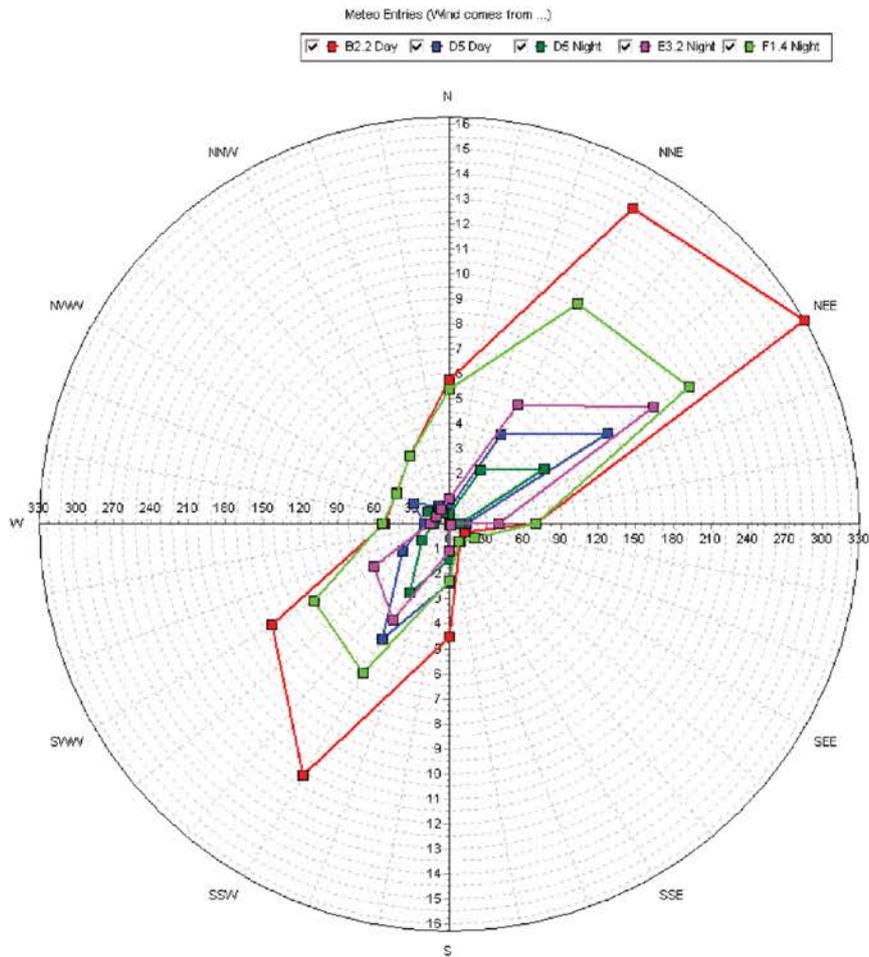
Table A.2: Meteorological data sets used in risk model

Direction wind from (degrees true)	B2.2		D5.0		E3.2		F1.4		Total day	Total night
	Day	Night	Day	Night	Day	Night	Day	Night		
0	5.75	0.00	0.60	0.36	0.00	1.00	0.00	5.37	6.35	6.74
30	14.59	0.00	4.11	2.45	0.00	5.48	0.00	10.17	18.70	18.10
60	16.27	0.00	7.29	4.35	0.00	9.35	0.00	11.04	23.56	24.74
90	3.41	0.00	0.69	0.41	0.00	1.94	0.00	3.41	4.10	5.76
120	0.71	0.00	0.00	0.00	0.00	0.03	0.00	1.15	0.71	1.18
150	0.82	0.00	0.06	0.04	0.00	0.06	0.00	0.81	0.88	0.91
180	4.53	0.00	2.39	1.42	0.00	1.11	0.00	2.28	6.92	4.81
210	11.60	0.00	5.32	3.17	0.00	4.44	0.00	6.89	16.92	14.51
240	8.13	0.00	2.16	1.29	0.00	3.45	0.00	6.20	10.28	10.94
270	2.55	0.00	1.00	0.60	0.00	0.75	0.00	2.67	3.55	4.03
300	2.44	0.00	1.63	0.97	0.00	0.61	0.00	2.42	4.07	4.00
330	3.11	0.00	0.85	0.51	0.00	0.66	0.00	3.13	3.97	4.30
Total	73.89	0.00	26.11	15.57	0.00	28.89	0.00	55.54	100.00	100.00

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX A Page 2

Figure A.1: Wind rose distribution



Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX A Page 3

Table A.3: Wind speeds summary table

Wind speed (m/s)	% Individual	% Cumulative total
<0.5	3.4	3.4
0.5-1	11.5	14.9
1-1.5	12.4	27.3
1.5-2	12.3	39.6
2-3	22.1	61.7
3-4	19.0	80.8
4-5	11.5	92.3
5-6	5.1	97.4
6-7	1.9	99.3
7-8	0.6	99.8
8-9	0.1	99.9
>9	0.1	100.0

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX A Page 4

APPENDIX B. CONSEQUENCE ANALYSIS

B1. Overview

The following types of event were evaluated to determine the effects from hydrocarbon releases at the Terminal:

- Jet/spray fires
- Pool fires
- Flash fires
- Tank top full surface fires
- Tank bund fires
- Tank overfill flash fires ('Buncefield' scenario)
- External factors consequences – earthquakes.

Consequence analysis was undertaken for both the current (2017) and projected future operations of the Terminal. The modelling approaches (e.g. parameters and models) and results are presented in the following sections.

The only changes in the consequence assessment and results between the Current and Future Cases, are changes to the overfill consequences of the storage tanks and the tank top full surface fires due to the addition of jet fuel tanks.

B2. Modelling parameters

The modelling parameters used for modelling of consequences are shown in Table B.1 respectively.

For the types of modelling undertaken (i.e. releases involving non-boiling, ambient temperature hydrocarbon liquids) the results are relatively insensitive to most environmental parameters, with the exception of the ground roughness length and the receptor height.

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX B Page 1

Table B.1: Modelling parameters

Item	Value	Basis
Ambient temperature	13 °C	Weather data, average annual temperature.
Soil temperature	13 °C	Assumed equal to ambient temperature.
Relative humidity	74%	Weather data, average relative humidity.
Solar radiation	1 kW/m ²	Summer/winter insolation - estimated typical values (0.1 – 1 kW/m ²).
Surface type	Concrete/ gravel	Affects pool spreading calculation.
Ground roughness length	0.1 m	Ground roughness affects turbulent flow properties of wind, hence dispersion of a released material. Terrain effects are taken into account to some degree in dispersion modelling by use of a parameter known as surface roughness length. A surface roughness length of 0.1 m used corresponding to an area with occasional large objects/obstacles and isolated trees and structures such as the area surrounding the terminals.
Averaging time (flammables)	20 seconds	TNO Yellow Book, Ref (24) For a (semi-) continuous source this is the duration over which the concentration will be 'averaged out', to deal with the effect of the meandering of the wind or local atmospheric turbulence. A one-second peak concentration at a given location downwind will be greater than a one-minute averaged peak concentration, which in turn will be greater than a one-hour average concentration, even though the amount released at the source is the same. For flammables a short duration peak is important and 18.75 to 20 sec is typical, for toxics the exposure duration is longer, typically 600 sec to 3600 sec to match the toxic effects being assessed.
Receptor height	1.5 m (1 m for flash fires)	1.5 m around face height. For dispersion to LFL, this is taken at 1 m height as models have been verified against experimental values at this height.

B3. Spray fires

Jet/spray fire results for the Current and Future Case operations are summarised in Table B.2. This table provides the dimensions of the spray fires for each identified release condition for gasoline release sizes less than 25 mm, as per rule set outlined in Table 7.2. Additionally, distance to heat radiation levels of interest (as per Table 7.4) is reported. These results represent a continuous release without isolation which represents the worst case scenario for any given leak.

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX B Page 2

Table B.2: Jet fire consequence results (at 1.5 m receiver height)

Component/ equipment	Scenario ID	Product	Modelled product	Pressure (barg)	Hole size (mm)	Release rate (kg/s)	Jet/spray fire (at D5.0 m/s wind speed)					
							Length (m)	Width (m)	Distance to heat radiation (m)			
									23 kW/m ²	12.5 kW/m ²	7.3 kW/m ²	4.7 kW/m ²
Inlet manifold	MAN-01G	91 ULP/ 95 PULP	ULP Summer	10	2	0.08	4	2	5	6	7	8
							6	4	15	16	19	21
							22	12	46	53	61	69
Transfer pipeline	PPL-01G	91 ULP/ 95 PULP	ULP Summer	10	2	0.08	4	2	5	6	7	8
							6	4	15	16	19	21
							22	12	46	53	61	69
LWPL ^(a)	LWP-01G	91 ULP/ 95 PULP	ULP Summer	10	22	9.2	23	10	33	42	52	61
Road tanker loading pumps	PMP-01G	91 ULP/ 95 PULP	ULP Summer	5	2	0.05	3	1	5	5	6	7
							6	4	13	15	16	18
							22	10	37	42	48	55
Road gantry	RTL-01G	91 ULP/ 95 PULP	ULP Summer	5	2	0.05	3	1	5	5	6	7
							6	4	13	15	16	18
							22	10	37	42	48	55

Notes:
(a) Releases from the LWPL underground section within the Terminal boundary were assumed to be orientated at 45° from vertically up as a worst case, as horizontal fires are unlikely due to underground impingement.

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX B Page 3

B4. Pool fires

Pool fire results are summarised in Table B.3. The reported results include the release rate, equivalent pool diameter and distance to heat radiation levels of interest (as specified in Table 7.4).

In this assessment, spills of a liquid hydrocarbon from a leak were assumed to form a circular pool (spreading in all directions), unless limited by a bund, terrain or drainage. Subsequently, the pool fire dimensions were calculated assuming equilibrium where the burn rate equals the release rate of the material.

Some bunded areas were much longer in one dimension; in these instances the fire was limited to the width of the shorter dimension.

The fire duration and potentially the size of a pool fire is dependent upon the time to detect and stop a leak. These results generally represent continuous release without isolation which represents the worst case scenario for any given leak.

The limiting pool diameters used in the QRA for different release locations were:

- Additive compound: 12 m diameter pool
 - Basis – limited by the bunded area of the additive compound (106 m²).
- Inlet manifold: 6 m diameter pool
 - Basis – limited by area of the inlet manifold (29 m²).
- Transfer pipeline: 20 m diameter pool
 - Basis – Assumed bounded by tank compound bund pump slab, foam generator skid and MCC 1 room.
- LWPL: 40 m diameter pool
 - Basis – Restricted by gutter on eastern side of Chapmans Rd.
- Road tanker loadout pumps: 12 m diameter pool
 - Basis – Road tanker loadout pumps are located within bunded area (104 m²) limiting pool growth for large releases.
- Road gantry: 8 m diameter pool
 - Basis – Gantry is kerbed with drainage limiting pool growth for large releases.

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX B Page 4

Table B.3: Pool fire consequence results (at 1.5 m receiver height)

Component/ equipment	Scenario ID	Modelled product	Pressure (barg)	Hole size (mm) ^(a)	Release rate (kg/s) ^(b)	Equivalent pool diameter (m)	Pool fire (at D5.0 m/s wind speed) ^(c)			
							Distance to heat radiation from pool centre (m)			
							23 kW/m ²	12.5 kW/m ²	7.3 kW/m ²	4.7 kW/m ²
Additives bund – flammable	-	ULP Summer	0	RUP	-	12	13	26	34	40
Inlet manifold	MAN-01G	ULP Summer	10	85	20	6	13	20	24	28
				RUP	20	6	13	20	24	28
Transfer pipeline	PPL-01G	ULP Summer	10	85	20	20	12	25	37	45
				RUP	20	20	12	25	37	45
LWPL	LWP-01G	ULP Summer	10	85	20	40	12	25	37	45
				RUP	20	40	12	25	37	45
Road tanker loading pumps	PMP-01G	ULP Summer	5	85	24	12	13	26	34	40
				RUP	24	12	13	26	34	40
Road gantry	RTL-01G	ULP Summer	5	85	24	8	13	23	28	33
				RUP	24	8	13	23	28	33
Additives bund – combustible	-	Dodecane	0	RUP	-	12	13	26	37	44
Inlet manifold	MAN-02D	Dodecane	10	2	0.08	0.8	4	6	7	8
				6	0.7	3	9	13	15	18
				22	10	6	13	22	27	32
				85	19	6	13	22	27	32
				RUP	19	6	13	22	27	32
Transfer pipeline	PPL-02D	Dodecane	10	2	0.08	0.8	4	6	7	8
				6	0.7	3	9	13	15	18
				22	10	9	13	26	34	40
				85	19	20	13	24	43	55

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX B Page 5

Component/ equipment	Scenario ID	Modelled product	Pressure (barg)	Hole size (mm) ^(a)	Release rate (kg/s) ^(b)	Equivalent pool diameter (m)	Pool fire (at D5.0 m/s wind speed) ^(c)			
							Distance to heat radiation from pool centre (m)			
							23 kW/m ²	12.5 kW/m ²	7.3 kW/m ²	4.7 kW/m ²
				RUP	19	20	13	24	43	55
LWPL	LWP-02D	Dodecane	10	22	10	9	13	26	34	40
				85	19	40	NR	30	51	77
				RUP	19	40	NR	30	51	77
Road tanker loading pumps	PMP-02D	Dodecane	5	2	0.06	0.7	4	5	6	7
				6	0.5	2	8	12	14	16
				22	7	8	13	25	31	36
				85	28	12	13	26	37	44
				RUP	28	12	13	26	37	44
Road gantry	RTL-02D	Dodecane	5	2	0.06	0.7	4	5	6	7
				6	0.5	2	8	12	14	16
				22	7	8	13	25	31	36
				85	28	8	13	25	32	37
				RUP	28	8	13	25	32	37

Notes:

(a) "RUP" refers to a full bore rupture.

(b) For loss of containment downstream of a pump, restriction orifice or control valve, the maximum release rate was limited to the normal pumping rate or the process flow rate if predicted flow rate from hole size exceeded the limiting process flow rate. "-" indicates flow rate is not calculated, relevant parameter for this scenario is pool surface area.

(c) "NR" indicates heat radiation level was not reached.

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX B Page 6

B5. Flash fires

Apart from the gasoline tank overfill scenario, vapour clouds result from either:

- evaporation of light components of releases of gasoline which pool on the ground. Similar to pool fires, the maximum size of a pool is limited by bund walls. The limiting sizes are described in Section B4.
- momentum jet pressurised releases.

The rate of evaporation and the dispersion characteristics from a spill are dependent on the weather conditions. The modelling showed that flammable clouds larger than the immediate area of a pool only develop under low wind speed conditions.

Flash fire modelling was only undertaken for gasoline due to the presence of hydrocarbon 'light ends' (typically C4-C5), which are not present in significant amounts for heavier fuels such as diesel. Typical vapour clouds from gasoline spills are denser than air.

The results of the flash fires assessment for both the Current and Future Case operations are summarised as follows:

- Leaks from storage tanks resulting in pool evaporation of bund contents resulting in flammable vapour clouds (Table B.4).
- Terminal operations: pressurised small, medium and large releases (Table B.5).

Modelling results for flash fires are reported in terms of fire width and length to 100% LFL concentrations.

Flash fires were modelled for steady state (equilibrium) case assuming a continuous release without isolation or detection, and therefore represent the worst case cloud size. Ignition of the cloud before equilibrium would result in a smaller flash fire.

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX B Page 7

Table B.4: Flash fire consequence results – storage tanks (pool evaporation) (at 1 m receiver height)

Tank number	Product	Release type	Dimensions of flammable cloud to LFL (m) ^(a)							
			B2.2		D5.0		E3.2		F1.4	
			Length	Width	Length	Width	Length	Width	Length	Width
Tank 2	91 ULP	Overfill	6	15	NR	NR	5	12	17	149
		Minor leak	79	92	NR	NR	60	74	199	251
		Major rupture	179	138	174	122	161	143	206	257
Tank 11	91 ULP	Overfill	6	15	NR	NR	5	12	17	149
		Minor leak	93	108	NR	NR	74	89	212	256
		Major rupture	194	162	189	142	176	166	223	268
Tank 14	98 SPULP	Overfill	6	15	NR	NR	5	12	17	149
		Minor leak	23	39	NR	NR	4	17	22	215
		Major rupture	187	126	170	104	164	125	201	247
Tank 15	95 PULP	Overfill	6	15	NR	NR	5	12	17	149
		Minor leak	87	100	NR	NR	67	82	207	253
		Major rupture	186	149	181	132	169	154	215	268

Notes:
(a) "NR" indicates LFL was not reached.

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX B Page 8

Table B.5: Flash fire consequence results – pressurised releases (at 1 m receiver height)

Component/ equipment	Scenario ID	Pressure (barg)	Hole size (mm) ^(a)	Release rate (kg/s) ^(b)	Dimensions of flammable cloud to LFL (m) ^(c)							
					B2.2		D5.0		E3.2		F1.4	
					Length	Width	Length	Width	Length	Width	Length	Width
Inlet manifold	MAN-01G	10	2	0.08	8	0.7	7	0.5	8	0.9	10	2
			6	0.7	29	5	25	3	27	6	38	22
			22	9	99	35	79	20	89	42	135	220
			85	20	5	5	NR	NR	3	4	13	23
			RUP	20	5	5	NR	NR	3	4	13	23
Transfer pipeline	PPL-01G	10	2	0.08	8	0.7	7	0.5	8	0.9	10	2
			6	0.7	29	5	25	3	27	6	38	22
			22	9	99	35	79	20	89	42	135	220
			85	20	14	14	1	3	9	11	39	99
			RUP	20	14	14	1	3	9	11	39	99
LWPL ^(d)	LWP-01G	10	22	9	NR	NR	NR	NR	NR	NR	NR	NR
			50	20	20	24	NR	NR	10	17	85	260
			RUP	20	20	24	NR	NR	10	17	85	260
Road tanker loadout pumps	PMP-01G	5	2	0.05	2	0.4	3	0.4	3	0.4	3	0.5
			6	0.5	25	5	20	3	22	6	31	23
			22	6	72	31	51	17	64	35	102	165
			85	24	0.2	1	NR	NR	NR	NR	19	41
			RUP	24	0.2	1	NR	NR	NR	NR	19	41
Road tanker gantry	RTL-01G	5	2	0.05	2	0.4	3	0.4	3	0.4	3	0.5
			6	0.5	25	5	20	3	22	6	31	23

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX B Page 9

Component/ equipment	Scenario ID	Pressure (barg)	Hole size (mm) ^(a)	Release rate (kg/s) ^(b)	Dimensions of flammable cloud to LFL (m) ^(c)							
					B2.2		D5.0		E3.2		F1.4	
					Length	Width	Length	Width	Length	Width	Length	Width
			22	6	72	31	51	17	64	35	102	165
			85	24	2	4	NR	NR	0.6	2	15	28
			RUP	24	2	4	NR	NR	0.6	2	15	28

Notes:
 (a) "RUP" refers to a full bore rupture.
 (b) For loss of containment downstream of a pump, restriction orifice or control valve, the maximum release rate was limited to the normal pumping rate or the process flow rate if predicted flow rate from hole size exceeded the limiting process flow rate.
 (c) "NR" indicates LFL was not reached.
 (d) Releases from the LWPL were assumed to be orientated at 45° from vertically up as a worst case, as horizontal releases are unlikely due to underground impingement.

Document number: 21086-RP-002
 Revision: 0
 Revision Date: 22-Jun-2018
 File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX B Page 10

B6. Tank top full surface fire

The tank top full surface area fire scenario was assessed for all tank types. For a floating roof tank this scenario represents the collapse of internal floating roof resulting in a full surface roof fire and subsequent collapse of the external roof. Tank top full surface fire consequence results for the current storage tank arrangement are presented in Table B.6. Tank top full surface fire consequence results for the future storage tank arrangement are presented in Table B.7.

B7. Tank bund fire

This scenario was assessed to represent mechanical failure/leaks from storage tank forming a large pool which may cover up to the full bund area (e.g. instantaneous release) and subsequently ignite. The tank bund fire consequence results are presented in Table B.8.

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX B Page 11

Table B.6: Tank top full surface fire consequence results (Current Case) (maximum distance at any height)

Tank number	Diameter (m)	Height (m)	Product	Distance (m) to heat radiation from tank centre at D5.0 m/s				
				Flame length	23 kW/m ²	12.5 kW/m ²	7.3 kW/m ²	4.7 kW/m ²
Tank 1	18.3	10.2	AGO	42	43	46	51	58
Tank 2	15.2	13.6	91 ULP	32	33	36	41	46
Tank 3	15.2	13.0	Out of Service	-	-	-	-	-
Tank 4	8.3	10.3	AGO	24	27	30	34	38
Tank 5	3.6	9.4	Interface	14	16	18	20	23
Tank 11	21.3	13.8	91 ULP	40	40	44	49	55
Tank 14	9.1	11.2	Out of Service	-	-	-	-	-
Tank 15	16.3	14.7	95 PULP	33	35	38	43	48

Table B.7: Tank top full surface fire consequence results (Future Case) (maximum distance at any height)

Tank number	Diameter (m)	Height (m)	Product	Distance (m) to heat radiation from tank centre at D5.0 m/s				
				Flame length	23 kW/m ²	12.5 kW/m ²	7.3 kW/m ²	4.7 kW/m ²
Tank 1	18.3	10.2	Jet Fuel	29	31	34	39	44
Tank 2	15.2	13.6	91 ULP	32	33	36	41	46
Tank 3	15.2	13.0	Jet Fuel	26	27	31	35	40
Tank 4	8.3	10.3	AGO	24	27	30	34	38
Tank 5	3.6	9.4	Interface	14	16	18	20	23
Tank 11	21.3	13.8	91 ULP	40	40	44	49	55
Tank 14	9.1	11.2	Jet Fuel	18	20	23	26	30
Tank 15	16.3	14.7	95 PULP	33	35	38	43	48

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX B Page 12

Table B.8: Tank bund fire consequence results (maximum distance at any height)

Compound	Surface area (m ²)	Equivalent diameter (m)	Product	Distance (m) to heat radiation from bund centre at D5.0 m/s ^(a)				
				Flame length	23 kW/m ²	12.5 kW/m ²	7.3 kW/m ²	4.7 kW/m ²
Woolston Tank Compound	6,800	93	ULP	115	NR	123	137	154
Woolston Tank Compound	6,800	93	AGO	130	NR	138	152	170
Woolston Tank Compound	6,800	93	Jet Fuel ^(b)	99	NR	106	119	134

Notes:
 (a) "NR" indicates heat radiation level was not reached, i.e. the model is predicting a very sooty flame with a low radiant heat.
 (b) The jet fuel bund fire consequence is applicable to the Future Case only.

Document number: 21086-RP-002
 Revision: 0
 Revision Date: 22-Jun-2018
 File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX B Page 13

B8. Tank overfill – vapour cloud explosion/flash fire

In addition to the tank top full surface and bund fires historically accounted for in hydrocarbon tank farm consequence assessment, flash fire scenarios due to large spills of hydrocarbons (such as those that have occurred in Buncefield UK, CAPECO Puerto Rico and Jaipur, India) have been considered. The industry had previously considered these scenarios to be unlikely.

The investigations into the Buncefield (2005), Jaipur (2009) and Puerto Rico (2009) events identified a number of common factors in the incidents that have occurred including:

- Potential for overfill or other release of hydrocarbon containing volatile material that continues undetected for some time
- Low wind speed, stable atmospheric conditions
- An ignition source in the vicinity
- Factors that may result in localised congestion or confinement of the dispersing flammable vapours.

At Buncefield, a tank was overfilled and the released product (gasoline) subsequently cascaded over the tank edge/girder resulting in large amounts of spray and vapour formation due to vaporisation of volatile components and formation of very fine hydrocarbon droplets. An ignition of the vapour cloud and explosion with overpressures far higher than what would have been predicted by conventional methods at Buncefield.

Extensive work including large scale experiments and CFD modelling were undertaken as part of the Buncefield investigation resulting in further explanation of the severity of the event.

In 2013, the UK HSE and the industry body the Fire and Blast Information Group (FABIG) issued a model for use based on the Health Safety and Laboratory (HSL) paper that can be used to estimate cloud sizes from overfills of volatile materials for zero wind speed conditions, Ref (12). This is primarily dependent on falling droplets drawing in air as they spray, forming a cold, well-mixed flammable cloud that moves due to gravity and local eddies rather than bulk air wind speed. This is known as the UK HSE VCA model.

The technique provides a specific model for assessing the physical behaviour of an overfill from a specific tank geometry and uses empirical correlations to predict a mass addition rate and concentration of hydrocarbon in the initial cloud from a cascading overfill. An extension of this correlation can also be applied to large leaks from tank base/flange failures to estimate the extent of the LFL (for zero wind speeds only).

For this QRA, loss of containment of gasoline due to tank overfill and the extent of the flammable cloud envelope was modelled following the UK HSE's VCA method, which provides a means of calculating the rate at which the volume of a vapour cloud increases during an overfilling incident.

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX B Page 14

The modelling results for the Current Case indicated that the combination of filling rates (maximum LWPL import rate is 95 m³/hr) and tank capacities were not sufficient for a flammable cloud to form. As such, delayed ignited events from overflow reverted to flash fires resulting from pool evaporation as covered in Table B.4.

This is consistent with guidance from the UK HSE, Ref (3), which defines large gasoline storage facilities (i.e. Buncefield type depots) and consequent land use planning separation distances as requiring tank filling rates for gasoline of 100 m³/hr.

For the Future Case, the import rate of gasoline to the Terminal is increased to approximately 120 m³/hr which results in distances to LFL of around 230 m. The filling rate required to produce a flash fire effect at 1 m receiver height varies depending on the tank dimensions, so the 230 m distance to LFL was assumed applicable for all flash fires resulting from gasoline overflow.

The UK VCA correlation can also be used for estimating the extent of the 14 kPa overpressure level. This predicts a distance smaller but of the same order of magnitude compared to the distance to LFL, e.g. for Tank 2 the distance to 14 kPa overpressure is up to 205 m compared to a distance to LFL of 230 m. This is very similar to the flashfire effect distance hence overpressure fatality effects are not explicitly considered in the risk model, as the LFL envelope is already set to 100% fatality probability.

In calculating the results the following assumptions have been made:

- that the width of the cloud to its LFL is the same as the LFL downwind distance ('Length'). This is consistent with CFD modelling results undertaken as part of the Buncefield investigation but may be affected by specific bund and building configurations.
- as a worst case it was assumed that both high level alarm and operator initiated shutdown have failed and that overflow of the tank occurs for 30 min duration.

B9. External factors consequences – earthquakes

Earthquakes result in different damage levels according to the Peak Ground Acceleration (PGA) experienced. No differentiation is made between vertical and horizontal PGA. Both can cause damage but the mode of damage may be different. Only extensive loss of containment scenarios (e.g. multiple tank failures simultaneously, or damage to the bunds as well as tanks with larger scale release that are not contained in the bunded areas) are considered in the QRA. Lower levels of damage (e.g. damage to connected piping, tank nozzle failure) are considered to be similar (i.e. no worse consequence) to scenarios already covered in the QRA, and so are not specifically considered.

For a catastrophic mechanical failure scenario of a single or multiple tanks where the bund is damaged and fails to adequately contain the spilled material, the following assumptions are made:

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX B Page 15

- No attempt is made to estimate specific hole sizes or rates of release due to earthquake damage. The assumption is that severe buckling or vertical uplift causes catastrophic failure of a tank wall or floor and the entire contents are rapidly lost.
- Each main spill area is assumed to be broadly constrained by roads and associated stormwater drainage channels.
- The minimum pool depth is assumed to be 300 mm which corresponds to a very uneven surface which would likely be the case following an earthquake resulting in cracking/deformation of ground.

The consequence distances corresponding to a spill from the largest capacity Class 3 tank (Tank 11) is shown in Table B.9.

Table B.9: Tank bund fire consequence results (at 1.5 m receiver height)

Modelled product	Release inventory (m ³)	Equivalent diameter (m)	Distance (m) to heat radiation from bund centre at D5.0 m/s ^(a)			
			23 kW/m ²	12.5 kW/m ²	7.3 kW/m ²	4.7 kW/m ²
ULP Summer	3,500	122	NR	79	125	170

Notes:
(a) "NR" indicates heat radiation level was not reached.

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX B Page 16

APPENDIX C. FREQUENCY ANALYSIS

C1. Overview

The following data were evaluated to determine the overall event frequencies for the Terminal:

- Historical equipment leak frequencies
- Parts count
- Operational error frequencies
- External factors frequencies – earthquakes
- Ignition probability
- Effect of safeguards
- Online time
- Storage tank fire frequencies (including tank overfill).

The details for each of the data selected are outlined in the following sections.

C2. Historical equipment leak frequencies

The main source of historical leak frequencies used is the OGP's Risk Assessment Data Directory Process release frequencies, Ref (11). The data and sources are included in Table C.1.

Tank top full surface fire frequencies were estimated from the LASTFIRE project, Ref (22), based on the storage tank type.

OGP and LASTFIRE data were selected as they are specific to the oil and gas industry and are updated relatively frequently based on industry incident reporting.

The frequency of tank overfill was estimated using layer of protection/event tree analysis since this is dependent on instrument failures and safeguards specific to each site.

Mechanical failures of atmospheric storage tanks (both bulk vertical tanks and smaller additives tanks) are obtained based on the UK HSE's Failure rate and event data for use within land use planning risk assessments report, Ref (25).

For the underground section of the LWPL within the Terminal boundary, leak frequencies were obtained based on CONCAWE's Performance of European cross-country oil pipelines report, Ref (26).

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX C Page 1

Table C.1: Equipment leak frequencies

Equipment type and size	Frequency (per year) by hole size					Source
	2 mm	6 mm	22 mm	85 mm	Full bore/ rupture	
Instrument fitting	1.8E-04	6.8E-05	2.5E-05			OGP
Pressure vessel (storage)	2.3E-05	1.2E-05	7.1E-06	4.3E-06	4.7E-07	OGP
Pump (centrifugal)	5.1E-03	1.8E-03	5.9E-04	9.7E-05	4.8E-05	OGP
Pump (reciprocating)	3.3E-03	1.9E-03	1.2E-03	3.7E-04	4.3E-04	OGP
Filter	1.3E-03	5.1E-04	1.9E-04	3.5E-05	2.0E-05	OGP
Flanges ANSI Raised Face - 50mm	2.6E-06	7.6E-07	1.2E-06			OGP
Flanges ANSI Raised Face - 150mm	3.7E-06	1.1E-06	9.0E-07	6.0E-07		OGP
Flanges ANSI Raised Face - 300mm	5.9E-06	1.7E-06	1.4E-06	1.8E-07	3.4E-07	OGP
Flanges ANSI Raised Face - 450mm	8.3E-06	2.4E-06	2.0E-06	2.6E-07	3.6E-07	OGP
Flanges ANSI Raised Face - 600mm	1.1E-05	3.2E-06	2.6E-06	3.3E-07	3.8E-07	OGP
Flanges ANSI Raised Face - 900mm	1.7E-05	4.9E-06	4.2E-06	5.4E-07	4.4E-07	OGP
Valve (manual) - 50mm	2.0E-05	7.7E-06	4.9E-06			OGP
Valve (manual) - 150mm	3.1E-05	1.2E-05	4.7E-06	2.4E-06		OGP
Valve (manual) - 300mm	4.3E-05	1.7E-05	6.5E-06	1.2E-06	1.7E-06	OGP
Valve (manual) - 450mm	5.3E-05	2.1E-05	8.0E-06	1.5E-06	1.9E-06	OGP
Valve (manual) - 600mm	6.2E-05	2.4E-05	9.4E-06	1.8E-06	2.1E-06	OGP
Valve (manual) - 900mm	7.8E-05	3.0E-05	1.2E-05	2.2E-05	2.3E-06	OGP
Process piping - 50mm ^(a)	5.5E-05	1.8E-05	7.0E-06	0.0E+00	0.0E+00	OGP
Process piping - 150mm ^(a)	2.6E-05	8.5E-06	2.7E-06	6.0E-07	0.0E+00	OGP
Process piping - 300mm ^(a)	2.3E-05	7.6E-06	2.4E-06	3.7E-07	1.7E-07	OGP
Process piping - 450mm ^(a)	2.3E-05	7.5E-06	2.4E-06	3.6E-07	1.7E-07	OGP
Process piping - 600mm ^(a)	2.3E-05	7.4E-06	2.4E-06	3.6E-07	1.6E-07	OGP
Process piping - 900mm ^(a)	2.3E-05	7.4E-06	2.3E-06	3.6E-07	1.6E-07	OGP
Pipeline (underground)			5.0E-08	4.0E-08	4.3E-08	CONCAWE
Tank rupture (atmospheric storage – vertical bulk)					5.0E-06	UK HSE 2012
Tank rupture (atmospheric storage – small/medium)					1.0E-04	UK HSE 2012
Loading arm (Road tanker) ^(b)			3.0E-07 (per hour)		3.0E-08 (per hour)	TNO Purple Book

Notes:
(a) Process piping and pipeline release frequencies are per metre-year.
(b) Hole sizes are 10% of diameter up to a max of 50 mm & full bore – basis is per hour (not per year as for all other items in table).

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX C Page 2

C3. Parts count

A parts count was completed for the terminal areas and operations type where a potential for hydrocarbon release was identified.

The Terminal was rationalised into six systems, including:

- MAN (Manifold)
- PMP (Pumps)
- RTL (Road Tanker Loading Gantry)
- LWP (Lyttelton-Woolston Pipeline)
- PPW (Transfer Pipework).

These systems were further expanded for parts count based on the product handled and the type of operation (e.g. import or export). These sections are summarised in Table C.2.

Table C.2: Sections defined for the QRA

ID	Scenario description	Area description
MAN-01G	Inlet Manifold - Gasoline	Manifold
MAN-02D	Inlet Manifold - Diesel	Manifold
PMP-01G	Road Tanker Loadout Pump - Gasoline	Transfer Pump
PMP-02D	Road Tanker Loadout Pump - Diesel	Transfer Pump
RTL-01G	Road Tanker Loading - Gasoline	Road Tanker Gantry
RTL-02D	Road Tanker Loading - Diesel	Road Tanker Gantry
LWP-01G	Lyttelton-Woolston Transfer Line - Gasoline	Import Pipeline
LWP-02D	Lyttelton-Woolston Transfer Line - Diesel	Import Pipeline
PPL-01G	Inlet Transfer Pipework - Gasoline	Transfer Pipework
PPL-02D	Inlet Transfer Pipework - Diesel	Transfer Pipework

Parts count and line length calculations were estimated for the process based on site layout diagrams. A sample parts count sheet used for the QRA is presented in Figure C.1. The example below applies for a single bay within the Terminal road tanker loading gantry. The complete parts count sheets for all the sections are not reproduced in this report.

Document number: 21086-RP-002
 Revision: 0
 Revision Date: 22-Jun-2018
 File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX C Page 3

Figure C.1: Sample parts count sheet

Parts Count Sheet		sherpa consulting							
CLIENT	Mobil Oil NZ Ltd								
JOB DESC	Lyttelton Port QRA								
Area Code	RTL								
Area Desc	Road Tanker Gantry								
Section No	01G								
Initiating Event ID	RTL-01G								
Event Description	Road Tanker Loading - Gasoline								
Release Type	L								
Detectors provided?	Yes								
ESD equipment provided?	Yes								
Congestion/confinement?	Yes								
Impingement possible?	Yes								
Fire fighting equipment provided?	Yes								
Toxic material present?	No								
Equipment Item	Tag	Number	Movements per year	Op. Hrs per year	Leak Frequency per Hole Size in mm (Leaks/Year)				RUP
Loading Arm (Road Tanker & Ships)	LOA_ART	1		2917			8.75E-04		8.75E-05
Valve (manual) - 150mm	VLM_150	1		2917	1.03E-05	4.00E-06	1.57E-06	7.99E-07	
Flanges ANSI Raised Face - 150mm	FLG_RF_150	2		2917	2.46E-06	7.33E-07	5.99E-07	4.00E-07	
Valve (manual) - 50mm	VLM_050	1		2917	6.66E-06	2.56E-06	1.63E-06		
Flanges ANSI Raised Face - 50mm	FLG_RF_050	2		2917	1.73E-06	5.06E-07	7.99E-07		

C4. Operational error frequencies

The frequency of operational errors from incorrect coupling was determined for the Terminal based on Mobil operational data. As there have been no coupling errors over at least the past 10 years of operation at the Terminal, the upper bound frequency of an error was determined based on an assumed error during the next operation.

For the Terminal, the frequency of coupling errors was determined as 7.54×10^{-7} per operation for road tanker loadouts at the gantry for the Current and Future Cases.

C5. External factors frequencies – earthquakes

To estimate the effect of earthquake risk in the QRA it is assumed that:

- An earthquake with the PGA (>2 g) required to cause a high probability of significant damage to either partially full or full tanks will occur at an average frequency of 1×10^{-4} per year. This is on the basis that the 1.3 g earthquake PGA experienced at Lyttelton Port in 2011 caused no tank damage resulting in loss of containment (whereas tank fragility correlations predict a 50% probability of significant damage level at 1.3 g, therefore a more severe PGA event would be needed to cause a significant probability of damage).
- Full tanks have a 0.75 probability of significant damage to an earthquake of this size.
- There is at least one full tank per compound (full tanks are at greater risk than partially full tanks). The highest hazard product (gasoline) tank is assumed to spill and the probability is adjusted accordingly.

Document number: 21086-RP-002
 Revision: 0
 Revision Date: 22-Jun-2018
 File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX C Page 4

- The frequency is applied to each main storage bunded area and an ignition probability applied to estimate the total fire frequency in each area (as per the general QRA ignition rule set for spillages in flammable storage areas).

The calculation for the Terminal is shown below:

Frequency of earthquake risk resulting in large spill and ignition

$$\begin{aligned}
 &= \text{Probability of peak ground acceleration (>2 g)} \times \text{probability of tank damage} \times \\
 &\quad \text{fraction of large tanks that are gasoline} \times \text{ignition probability} \\
 &= 1 \times 10^{-4} \times 0.75 \times (3/4) \times 0.08 \\
 &= 4.5 \times 10^{-6} \text{ per year}
 \end{aligned}$$

C6. Ignition probability

The ignition probability values used in this study were based on the assessment by Cox, Lees and Ang, Ref (27). The probabilities are based on the release rate and the phase of the fluid assessed. The ignition probability values to be used in the QRA are provided in Table C.3.

Using the values described in Table C.3, further analysis was undertaken to calculate the ignition probabilities of the assessed flammable substances that result into fires. These values are presented in Table C.4.

Releases of combustible liquids such as diesel are more difficult to ignite due to their high flash point. In this study, diesel is stored in common bunds with flammable liquids and tank product allocations may also be changed from time to time. Hence to ensure a fire scenario was included for all tanks and to take into account possible escalation from a flammable liquid fire, the ignition probability for diesel was assumed to be one-tenth that of flammable liquids such as gasoline, Ref (28).

No additional fixed ignition sources were identified for this Terminal.

Table C.3: Total ignition probabilities (Cox, Lees and Ang, Ref (27))

Mass flow rate (kg/s)	Total ignition probability of a gas or mixture	Total ignition probability of a liquid	Fraction of explosions given ignition of a gas, liquid or mixture	Explosion probability of a gas or mixture	Explosion probability of a liquid
< 1	0.01	0.01	0.04	0.0004	0.0004
1 - 50	0.07	0.03	0.12	0.0084	0.0036
> 50	0.3	0.08	0.3	0.09	0.024

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX C Page 5

Table C.4: Calculated ignition probabilities for fires

Mass flow rate (kg/s)	Immediate ignition of gas/ mixture resulting in fire	Delayed ignition of gas/mixture resulting in fire	Immediate ignition of liquid resulting in fire	Delayed ignition of liquid resulting in fire
< 1	0.0096	0.0004	0.0096	0.0004
1 - 50	0.0616	0.0084	0.0264	0.0036
> 50	0.21	0.09	0.056	0.024

C7. Effect of safeguards

Manually initiated shutdown is also allowed in the situation where:

- there are personnel present and shutdown functionality is available
- the event can be readily detected and isolated, particularly if continuous monitoring occurs.

Manual shutdown activation is useful in limiting the duration and inventory released. However, depending on the scenario and inventory between any block valves an un-isolated and isolated release may have similar consequences.

Safeguards relating to fire protection (e.g. foam deluge in the road tanker loading gantry) are not accounted for in estimating the initial event likelihood. They can be used to estimate the likelihood of escalation to other equipment (as they do not prevent the initial event, but limit the consequences) or to reduce the likelihood of a small event escalating to a larger event (e.g. rim seal fire escalating to a full tank surface fire).

C8. Online time

An online factor was applied to the leak frequencies of each identified sections provided in Table C.2. The online time factor reduces the leak frequency based on the proportion of time that the equipment is used.

The online time factor for each of these sections assessed in the QRA are summarised in Table C.5.

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX C Page 6

Table C.5: Online times assumed by section

Scenario	Online time (hours/year)		Comments on online time calculation
	Current Case	Future Case	
MAN-01G	3,807	4,271	Hours LWPL import: Gasoline (91 ULP, 95 PULP, 98 SPULP)
MAN-02D	4,077	212	Hours LWPL import: Diesel (AGO)
MAN-03J	-	3,402	Hours LWPL import: Jet Fuel
PMP-01G	2,922	4,348	Hours road tanker export: Gasoline (91 ULP, 95 PULP, 98 SPULP)
PMP-02D	2,644	186	Hours road tanker export: Diesel (AGO)
PMP-03J	-	3,270	Hours road tanker export: Jet Fuel
RTL-01G	2,922	4,348	Hours road tanker export: Gasoline (91 ULP, 95 PULP, 98 SPULP) Current Case: = (336,000) m ³ /yr / (115.2) m ³ /hr = 2,917 hr/yr
RTL-02D	2,644	186	Hours road tanker export: Diesel (AGO)
RTL-03J	-	3,270	Hours road tanker export: Jet Fuel
LWP-01G	3,807	4,271	Hours LWPL import: Gasoline (91 ULP, 95 PULP, 98 SPULP)
LWP-02D	4,077	212	Hours LWPL import: Diesel (AGO)
LWP-03J	-	3,402	Hours LWPL import: Jet Fuel
PPL-01G	3,807	4,271	Hours LWPL import: Gasoline (91 ULP, 95 PULP, 98 SPULP)
PPL-02D	4,077	212	Hours LWPL import: Diesel (AGO)
PPL-03J	-	3,402	Hours LWPL import: Jet Fuel

C9. Storage tank incident frequencies

The types of incident considered for the bulk storage tanks area are:

- tank top full surface fire
- tank overfill leading to pool fire in the bund and flash fire
- tank major rupture leading to pool fire in the bund and pool evaporation leading to flash fire
- tank minor leak leading to pool fire in the bund and pool evaporation leading to flash fire.

C9.1. Tank top full surface fire

The tank top full surface fire frequencies used in the QRA study were obtained from the most recent LASTFIRE Project Update 2012, Ref (22).

LASTFIRE Project Update 2012 indicates that the tank top full surface fire frequency for fixed roof tanks (all causes including lightning, hot work etc.) is given as 2.1×10^{-5} per

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX C Page 7

year. The LASTFIRE data includes all types of hydrocarbon fuel tanks. For gasoline, the frequency is taken from the data directly, while for diesel, an additional reduction factor of 10% has been applied to the reported data as the vapour space is not within the flammable range under normal circumstances.

LASTFIRE Project Update 2012 indicates that there has been no tank top full surface fires recorded for Internal Floating Roof (IFR) tanks. The rim seal fire frequency for IFR tanks is given as 4.4×10^{-5} per year. The bulk tanks at the Terminal are not provided with rim seal fire detection or tank top foam pourers that would cover the floating blanket/pan and the rim seals with foam upon activation, and a manual foam attack could take some time to arrange. Hence, the probability of a tank top full surface fire on an IFR tank was also taken as 4.4×10^{-5} per year.

As all the tanks are located in a common compound bund without fixed spray cooling water, escalation between tanks at the Terminal is accounted for. For tank top fires where the 23 kW/m² heat radiation level can reach other tanks, escalation is considered possible. An adjustment factor of 0.25 is applied to account for the probability of the wind blowing in the direction of the neighbouring tank.

A summary of the tank top full surface fire frequencies used for each tank is shown in Table C.6.

Table C.6: Tank top full surface fire frequencies Current Case

Tank number	Product	Tank type	LASTFIRE 2012 base frequency (per year)	Frequency due to escalation (per year)	Total frequency (per year)
Tank 1	AGO	Fixed	2.10E-06	2.25E-05	2.46E-05
Tank 2	91 ULP	IFR	4.40E-05	2.25E-05	6.65E-05
Tank 3	Out of Service	-	-	-	-
Tank 4	AGO	Fixed	2.10E-06	1.05E-06	3.15E-06
Tank 5	Interface	Fixed	2.10E-06	1.05E-06	3.15E-06
Tank 11	91 ULP	IFR	4.40E-05	1.10E-05	5.50E-05
Tank 14	Out of Service	-	-	-	-
Tank 15	95 PULP	IFR	4.40E-05	1.15E-05	5.55E-05

C9.2. Tank overflow

For this study, the frequency of an extended duration tank overflow was calculated as a function of tank level gauging failure and failure of operator during stock reconciliation.

Basis:

Failure rate of gauging system = once every 10 years, Ref (29)

Failure of stock reconciliation = 0.1 (estimated based on Center for Chemical Process Safety (CCPS) guidelines, Ref (30). This is a fairly conservative approach.)

Using the event tree analysis, the frequency of pool fire in bund (immediate ignition) due to tank overfill was determined to be 1.14×10^{-4} per tank-year and the flash fires/VCE (delayed ignition) due to tank overfill was determined to be 3.8×10^{-5} per tank-year, as shown in Figure C.2.

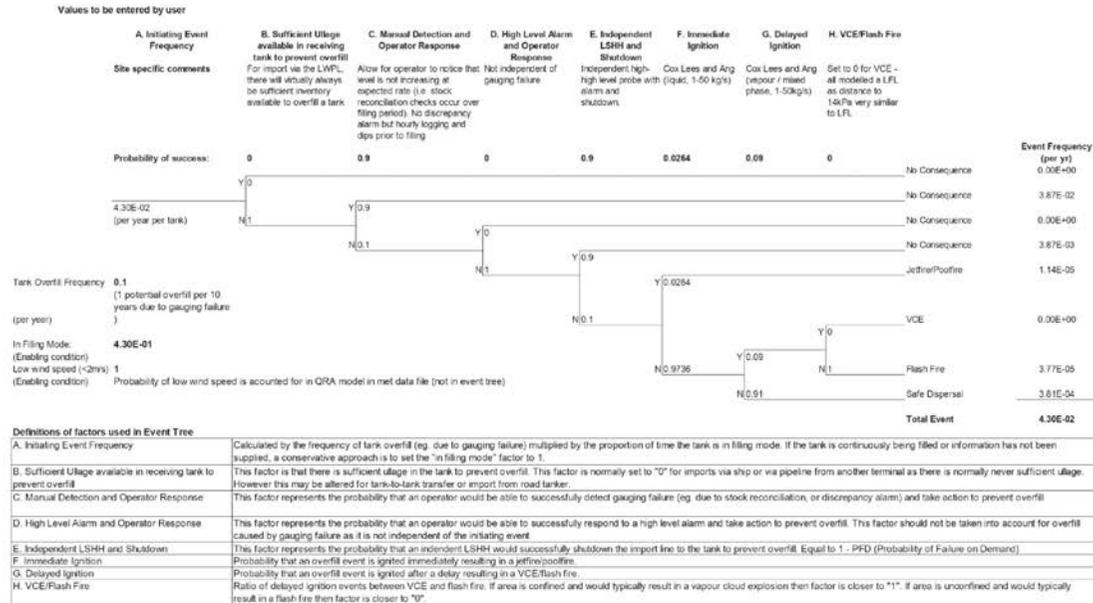
Where the tanks are contained in an intermediate bund, a tank overfill leading to pool fire in bund frequency is associated with the consequence of the intermediate bund fire. Otherwise, if there is no intermediate bund, the pool is assumed to cover the bund full surface area and potentially lead to the consequence of the full bund fire.

This value was then adjusted by the proportion of time that the tank is in filling mode (CCPS enabling condition for overfill).

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX C Page 9

Figure C.2: Example tank overfill event tree (Future Case)



Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX C Page 10

C9.3. Tank major rupture and minor leak

Tank major ruptures and minor leaks could lead to pool fires in bund and pool evaporation resulting in flash fire.

The tank bund fire frequencies were calculated using the event tree analyses. Derivation of these frequencies is provided below.

Tank rupture (major)

This frequency was applied for all full bund fire events due to tank rupture. An event tree was developed for tank rupture frequency where 5.0×10^{-6} per tank-year is used based on DNV Buncefield Report, Ref (10).

This is appropriate for large bund fires as these failures are difficult to isolate depending on the leak source location and may result in large pool size (restricted by the bund area).

Allocation is made between bund fires and flash fires (based on immediate and delayed ignition probability), with the frequencies reported in Table C.7.

Leaks from tank (minor)

This frequency was applied for the full bund fire events due to tank minor leak.

The tank minor leak frequency was estimated based on the data in LASTFIRE, Ref (22), where the frequency of spills into bund at 3.97×10^{-4} per tank-year was divided into the number of releases resulting from a minor leak. This gives a total leak frequency of 2.36×10^{-4} per tank-year which is used for the QRA.

This covers bund fires where the applicable cause of failure could be due to human error, leak from pipework, flanges and valves, drain failure, shell corrosion and other. This excludes tank rupture and overfill as these have already been accounted for in previous sections.

Allocation is made between bund fires and flash fires (based on immediate and delayed ignition probability), with the frequencies reported in Table C.7.

C10. Current Case frequencies

The frequencies for scenarios included in the current Case QRA model are summarised in Table C.7, Table C.8 and Table C.9.

C11. Future Case frequencies

The frequencies for scenarios included in the Future Case QRA model have been developed using the same approach as the Current Case.

Resulting Future Case frequencies are summarised in Table C.10, Table C.11 and Table C.12.

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX C Page 11

Table C.7: Tank fire frequencies (Current Case)

Tank number	Product	Tank top full surface fire frequency (per year)	Tank overfill		Tank major rupture		Tank minor leak	
			Bund fire frequency (per year)	Flash fire frequency (per year)	Bund fire frequency (per year)	Flash fire frequency (per year)	Bund fire frequency (per year)	Flash fire frequency (per year)
Tank 1	AGO	2.46E-05	1.13E-06	-	2.80E-08	-	6.23E-07	-
Tank 2	91 ULP	6.65E-05	3.96E-06	1.23E-06	2.80E-07	4.25E-07	6.23E-06	1.93E-06
Tank 3	Out of Service	-	-	-	-	-	-	-
Tank 4	AGO	3.15E-06	2.30E-07	-	2.80E-08	-	6.23E-07	-
Tank 5	Interface	3.15E-06	-	-	2.80E-08	-	6.23E-07	-
Tank 11	91 ULP	5.50E-05	6.51E-06	2.02E-06	2.80E-07	4.25E-07	6.23E-06	1.93E-06
Tank 14	Out of Service	-	-	-	-	-	-	-
Tank 15	95 PULP	5.55E-05	2.28E-06	7.05E-07	2.80E-07	4.25E-07	6.23E-06	1.93E-06

Document number: 21086-RP-002
 Revision: 0
 Revision Date: 22-Jun-2018
 File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX C Page 12

Table C.8: QRA location frequencies summary (Current Case)

Scenario ID	Total release frequency (per year)	Jet fire/pool fire frequency (per year)	Flash fire frequency (per year)	Total event frequency (per year)
ADD_01G_RUP	5.00E-04	2.80E-05	1.20E-05	4.00E-05
ADD_02D_RUP	4.00E-04	2.24E-06	9.60E-07	3.20E-06
MAN-01G_002	2.33E-03	2.23E-05	9.22E-07	2.33E-05
MAN-01G_006	8.24E-04	7.91E-06	3.26E-07	8.24E-06
MAN-01G_022	2.73E-04	1.68E-05	2.15E-06	1.90E-05
MAN-01G_085	4.53E-05	2.79E-06	3.57E-07	3.15E-06
MAN-01G_RUP	2.09E-05	1.29E-06	1.64E-07	1.45E-06
MAN-02D_002	2.49E-03	2.39E-06	9.96E-08	2.49E-06
MAN-02D_006	8.83E-04	8.47E-07	3.53E-08	8.83E-07
MAN-02D_022	2.92E-04	1.80E-06	2.44E-07	2.04E-06
MAN-02D_085	4.85E-05	2.99E-07	4.05E-08	3.39E-07
MAN-02D_RUP	2.23E-05	1.38E-07	1.86E-08	1.56E-07
PMP-01G_002	1.79E-03	1.72E-05	7.08E-07	1.79E-05
PMP-01G_006	6.33E-04	6.07E-06	2.51E-07	6.32E-06
PMP-01G_022	2.09E-04	1.29E-05	1.65E-06	1.46E-05
PMP-01G_085	3.48E-05	2.14E-06	2.74E-07	2.41E-06
PMP-01G_RUP	1.60E-05	9.86E-07	1.26E-07	1.11E-06
PMP-02D_002	1.62E-03	1.55E-06	6.46E-08	1.62E-06
PMP-02D_006	5.72E-04	5.50E-07	2.29E-08	5.72E-07
PMP-02D_022	1.90E-04	1.17E-06	1.58E-07	1.33E-06
PMP-02D_085	3.15E-05	1.94E-07	2.63E-08	2.20E-07
PMP-02D_RUP	1.45E-05	8.92E-08	1.21E-08	1.01E-07
RTL-01G_002	2.12E-05	2.04E-07	8.40E-09	2.12E-07
RTL-01G_006	7.81E-06	7.50E-08	3.09E-09	7.81E-08
RTL-01G_022	8.81E-04	5.43E-05	6.95E-06	6.12E-05
RTL-01G_085	5.19E-02	3.19E-03	4.09E-04	3.60E-03
RTL-01G_RUP	8.77E-05	5.40E-06	6.91E-07	6.09E-06
RTL-02D_002	1.92E-05	1.84E-08	7.67E-10	1.92E-08
RTL-02D_006	7.07E-06	6.79E-09	2.82E-10	7.07E-09
RTL-02D_022	7.97E-04	4.91E-06	6.66E-07	5.58E-06
RTL-02D_085	4.81E-02	2.97E-04	4.02E-05	3.37E-04
RTL-02D_RUP	7.93E-05	4.89E-07	6.62E-08	5.55E-07

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX C Page 13

Table C.9: QRA pipeline frequencies summary (Current Case)

Scenario ID	Total release frequency (per km-year)	Jet fire/pool fire frequency (per km-year)	Flash fire frequency (per km-year)	Total event frequency (per km-year)
LWP-01G_022	2.17E-05	1.34E-06	1.71E-07	1.51E-06
LWP-01G_085	1.74E-05	1.07E-06	1.37E-07	1.21E-06
LWP-01G_RUP	1.87E-05	1.15E-06	1.47E-07	1.30E-06
LWP-02D_022	2.33E-05	1.43E-07	1.94E-08	1.63E-07
LWP-02D_085	1.86E-05	1.15E-07	1.55E-08	1.30E-07
LWP-02D_RUP	2.00E-05	1.23E-07	1.67E-08	1.40E-07
PPL-01G_002	1.13E-02	1.08E-04	4.48E-06	1.13E-04
PPL-01G_006	3.69E-03	3.55E-05	1.46E-06	3.69E-05
PPL-01G_022	1.17E-03	7.23E-05	9.25E-06	8.15E-05
PPL-01G_085	2.61E-04	1.61E-05	2.06E-06	1.81E-05
PPL-02D_002	1.21E-02	1.16E-05	4.84E-07	1.21E-05
PPL-02D_006	3.96E-03	3.80E-06	1.58E-07	3.96E-06
PPL-02D_022	1.26E-03	7.74E-06	1.05E-06	8.79E-06
PPL-02D_085	2.79E-04	1.72E-06	2.33E-07	1.95E-06

Document number: 21086-RP-002
 Revision: 0
 Revision Date: 22-Jun-2018
 File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX C Page 14

Table C 10: Tank fire frequencies (Future Case)

Tank number	Product	Total Tank top full surface fire frequency ^(a) (per year)	Tank overfill		Tank major rupture		Tank minor leak	
			Bund fire frequency (per year)	Flash fire frequency (per year)	Bund fire frequency (per year)	Flash fire frequency (per year)	Bund fire frequency (per year)	Flash fire frequency (per year)
Tank 1	Jet Fuel	3.21E-05	1.82E-06	-	8.40E-08	-	1.87E-06	-
Tank 2	91 ULP	6.92E-05	3.28E-06	1.02E-06	2.80E-07	4.25E-07	6.23E-06	1.93E-06
Tank 3	Jet Fuel	3.32E-05	7.46E-07	-	8.40E-08	-	1.87E-06	-
Tank 4	AGO	7.50E-06	6.38E-08	-	2.80E-08	-	6.23E-07	-
Tank 5	Interface	4.20E-06	-	-	2.80E-08	-	6.23E-07	-
Tank 11	91 ULP	5.66E-05	5.39E-06	1.67E-06	2.80E-07	4.25E-07	6.23E-06	1.93E-06
Tank 14	Jet Fuel	1.69E-05	5.05E-07	-	8.40E-08	-	1.87E-06	-
Tank 15	95 PULP	5.66E-05	4.20E-06	1.30E-06	2.80E-07	4.25E-07	6.23E-06	1.93E-06

Notes:
(a). total frequency includes escalation from neighbouring tanks

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX C Page 15

Table C.11: QRA location frequencies summary (Future Case)

Scenario ID	Total release frequency (per year)	Jet fire/pool fire frequency (per year)	Flash fire frequency (per year)	Total event frequency (per year)
ADD_01G_RUP	5.00E-04	2.80E-05	1.20E-05	4.00E-05
ADD_02D_RUP	4.00E-04	2.24E-06	9.60E-07	3.20E-06
MAN-01G_002	2.61E-03	2.51E-05	1.03E-06	2.61E-05
MAN-01G_006	9.25E-04	8.88E-06	3.66E-07	9.24E-06
MAN-01G_022	3.06E-04	1.89E-05	2.41E-06	2.13E-05
MAN-01G_085	5.08E-05	3.13E-06	4.00E-07	3.53E-06
MAN-01G_RUP	2.34E-05	1.44E-06	1.84E-07	1.63E-06
MAN-02D_002	1.29E-04	1.24E-07	5.17E-09	1.29E-07
MAN-02D_006	4.58E-05	4.40E-08	1.83E-09	4.58E-08
MAN-02D_022	1.52E-05	9.34E-08	1.27E-08	1.06E-07
MAN-02D_085	2.52E-06	1.55E-08	2.10E-09	1.76E-08
MAN-02D_RUP	1.16E-06	7.14E-09	9.68E-10	8.11E-09
MAN-03J_002	2.08E-03	5.99E-06	2.49E-07	6.24E-06
MAN-03J_006	7.36E-04	2.12E-06	8.81E-08	2.21E-06
MAN-03J_022	2.44E-04	4.51E-06	6.03E-07	5.11E-06
MAN-03J_085	4.05E-05	7.48E-07	1.00E-07	8.48E-07
MAN-03J_RUP	1.86E-05	3.44E-07	4.61E-08	3.91E-07
PMP-01G_002	2.66E-03	2.55E-05	1.05E-06	2.66E-05
PMP-01G_006	9.41E-04	9.04E-06	3.73E-07	9.41E-06
PMP-01G_022	3.12E-04	1.92E-05	2.46E-06	2.17E-05
PMP-01G_085	5.17E-05	3.19E-06	4.08E-07	3.59E-06
PMP-01G_RUP	2.38E-05	1.47E-06	1.88E-07	1.66E-06
PMP-02D_002	1.14E-04	1.09E-07	4.56E-09	1.14E-07
PMP-02D_006	4.04E-05	3.87E-08	1.61E-09	4.04E-08
PMP-02D_022	1.34E-05	8.23E-08	1.12E-08	9.35E-08
PMP-02D_085	2.22E-06	1.37E-08	1.85E-09	1.55E-08
PMP-02D_RUP	1.02E-06	6.29E-09	8.53E-10	7.15E-09
PMP-03J_002	2.00E-03	5.76E-06	2.39E-07	6.00E-06
PMP-03J_006	7.08E-04	2.04E-06	8.47E-08	2.12E-06
PMP-03J_022	2.34E-04	4.33E-06	5.80E-07	4.91E-06
PMP-03J_085	3.89E-05	7.19E-07	9.62E-08	8.15E-07
PMP-03J_RUP	1.79E-05	3.31E-07	4.43E-08	3.75E-07
RTL-01G_002	3.16E-05	3.03E-07	1.25E-08	3.16E-07
RTL-01G_006	1.16E-05	1.12E-07	4.60E-09	1.16E-07
RTL-01G_022	1.31E-03	8.08E-05	1.03E-05	9.11E-05
RTL-01G_085	7.72E-02	4.75E-03	6.08E-04	5.36E-03
RTL-01G_RUP	1.30E-04	8.03E-06	1.03E-06	9.06E-06
RTL-02D_002	1.35E-06	1.30E-09	5.41E-11	1.35E-09

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX C Page 16

Scenario ID	Total release frequency (per year)	Jet fire/pool fire frequency (per year)	Flash fire frequency (per year)	Total event frequency (per year)
RTL-02D_006	4.98E-07	4.79E-10	1.99E-11	4.98E-10
RTL-02D_022	5.62E-05	3.46E-07	4.69E-08	3.93E-07
RTL-02D_085	3.40E-03	2.09E-05	2.83E-06	2.37E-05
RTL-02D_RUP	5.59E-06	3.45E-08	4.67E-09	3.91E-08
RTL-03J_002	2.37E-05	6.84E-08	2.84E-09	7.12E-08
RTL-03J_006	8.74E-06	2.52E-08	1.05E-09	2.62E-08
RTL-03J_022	9.86E-04	1.82E-05	2.44E-06	2.07E-05
RTL-03J_085	5.80E-02	1.07E-03	1.44E-04	1.22E-03
RTL-03J_RUP	9.81E-05	1.81E-06	2.43E-07	2.06E-06

Table C.12: QRA pipeline frequencies summary (Future Case)

Scenario ID	Total release frequency (per km-year)	Jet fire/pool fire frequency (per km-year)	Flash fire frequency (per km-year)	Total event frequency (per km-year)
LWP-01G_022	2.44E-05	1.50E-06	1.92E-07	1.69E-06
LWP-01G_085	1.95E-05	1.20E-06	1.54E-07	1.35E-06
LWP-01G_RUP	2.10E-05	1.29E-06	1.65E-07	1.46E-06
LWP-02D_022	1.21E-06	7.44E-09	1.01E-09	8.45E-09
LWP-02D_085	9.66E-07	5.95E-09	8.06E-10	6.76E-09
LWP-02D_RUP	1.04E-06	6.40E-09	8.67E-10	7.26E-09
LWP-03J_022	1.94E-05	3.59E-07	4.80E-08	4.07E-07
LWP-03J_085	1.55E-05	2.87E-07	3.84E-08	3.25E-07
LWP-03J_RUP	1.67E-05	3.09E-07	4.13E-08	3.50E-07
PPL-01G_002	1.27E-02	1.22E-04	5.02E-06	1.27E-04
PPL-01G_006	4.14E-03	3.98E-05	1.64E-06	4.14E-05
PPL-01G_022	1.32E-03	8.11E-05	1.04E-05	9.15E-05
PPL-01G_085	2.93E-04	1.80E-05	2.31E-06	2.03E-05
PPL-02D_002	6.28E-04	6.03E-07	2.51E-08	6.28E-07
PPL-02D_006	2.05E-04	1.97E-07	8.20E-09	2.05E-07
PPL-02D_022	6.52E-05	4.02E-07	5.44E-08	4.56E-07
PPL-02D_085	1.45E-05	8.93E-08	1.21E-08	1.01E-07
PPL-03J_002	1.01E-02	2.91E-05	1.21E-06	3.03E-05
PPL-03J_006	3.30E-03	9.51E-06	3.95E-07	9.90E-06
PPL-03J_022	1.05E-03	1.94E-05	2.59E-06	2.20E-05
PPL-03J_085	2.33E-04	4.31E-06	5.76E-07	4.88E-06

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX C Page 17

APPENDIX D. LAND USES

A map showing the surrounding land uses to the Terminal is shown in Figure D.1, based on the CDP Map, Ref (4).

A comparison was made against the proposed Christchurch Replacement District Plan, Ref (31), which showed that no changes were proposed for the area surrounding the Terminal. Hence, it was assumed that there will be no significant change in the land use zoning between the Current and Future Case operations.

The only change identified is a bike path is planned to route along Cumnor Terrace close to the northern boundary of the Terminal for the Future Case.

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX D Page 1

Figure D.1: Surrounding land uses map (approximate areas only)



Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX D Page 2

APPENDIX E. SENSITIVITY STUDIES

E1. Earthquake effects

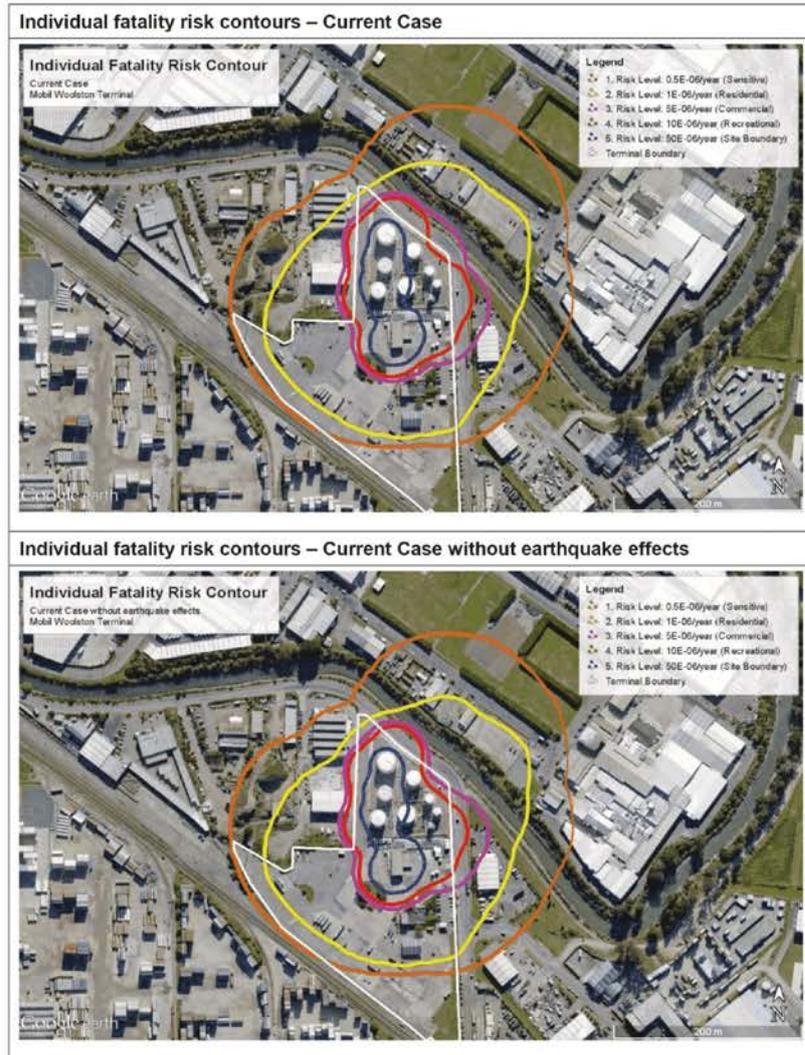
A sensitivity study of the Current and Future Cases was completed to determine the effect of accounting for earthquakes on the overall individual fatality risk contours. The results of the assessment are illustrated in Figure E.1 and Figure E.2.

The comparison shows a small reduction of up to 25 m in the extent of some of the risk contours, with the largest changes at the northern section of the Terminal. The reduction in the contours extent does not however change the results of the assessment against the HIPAP 4 risk criteria (i.e. all individual fatality risk criteria are met).

Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX E Page 1

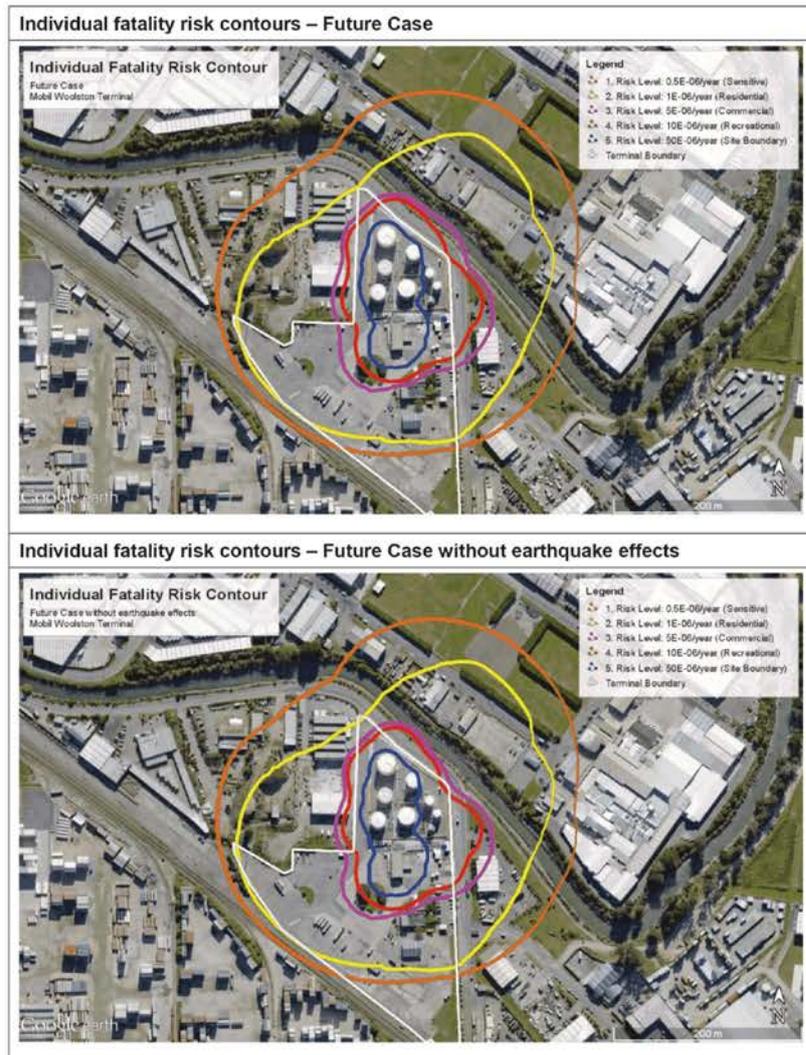
Figure E.1: Comparison of earthquake effects on Current Case



Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX E Page 2

Figure E.2: Comparison of earthquake effects on Future Case



Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX E Page 3

E2. Alternative risk criteria

Worksafe Victoria guidance (Ref (6)) suggests that planning consider:

- An *inner planning advisory area* – where the individual risk of fatality from potential foreseeable incidents is greater than or equal to 1×10^{-7} per year (equivalent to one chance in 10 million years or 0.1×10^{-6} per year).

And that Worksafe generally advises against the following proposed land use or developments:

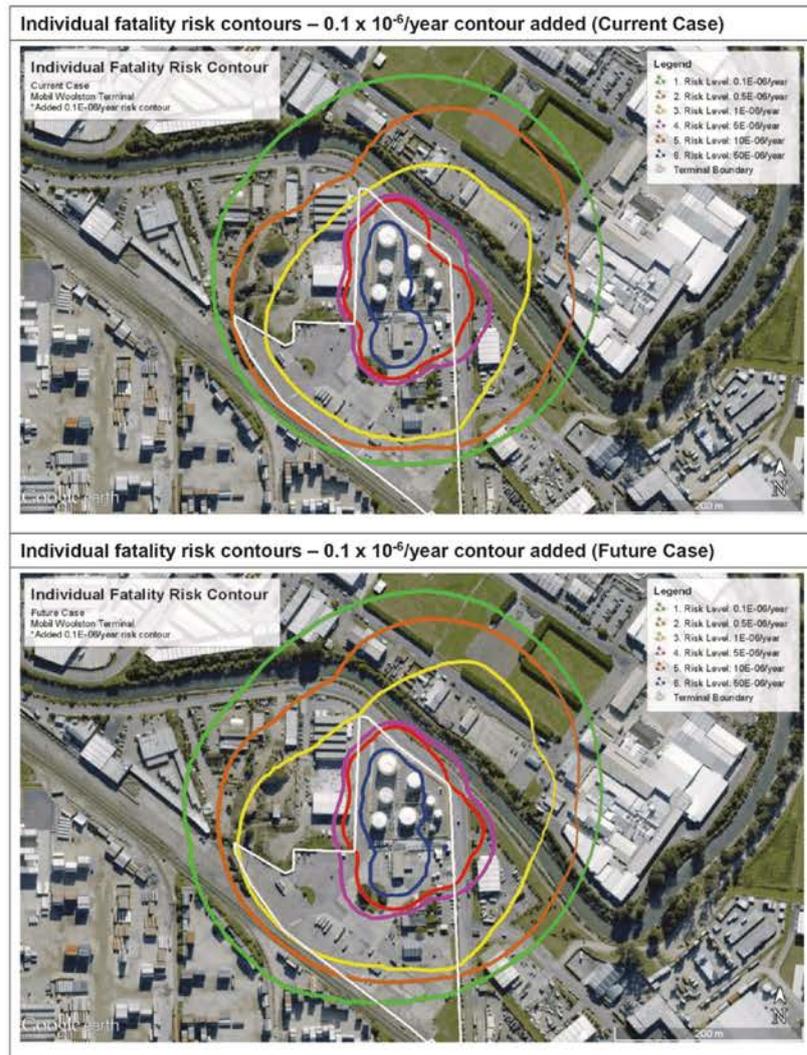
- land use or developments within the inner area, apart from low density industrial uses such as non-retail warehousing or other low employee density business or industrial use. This minimises the numbers of people that might be affected by a low frequency-high consequence incident and maximises the likelihood of people safely responding to an emergency.

Figure E.3 and E.4 show the additional risk contour as well the HIPAP 4 contours for the Current and Future Cases.

If the Worksafe Victoria criterion 0.1×10^{-6} per year was applied instead of the HIPAP 4 sensitive land use criterion (of 0.5×10^{-6} per year), the effect would be to:

- confirm that the 250m current overlay in the CDP would remain adequate
- increase the minimum recommended extent of the overlay from around 170 m to 190 m.
- further restrict allowable development to "*low density industrial uses such as non-retail warehousing or other low employee density business or industrial use*" rather than the suggested interpretation based on HIPAP 4 that "*sensitive or residential uses, and any land uses involving large populations should not establish within the extent of the overlay*".

Figure E.3: Alternative individual fatality risk contours



Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX E Page 5

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Document number: 21086-RP-002
Revision: 0
Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX F Page 1

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Revision Date: 22-Jun-2018
File name: 21086-RP-002-Rev0 Mobil Woolston QRA

APPENDIX F Page 2



TECHNICAL NOTE

CHRISTCHURCH DISTRICT PLAN - RISK OVERLAY FOR
DISCUSSION

BURTON PLANNING LTD

Rev	Date	Description	Prepared	Reviewed	Method of issue
A	14 Dec 2017	Issued to Client for comments	J Polich, Sherpa	D Phillis, Worley	Email PDF
B	22 June 2018	Updated to address CCC comments	J Polich, Sherpa	D Phillis, Worley	Email PDF
0	26 June 2018	Final Issue	J Polich, Sherpa	D Phillis, Worley	Email PDF
1	21 Sep 2018	Shape file details added in Section 3.2 and legend shown on Figure 2.3	J Polich, Sherpa	D Phillis, Worley	Email PDF

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QA verified	-
Date	-

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CONTENTS

1. INTRODUCTION	2
1.1. Background.....	2
1.2. QRA status	3
1.3. Scope and objectives	3
1.4. Risk assessment.....	4
2. INDIVIDUAL FATALITY RISK CONTOURS	6
2.1. Contours	6
2.2. Potential interaction between sites.....	6
3. SUGGESTED OVERLAY	8
3.1. Proposed overlay.....	8
3.2. Digital map file	8
3.3. Comparison to existing CDP risk overlay	9
4. REFERENCES	12

TABLES

Table 1.1: HIPAP 4 individual fatality risk criteria.....	5
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FIGURES

Figure 1.1: CDP risk overlay (expires 2019)	2
Figure 2.1: Distance between hazardous material inventories	6
Figure 2.2: Individual fatality risk contours, Mobil site, Future Case.....	7
Figure 2.3: Individual fatality risk contours, Liquigas site, Future Case	7
Figure 3.1: Proposed overlay – contours merged	10
Figure 3.2: Alternative overlay – property boundary example (approximation only)	10
Figure 3.3: Screen shot of Figure 3.1 as shape file for CCC.....	10

Document number: 21205-TN-001
Revision: 1
Revision Date: 21-Sep-2018
File name: 21205-TN-001 Rev 1

Page 1



1. INTRODUCTION

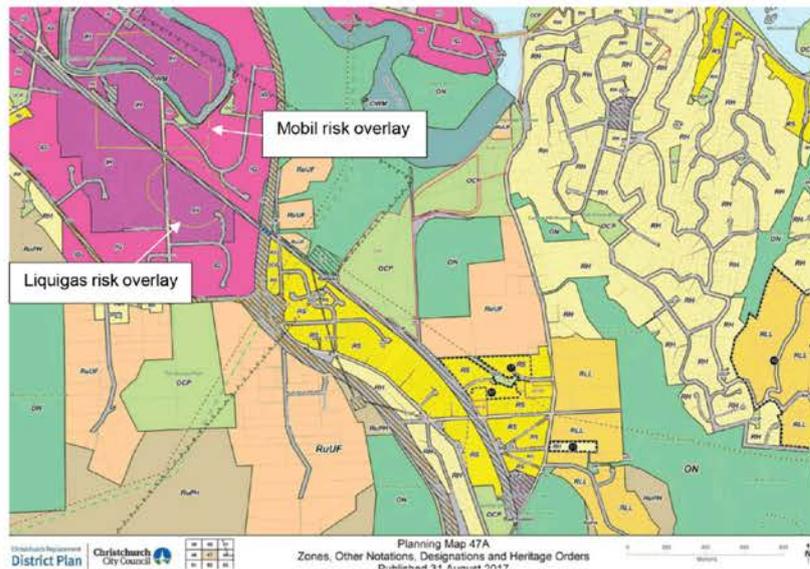
1.1. Background

The Christchurch District Plan (CDP) currently includes a risk management overlay provision around the Liquigas (LPG) and Mobil (hydrocarbon fuel) facilities in Woolston Christchurch, New Zealand (NZ). This is reproduced in Figure 1.1.

The overlay extends around 100m to 250m from the sites and covers industrially zoned land along with a small local pocket park, Heathcote River and margins, and road and rail networks. The overlay was a temporary measure to prevent incompatible development occurring in the vicinity of the facilities which are potentially hazardous due to the flammable materials handled. It was based on land use planning guidance published by the UK Health and Safety Executive (UK HSE) for separation distances from fuel terminals (Ref 1) in the case of the Mobil terminal and a seven year old Quantitative Risk Assessment (QRA) for the Liquigas terminal. The CDP risk overlay provisions expire in 2019.

Future protection provisions are subject to completion of a QRA to assess the site specific risk from the Liquigas and Mobil facilities. The QRA results are necessary to inform and provide the basis for a Plan Change Process with the aim of producing a revised overlay with rules attached, that continues to protect the facilities from encroachment by incompatible land uses.

Figure 1.1: CDP risk overlay (expires 2019)



Document number: 21205-TN-001
Revision: 1
Revision Date: 21-Sep-2018
File name: 21205-TN-001 Rev 1

Page 2



1.2. QRA status

QRA reports have been completed over 2017- 2018 for both facilities to assess the offsite individual fatality risk levels as follows:

1. Mobil Woolston Terminal QRA completed by Sherpa Consulting Pty Ltd (Sherpa), document: *Mobil Woolston Terminal Quantitative Risk Assessment For Determination Of Planning Overlay Mobil Oil New Zealand Limited* Doc No 21086-RP-002 Rev 0, 22-Jun-2018 (Ref 2).
2. Liquigas Woolston LPG Depot QRA completed by Worley Parsons New Zealand Pty Ltd (Worley Parsons) document: *LIQUIGAS Woolston LPG Depot Quantitative Risk Assessment* Doc No 503402-RPT-R0001-R1 May 2018 (Ref 3).

Worley and Sherpa have peer reviewed the assumptions and methodology for the QRA undertaken by the other party. Both consultants consider that the methodologies are consistent with the typical approaches used within industry to prepare land use safety planning risk assessments.

Whilst there are some technical differences in approach (for example choice of software) the authors agree that:

- The approach in each QRA is appropriate for the specific facilities.
- Both QRAs have been prepared to account for a reasonable future growth case hence should be representative of risk levels for each site operation over the next 10 years (up to 2028) which is consistent with a timeframe for a District Plan.
- The QRA results are presented and assessed in a consistent manner, ie both QRAs use individual fatality risk as the basis for assessment hence can be used cumulatively.

Overall, it is agreed by the consultants that any differences in approach with respect to the assumptions for the specific facilities, the overall QRA methodology and reporting styles, are not significant in the context of using the results for preparing a combined risk overlay to replace the existing CDP overlay provisions.

1.3. Scope and objectives

The purpose of this report is to:

- present the individual fatality risk contours for both the facilities
- propose a combined overlay for review by CCC
- explain the basis for the proposed overlay.

The overall approach and assumptions for the QRAs are not covered as these are contained in the individual QRA reports.

Document number: 21205-TN-001
Revision: 1
Revision Date: 21-Sep-2018
File name: 21205-TN-001 Rev 1

Page 3



1.4. Risk assessment

Land use safety planning QRAs typically assess the following risk measures:

1. Individual fatality risk. Individual fatality risk represents the probability of some specified level of harm (in this case fatality) occurring to a theoretical individual located permanently at a particular location, assuming no mitigating action such as escape can be taken. This is shown as contours on a map of the area which show the probability of fatality per million per year at a location.
2. Societal risk. Societal risk is a measure of the probability of incidents affecting an actual population (rather than a theoretical individual as in individual risk), i.e. takes into account the number of people exposed to risk. Probability of presence is accounted for, and mitigating effects such as whether people are located inside or outside, or effective emergency response can also be accounted for where relevant.

Individual fatality risk is a function of the source of risk (ie the potentially hazardous facility), not the receptors or persons exposed to a risk, and is typically the main basis for assessing risk acceptability from a potentially hazardous facility to surrounding land uses. Different risk criteria apply to different land uses, with a lower risk level applicable to more sensitive land uses (eg schools, housing) and a higher risk level applicable to less sensitive (ie industrial) land uses.

Societal risk is a potential issue when there are large populations (commercial offices, shopping centres etc), residential (present overnight) or sensitive (more vulnerable or difficult to evacuate) populations within the area affected by the individual fatality risk contours. Societal risk is generally assessed only when these types of population occur within or in close proximity to the fatality risk contours, or when a significant change in population is proposed in the vicinity of a hazardous facility.

Given that such populations or sensitive activities do not currently occur near the two Woolston facilities, the use of individual fatality risk is an appropriate basis for future planning.

1.4.1. Risk criteria

There are no specific NZ risk criteria, however the decisions version of the CDP (Ref 4 Section 16.2.1.4) suggests that the risk acceptability criteria in NSW Department of Planning. *Hazardous Industry Planning Advisory Paper No.4 - Risk Criteria for Land Use Safety Planning* (known as HIPAP 4, Ref 5) should be referred to.

1.4.2. Adopted criteria

HIPAP 4 contains criteria for both individual fatality risk and societal risk.

The HIPAP 4 individual fatality risk criteria as shown in Table 1.1 have been adopted for both the Liquigas and Mobil QRAs and are used as the basis for setting the extent of the combined risk overlay.

Document number: 21205-TN-001
Revision: 1
Revision Date: 21-Sep-2018
File name: 21205-TN-001 Rev 1

Page 4



In the Woolston area around Mobil and Liquigas, the populations are associated with low density industrial land uses and are not typically present overnight apart from shift workers employed in industrial activities.

The purpose of the overlay approach is to prevent encroachment of incompatible populations (eg due to a change in land use) into risk affected areas and also to avoid an unacceptable increase in societal risk due to large populations encroaching. Therefore only the individual fatality risk contours are required to provide input to setting the extent of an overlay. An assessment of the existing societal risk is not required for this purpose.

Table 1.1: HIPAP 4 individual fatality risk criteria

HIPAP 4 description and land use	HIPAP 4 criteria (per year)
Hospitals, child-care facilities and old age housing (sensitive land uses)	0.5 x 10 ⁻⁶
Residential developments and places of continuous occupancy such as hotels and tourist resorts (residential land use)	1 x 10 ⁻⁶
Commercial developments, including offices, retail centres and entertainment centres (commercial land use)	5 x 10 ⁻⁶
Sporting complexes and active open space areas (recreational land use)	10 x 10 ⁻⁶
Target for site boundary (boundary limit)	50 x 10 ⁻⁶

1.4.3. Land uses

It should be noted that the land use categories defined in the HIPAP 4 risk criteria do not always directly align with a specific land use category in a planning instrument such as the CDP.

Commercial land uses include office spaces used by the general working public for non-industrial activities, ie sales, call centres, general business activities.

Offices that are directly associated with industrial facilities or retail facilities servicing an industrial surrounding (e.g. control rooms, offices on an industrial site, lunch bars used by people such as truck drivers or operators already working in the industrial area) and that have relatively low numbers of people, minimal overnight populations and do not attract large numbers of the general public unrelated to the industry, are classified as an industrial land use.

The actual land uses located around the Woolston facilities are industrial in the context of HIPAP 4, which is consistent with the industrial zoning in the CDP (ie Industrial General (IG) and Industrial Heavy (IH) zones).

2. INDIVIDUAL FATALITY RISK CONTOURS

2.1. Contours

The individual fatality risk contours for the Mobil future growth case are shown in Figure 2.2 (from Ref 2) and for the Liquigas growth case in Figure 2.3 (from Ref 3).

2.2. Potential interaction between sites

Whilst the boundaries between the two sites are close, there is a large separation distance between the main hazardous inventories (around 450m as per Figure 2.1). As per Figure 2.2 the risk contours from the Mobil site do not extend into the Liquigas site. The risk contours from the Liquigas site do extend into the Mobil site, but they do not reach the gasoline inventories.

Therefore there is no significant risk of escalation between the two sites.

Figure 2.1: Distance between hazardous material inventories

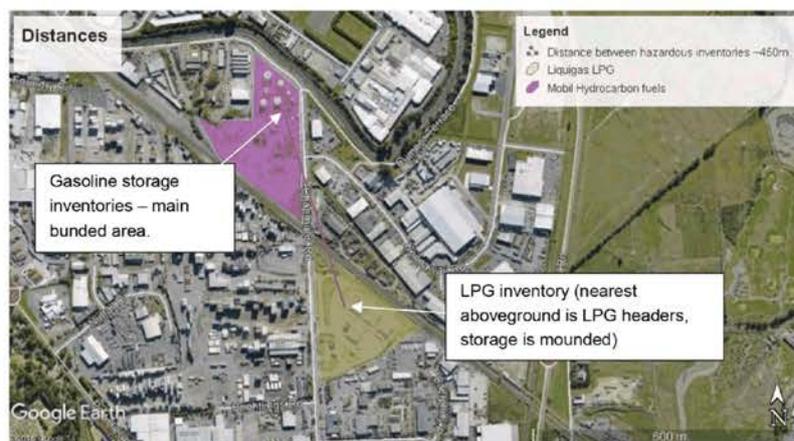


Figure 2.2: Individual fatality risk contours, Mobil site, Future Case

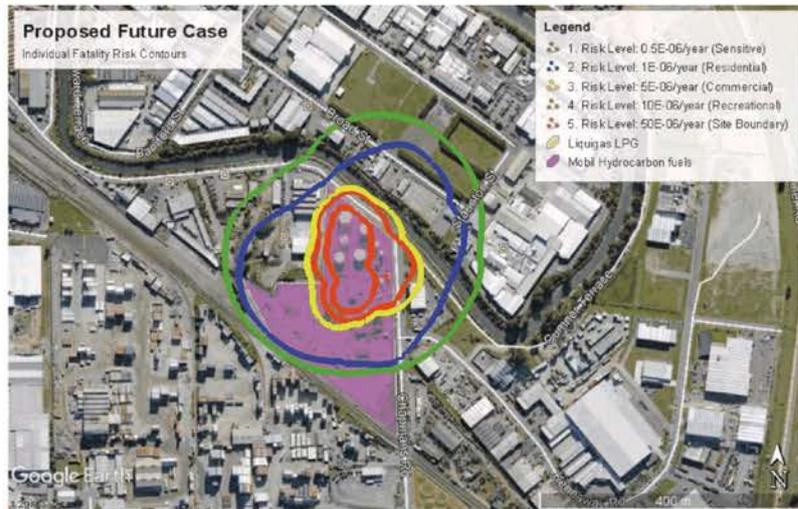
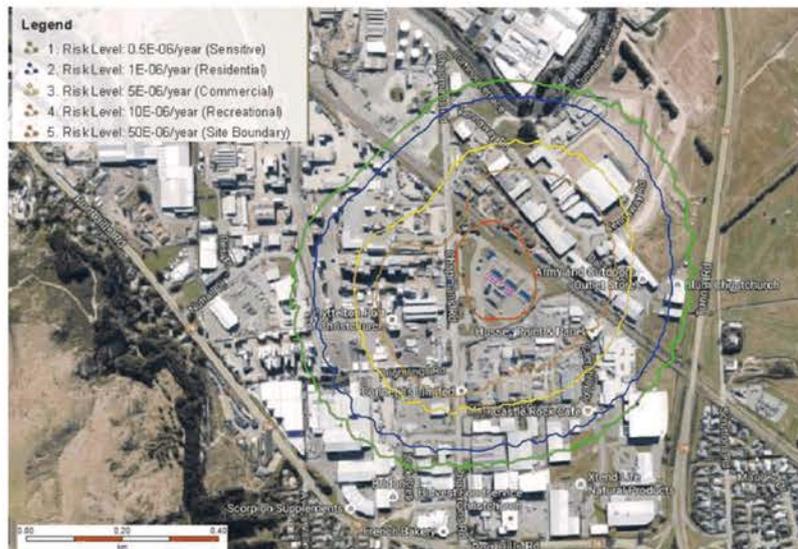


Figure 2.3: Individual fatality risk contours, Liquigas site, Future Case



Document number: 21205-TN-001
Revision: 1
Revision Date: 21-Sep-2018
File name: 21205-TN-001 Rev 1



3. SUGGESTED OVERLAY

3.1. Proposed overlay

An overlay is proposed based on combining the sensitive land use contours (0.5 x10⁻⁶ per year) from both sites.

The sensitive land use contour is selected as the intent is to prevent encroachment on the existing facilities by sensitive land uses ('sensitive' includes residential in this case) and also to use the overlay as a de-facto means of preventing large or high density non-industrial populations, hence limiting societal risk increases.

The merged contours are shown in Figure 3.1.

Another option (as was done in Auckland Unitary Plan around the WOSL site) would be to use property boundaries that the contour cuts through for ease of application in a planning context. An example of this type of overlay (boundaries are approximate only) is shown in Figure 3.2.

3.2. Digital map file

A shape file meeting CCC's digital data supply requirements has been supplied for the merged contour shown in Figure 3.1. (Note that shape files are not provided for the alternative overlay option shown in Figure 3.2).

The Figure 3.1 shape file dataset filenames are :

Merged Mobil + Liquigas (0.5E-06year).prj
Merged Mobil + Liquigas (0.5E-06year)Poly.cpg
Merged Mobil + Liquigas (0.5E-06year)Poly.dbf
Merged Mobil + Liquigas (0.5E-06year)Poly.prj
Merged Mobil + Liquigas (0.5E-06year)Poly.shp
Merged Mobil + Liquigas (0.5E-06year)Poly.shp.gsr2
Merged Mobil + Liquigas (0.5E-06year)Poly.shx

The files have been provided as a single zipped file:

Merged Mobil+Liquigas 0.5e-6year SHP files.ZIP

As required by CCC, these files provide the merged contour as a polygon in the NZGD2000 co-ordinate system (as per the screen shot shown in Figure 3.3).



3.3. Comparison to existing CDP risk overlay

Based on the site specific QRAs the extent of the overlay (which currently extends around 100m to 250m from the sites) has changed as follows:

1. Reduced to approximately 170m around the Mobil site (measured from the main bund).
2. Increased to approximately 300m for the Liquigas site.

Document number: 21205-TN-001
Revision: 1
Revision Date: 21-Sep-2018
File name: 21205-TN-001 Rev 1

Page 9



Figure 3.1: Proposed overlay – contours merged



Figure 3.2: Alternative overlay – property boundary example (approximation only)

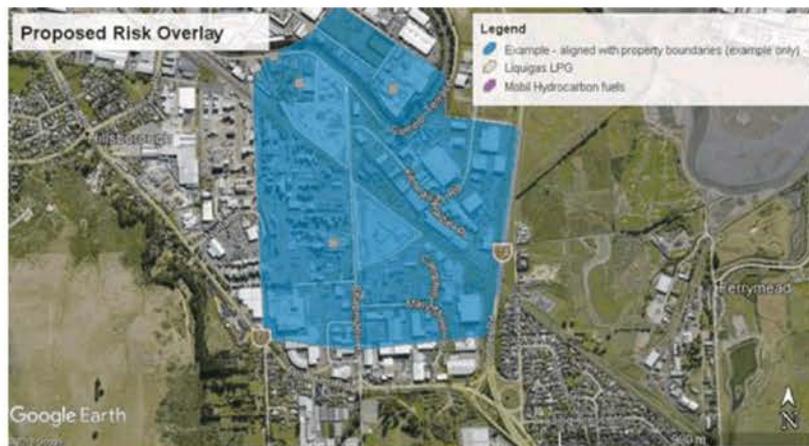
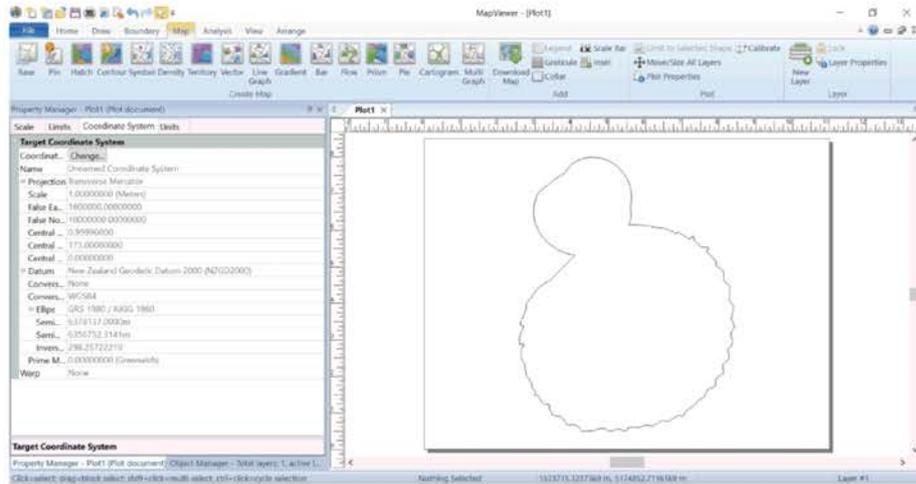


Figure 3.3: Screen shot of Figure 3.1 as shape file for CCC

Document number: 21205-TN-001
Revision: 1
Revision Date: 21-Sep-2018
File name: 21205-TN-001 Rev 1

Page 10



Document number: 21205-TN-001
Revision: 1
Revision Date: 21-Sep-2018
File name: 21205-TN-001 Rev 1



4. REFERENCES

- 1 UK HSE. *Land use planning advice around large scale petrol storage sites* SPC/TECH/GENERAL/43. [Online] [Cited: 8 May 2015.]
http://www.hse.gov.uk/foi/internalops/hid_circs/technical_general/spc_tech_gen_43/index.htm
- 2 Sherpa Consulting Pty Ltd *Mobil Woolston Terminal Quantitative Risk Assessment for Determination of Planning Overlay Mobil Oil New Zealand Limited* Doc No 21086-RP-002 Rev 0, 22-Jun-2018
- 3 WorleyParsons New Zealand Pty Ltd *LIQUIGAS Woolston LPG Depot Quantitative Risk Assessment* Doc No 503402-RPT-R0001-R1 May 2018
- 4 <http://proposeddistrictplan1.ccc.govt.nz/>. *Proposed Christchurch Replacement District Plan*. [Online] [Cited: 7 June 2017]
- 5 NSW Department of Planning. *Hazardous Industry Planning Advisory Paper No.4 - Risk Criteria for Land Use Safety Planning*. 2011

Document number: 21205-TN-001
Revision: 1
Revision Date: 21-Sep-2018
File name: 21205-TN-001 Rev 1

Page 12

DISTRICT PLAN AMENDMENTS

Note: For the purposes of this plan change:

Any text proposed to be added by the plan change is shown as **bold underlined** and text to be deleted as **bold strikethrough**.

Text in **green** are defined terms to be linked to their respective definition in Definitions Chapter.

Text in **blue** are cross references to be linked to external and/or other provision within the Plan.

Amend the District Plan as follows:

Chapter 4 Hazardous substances and contaminated land, 4.1 Hazardous substances, 4.1.2 Objectives and Policies

4.1.2.2.2 Policy - Woolston Risk Management Areas

- a. Avoid **sensitive activities** locating within **the Woolston** Risk Management Areas where these have the potential to be exposed to unacceptable risk and/or may otherwise constrain the development, operation, upgrading or maintenance of bulk fuel and gas terminals.

Advice note:

- 1. The **Woolston** Risk Management Areas **are is** shown on **Planning Map 47A**. **The geographic extent of these areas may be subject to a future plan change to have effect by 31st March 2019 and any such plan change would need to be based on the findings of a Quantitative Risk Assessment.**

Chapter 4 Hazardous substances and contaminated land, 4.1 Hazardous substances, 4.1.4 Rules – Hazardous substances

4.1.4.1.5 Non-complying activities

Activity	
NC2	<p>a. Any sensitive activity located within a the Woolston Risk Management Area. This rule shall cease to have effect by 31 March 2019.</p> <p>Advice note:</p> <ul style="list-style-type: none">1. The Woolston Risk Management Areas are is shown on Planning Map 47A. The geographic extent of these areas may be subject to a future plan change to have effect by 31st March 2019 and any such plan change would need to be based on the findings of a Quantitative Risk Assessment.

Chapter 16 Industrial, 16.2 Objectives and Policies

16.2.1.4 Policy – Activities in industrial zones

- a. ...
- 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, or by being exposed to unacceptable risk**. This includes but is not limited to avoiding:
 - i. **sensitive activities** located within the 50dB Ldn Air Noise Contour, the Lyttelton Port Influences Overlay Area, **the Woolston Risk Management Area** and in proximity to the **National Grid**;
 - ii. discretionary or non-complying activities in **the Woolston Risk Management Area 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.
- c. ...
- d. ...

Advice note for Clause b.ii:

- 1. The Woolston Risk Management Area is shown on [Planning Map 47A](#). As at June 2015, bulk fuel storage facilities in industrial zones are limited to the LPG and oil depots in Chapmans Road, Woolston.**
- 2. The quantitative risk assessment shall consider the vulnerability of activities to hazardous events from a bulk fuel storage facility, such as fires and vapour cloud explosions, and the ability of the proposed activity to enact timely and effective emergency action and evacuation. This will require consideration of factors including:**
 - a. Site and building occupancy, and the ability to easily evacuate;**
 - b. Building type and siting; and**
 - c. The effects of structures and landscaping on the propagation of vapour cloud explosions.**
- 3.2. The identification of appropriate ~~Appropriate~~ risk acceptability criteria and guidance on preparing a quantitative risk assessment shall refer to guidance include those in the [Planning NSW Hazardous Industry Planning Advisory Papers No. 3 and 4 Risk Criteria for Land Use Safety Planning](#). Those criteria were used in determining the geographic extent of the Woolston Risk Management Area. ~~or similar guidance suitable to the content of the site and activity that the risk assessment is for.~~ Early consultation with the companies responsible for the LPG and oil depots is encouraged for any proposed activity within the Woolston Risk Management Area 300 metres of the depots, as the companies will be able to assist with the identification of appropriate risk issues relating to any proposed development, acceptability criteria and the extent to which a quantitative risk assessment is necessary.**
- 3. Council holds and will make freely available to the public, the Quantitative Risk Assessments prepared by the LPG and oil depot companies for the Woolston Risk Management Area.**
- 4. For the avoidance of doubt, the relevant discretionary and non-complying activities are only those the subject of Rule 16.4.1.4 D1, Rule 16.5.1.4, and Rule 16.5.1.5 NC1.**

Chapter 16 Industrial, 16.4 Rules – Industrial General Zone

16.4.1.1 Permitted activities

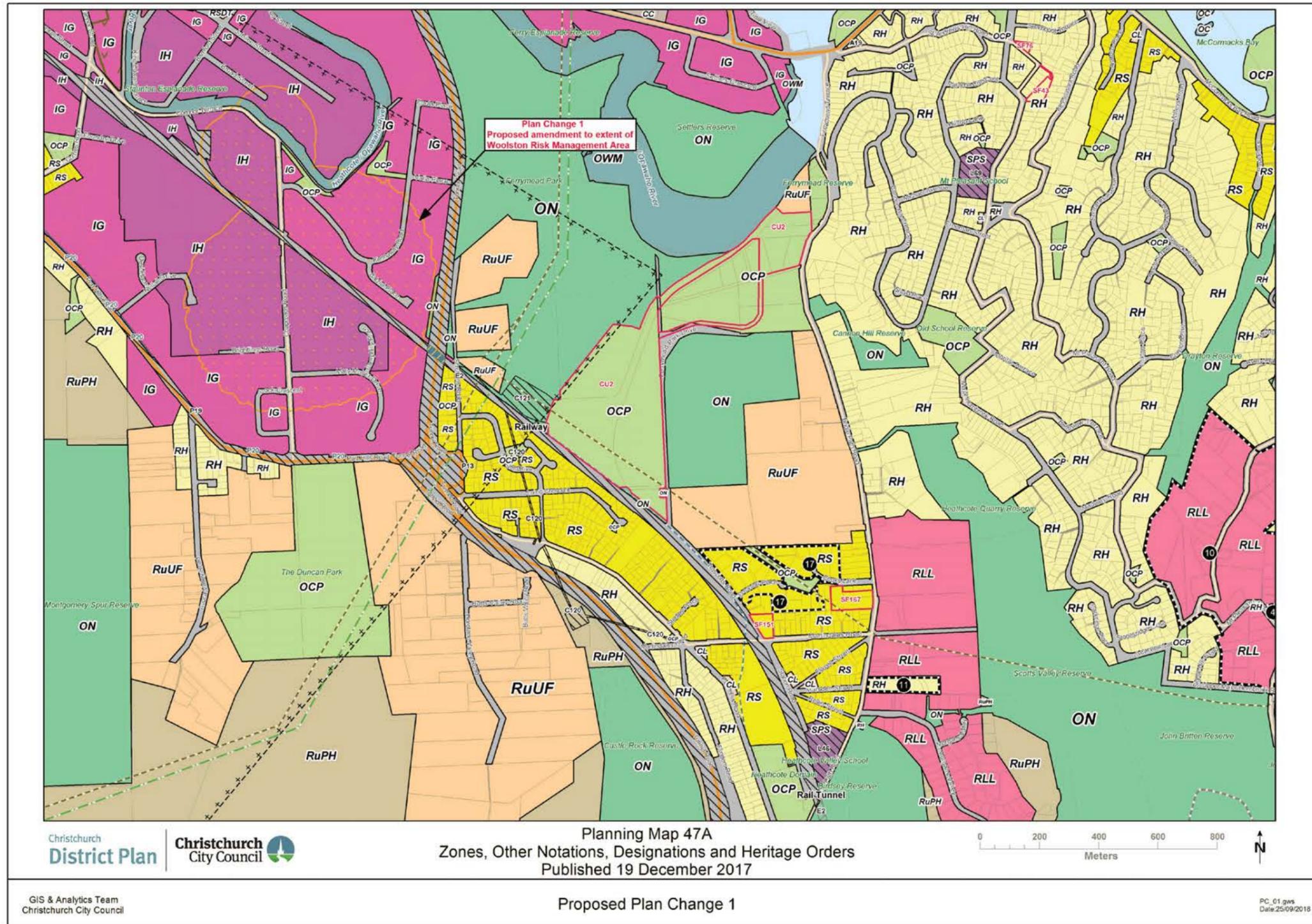
Activity	Activity specific standards
<p>P18 Preschool</p> <p>a. outside the 50 dB L_{dn} Air Noise Contour;</p> <p>b. in Lyttelton, outside the Lyttelton Port Influences Overlay Area as defined on the planning maps;</p> <p>c. <u>outside the Woolston Risk Management Area as defined on the planning maps</u></p>	<p>a. Any preschool activity shall be:</p> <p>i. located more than 100 metres from the boundary of an Industrial Heavy Zone; and</p> <p>ii. any habitable space must be designed and constructed to achieve an external to internal noise reduction of not less than 25 dB $D_{tr,2m,nT,w}+C_{tr}$; and; and</p> <p>iii. any bedroom or sleeping area must be designed and constructed to achieve an external to internal noise reduction of not less than 30 dB $D_{tr,2m,nT,w}+C_{tr}$.</p>

16.4.1.5 Non-complying activities

	Activity
NC2	Sensitive activity within the 50 dB L_{dn} Air Noise Contour, <u>the Woolston Risk Management Area</u> or within the Lyttelton Port Influences Overlay Area as defined on the planning maps.

Amend Planning Map 47A by removing the existing Risk Management Areas and replacing it with the new Woolston Risk Management Area, as shown on the attachment.

Amend Planning Map Legend by renaming “Risk Management Areas” to “Woolston Risk Management Area” and removing the text under “Risk Management Areas”, as shown on the attachment.



Land Use Zones	Designations and Heritage Orders
<p>CBP Commercial Banks Peninsula</p> <p>CC Commercial Core</p> <p>CL Commercial Local</p> <p>CMU Commercial Mixed Use</p> <p>CO Commercial Office</p> <p>CRP Commercial Retail Park</p> <p>IG Industrial General</p> <p>IH Industrial Heavy</p> <p>IP Industrial Park</p> <p>OC Open Space Coastal</p> <p>DCP or RuQ/T Open Space Community Parks or Rural Quarry (Templeton)</p> <p>OMI Open Space McLeans Island</p> <p>OMF Open Space Metropolitan Facilities</p> <p>ON Open Space Natural</p> <p>OWM Open Space Water and Margins</p> <p>PA Pāpākāinga/Kāinga Nohoanga</p> <p>RBP Residential Banks Peninsula</p> <p>RG Residential Guest Accommodation</p> <p>RH Residential Hills</p> <p>RLL Residential Large Lot</p> <p>RMD Residential Medium Density</p> <p>RNN Residential New Neighbourhood</p> <p>RSS Residential Small Settlement</p> <p>RS Residential Suburban</p> <p>RSDT Residential Suburban Density Transition</p> <p>RuBP Rural Banks Peninsula</p> <p>RuPH Rural Port Hills</p> <p>RuQ Rural Quarry</p> <p>RuQ or DCP/T Rural Quarry or Open Space Community Parks (Templeton)</p> <p>RuT Rural Templeton</p> <p>RuUF Rural Urban Fringe</p> <p>RuW Rural Waimakariri</p> <p>SPA Specific Purpose (Airport)</p> <p>SPB Specific Purpose (Burwood Landfill and Resource Recovery Park)</p> <p>SPC Specific Purpose (Cemetery)</p> <p>SPW Specific Purpose (Defence Wigram)</p> <p>SPLR Specific Purpose (Flat Land Recovery)</p> <p>SPR Specific Purpose (Golf Resort)</p> <p>SPH Specific Purpose (Hospital)</p> <p>SPLP Specific Purpose (Lyttelton Port)</p> <p>SPN Specific Purpose (Ngā Hau e Whā)</p> <p>SPRa Specific Purpose (Ruapuna Motorsport)</p> <p>SPS Specific Purpose (School)</p> <p>SPST Specific Purpose (Styx Mill Road Transfer Station)</p> <p>SPT Specific Purpose (Tertiary Education)</p> <p>Transport</p> <p>Transport over Open Space Water and Margins Zone</p>	<p>Other Notations</p> <p>220kV National Grid</p> <p>110kV National Grid</p> <p>66kV National Grid</p> <p>66kV Electricity Distribution Lines</p> <p>33kV Electricity Distribution Lines</p> <p>11kV Heathcote to Lyttelton Electricity Distribution Lines</p> <p>Air Noise Boundary and Air Noise Contours</p> <p>On-Aircraft Engine Testing Contours</p> <p>Christchurch International Airport Protection Surfaces</p> <p>Amenity Tree Planting 1.8m Contour Buffer</p> <p>Key Pedestrian Frontage</p> <p>Major Arterial Road</p> <p>Minor Arterial Road</p> <p>Collector Road</p> <p>160m Contour Line (applies only to Rural Banks Peninsula zone)</p> <p>Accommodation and Community Facilities Overlay</p> <p>Brownfield Overlay Area</p> <p>Character Area Overlay</p> <p>Coastal Bach Overlay</p> <p>Community Housing Redevelopment Mechanism</p> <p>Kainga Overlay Area 1</p> <p>Kainga Overlay Area 2</p> <p>Spencerville Overlay</p> <p>Moncks Spur/Mt Pleasant Density Overlay</p> <p>Shalamar Drive Density Overlay</p> <p>Upper Kennedys Bush Density Overlay</p> <p>Akaroa Hillslopes Density Overlay</p> <p>Allandale Density Overlay</p> <p>Samarang Bay Density Overlay</p> <p>Residential Large Lot Density Overlay</p> <p>Residential Mixed Density Overlay - 86 Bridle Path Road</p> <p>Residential Mixed Density Overlay - Redmund Spur</p> <p>Residential Medium Density Lower Height Limit Overlay</p> <p>Diamond Harbour Density Overlay</p> <p>Existing Rural Hamlet Overlay</p> <p>Medium Density (Higher Height Limit) Overlay</p> <p>Peat Ground Condition Constraint Overlay</p> <p>Riccarton Wastewater Interceptor Catchment Overlay</p> <p>Stormwater Capacity Constraint Overlay</p> <p>Lyttelton Port Influences Overlay Area</p> <p>Meadowlands Exemplar Overlay</p> <p>Prestons Road Retirement Village Overlay</p> <p>Ruapuna Inner Noise Boundary</p> <p>Ruapuna Outer Noise Boundary</p> <p>Salvation Army Addington Overlay</p> <p>Scheduled Activity</p> <p>St Georges Heaton Overlay</p> <p>Woolston Risk Management Area</p>
	<p>Information Only</p> <p>District Boundary</p> <p>Lyttelton Tunnel Road</p> <p>Summit Road Protection Act Overlay</p>

Plan Change 1 Text to be amended

The cadastral and coastline shown on the planning maps is not part of the information in the District Plan. It has been provided on the planning maps as an additional function to enhance navigability and search capability. District Plan rules do not apply for overlays extending into the Coastal Marine Area. The Coastal Marine Area is as defined in the Resource Management Act. The cadastral was based on the most recent information held by the Council at the date the map was produced. Establishing compliance or otherwise with the plan may require a formal survey.

The District boundary is as defined in the Resource Management Act, which uses the definition from the Local Government Act. The line on these maps representing the District boundary is indicative and for information purposes only. The actual boundary is as defined in the legislation. Determining rights and obligations under the District Plan where the District boundary is relevant may require a formal survey.

The District Plan planning maps are at a scale of 1:10000 and 1:50000. Use at any other scale than specified on each map is for information purposes only, and does not form part of the District Plan.

For information, acknowledgements and disclaimers relating to external data sources used in the planning maps please see the Data Sources page: <https://ccc.govt.nz/the-council/plans-strategies-policies-and-by-laws/plans/christchurch-district-plan/additional-information/data-sources/>

Christchurch District Plan

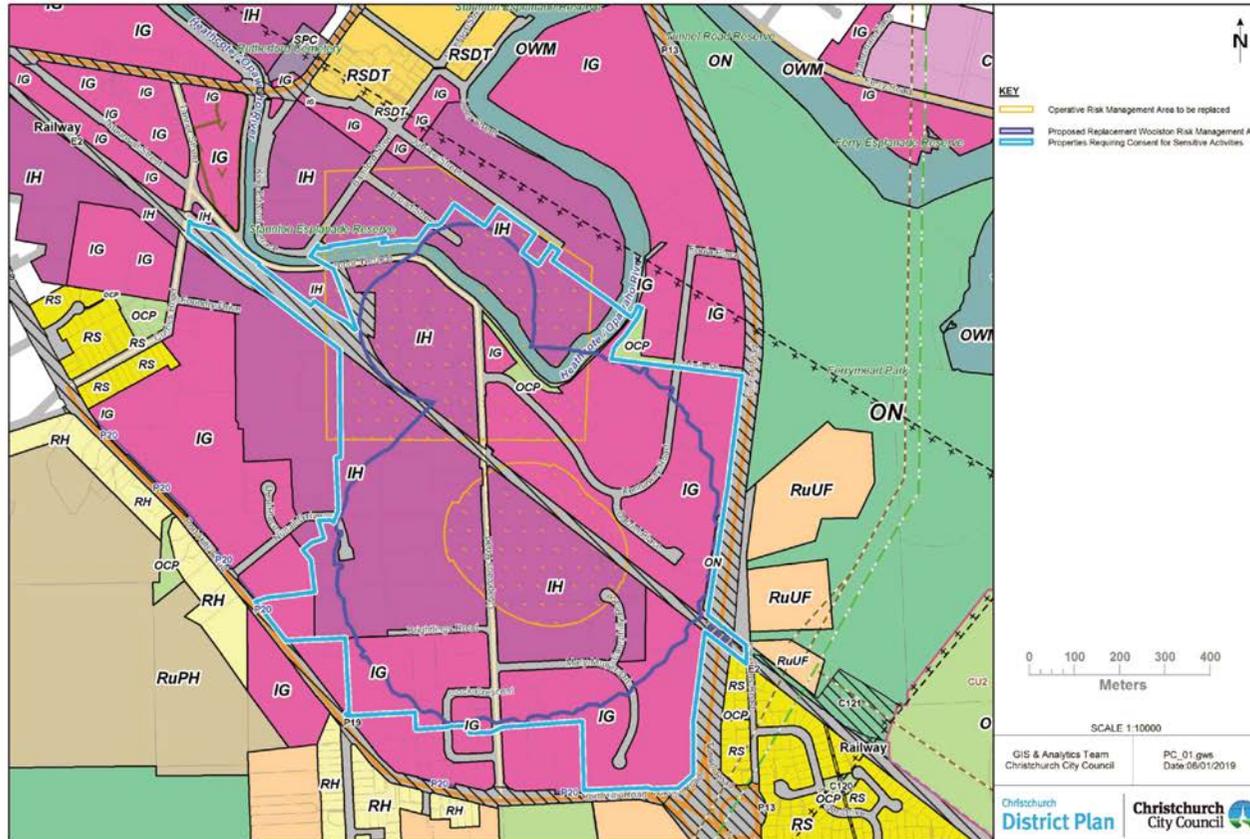
Christchurch City Council

Legend
Zones, Other Notations, Designations and Heritage Orders
Published 19 December 2017

GIS & Analytics Team
Christchurch City Council

Proposed Plan Change 1

Legend_A_PC1.qws
Date: 24/09/2018



Draft Plan Change 1 - Woolston Risk Management Area - Change to Planning Map 47A
For Consultation Purposes Only.

22. Hearings Panel report to the Council on the Hereford Street (Manchester - Oxford) Upgrade Project

Reference: 19/174921

Presenter(s): Councillor Mike Davidson, Chair of Hearings Panel

1. Purpose of Report

- 1.1 The purpose of this report is to present to the Council the Hearings Panel recommendations following the consultation and hearings process on the proposed Hereford Street (Manchester – Oxford) Upgrade Project.
- 1.2 The Hearings Panel has no decision-making powers but, in accordance with its delegation, has considered the written and oral submissions received on the proposal and is now making recommendations to the Council. The Council can then accept or reject those recommendations as it sees fit bearing in mind that the Local Government Act 2002 s.82(1)(e) requires that “the views presented to the local authority should be received by the local authority with an open mind and should be given by the local authority, in making a decision, due consideration.”
- 1.3 The Council, as the final decision-maker, should put itself in as good a position as the Hearings Panel having heard all the parties. It can do so by considering this report which includes a summary of the written and verbal submissions that were presented at the hearings, any additional information received and the Hearings Panel’s considerations and deliberations. Links to the Hearings Panel agenda including the written submissions, and the Minutes of the Hearings Panel meeting, are available:

Agenda: http://christchurch.infocouncil.biz/Open/2019/02/BLHP_20190219_AGN_3527_AT.PDF

Minutes: http://christchurch.infocouncil.biz/Open/2019/02/BLHP_20190219_MIN_3527.PDF

2. Hearings Panel Recommendations

That the Council:

1. Approves:
 - a. the scheme design of the network transformation project for Hereford Street (Manchester – Oxford) as detailed in **Attachment A**, and
 - b. that the upgrade be completed in one phase of work.
2. Notes there is construction to be undertaken on Hereford Street between Oxford Terrace and Cambridge Terrace, and recommends that delivery is coordinated with this project.
3. Notes that there is a variance between the LTP budget and the current estimate, and requests Council officers to report back to the appropriate Committee on the final expected outturn costs.
4. Requests Council officers to review the permitted traffic movements at the Colombo Street intersection, and report back to the Infrastructure, Transport and Environment Committee on the outcome of the review.
5. Approves the following resolutions:

(For the purposes of the following resolutions: (1) an intersection is defined by the position of kerbs on each intersecting roadway; and (2) the resolution is to take effect from the commencement of physical road works associated with the project as detailed in this report; and (3) if the resolution states "Note 1 applies", any distance specified in the resolution relates to the

kerb line location referenced as exists on the road immediately prior to the Hearings Panel meeting of the 19 February 2019; and (4) if the resolution states "Note 2 applies", any distance specified in the resolution relates to the approved kerb line location on the road resulting from the resolution as approved.)

1. That all traffic controls except the speed limit on Hereford Street, commencing at its intersection with Oxford Terrace and extending in an easterly direction to its intersection with Colombo Street be revoked.
2. That all intersection traffic controls, including traffic signals, at the intersection of Colombo Street with Hereford Street be revoked.
3. That all traffic controls except the speed limit on Hereford Street, commencing at its intersection with Colombo Street and extending in an easterly direction to its intersection with Manchester Street be revoked.
4. That all existing parking and stopping restrictions on the north side of Hereford Street, commencing at its intersection with Oxford Terrace and extending in an easterly direction to its intersection with Colombo Street be revoked.
5. That all existing parking and stopping restrictions on the south side of Hereford Street, commencing at its intersection with Oxford Terrace and extending in an easterly direction to its intersection with Colombo Street be revoked.
6. That all existing parking and stopping restrictions on the north side of Hereford Street, commencing at its intersection with Colombo Street and extending in an easterly direction to its intersection with Manchester Street be revoked.
7. That all existing parking and stopping restrictions on the south side of Hereford Street, commencing at its intersection with Colombo Street and extending in an easterly direction to its intersection with Manchester Street be revoked.
8. That all existing parking and stopping restrictions on the west side of Colombo Street, commencing at its intersection with Hereford Street and extending in a southerly direction for a distance of 29 metres be revoked. Note 1 applies.
9. That all existing parking and stopping restrictions on the east side of Colombo Street, commencing at its intersection with Hereford Street and extending in a southerly direction for a distance of 22 metres be revoked. Note 1 applies.
10. That all existing parking and stopping restrictions on the west side of Colombo Street, commencing at its intersection with Hereford Street and extending in a northerly direction to its intersection with Cathedral Square be revoked.
11. That all existing parking and stopping restrictions on the east side of Colombo Street, commencing at its intersection with Hereford Street and extending in a northerly direction to its intersection with Cathedral Square be revoked.
12. The lane marking changes, kerb alignment changes and road surface changes, on Hereford Street commencing at its intersection with Oxford Terrace and extending in an easterly direction to its intersection with Colombo Street as detailed in Attachment A. Note 2 applies.
13. The lane marking changes, kerb alignment changes, tram track alignment and road surface changes, at the Colombo Street / Hereford Street / High Street intersection, as detailed in Attachment A. Note 2 applies.
14. That the intersection of Colombo Street / Hereford Street / High Street be controlled by traffic signals in accordance with section 6 of the Land Transport Rule: Traffic Control Devices 2004, as detailed in Attachment A.

15. Pursuant to section 17 (1) (a) of the Christchurch City Council Traffic and Parking Bylaw 2017, that the left turn movement for all motorised vehicles be prohibited from the western approach of Hereford Street into Colombo Street.
16. Pursuant to section 17 (1) (a) of the Christchurch City Council Traffic and Parking Bylaw 2017, that the right turn movement for all vehicles be prohibited from the western approach of Hereford Street into Colombo Street.
17. Pursuant to section 17 (1) (a) of the Christchurch City Council Traffic and Parking Bylaw 2017, that the right turn movement for all vehicles be prohibited from the eastern approach of Hereford Street into Colombo Street.
18. Pursuant to section 17 (1) (a) of the Christchurch City Council Traffic and Parking Bylaw 2017, that the right turn movement for all vehicles be prohibited from the northern approach of Colombo Street into Hereford Street.
19. The lane marking changes, kerb alignment changes and road surface changes, on Hereford Street commencing at its intersection with Colombo Street and continuing in an easterly direction to its intersection with Manchester Street, as detailed in Attachment A.
20. That a special vehicle lane for the use of eastbound cycles only, be established on the north side of Hereford Street, commencing at its intersection with Oxford Terrace and extending in an easterly direction to its intersection with Colombo Street, as detailed on Attachment A. This special vehicle lane is authorised under clause 18 of the Christchurch City Council Traffic and Parking Bylaw 2017, and is therefore to be added to the Register of Roads or Traffic Lanes Restricted to Specific Classes of Vehicles.
21. That a special vehicle lane for the use of westbound cycles only, be established on the south side of Hereford Street, commencing at its intersection with Oxford Terrace and extending in an easterly direction to its intersection with Colombo Street, as detailed on Attachment A. This special vehicle lane is authorised under clause 18 of the Christchurch City Council Traffic and Parking Bylaw 2017, and is therefore to be added to the Register of Roads or Traffic Lanes Restricted to Specific Classes of Vehicles.
22. That a special vehicle lane for the use of eastbound cycles only, be established on the north side of Hereford Street, commencing at its intersection with Colombo Street and extending in an easterly direction to its intersection with Manchester Street, as detailed on Attachment A. This special vehicle lane is authorised under clause 18 of the Christchurch City Council Traffic and Parking Bylaw 2017, and is therefore to be added to the Register of Roads or Traffic Lanes Restricted to Specific Classes of Vehicles.
23. That a special vehicle lane for the use of westbound cycles only, be established on the south side of Hereford Street, commencing at its intersection with Colombo Street and extending in an easterly direction to its intersection with Manchester Street, as detailed on Attachment A. This special vehicle lane is authorised under clause 18 of the Christchurch City Council Traffic and Parking Bylaw 2017, and is therefore to be added to the Register of Roads or Traffic Lanes Restricted to Specific Classes of Vehicles.
24. That the stopping of vehicles be prohibited at any time on the north side of Hereford Street commencing at its intersection with Colombo Street and extending in a westerly direction for a distance of 28 metres, as detailed on Attachment A. Note 2 applies.
25. That a Loading Zone be created and be restricted to a maximum period of five minutes, on the north side of Hereford Street commencing at a point 28 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of eight metres, as detailed on Attachment A. This restriction is to apply at any time. Note 2 applies.

26. That the parking of vehicles be restricted to a maximum period of five minutes on the north side of Hereford Street commencing at a point 36 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of six metres, as detailed on Attachment A. This restriction is to apply at any time. Note 2 applies.
27. That the stopping of vehicles be prohibited at any time on the north side of Hereford Street commencing at point 42 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 31 metres, as detailed on Attachment A. Note 2 applies.
28. That a Loading Zone be created and be restricted to a maximum period of five minutes, on the north side of Hereford Street commencing at a point 73 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 29 metres, as detailed on Attachment A. Note 2 applies.
29. That the stopping of vehicles be prohibited at any time on the north side of Hereford Street commencing at a point 102 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 22 metres, as detailed on Attachment A. Note 2 applies.
30. That the parking of vehicles be restricted to a maximum period of 60 minutes and controlled by Parking Meters, (including Pay by Plate machines or any Approved means of payment) on the north side of Hereford Street commencing at a point 124 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 23 metres, as detailed on Attachment A. This restriction is to apply between 8:00am and 8:00pm, Monday to Sunday. Note 2 applies.
31. That a 'Small Passenger Service Vehicle Stand' be created on the north side of Hereford Street commencing at a point 124 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 23 metres, as detailed on Attachment A. This restriction is to apply between 8:00pm and 8:00am the following day, Monday to Sunday. Note 2 applies.
32. That the stopping of vehicles be prohibited at any time on the north side of Hereford Street commencing at a point 147 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 32.5 metres, as detailed on Attachment A. Note 2 applies.
33. That the parking of vehicles be restricted to a maximum period of 60 minutes and controlled by Parking Meters, (including Pay by Plate machines or any Approved means of payment) on the north side of Hereford Street commencing at a point 179.5 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 11.5 metres, as detailed on Attachment A. This restriction is to apply between 8:00am and 8:00pm, Monday to Sunday. Note 2 applies.
34. That a 'Small Passenger Service Vehicle Stand' be created on the north side of Hereford Street commencing at a point 179.5 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 11.5 metres, as detailed on Attachment A. This restriction is to apply between 8:00pm and 8:00am the following day, Monday to Sunday. Note 2 applies.
35. That the parking of vehicles be restricted to a maximum period of 120 minutes and be reserved for vehicles with an approved disabled person's parking permit, prominently displayed in the vehicle, in accordance with section 6.4 (1a) of the Land Transport (Road User) Rule 2004. This restriction is to apply at any time and be located on the north side of Hereford Street, commencing at a point 191 metres west of its intersection with Colombo Street, and extending in a westerly direction for a distance of seven metres, as detailed on Attachment A. Note 2 applies.

36. That the stopping of vehicles be prohibited at any time on the north side of Hereford Street commencing at a point 198 metres west of its intersection with Colombo Street and extending in a westerly direction to its intersection with Oxford Terrace, as detailed on Attachment A. Note 2 applies.
37. That the stopping of vehicles be prohibited at any time on the south side of Hereford Street commencing at its intersection with Colombo Street and extending in a westerly direction for a distance of 21.5 metres, as detailed on Attachment A. Note 2 applies.
38. That the parking of vehicles be restricted to a maximum period of 120 minutes and be reserved for vehicles with an approved disabled person's parking permit, prominently displayed in the vehicle, in accordance with section 6.4 (1a) of the Land Transport (Road User) Rule 2004. This restriction to apply at any time and be located on the south side of Hereford Street, commencing at a point 21.5 metres west of its intersection with Colombo Street, and extending in a westerly direction for a distance of seven metres, as detailed on Attachment A. Note 2 applies.
39. That the stopping of vehicles be prohibited at any time on the south side of Hereford Street commencing at a point 28.5 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 6.5 metres, as detailed on Attachment A. Note 2 applies.
40. That a Loading Zone be created and be restricted to a maximum period of five minutes, on the south side of Hereford Street commencing at a point 35 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 7.5 metres, as detailed on Attachment A. This restriction is to apply at any time. Note 2 applies.
41. That the stopping of vehicles be prohibited at any time on the south side of Hereford Street commencing at point 42.5 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 86 metres, as detailed on Attachment A. Note 2 applies.
42. That the parking of vehicles be restricted to a maximum period of 60 minutes and controlled by Parking Meters, (including Pay by Plate machines or any approved means of payment) on the south sides of Hereford Street commencing at a point 128.5 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 23 metres, as detailed on Attachment A. This restriction is to apply between 5:00am and 11:00pm, Monday to Sunday. Note 2 applies.
43. That a 'Small Passenger Service Vehicle Stand' be created on the south side of Hereford Street commencing at a point 128.5 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 23 metres, as detailed on Attachment A. This restriction is to apply between 11:00pm and 5:00am the following day, Monday to Sunday. Note 2 applies.
44. That the stopping of vehicles be prohibited at any time on the south side of Hereford Street commencing at a point 151.5 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 16.5 metres, as detailed on Attachment A. Note 2 applies.
45. That the parking of vehicles be restricted to a maximum period of five minutes on the south side of Hereford Street commencing at a point 168 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 26 metres, as detailed on Attachment A. This restriction is to apply between 5:00am to 11:00pm, Monday to Sunday. Note 2 applies.

46. That a 'Small Passenger Service Vehicle Stand' be created on the south side of Hereford Street commencing at a point 168 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 26 metres, as detailed on Attachment A. This restriction is to apply between 11:00pm and 5:00am the following day, Monday to Sunday. Note 2 applies.
47. That the stopping of vehicles be prohibited at any time on the south side of Hereford Street commencing at a point 194 metres west of its intersection with Colombo Street and extending in a westerly direction to its intersection with Oxford Terrace, as detailed on Attachment A. Note 2 applies.
48. That the stopping of vehicles be prohibited at any time on the north side of Hereford Street commencing at its intersection with Colombo Street and extending in an easterly direction for a distance of 28 metres, as detailed on Attachment A. Note 2 applies.
49. That the parking of vehicles be restricted to a maximum period of five minutes on the north side of Hereford Street commencing at a point 28 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of 13 metres, as detailed on Attachment A. This restriction is to apply at any time. Note 2 applies.
50. That the stopping of vehicles be prohibited at any time on the north side of Hereford Street commencing at a point 41 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of 20.5 metres, as detailed on Attachment A. Note 2 applies.
51. That a Bus Stop be created on the north side of Hereford Street commencing at a point 61.5 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of 14 metres, as detailed on Attachment A. Note 2 applies.
52. That the stopping of vehicles be prohibited at any time on the north side of Hereford Street commencing at a point 75.5 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of 36 metres, as detailed on Attachment A. Note 2 applies.
53. That the parking of vehicles be restricted to a maximum period of 120 minutes and be reserved for vehicles with an approved disabled person's parking permit, prominently displayed in the vehicle, in accordance with section 6.4 (1a) of the Land Transport (Road User) Rule 2004. This restriction is to apply at any time and be located on the north side of Hereford Street, commencing at point 111.5 metres east of its intersection with Colombo Street, and extending in an easterly direction for a distance of seven metres, as detailed on Attachment A. Note 2 applies.
54. That the parking of vehicles be restricted to a maximum period of ten minutes on the north side of Hereford Street commencing at a point 118.5 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of 12 metres, as detailed on Attachment A. This restriction is to apply at any time. Note 2 applies.
55. That the stopping of vehicles be prohibited at any time on the north side of Hereford Street commencing at a point 130.5 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of 28.5 metres, as detailed on Attachment A. Note 2 applies.
56. That a Loading Zone be created and be restricted to a maximum period of five minutes, on the north side of Hereford Street commencing at a point 159 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of 16 metres, as detailed on Attachment A. Note 2 applies.
57. That the stopping of vehicles be prohibited at any time on the north side of Hereford Street commencing at a point 175 metres east of its intersection with Colombo Street and

- extending in an easterly direction to its intersection with Manchester Street, as detailed on Attachment A. Note 2 applies.
58. That the stopping of vehicles be prohibited at any time on the south side of Hereford Street commencing at its intersection with Colombo Street and extending in an easterly direction for a distance of 43.5 metres, as detailed on Attachment A. Note 2 applies.
 59. That the parking of vehicles be restricted to a maximum period of ten minutes on the south side of Hereford Street commencing at a point 43.5 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of 23 metres, as detailed on Attachment A. This restriction is to apply at any time. Note 2 applies.
 60. That the stopping of vehicles be prohibited at any time on the south side of Hereford Street commencing at a point 66.5 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of six metres, as detailed on Attachment A. Note 2 applies.
 61. That a Bus Stop be created on the south side of Hereford Street commencing at a point 72.5 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of 14 metres, as detailed on Attachment A. Note 2 applies.
 62. That the stopping of vehicles be prohibited at any time on the south side of Hereford Street commencing at a point 86.5 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of 74.5 metres, as detailed on Attachment A. Note 2 applies.
 63. That a Loading Zone be created and be restricted to a maximum period of five minutes, on the south side of Hereford Street commencing at a point 161 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of 7.5 metres, as detailed on Attachment A. This restriction is to apply at any time. Note 2 applies.
 64. That the parking of vehicles be restricted to a maximum period of five minutes on the south side of Hereford Street commencing at a point 168.5 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of six metres, as detailed on Attachment A. This restriction is to apply at any time. Note 2 applies.
 65. That the stopping of vehicles be prohibited at any time on the south side of Hereford Street commencing at a point 174.5 metres east of its intersection with Colombo Street and extending in an easterly direction to its intersection with Manchester Street, as detailed on Attachment A. Note 2 applies.
 66. That the stopping of vehicles be prohibited at any time on the west side of Colombo Street commencing at its intersection with Hereford Street and extending in a southerly direction for a distance of 23 metres, as detailed on Attachment A. Note 2 applies.
 67. That a Motorcycle Stand be created on the west side of Colombo Street commencing at a point 23 metres south of its intersection with Hereford Street and extending in a southerly direction for a distance of six metres. Note 2 applies.
 68. That the stopping of vehicles be prohibited at any time on the east side of Colombo Street commencing at its intersection with Hereford Street and extending in a southerly direction for a distance of 22 metres, as detailed on Attachment A. Note 2 applies.
 69. That the stopping of vehicles be prohibited at any time on the east side of Colombo Street commencing at its intersection with Hereford Street and extending in a northerly direction to its intersection with Cathedral Square, as detailed on Attachment A.

70. That the stopping of vehicles be prohibited at any time on the west side of Colombo Street commencing at its intersection with Hereford Street and extending in a northerly direction to its intersection with Cathedral Square, as detailed on Attachment A.
71. The removal of one tree, as identified on Attachment A.
72. That these resolutions take effect when parking signage and/or road markings, that evidence the restrictions, is/are in place (or removed in the case of revocations).

3. Background

- 3.1 Hereford Street between Oxford Terrace and Manchester Street has been badly damaged by the Canterbury earthquakes and subsequent demolition work in the area. Since the street was last redesigned it has also become more widely used by cyclists and buses, and the vehicle lanes on the section between Oxford Terrace and Colombo Street are currently too narrow to safely accommodate this traffic.
- 3.2 As well as repairing the damaged infrastructure, the project provides an opportunity to enhance the streetscape to ensure it is fit for purpose and provides an attractive setting for new and repaired buildings.
- 3.3 Separate construction work is being planned for the intersection of Hereford Street with Oxford Terrace, and the length of Hereford Street between Oxford Terrace and Cambridge Terrace. That work is outside the scope of this report. But coordinating the delivery of the projects is a matter that the Panel discussed during its deliberations and this is discussed further in section seven of this report.
- 3.4 The current project budget is \$4,915,383. This budget is made up of the \$4,248,637 the Council put on budget for the project in its 2018-2028 Long Term Plan. A further \$394,644 was already spent on the project under the previous Long Term Plan and a carry forward of \$272,099 from the 2017/18 financial year into the 2018/19 financial year brings the total budget to \$4,915,383.

4. Consultation Process and Submissions

- 4.1 The consultation period opened on 17 July 2018 and closed on 14 August 2018.
- 4.2 Booklets were delivered to 700 businesses and residences between Gloucester Street and Lichfield Street. They were also sent to absentee owners of 216 properties, as well as libraries and service centres. In addition, 250 key stakeholders received emails about the project and the consultation was promoted through radio and print advertising and social media.
- 4.3 Of the 180 responses received, 97 (53.9%) supported the consultation plan, 80 (44.4%) did not support the plan and three submitters (1.7%) did not indicate a view. Nineteen submitters indicated that they wish to be heard; eight for the proposed scheme, ten against, and one requesting changes to the scheme.
- 4.4 The original consultation document indicated that the outcome of the consultation would be reported back to the Council for decision through the Infrastructure, Transport and Environment Committee. Given the level of interest in the consultation, in December 2018 the Council resolved to appoint a Hearings Panel to consider the submissions received during the consultation and hear submissions from those who wished to appear and speak in person. The Panel would then make its recommendation directly to the Council.

Key Issues Raised During Consultation

- 4.5 Twenty seven submitters questioned the project's priority and/or cost. They were advised that the \$4.5 million allocated for this project had been approved by the Council in the 2018-28 Long Term Plan. The street has been badly damaged as a result of the earthquakes and subsequent

- demolition of buildings, and the Council is required to provide safe and adequate facilities within the central city.
- 4.6 The loss of 14 on-street parking spaces was also a contentious issue with 22 submitters criticising this aspect of the plan. Several commented on the need for adequate loading zones for businesses.
 - 4.7 Thirty seven car parks of the existing 51 on-street car parking spaces are retained on this length of Hereford Street. This parking is prioritised for short-term parking, mobility parks, loading zones and passenger service vehicles.
 - 4.8 Hereford and West End car park buildings provide 698 short-term parking spaces on Hereford Street. An estimated 200 short-term spaces are proposed in the new Terrace car park that has yet to be completed on Hereford Street.
 - 4.9 The Community and Public Health unit of the Canterbury District Health Board recommended that the Council consider the cost/benefits of on-street parking when designing the streetscape, as on-street parking has a significant impact on the use and feel of streets. The Board stated in its submission that “on-street parks negatively impact upon the perception of safety when walking and cycling and take up the space which could be used for other purposes which add to the amenity of the area, such as outdoor dining, benches or art installations.”
 - 4.10 Twenty submitters did not want painted on-road cycle lanes on these two blocks of Hereford Street while 22 had safety concerns or suggested ways to improve safety. Sharing the road with cars along this 30 km/h stretch of road (sharrow treatment) was suggested by seven submitters while three submitters, including the cycle advocacy group Spokes, wanted flexible posts on specific sections of the street.
 - 4.11 Submitters were advised that Hereford Street is designed as a local distributor road and is a key passenger transport route. This requires the vehicle lanes to be widened in the block between Colombo Street and Oxford Terrace to better accommodate the mix of modes of transport. Hereford Street is not a key cycle route within the central city, where other routes such as Tuam Street and St Asaph Street provide separated cycle lanes. Therefore, painted on-street cycle lanes along with advanced boxes at the signal intersections provides an appropriate level of service. The cycle lanes are 1.8 m wide providing adequate space to pass parked cars - and are within the slow speed 30 km/h zone which provides additional safety to cyclists' and pedestrians'.
 - 4.12 The overall design was criticised by some submitters. Ten called for wider vehicle lanes while eight said the footpaths were too wide. Six queried the proposed paving, with several pointing out that this needed to be smooth, non-slip, and suitable for high heels. Eight were critical of the two metre strip provided on some sections of the street for outdoor dining, saying conditions in Hereford Street did not suit this use.
 - 4.13 Seven submitters were concerned about courtesy crossings which they felt were confusing for both motorists and pedestrians. The courtesy crossings are intended to reproduce the raised crossings implemented with the street upgrade just before the earthquakes. However, they will be raised 75 mm instead of the current 150 mm. Prior to the earthquakes, these crossings were working well, as they help support a lower speed on the street. The courtesy crossings incorporate tactile pavers at the adjacent footpath edges and different surface colour to ensure they are not mistaken for controlled zebra crossings.
 - 4.14 Hereford Street is a local distributor road and a passenger transport route. Wider vehicle lanes are therefore required in the block between Colombo Street and Oxford Terrace. The proposed bus stops are intended to complement those across the central city supporting the new Interchange and Manchester Street "superstops", and have been planned in consultation with Environment Canterbury to ensure a good standard of access for passengers to the Hereford Street bus services.

- 4.15 In its submission the Public Transport team at Environment Canterbury said it fully supported this proposal: “We support retaining the two bus stops on Hereford Street with indented bus bays which serve the 17 bus route. We also support widening the road width to 3.25 metres which will make it easier for buses to travel alongside other vehicles on this busy corridor.”
- 4.16 Thirteen submissions were received about the proposed trees, with some submitters calling for native trees to be planted. The project’s landscape architect commented that the ornamental callery pear (Pyrus ‘Candelabra’) has been selected as its form is well suited to a city street. Being deciduous it will allow light to penetrate to street level during the winter months. Native trees thrive best when planted together. In this situation, with the trees needing to be within raised planters, the callery pear is a better species to use. It is proposed that the trees will be under-planted with native plant species.
- 4.17 Several other submitters felt that the current proposal could be enhanced by other elements such as more lighting and digital art.
- 4.18 They were advised that if budget is available the Council plans to incorporate LED lighting in the raised planters. The project team is working with Matapopore to provide appropriate graphic images and interpretation onto the planters and the screens which will give Hereford Street its own unique identity. Similarly, the team is exploring ways of incorporating patterns into the paving to acknowledge old water courses and express ideas of wayfinding throughout the city. This area will be used for outdoor dining, raised planters with trees, seats and low planting, cycle stands, rubbish bins and a drinking fountain.

5. Changes Suggested as a Result of Consultation

- 5.1 As a result of feedback received, Council officers recommended the following changes to the plan for approval in their report to the Hearings Panel:
 - 5.1.1 Bus stop on southern side outside 142 Hereford Street relocated west to replace the proposed two P5 parking spaces. These parking spaces have been changed to P10 and moved east outside 148 Hereford Street.
 - 5.1.2 An additional P10 parking space has been added in the vicinity of 142 Hereford Street.
 - 5.1.3 Provision has been made for the car park entrance to 138 Hereford Street.
 - 5.1.4 The kerb build-out near 142 Hereford Street has been removed to provide more space for the left turn lane.
 - 5.1.5 The loading zone on the northern side of Hereford Street outside 147 and 151 has been relocated to outside 159 and 161 to replace the three 60 minute paid parking spaces.
 - 5.1.6 Two 60 minute paid parks outside 159 and 161 Hereford Street have been relocated to outside 147 and 151 and changed to P5 parks.
 - 5.1.7 The footpath on the south-east of the intersection of Hereford Street and Colombo Street has been widened to 3 metres by replacing the separate cycle lane and left turn lane with a sharrow.
 - 5.1.8 Provision has been made for a future entrance to 136 Hereford Street.
- 5.2 The amendments to the consultation plan are shown in **Attachment A**.

6. The Hearing

- 6.1 The Hearings Panel consisted of Councillors Davidson, Livingstone and Swiggs. Councillor Davidson was elected as the Chair of the Hearings Panel.

- 6.2 The Hearings Panel conducted a site visit with Council officers on Monday 11 February 2019. During the visit Council officers outlined the key proposals and highlighted the damage to the street.
- 6.3 The Hearings Panel convened on Tuesday 19 February 2019 to consider and deliberate on all submissions received on the proposal.
- 6.4 Prior to hearing oral submissions Council officers presented a brief overview of the project and outlined the amendments they recommended as a result of considering the written submissions and engaging with local businesses.
- 6.5 Eight submitters presented a verbal submission to the Hearings Panel.
- 6.6 The following points were raised by the submitters who presented verbal submissions to the Hearings Panel:
 - 6.6.1 Three submitters fully supported the proposal and felt that elements such as enhanced landscaping and wider footpaths will enhance the amenity of the street. These submitters also discussed some opportunities for further enhancement which are outlined below. A further three submitters indicated that they had no significant objection to the proposed design, as their submissions focused on matters not specific to the design.
 - 6.6.2 No submitters disputed the need to repair the street.
 - 6.6.3 Two submitters opposed the proposed design.
 - 6.6.4 All submitters agreed that any work needs to be completed quickly to avoid detracting visitors to the Central City and causing undue hardship for local businesses.
 - 6.6.5 In particular, two submitters raised the importance of avoiding any construction work occurring during the peak summer trading season. Submitters also discussed the importance of keeping the road open at all times, preferably in both directions but from west to east at a minimum if lane closures are necessary.
 - 6.6.6 A further submitter discussed how ongoing roadworks are prolonging the psychological trauma associated with the earthquakes. The submitter indicated that they had no objection to the design itself, but recommended removing any unnecessary landscape elements from the plan to allow construction to be completed as quickly as possible.
 - 6.6.7 One submitter indicated general support of the proposal, especially the widened footpaths, but discussed the safety of the painted cycle lanes and suggested an alternative layout using sharrows and different road markings to slow traffic.
 - 6.6.8 Three submitters raised the importance of maintaining effective communications with businesses throughout the construction. Businesses acknowledge that roadworks are necessary, but need access to timely information about construction progress so they can react to changing circumstances.
 - 6.6.9 Two submitters informed the panel that they will be conducting private construction works on Hereford Street around the same time as this project is delivered. This will need to be coordinated to ensure all parties can maintain access to their sites and mitigate the risk of damaging newly refurbished sections of the street. They also advised of their support for the project with one stating that it should be undertaken as soon as possible.
 - 6.6.10 One submitter opposed the proposed changes to the street layout because they believed it will make the street more difficult to access. In particular they submitted that the reduction of on-street parking will make the street inaccessible to those for whom access is difficult, such as parents of young children, the elderly, and people who are short of time.

6.6.11 One submitter opposed the proposed changes to the street layout because they believed it would reduce the outdoor dining space available for their business, and potentially cause health and safety problems for their customers, particularly on busy late nights when their venue is full and people need space to queue outside and disperse into waiting passenger vehicles.

6.6.12 Two submitters discussed the importance of providing space for passenger service vehicles (such as taxis or Uber vehicles), and queried whether the current stands on the Hereford Street Bridge could be retained alongside the new provision in the proposal for the block between Oxford Terrace and Colombo Street.

7. Consideration and Deliberation of Submissions

- 7.1 The Hearings Panel considered and deliberated on all submissions received on the proposal as well as information received from Council Officers during the hearing.
- 7.2 The Hearings Panel noted the support for the proposal from the majority of submitters and thanked Council officers for their work in engaging with Hereford Street businesses, most of whom have indicated they are comfortable with the proposal.
- 7.3 Some of the key issues that were addressed by the Hearings Panel are as follows:

Speed of delivery

- 7.3.1 The Hearings Panel noted the consistent view expressed by submitters that prompt delivery of the project is vital and requested assurance from Council officers that this will be the case.
- 7.3.2 Council Officers advised the Hearings Panel that delivery is an operational matter, but Council officers will work with the contractor to ensure the construction is completed as quickly as possible. It is likely this will include night works, but this needs to be managed as it could cause disruption and safety issues for hospitality operators during the weekend trading peak.

Coordination with Businesses and Private Construction Works

- 7.3.3 The Hearings Panel agreed with submitters that it is important to avoid construction works over the peak summer trading period. The Hearings Panel also raised questions about how the project can be coordinated with other private construction works occurring in the street, and what mitigation measures will be in place to prevent damage to the new street.
- 7.3.4 Council officers advised the Hearings Panel that significant efforts have been made to communicate with local businesses and this will continue throughout the project, as they have with other projects such as Riccarton Road. There is likely to be a permanent communications officer who businesses can contact during the project.
- 7.3.5 Council officers advised the Hearings Panel that coordinating construction work with other private construction works on Hereford Street is an operational matter, but Council officers will be working to ensure all projects can continue and site access will be maintained. If a private developer damages a Council owned street asset, they will be expected to undertake reinstatement.

Provision of Passenger Service Vehicle Stands

- 7.3.6 The Hearings Panel raised questions about how the street will function on busy late nights, particularly on Fridays and Saturdays, given the number of people visiting the area and wanting to disperse into taxis. The Hearings Panel also raised questions about whether there is enough capacity for taxis dropping passengers at the BNZ Centre.

- 7.3.7 Council officers advised the Hearings Panel that there will be 14 passenger service vehicle stands at night time, which convert to regular loading zones and short-term parking spaces during the day. Council officers have discussed the plans with the taxi federation who are comfortable with this plan.
- 7.3.8 Council officers further advised the Hearings Panel that taxis will be able to use the loading zones near the IBIS Hotel.

Intersection of Hereford Street and Colombo Street

- 7.3.9 The Hearings Panel discussed traffic movements at the intersection of Hereford Street and Colombo Street. Specifically, the Hearings Panel raised questions around the proposal to ban the left turn manoeuvre from Hereford Street into Cathedral Square. The Hearings Panel also discussed the proposal to ban the right turn from Hereford Street onto Colombo Street due to the lack of space for a right turn lane, and suggested that the same argument applied to the northbound right turn from Colombo Street onto Hereford Street. The Hearings Panel suggested that vehicles attempting to perform this manoeuvre are already causing congestion on Colombo Street.
- 7.3.10 Council officers advised the Hearings Panel that the long term goal is to reduce the volume of traffic using Cathedral Square as a through route, and banning the left turn supports this. Colombo Street is also expected to carry less traffic, making it less likely that congestion will occur. A right turn arrow could be investigated but might be impractical due to the number of other phases already sequenced for the traffic lights at that intersection.
- 7.3.11 The Hearings Panel added a recommendation that Council officers conduct a further review of the traffic movements at this intersection and report back to the Infrastructure, Transport and Environment Committee.

Sharrows and Cycle Lanes

- 7.3.12 The Hearings Panel appreciated the submission encouraging the use of sharrows and alternative road markings, but agreed that Hereford Street would be too busy for this approach to succeed. The Hearings Panel requested Council officers to keep this suggestion in mind for the design of other city streets.
- 7.3.13 The Hearings Panel discussed the safety of the cycle lanes and the proposal for the left turn vehicle lanes to be sharrows which also act as the straight ahead cycle lane.
- 7.3.14 Council officers advised the Hearings Panel that appropriate road markings will be applied to the sharrow lanes to avoid confusion and ensure all road users understand how to use these lanes safely. Council officers believe that the sharrows are an acceptable option and avoid the need to make the footpaths narrower.

Coordination with Hereford Street (Oxford Terrace to Cambridge Terrace) Project

- 7.3.15 The Hearings Panel raised questions about the construction work being planned for the Hereford Street (Oxford Terrace to Cambridge Terrace) project. The Hearings Panel asked if there is an opportunity to maintain more spaces for passenger service vehicles on this section. The Hearings Panel also expressed a desire for the construction to either occur simultaneously or immediately after the construction on the Oxford Terrace – Manchester Street section, to minimise disruption.
- 7.3.16 Council officers advised the Hearings Panel that the Hereford Street (Oxford Terrace to Cambridge Terrace) project is currently the responsibility of Ōtākaro. Council officers are in discussions with Ōtākaro about the delivery of that project. It might be necessary to wait for the Oxford Terrace to Manchester Street section to be complete before starting

work on the Hereford Street Bridge to ensure an appropriate number of passenger service vehicles stands can be maintained.

Project Budget

- 7.3.17 The Hearings Panel discussed the project budget, and raised questions about why the current estimated cost of \$6.2 million is significantly higher than the \$4.9 million budgeted in the Long Term Plan.
- 7.3.18 Council officers advised the Hearings Panel that the original project budget in the Long Term Plan was the best estimate available at the time, but at that point not a lot of detail was known about the work required to reinstate the street. As more detailed investigations have been made the estimated cost has increased, but there is a risk contingency built into the current estimated cost. Council officers will work with the designer and contractor to confirm the final costs and will be working hard to minimise costs. Significant savings could be made if the project is delivered quickly because of the consequential reduction in compliance costs.
- 7.3.19 Council officers advised the Hearings Panel that construction will not commence until the final budget is known. If the final expected outturn costs remain over budget, work will not commence until the shortfall is addressed. In that case, Council officers might recommend that the Council reduces the scope of the project or reallocates budget from other projects.
- 7.3.20 The Hearings Panel added a recommendation that the final expected outturn costs are reported to the appropriate Committee (likely to be the Finance and Performance Committee of the Whole).

Final Recommendations

- 7.4 As outlined previously, the Hearings Panel made additional recommendations regarding a review of the permitted movements at the Colombo Street intersection, requesting Council officers to report on the final expected outturn costs, and coordinating delivery with the Hereford Street (Oxford Terrace to Cambridge Terrace) project.
- 7.5 Otherwise the Hearings Panel accepted the Council officers' recommendations and did not recommend any further changes to the plans. The Hearings Panel also accepted the recommendation that the project be delivered in one phase of work.

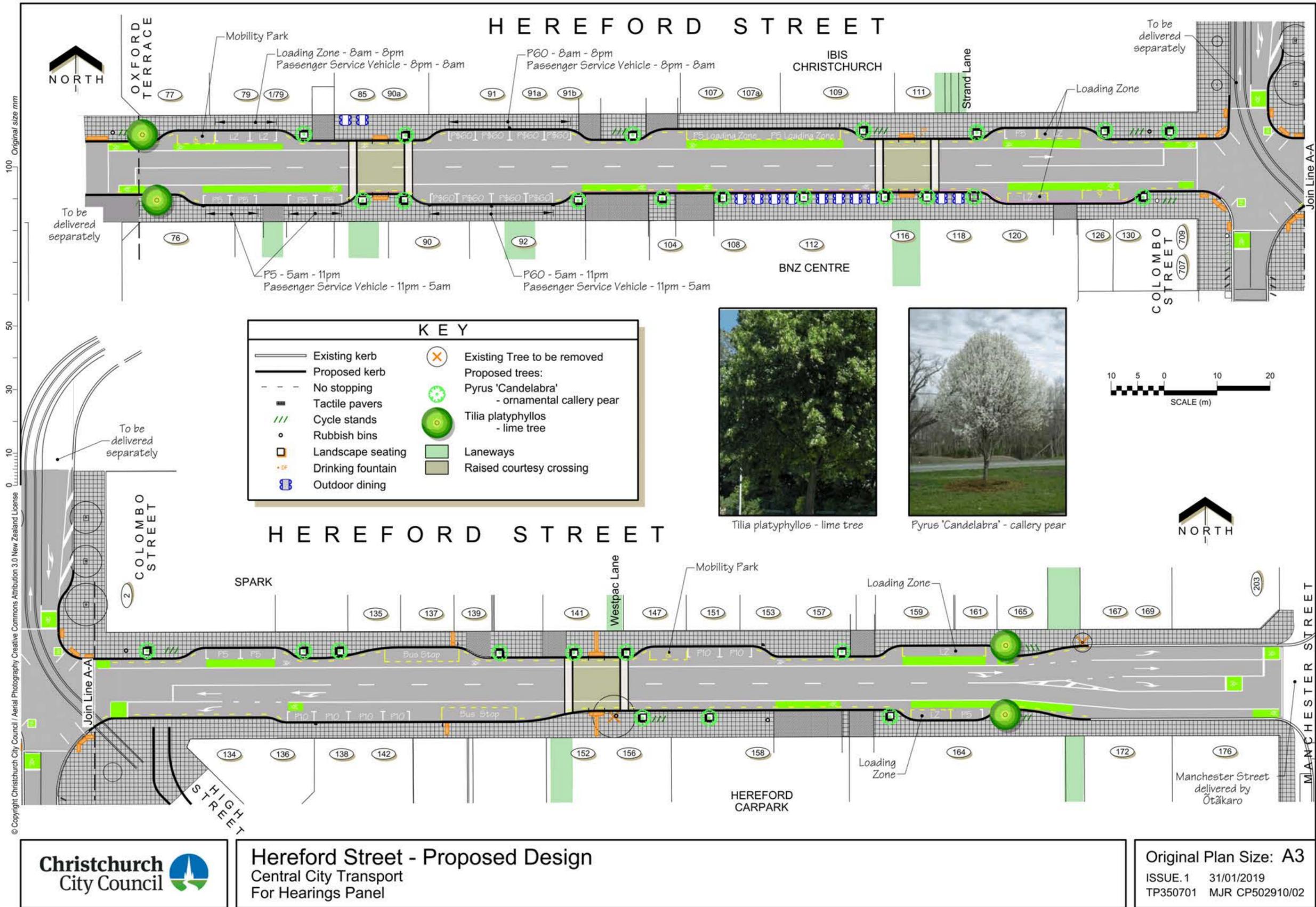
Signatories

Author Aidan Kimberley - Hearings Advisor

Approved By Councillor Mike Davidson - Chair of Hearings Panel

Attachments

No.	Title	Page
A ↓	Hereford Street (Manchester - Oxford) - Revised Plan Following Consultation	621
B ↓	Officers Report to Hearings Panel	622



Hearings Panel
19 February 2019

Christchurch
City Council 

4. Central City Transport Project - Hereford Street (Manchester - Oxford)

Reference: 18/711874

Presenter(s): Neil Gillon, Senior Project Manager - Transport

1. Purpose and Origin of Report

Purpose of Report

- 1.1 The purpose of this report is to advise the Hearings Panel on the outcome of community consultation and to inform it of the preferred delivery option before it considers the views of submitters both oral and written, and to request that it recommend to Council that it approve the proposed design for the length of Hereford Street between Oxford Terrace and Manchester Street, as shown in **Attachment B**, and that the upgrade be completed in one phase of work.

Origin of Report

- 1.2 This report is staff generated following community consultation.

2. Significance

- 2.1 The decision in this report is of high significance in relation to the Christchurch City Council's Significance and Engagement Policy.
 - 2.1.1 The level of significance was determined by the high level of community interest city-wide already apparent in this project, and social benefits. The level of impact on those people affected is also expected to be high, especially during construction. However, the central city area affected by the works is small in relation to the size of the Christchurch District.
 - 2.1.2 The Christchurch Central Recovery Plan and its transport chapter provides the strategic direction for the proposed design changes. Key elements of this project are to provide wider vehicle lanes between Oxford Terrace and Colombo Street than currently exist, street trees and painted on-road cycle lanes on the north and south sides of Hereford Street
 - 2.1.3 The community engagement and consultation outlined in this report reflect the significance assessment.
 - 2.1.4 The proposal was presented to the Waikura/Linwood-Central-Heathcote Community Board and the Infrastructure, Transport and Environment Committee on 9 and 11 July 2018, respectively, with Councillors invited to the meeting on 11 July 2018.
 - 2.1.5 The proposed design that was consulted on is shown in **Attachment A**. The differences between the proposed designs in Attachment A and the preferred option are detailed in section 6.35.

3. Staff Recommendations

That the Hereford Street (Manchester – Oxford) Hearings Panel:

1. Recommends that the Council approves
 - a. the scheme design of the network transformation project for Hereford Street (Manchester – Oxford) as detailed in **Attachment B**, and
 - b. that the upgrade be completed in one phase of work.
2. Recommends to Council that it approves the following resolutions:

Hearings Panel
19 February 2019



(For the purposes of the following resolutions: (1) an intersection is defined by the position of kerbs on each intersecting roadway; and (2) the resolution is to take effect from the commencement of physical road works associated with the project as detailed in this report; and (3) if the resolution states "Note 1 applies", any distance specified in the resolution relates to the kerb line location referenced as exists on the road immediately prior to the Hearings Panel meeting of the 19 February 2019; and (4) if the resolution states "Note 2 applies", any distance specified in the resolution relates to the approved kerb line location on the road resulting from the resolution as approved.)

1. That all traffic controls except the speed limit on Hereford Street, commencing at its intersection with Oxford Terrace and extending in an easterly direction to its intersection with Colombo Street be revoked.
2. That all intersection traffic controls, including traffic signals, at the intersection of Colombo Street with Hereford Street be revoked.
3. That all traffic controls except the speed limit on Hereford Street, commencing at its intersection with Colombo Street and extending in an easterly direction to its intersection with Manchester Street be revoked.
4. That all existing parking and stopping restrictions on the north side of Hereford Street, commencing at its intersection with Oxford Terrace and extending in an easterly direction to its intersection with Colombo Street be revoked.
5. That all existing parking and stopping restrictions on the south side of Hereford Street, commencing at its intersection with Oxford Terrace and extending in an easterly direction to its intersection with Colombo Street be revoked.
6. That all existing parking and stopping restrictions on the north side of Hereford Street, commencing at its intersection with Colombo Street and extending in an easterly direction to its intersection with Manchester Street be revoked.
7. That all existing parking and stopping restrictions on the south side of Hereford Street, commencing at its intersection with Colombo Street and extending in an easterly direction to its intersection with Manchester Street be revoked.
8. That all existing parking and stopping restrictions on the west side of Colombo Street, commencing at its intersection with Hereford Street and extending in a southerly direction for a distance of 29 metres be revoked. Note 1 applies.
9. That all existing parking and stopping restrictions on the east side of Colombo Street, commencing at its intersection with Hereford Street and extending in a southerly direction for a distance of 22 metres be revoked. Note 1 applies.
10. That all existing parking and stopping restrictions on the west side of Colombo Street, commencing at its intersection with Hereford Street and extending in a northerly direction to its intersection with Cathedral Square be revoked.
11. That all existing parking and stopping restrictions on the east side of Colombo Street, commencing at its intersection with Hereford Street and extending in a northerly direction to its intersection with Cathedral Square be revoked.
12. The lane marking changes, kerb alignment changes and road surface changes, on Hereford Street commencing at its intersection with Oxford Terrace and extending in an easterly direction to its intersection with Colombo Street as detailed in Attachment B. Note 2 applies.
13. The lane marking changes, kerb alignment changes, tram track alignment and road surface changes, at the Colombo Street / Hereford Street / High Street intersection, as detailed in Attachment B. Note 2 applies.

Hearings Panel
19 February 2019

Christchurch
City Council 

14. That the intersection of Colombo Street / Hereford Street / High Street be controlled by traffic signals in accordance with section 6 of the Land Transport Rule: Traffic Control Devices 2004, as detailed in Attachment B.
15. Pursuant to section 17 (1) (a) of the Christchurch City Council Traffic and Parking Bylaw 2017, that the left turn movement for all motorised vehicles be prohibited from the western approach of Hereford Street into Colombo Street.
16. Pursuant to section 17 (1) (a) of the Christchurch City Council Traffic and Parking Bylaw 2017, that the right turn movement for all vehicles be prohibited from the western approach of Hereford Street into Colombo Street.
17. Pursuant to section 17 (1) (a) of the Christchurch City Council Traffic and Parking Bylaw 2017, that the right turn movement for all vehicles be prohibited from the eastern approach of Hereford Street into Colombo Street.
18. Pursuant to section 17 (1) (a) of the Christchurch City Council Traffic and Parking Bylaw 2017, that the right turn movement for all vehicles be prohibited from the northern approach of Colombo Street into Hereford Street.
19. The lane marking changes, kerb alignment changes and road surface changes, on Hereford Street commencing at its intersection with Colombo Street and continuing in an easterly direction to its intersection with Manchester Street, as detailed in Attachment B.
20. That a special vehicle lane for the use of eastbound cycles only, be established on the north side of Hereford Street, commencing at its intersection with Oxford Terrace and extending in an easterly direction to its intersection with Colombo Street, as detailed on Attachment B. This special vehicle lane is authorised under clause 18 of the Christchurch City Council Traffic and Parking Bylaw 2017, and is therefore to be added to the Register of Roads or Traffic Lanes Restricted to Specific Classes of Vehicles.
21. That a special vehicle lane for the use of westbound cycles only, be established on the south side of Hereford Street, commencing at its intersection with Oxford Terrace and extending in an easterly direction to its intersection with Colombo Street, as detailed on Attachment B. This special vehicle lane is authorised under clause 18 of the Christchurch City Council Traffic and Parking Bylaw 2017, and is therefore to be added to the Register of Roads or Traffic Lanes Restricted to Specific Classes of Vehicles.
22. That a special vehicle lane for the use of eastbound cycles only, be established on the north side of Hereford Street, commencing at its intersection with Colombo Street and extending in an easterly direction to its intersection with Manchester Street, as detailed on Attachment B. This special vehicle lane is authorised under clause 18 of the Christchurch City Council Traffic and Parking Bylaw 2017, and is therefore to be added to the Register of Roads or Traffic Lanes Restricted to Specific Classes of Vehicles.
23. That a special vehicle lane for the use of westbound cycles only, be established on the south side of Hereford Street, commencing at its intersection with Colombo Street and extending in an easterly direction to its intersection with Manchester Street, as detailed on Attachment B. This special vehicle lane is authorised under clause 18 of the Christchurch City Council Traffic and Parking Bylaw 2017, and is therefore to be added to the Register of Roads or Traffic Lanes Restricted to Specific Classes of Vehicles.
24. That the stopping of vehicles be prohibited at any time on the north side of Hereford Street commencing at its intersection with Colombo Street and extending in a westerly direction for a distance of 28 metres, as detailed on Attachment B. Note 2 applies.
25. That a Loading Zone be created and be restricted to a maximum period of five minutes, on the north side of Hereford Street commencing at a point 28 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of

Hearings Panel
19 February 2019

Christchurch
City Council 

- eight metres, as detailed on Attachment B. This restriction is to apply at any time. Note 2 applies.
26. That the parking of vehicles be restricted to a maximum period of five minutes on the north side of Hereford Street commencing at a point 36 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of six metres, as detailed on Attachment B. This restriction is to apply at any time. Note 2 applies.
 27. That the stopping of vehicles be prohibited at any time on the north side of Hereford Street commencing at point 42 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 31 metres, as detailed on Attachment B. Note 2 applies.
 28. That a Loading Zone be created and be restricted to a maximum period of five minutes, on the north side of Hereford Street commencing at a point 73 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 29 metres, as detailed on Attachment B. Note 2 applies.
 29. That the stopping of vehicles be prohibited at any time on the north side of Hereford Street commencing at a point 102 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 22 metres, as detailed on Attachment B. Note 2 applies.
 30. That the parking of vehicles be restricted to a maximum period of 60 minutes and controlled by Parking Meters, (including Pay by Plate machines or any Approved means of payment) on the north side of Hereford Street commencing at a point 124 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 23 metres, as detailed on Attachment B. This restriction is to apply between 8:00am and 8:00pm, Monday to Sunday. Note 2 applies.
 31. That a 'Small Passenger Service Vehicle Stand' be created on the north side of Hereford Street commencing at a point 124 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 23 metres, as detailed on Attachment B. This restriction is to apply between 8:00pm and 8:00am the following day, Monday to Sunday. Note 2 applies.
 32. That the stopping of vehicles be prohibited at any time on the north side of Hereford Street commencing at a point 147 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 32.5 metres, as detailed on Attachment B. Note 2 applies.
 33. That the parking of vehicles be restricted to a maximum period of 60 minutes and controlled by Parking Meters, (including Pay by Plate machines or any Approved means of payment) on the north side of Hereford Street commencing at a point 179.5 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 11.5 metres, as detailed on Attachment B. This restriction is to apply between 8:00am and 8:00pm, Monday to Sunday. Note 2 applies.
 34. That a 'Small Passenger Service Vehicle Stand' be created on the north side of Hereford Street commencing at a point 179.5 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 11.5 metres, as detailed on Attachment B. This restriction is to apply between 8:00pm and 8:00am the following day, Monday to Sunday. Note 2 applies.
 35. That the parking of vehicles be restricted to a maximum period of 120 minutes and be reserved for vehicles with an approved disabled person's parking permit, prominently displayed in the vehicle, in accordance with section 6.4 (1a) of the Land Transport (Road User) Rule 2004. This restriction is to apply at any time and be located on the north side

Hearings Panel
19 February 2019

Christchurch
City Council 

- of Hereford Street, commencing at a point 191 metres west of its intersection with Colombo Street, and extending in a westerly direction for a distance of seven metres, as detailed on Attachment B. Note 2 applies.
36. That the stopping of vehicles be prohibited at any time on the north side of Hereford Street commencing at a point 198 metres west of its intersection with Colombo Street and extending in a westerly direction to its intersection with Oxford Terrace, as detailed on Attachment B. Note 2 applies.
 37. That the stopping of vehicles be prohibited at any time on the south side of Hereford Street commencing at its intersection with Colombo Street and extending in a westerly direction for a distance of 21.5 metres, as detailed on Attachment B. Note 2 applies.
 38. That the parking of vehicles be restricted to a maximum period of 120 minutes and be reserved for vehicles with an approved disabled person's parking permit, prominently displayed in the vehicle, in accordance with section 6.4 (1a) of the Land Transport (Road User) Rule 2004. This restriction to apply at any time and be located on the south side of Hereford Street, commencing at a point 21.5 metres west of its intersection with Colombo Street, and extending in a westerly direction for a distance of seven metres, as detailed on Attachment B. Note 2 applies.
 39. That the stopping of vehicles be prohibited at any time on the south side of Hereford Street commencing at a point 28.5 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 6.5 metres, as detailed on Attachment B. Note 2 applies.
 40. That a Loading Zone be created and be restricted to a maximum period of five minutes, on the south side of Hereford Street commencing at a point 35 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 7.5 metres, as detailed on Attachment B. This restriction is to apply at any time. Note 2 applies.
 41. That the stopping of vehicles be prohibited at any time on the south side of Hereford Street commencing at point 42.5 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 86 metres, as detailed on Attachment B. Note 2 applies.
 42. That the parking of vehicles be restricted to a maximum period of 60 minutes and controlled by Parking Meters, (including Pay by Plate machines or any approved means of payment) on the south sides of Hereford Street commencing at a point 128.5 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 23 metres, as detailed on Attachment B. This restriction is to apply between 5:00am and 11:00pm, Monday to Sunday. Note 2 applies.
 43. That a 'Small Passenger Service Vehicle Stand' be created on the south side of Hereford Street commencing at a point 128.5 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 23 metres, as detailed on Attachment B. This restriction is to apply between 11:00pm and 5:00am the following day, Monday to Sunday. Note 2 applies.
 44. That the stopping of vehicles be prohibited at any time on the south side of Hereford Street commencing at a point 151.5 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 16.5 metres, as detailed on Attachment B. Note 2 applies.
 45. That the parking of vehicles be restricted to a maximum period of five minutes on the south side of Hereford Street commencing at a point 168 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 26 metres, as

Hearings Panel
19 February 2019

Christchurch
City Council 

- detailed on Attachment B. This restriction is to apply between 5:00am to 11:00pm, Monday to Sunday. Note 2 applies.
46. That a 'Small Passenger Service Vehicle Stand' be created on the south side of Hereford Street commencing at a point 168 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 26 metres, as detailed on Attachment B. This restriction is to apply between 11:00pm and 5:00am the following day, Monday to Sunday. Note 2 applies.
 47. That the stopping of vehicles be prohibited at any time on the south side of Hereford Street commencing at a point 194 metres west of its intersection with Colombo Street and extending in a westerly direction to its intersection with Oxford Terrace, as detailed on Attachment B. Note 2 applies.
 48. That the stopping of vehicles be prohibited at any time on the north side of Hereford Street commencing at its intersection with Colombo Street and extending in an easterly direction for a distance of 28 metres, as detailed on Attachment B. Note 2 applies.
 49. That the parking of vehicles be restricted to a maximum period of five minutes on the north side of Hereford Street commencing at a point 28 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of 13 metres, as detailed on Attachment B. This restriction is to apply at any time. Note 2 applies.
 50. That the stopping of vehicles be prohibited at any time on the north side of Hereford Street commencing at a point 41 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of 20.5 metres, as detailed on Attachment B. Note 2 applies.
 51. That a Bus Stop be created on the north side of Hereford Street commencing at a point 61.5 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of 14 metres, as detailed on Attachment B. Note 2 applies.
 52. That the stopping of vehicles be prohibited at any time on the north side of Hereford Street commencing at a point 75.5 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of 36 metres, as detailed on Attachment B. Note 2 applies.
 53. That the parking of vehicles be restricted to a maximum period of 120 minutes and be reserved for vehicles with an approved disabled person's parking permit, prominently displayed in the vehicle, in accordance with section 6.4 (1a) of the Land Transport (Road User) Rule 2004. This restriction is to apply at any time and be located on the north side of Hereford Street, commencing at point 111.5 metres east of its intersection with Colombo Street, and extending in an easterly direction for a distance of seven metres, as detailed on Attachment B. Note 2 applies.
 54. That the parking of vehicles be restricted to a maximum period of ten minutes on the north side of Hereford Street commencing at a point 118.5 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of 12 metres, as detailed on Attachment B. This restriction is to apply at any time. Note 2 applies.
 55. That the stopping of vehicles be prohibited at any time on the north side of Hereford Street commencing at a point 130.5 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of 28.5 metres, as detailed on Attachment B. Note 2 applies.
 56. That a Loading Zone be created and be restricted to a maximum period of five minutes, on the north side of Hereford Street commencing at a point 159 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of 16 metres, as detailed on Attachment B. Note 2 applies.

Hearings Panel
19 February 2019

Christchurch
City Council 

57. That the stopping of vehicles be prohibited at any time on the north side of Hereford Street commencing at a point 175 metres east of its intersection with Colombo Street and extending in an easterly direction to its intersection with Manchester Street, as detailed on Attachment B. Note 2 applies.
58. That the stopping of vehicles be prohibited at any time on the south side of Hereford Street commencing at its intersection with Colombo Street and extending in an easterly direction for a distance of 43.5 metres, as detailed on Attachment B. Note 2 applies.
59. That the parking of vehicles be restricted to a maximum period of ten minutes on the south side of Hereford Street commencing at a point 43.5 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of 23 metres, as detailed on Attachment B. This restriction is to apply at any time. Note 2 applies.
60. That the stopping of vehicles be prohibited at any time on the south side of Hereford Street commencing at a point 66.5 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of six metres, as detailed on Attachment B. Note 2 applies.
61. That a Bus Stop be created on the south side of Hereford Street commencing at a point 72.5 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of 14 metres, as detailed on Attachment B. Note 2 applies.
62. That the stopping of vehicles be prohibited at any time on the south side of Hereford Street commencing at a point 86.5 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of 74.5 metres, as detailed on Attachment B. Note 2 applies.
63. That a Loading Zone be created and be restricted to a maximum period of five minutes, on the south side of Hereford Street commencing at a point 161 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of 7.5 metres, as detailed on Attachment B. This restriction is to apply at any time. Note 2 applies.
64. That the parking of vehicles be restricted to a maximum period of five minutes on the south side of Hereford Street commencing at a point 168.5 metres east of its intersection with Colombo Street and extending in an easterly direction for a distance of six metres, as detailed on Attachment B. This restriction is to apply at any time. Note 2 applies.
65. That the stopping of vehicles be prohibited at any time on the south side of Hereford Street commencing at a point 174.5 metres east of its intersection with Colombo Street and extending in an easterly direction to its intersection with Manchester Street, as detailed on Attachment B. Note 2 applies.
66. That the stopping of vehicles be prohibited at any time on the west side of Colombo Street commencing at its intersection with Hereford Street and extending in a southerly direction for a distance of 23 metres, as detailed on Attachment B. Note 2 applies.
67. That a Motorcycle Stand be created on the west side of Colombo Street commencing at a point 23 metres south of its intersection with Hereford Street and extending in a southerly direction for a distance of six metres. Note 2 applies.
68. That the stopping of vehicles be prohibited at any time on the east side of Colombo Street commencing at its intersection with Hereford Street and extending in a southerly direction for a distance of 22 metres, as detailed on Attachment B. Note 2 applies.
69. That the stopping of vehicles be prohibited at any time on the east side of Colombo Street commencing at its intersection with Hereford Street and extending in a northerly direction to its intersection with Cathedral Square, as detailed on Attachment B.

Hearings Panel
19 February 2019

Christchurch
City Council 

70. That the stopping of vehicles be prohibited at any time on the west side of Colombo Street commencing at its intersection with Hereford Street and extending in a northerly direction to its intersection with Cathedral Square, as detailed on Attachment B.
71. The removal of one tree, as identified on Attachment B.
72. That these resolutions take effect when parking signage and/or road markings, that evidence the restrictions, is/are in place (or removed in the case of revocations).

4. Key Points

- 4.1 This report supports the [Council's Long Term Plan \(2018 - 2028\)](#):
 - 4.1.1 Activity: Active Travel
 - Level of Service: 16.0.10.0 Improve the perception that Christchurch is a walking friendly city - =84%
 - 4.1.2 Activity: Roads & Footpaths
 - Level of Service: 16.0.8.0 Maintain the condition of footpaths
 - Level of Service: 16.0.2.0 Maintain roadway condition to an appropriate national standard
- 4.2 The following feasible delivery options have been considered:
 - Delivery Option 1 – Hereford Street (Manchester – Oxford) one-phase upgrade (preferred option)
 - Delivery Option 2 – Three-phase upgrade
 - Delivery Option 3 – Essential repairs only (with a full upgrade at a later date)
- 4.3 Option Summary - Advantages and Disadvantages (Delivery Option 1 – Preferred)
 - 4.3.1 The advantages of this delivery option include:
 - Repair to damaged road and footpaths;
 - Widened vehicle lanes for maintaining a local distributor street;
 - Provision of outdoor dining spaces on the footpath outside Rockpool and the BNZ Centre, where dining activity currently exists;
 - Night time small passenger service vehicle parking;
 - New street trees in raised planters incorporating seating;
 - Painted on-road cycle lanes;
 - Three mobility parks on Hereford Street; and
 - Completion of the entire work in one phase, thus minimising the length of time of disruption to businesses and users of the street.
 - 4.3.2 The disadvantages of this delivery option include:
 - Loss of 14 on-street car parks. However, there are two car parking buildings existing and proposed in this length of Hereford Street providing more than 690 casual car parks (in Hereford and The Terrace car parks); and
 - Disruption to businesses and users of the street during the construction period. The construction team will work to minimise the length of time that construction is undertaken and will engage with businesses to ensure that construction impacts are minimised.

5. Context/Background

Background to Delivery Options

- 5.1 Given that some submissions raised concerns around the timeframe for completion of the Hereford Street upgrade and the impact of construction works on businesses, staff have provided options for delivery of the project. These options are detailed in this report.

Extent of Work

- 5.2 The extent of the upgrade work proposed on Hereford Street is between Manchester Street and Oxford Terrace. The Manchester Street upgrade was designed and constructed by CCDU/Ōtākaro Limited and the Oxford Terrace intersection with Hereford Street is part of the Te Papa Ōtākaro / Avon River Precinct project also being undertaken by Ōtākaro Limited.
- 5.3 The length of Hereford Street between Oxford Terrace and Cambridge Terrace also forms part of the Te Papa Ōtākaro / Avon River Precinct project.
- 5.4 The delivery of the intersection at Oxford Terrace and the length of Hereford Street between the intersection and Cambridge Terrace is currently being reviewed, with an option that Council delivers this on behalf of Ōtākaro Limited.
- 5.5 This length of Hereford Street was badly damaged from the February 2011 earthquake and the post-earthquake demolition work. The design guidelines associated with central city streets detail the treatment recommended for this street.

Traffic Resolutions

- 5.6 The parking resolutions that will take affect for the preferred option are as detailed in the staff recommendations in Section 3.

Hearings Panel
19 February 2019

Christchurch
City Council 

6. Delivery Option 1 - Hereford Street (Manchester – Oxford) one-phase upgrade (preferred)

Option Description

- 6.1 The *Christchurch Central Streets and Spaces Design Guide*, Section 5 – Streets, defines Hereford Street as an east-west central local distributor road incorporating a bus route and supporting the slow core of pedestrian- and cycle-friendly central city streets¹. Hereford Street is identified within the *Design Guide* as one of four streets facilitating movement within the city and connecting many of the city's cultural, event, retail and residential venues and precincts. The following paragraphs discuss the design features of the proposed upgrade (refer to **Attachment B** for details).
- 6.2 Widened footpath
- The footpath width for central city streets is normally three metres. In this length of Hereford Street, the footpath is proposed to be widened to five metres where licensed outdoor dining spaces exist. Elsewhere a three metre width is proposed. The five metre width provides a width of two metres for dining.
 - The outdoor dining areas on the southern side of the street are proposed to be relocated from the building edge to the kerb edge. This provides clear passage for pedestrians against the building line making the area more accessible for visually impaired pedestrians. The building-edge dining area outside Rockpool will remain but with a reduced width of two metres.
- 6.3 Widened vehicle lanes
- The vehicle lanes will be widened from 3 metres to 3.25 metres in the length of Hereford Street between Oxford Terrace and Colombo Street, this will accommodate the large vehicles (particularly buses) that use the street. These lanes were narrowed prior to the 2011 earthquake to facilitate a reduction in traffic speeds. At that time, this section of Hereford Street was not a bus route.
- 6.4 Courtesy crossings
- Three courtesy crossings are proposed between intersections. These provide convenient points for pedestrians wanting to cross the road while also showing vehicle drivers where they are most likely to cross. Tactile pavers will assist those pedestrians who are visually impaired.
- 6.5 Streetscape
- The streetscape is proposed to be enhanced by the inclusion of street trees grown within raised planters. Raised planters are required because of the significant number of underground services; too many to accommodate tree pits. These planters will also incorporate seating within them.
 - The tree selected for Hereford Street is ornamental callery pear, a deciduous tree suited to a city environment. Under-planting with native species is planned.
 - Cycle stands and rubbish bins will also be installed in appropriate locations.
- 6.6 Cycle lanes
- Painted on-road cycle lanes will be provided next to the vehicle lanes. These will be 1.8 m wide. At bus stops the cycle lanes will be the required width of 1.5 m.

¹ A local distributor road is defined in Appendix 7.5.12 of the District Plan as a specific type of collector road important for distribution of traffic to parking precincts or providing for public transport movements.

Hearings Panel
19 February 2019

Christchurch
City Council

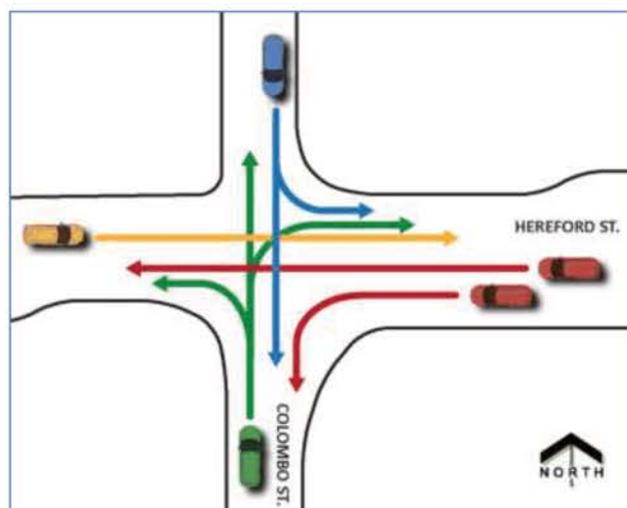
- Along the section of the street where kerbside dining is provided, a barrier will be installed between the dining area and the adjacent cycle lane. This will ensure the safety of both cyclists and diners is maintained.

6.7 Parking

- Parking prioritises buses, short-term pick-ups and drop-offs, loading, mobility parks and small passenger service vehicles. Some 60 minute paid parking is also included.
- The number of on-street parking spaces in the two blocks decreases from 51 to 37, however more than 698 short-stay off-street parking spaces are available in existing car park buildings on Hereford Street (Hereford and West End car parks) with a further 200-300 short-stay off-street parking spaces in a car park building being built on Hereford Street (The Terrace car park). These car park buildings include mobility parks on each floor close to lifts. Three mobility parks will be provided on Hereford Street itself.
- A space for parking motorcycles will replace an existing car parking space on Colombo Street, immediately south of Hereford Street.
- Special provision is being made for taxis and Ubers (small passenger service vehicles) towards Oxford Terrace with 14 loading zones and parking spaces becoming Uber and taxi stops during night hours.

6.8 Hereford Street/Colombo Street intersection

- To maintain the efficiency of Hereford Street as a local distributor road it is necessary to control the movement of vehicles at the Hereford Street/Colombo Street intersection. It is proposed that the following turn movements will be permitted, shown in the diagram below:



- Hereford Street eastbound – straight through only
- Hereford Street westbound – straight through and left turn to Colombo Street southbound only
- Colombo Street southbound – straight through and left turn to Hereford Street eastbound only
- Colombo Street northbound – straight through, left turn to Hereford Street westbound, and right turn to Hereford Street eastbound.

Hearings Panel
19 February 2019

Christchurch
City Council 

- These restrictions will limit the traffic volume through Cathedral Square ahead of work starting on the restoration of ChristChurch Cathedral and the Square itself.
- The following turn movements are currently permitted:
 - Hereford Street eastbound – straight through, left and right turn to Colombo Street
 - Hereford Street westbound – straight through and left turn to Colombo Street southbound only
 - Colombo Street southbound – straight through, left and right turn to Hereford Street
 - Colombo Street northbound – straight through, left and right turn to Hereford Street.

Significance

- 6.9 The level of significance of this option is high, consistent with section 2 of this report.
- 6.10 Engagement requirements for this level of significance have been met through early and continued engagement with major stakeholders, and involving them throughout the scheme design process. This was undertaken because of the location of this street, between Cashel Mall and Cathedral Square in the heart of the city.

Impact on Mana Whenua

- 6.11 This option does not involve a significant decision in relation to ancestral land or a body of water or other elements of intrinsic value. However, the project area is in close vicinity of the Ōtākaro/Avon River, so Matapopore Charitable Trust has been consulted throughout this project and its input has been included in the design for the street.
- 6.12 The Matapopore Charitable Trust has been established by Te Ngāi Tūāhuriri Rūnanga for the provision of cultural advice on Ngāi Tūāhuriri / Ngāi Tahu values, narratives and aspirations for the anchor projects and any other projects associated with the regeneration of Ōtautahi / Christchurch. The Hereford Street project is one of these projects.

Community Views and Preferences

- 6.13 Engagement with key stakeholders on the Hereford Street project began in September 2016 when businesses, property owners and other key stakeholders were invited to take part in an initial issues survey. They were also sent the road layout proposed for the street in the Christchurch Central Streets and Spaces Design Guide.
- 6.14 The 17 responses were mainly concerned with the road layout, access points to new developments and Oxford Terrace, bus priority, bus and coach stops, pedestrian safety, taxi ranks and other parking arrangements.
- 6.15 Building on this feedback, the Council's project team began developing concepts, working closely with key stakeholders to try to balance the needs identified with project objectives. Since then more than 20 meetings, including two drop-in sessions to provide updates, were arranged with property and business owners. Thirty four key stakeholders attended these drop-in sessions.
- 6.16 The consultation plan was also presented to the Central City Transport Liaison Group comprising key stakeholder groups, including business and resident group representatives.
- 6.17 Formal community wide consultation took place from 17 July to 14 August 2018. Booklets were delivered to 700 businesses and residences between Gloucester Street and Lichfield Street. They were also sent to absentee owners of 216 properties, as well as being made available at libraries and service centres. In addition, 250 key stakeholders received emails about the project and the consultation was publicised through radio and print advertising and via social media channels.

Hearings Panel
19 February 2019



- 6.18 Of the 180 responses received, 97 (53.9%) supported the consultation plan, 80 (44.4%) did not support the plan and three submitters (1.7%) did not indicate a view.
- 6.19 A question was also asked about the sale of land in Strand Lane to potentially enable the lane to be widened. This is a related but separate project which has been the subject of a separate report to Council.
- 6.20 Among the 53.8% who supported the plan, some referred to the need to repair the badly damaged road between Oxford Terrace and Manchester Street while others praised the plan for balancing the needs of all users. Responses included: *I think it looks fantastic and there is a real need for the upgrade on this street!* and *Upgrade much needed and looks good. Retains access for cars, delivery vehicles, cyclists and pedestrians. Desperately required upgrade!*

Key Issues

- 6.21 Twenty seven submitters questioned the project's priority and/or cost. They were advised that the \$4.5 million allocated for this project had been approved by the Council in the 2018-28 Long Term Plan. The street has been badly damaged as a result of the earthquakes and subsequent demolition of buildings, and the Council is required to provide a safe and adequate facilities within the central city.
- 6.22 The loss of 14 on-street parking spaces was also a contentious issue with 22 submitters criticising this aspect of the plan. Several commented on the need for adequate loading zones for businesses.
- 6.23 Thirty seven car parks of the existing 51 on-street car parking spaces are retained on this length of Hereford Street. This parking is prioritised for short-term parking, mobility parks, loading zones and passenger service vehicles.
- 6.24 Hereford and Westend car park buildings provide 698 short-term parking spaces on Hereford Street. An estimated 200 short-term spaces are proposed in the new Terrace car park that has yet to be completed on Hereford Street.
- 6.25 The Community and Public Health unit of the Canterbury District Health Board recommended that the Council consider the cost/benefits of on-street parking when designing the streetscape, as on-street parking has a significant impact on the use and feel of streets. The Board stated in its submission that "on-street parks negatively impact upon the perception of safety when walking and cycling and take up the space which could be used for other purposes which add to the amenity of the area, such as outdoor dining, benches or art installations."
- 6.26 Twenty submitters did not want painted on-road cycle lanes on these two blocks of Hereford Street while 22 had safety concerns or suggested ways to improve safety. Sharing the road with cars along this 30 km/h stretch of road (sharrow treatment) was suggested by seven submitters while three submitters, including the cycle advocacy group Spokes, wanted flexible posts on specific sections of the street.
- 6.27 Submitters were advised that Hereford Street is designed as a local distributor road and is a key passenger transport route. This requires the vehicle lanes to be widened in the block between Colombo Street and Oxford Terrace to better accommodate the mix of modes of transport. Hereford Street is not a key cycle route within the central city, where other routes such as Tuam Street and St Asaph Street provide separated cycle lanes. Therefore, painted on-street cycle lanes along with advanced boxes at the signal intersections provides an appropriate level of service. The cycle lanes are 1.8 m wide providing adequate space to pass parked cars - and are within the slow speed 30 km/h zone which provides additional safety to cyclists' and pedestrians'.
- 6.28 The overall design was criticised by some submitters. Ten called for wider vehicle lanes while eight said the footpaths were too wide. Six queried the proposed paving, with several pointing out that this needed to be smooth, non-slip, and suitable for high heels. Eight were critical of

- the two metre strip provided on some sections of the street for outdoor dining, saying conditions in Hereford Street did not suit this use.
- 6.29 Seven submitters were concerned about courtesy crossings which they felt were confusing for both motorists and pedestrians. The courtesy crossings are intended to reproduce the raised crossings implemented with the street upgrade just before the earthquakes. However, they will be raised 75 mm instead of the current 150 mm. Prior to the earthquakes, these crossings were working well, as they help support a lower speed on the street. The courtesy crossings incorporate tactile pavers at the adjacent footpath edges and different surface colour to ensure they are not mistaken for controlled zebra crossings.
- 6.30 Hereford Street is a local distributor road and a passenger transport route. Wider vehicle lanes are therefore required in the block between Colombo Street and Oxford Terrace. The proposed bus stops are intended to complement those across the central city supporting the new Interchange and Manchester Street "superstops", and have been planned in consultation with Environment Canterbury to ensure a good standard of access for passengers to the Hereford Street bus services.
- 6.31 In its submission the Public Transport team at Environment Canterbury said it fully supported this proposal: "We support retaining the two bus stops on Hereford Street with indented bus bays which serve the 17 bus route. We also support widening the road width to 3.25 metres which will make it easier for buses to travel alongside other vehicles on this busy corridor."
- 6.32 Thirteen submissions were received about the proposed trees, with some submitters calling for native trees to be planted. The project's landscape architect commented that the ornamental callery pear (*Pyrus 'Candelabra'*) has been selected as its form is well suited to a city street. Being deciduous it will allow light to penetrate to street level during the winter months. Native trees thrive best when planted together. In this situation, with the trees needing to be within raised planters, the callery pear is a better species to use. It is proposed that the trees will be under-planted with native plant species.
- 6.33 Several other submitters felt that the current proposal could be enhanced by other elements such as more lighting and digital art.
- 6.34 They were advised that if budget is available the Council plans to incorporate LED lighting in the raised planters. The project team is working with Matapopore to provide appropriate graphic images and interpretation onto the planters and the screens which will give Hereford Street its own unique identity. Similarly, the team is exploring ways of incorporating patterns into the paving to acknowledge old water courses and express ideas of wayfinding throughout the city. This area will be used for outdoor dining, raised planters with trees, seats and low planting, cycle stands, rubbish bins and a drinking fountain.

Changes suggested as a result of consultation

- 6.35 As a result of feedback received, the following changes have been made to the plan for approval:
- Bus stop on southern side outside 142 Hereford Street relocated west to replace the proposed two P5 parking spaces. These parking spaces have been changed to P10 and moved east outside 148 Hereford Street.
 - An additional P10 parking space has been added in the vicinity of 142 Hereford Street.
 - Provision has been made for the car park entrance to 138 Hereford Street.
 - The kerb build-out near 142 Hereford Street has been removed to provide more space for the left turn lane.
 - The loading zone on the northern side of Hereford Street outside 147 and 151 has been relocated to outside 159 and 161 to replace the three 60 minute paid parking spaces.

Hearings Panel
19 February 2019

Christchurch
City Council 

- Two 60 minute paid parks outside 159 and 161 Hereford Street have been relocated to outside 147 and 151 and changed to P5 parks.
- The footpath on the south-east of the intersection of Hereford Street and Colombo Street has been widened to 3 metres by replacing the separate cycle lane and left turn lane with a sharrow.
- Provision has been made for a future entrance to 136 Hereford Street.

6.36 The amendments to the consultation plan are shown in **Attachment B**.

6.37 All submitters have been advised of details of the Hearings Panel meeting and how to access information about the project, including a summary of consultation and answers to questions raised in their submissions.

Alignment with Council Plans and Policies

6.38 This option is consistent with Council's Plans and Policies as provided for in the *Christchurch Central Streets and Spaces Design Guide*.

Financial Implications

6.39 Cost of Implementation – The high level scheme phase estimate is \$6.2 million, including all project costs.

6.40 Maintenance / Ongoing Costs – The design proposed is broadly aligned to the Christchurch Central Streets and Spaces Design Guide. This was the document used to model future maintenance and operating costs for the central city. As such, the ongoing costs for this proposal have been accounted for in future OPEX budgets.

6.41 Funding source – The project is funded through the Council's capital programme of the 2018-2018 Long Term Plan (Project 19847 AAC Hereford Street (Manchester – Oxford)). The budget provision within the Long Term Plan is \$4,915,383. Opportunities for reducing construction costs will be considered during the detailed design phase and as part of construction programming. If required, additional capital funding will be sought from within the central city transport programme.

Legal Implications

6.42 There is a legal context, issue or implication relevant to this decision.

6.43 This report has been reviewed and approved by the Legal Services Unit.

6.44 The legal consideration concerns the consideration of all reasonably practicable options, and the extent of the consultation, in light of the high significance, and whether there is sufficient information to enable the Council to meet the decision-making requirements in the Local Government Act 2002. The Legal Services Unit considers the options in this report and the consultation process and feedback received will enable the Council to meet its obligations.

Risks and Mitigations

6.45 The inherent risks associated with this scheme are considered to be very high. With the proposed mitigation actions, the residual risk is assessed as moderate as some disruption is inevitable.

6.46 Key risk, consequences and mitigations are as follows:

Risk	Consequence	Mitigation
Public criticism	Negative media, dissatisfied stakeholders	Proactive and early communications and engagement

Hearings Panel
19 February 2019

Christchurch
City Council 

Risk	Consequence	Mitigation
Disruption to businesses	Disruption to the operation of businesses on Hereford Street during the construction period	Daily engagement with the business owners to identify concerns and inform on construction activities. Undertake some construction during hours that businesses are not open.

Implementation

6.47 Implementation dependencies - New buildings are under construction and planned at 2 and 9 Cathedral Square:

Building	Planned completion date
2 Cathedral Square (Nexus Point)	October 2019
9 Cathedral Square (Redson)	Late 2020

The developers of both of these buildings have requested that the kerbs and footpaths on Hereford Street be completed on time to meet the opening dates for each of their buildings. The project team is engaging with representatives of these buildings to enable this to occur as efficiently as possible.

6.48 Implementation timeframe – The project team is aware of the impact of the construction works on the surrounding businesses and will be working with the contracting industry to ensure these impacts are minimised when determining construction timeframes.

Delivery Option Summary - Advantages and Disadvantages

6.49 The advantages of this option include:

- Repair to damaged road and footpaths;
- Widened vehicle lanes for maintaining a local distributor street;
- Provision of outdoor dining spaces on the footpath outside Rockpool and the BNZ Centre, where dining activity currently exists;
- Night time small passenger service vehicle parking;
- New street trees in raised planters incorporating seating;
- Painted on-road cycle lanes;
- Three mobility parks on Hereford Street; and
- Completion of the entire work in one phase, thus minimising the length of time of disruption to businesses and users of the street.

6.50 The disadvantages of this option include:

- Loss of 14 on-street car parks. However, there are two car parking buildings existing and proposed in this length of Hereford Street providing more than 690 casual car parks (in Hereford and The Terrace car parks); and

Hearings Panel
19 February 2019

Christchurch
City Council 

- Disruption to businesses and users of the street during the construction period. The construction team will work to minimise the length of time that construction is undertaken and will engage with businesses to ensure that construction impacts are minimised.

7. Delivery Option 2 – Phased Upgrade

Option Description

- 7.1 This option provides for the full upgrade as detailed in Option 1, but scheduled to be undertaken in three phases to suit the needs of business owners and developers.
- 7.2 The separate phases of work are as follows:
- 7.2.1 Phase 1: Upgrade Manchester Street to Colombo Street, plus Colombo Street intersection (including kerb, channel and footpath replacement outside 2 and 9 Cathedral Square) (refer to **Attachment B** for detail of proposed upgrade work)
- 7.2.2 Phase 2: Essential repairs only between Colombo Street and Oxford Terrace (refer to **Attachment C** for extent of repair work required). This is likely to occur at the same time as Phase 1.
- 7.2.3 Phase 3: Upgrade Colombo Street to Oxford Terrace at a later date to be determined.

Significance

- 7.3 The level of significance of this option is high because of the level of public interest in this street and that the work to complete the upgrade of the full street will be delayed. The proposed timeline in the consultation document showed construction being undertaken over a period of ten months. Option 2 is presented because of the high level of interest of key stakeholders and their concerns since consultation.

Impact on Mana Whenua

- 7.4 This option does not involve a significant decision in relation to ancestral land or a body of water or other elements of intrinsic value. However, the project area is in close vicinity of the Ōtākaro/Avon River, so Matapopore Charitable Trust has been consulted throughout this project and its input has been included in the design for the street.
- 7.5 The Matapopore Charitable Trust has been established by Te Ngāi Tūāhuriri Rūnanga for the provision of cultural advice on Ngāi Tūāhuriri / Ngāi Tahu values, narratives and aspirations for the anchor projects and any other projects associated with the regeneration of Ōtautahi / Christchurch. The Hereford Street project is one of these projects.

Community Views and Preferences

- 7.6 Consultation on the Christchurch Central Streets and Spaces Design Guide indicates a community view that Hereford Street should be more pedestrian-friendly and incorporate streetscape elements to make this a greener environment.

Alignment with Council Plans and Policies

- 7.7 This option is consistent with Council's Plans and Policies as provided for in the *Christchurch Central Streets and Spaces Design Guide*.

Financial Implications

- 7.8 Cost of Implementation – The estimate to complete this work in three phases is \$7.4 million.
- 7.9 Maintenance / Ongoing Costs - The design proposed is broadly aligned to the Christchurch Central Streets and Spaces Design Guide. This was the document used to model future maintenance and operating costs for the central city. As such, the ongoing costs for this proposal have been accounted for in future OPEX budgets.

Hearings Panel
19 February 2019

Christchurch
City Council 

- 7.10 Funding source – Funding for the upgrade work is through the Council’s capital programme of the 2018-2018 Long Term Plan (Project 19847 AAC Hereford Street (Manchester – Oxford)). The budget provision within the Long Term Plan is \$4,915,383. The additional costs relating to this delivery option would need to be sourced from existing capital (CAPEX) and operational (OPEX) programmes. This would result in reprioritisation of programmes and other works having to be deferred.

Legal Implications

- 7.11 There is a legal context, issue or implication relevant to this decision
- 7.12 This report has been reviewed and approved by the Legal Services Unit in regard to this option.
- 7.13 The legal consideration concerns the proposed change to the phasing of the upgrade, which was not an option considered or presented during the consultation. The Council has to consider whether it has enough information about the views and preferences of the wider community to the change in timing of delivery of the project.

Risks and Mitigations

- 7.14 The inherent risks associated with this option are considered to be very high. With the proposed mitigation actions the residual risk is assessed as moderate as some disruption is inevitable.
- 7.15 Key risk, consequences and mitigations are:

Risk	Consequence	Mitigation
Public criticism of not delivering this project within the original time frame consulted on	Negative media, dissatisfied stakeholders.	Implement the Preferred Option. Proactive and early communications and engagement.
Public criticism of long period for construction completion	Extended delivery period and repeat work in length of Hereford Street between Colombo Street and Oxford Terrace.	Implement the Preferred Option. Proactive and early communications and engagement. Communication with the public as to the reasons for the project change and the proposed timing for the upgrade project.
Disruption to businesses	Disruption to the operation of businesses on Hereford Street during the construction periods	Daily engagement with the business owners to identify concerns and inform on construction activities. Undertake some construction during hours that businesses are not open.
Some safety issues not addressed as promptly as in the preferred option	Continued narrow vehicle lanes (3 m wide) in the length of Hereford Street between Colombo Street and Oxford	Communication with the public as to the reasons for the project change and the

Hearings Panel
19 February 2019

Christchurch
City Council 

Risk	Consequence	Mitigation
	<p>Terrace until full reconstruction complete.</p> <p>Cyclists continue to cycle in the vehicle lanes between Colombo Street and Oxford Terrace, until full construction complete, though on-road cycle lanes provided in Hereford Street east of this.</p> <p>The condition of Oxford-Colombo until Phase 2 is completed?</p>	<p>proposed timing for the upgrade project.</p>
<p>Criticism from developers and business owners</p>	<p>Some developers and business owners have been supportive of the project for the upgrade of Hereford Street.</p>	<p>Communication with all developers and business owners as to the reasons for the project change and the proposed timing for the upgrade project.</p>

Implementation

- 7.16 Implementation dependencies - New buildings are under construction and planned at 2 and 9 Cathedral Square:

Building	Planned completion date
2 Cathedral Square (Nexus Point)	October 2019
9 Cathedral Square (Redson)	Late 2020

The developers of both of these buildings have requested that the kerbs and footpaths on Hereford Street be completed on time to meet the opening dates for each of their buildings. The project team is engaging with representatives of these buildings to enable this to occur as efficiently as possible.

- 7.17 Implementation timeframe – The project team is aware of the impact of the construction works on the surrounding businesses and will be working with the contracting industry to ensure these impacts are minimised when determining construction timeframes. It should be noted that this delivery option will result in an extended construction period in the area.

Delivery Option Summary - Advantages and Disadvantages

- 7.18 The advantages of this option include:

- Phase 1 –
 - Providing an improved streetscape with trees and other street furniture between Manchester Street and Colombo Street
 - Providing painted on-road cycle lanes between Manchester Street and Colombo Street

Hearings Panel
19 February 2019

Christchurch
City Council 

- Providing one additional on-street mobility car park between Manchester Street and Colombo Street
 - Retaining courtesy crossings between intersections for pedestrians
 - Phase 2 –
 - Repairing the hazards created as a result of the damaged road, footpaths and drainage between Colombo Street and Oxford Terrace
 - Phase 3 –
 - Providing an improved streetscape with trees and other street furniture between Colombo Street and Oxford Terrace
 - Providing wider lanes suitable for maintaining a local distributor road
 - Providing space for outdoor dining
 - Making provision for night-time stopping for taxis and Uber vehicles
 - Providing two on-street mobility parks between Colombo Street and Oxford Terrace
 - Retaining courtesy crossings
- 7.19 The disadvantages of this option include:
- Phase 1 –
 - Removal of eight on-street parks
 - No improved streetscape between Colombo Street and Oxford Terrace
 - No widened vehicle lanes for maintaining a local distributor collector road between Colombo Street and Oxford Terrace
 - Existing outdoor dining with difficult passage for visually impaired pedestrians
 - Unsafe route for cyclists between Colombo Street and Oxford Terrace
 - No provision for night-time stopping for taxis and Uber vehicles
 - Disruption to businesses and other users of the street during the construction period.
 - Phase 2 –
 - Disruption to businesses and other users of the street during the repairs construction period
 - Additional cost to undertake repairs to the length between Colombo Street and Oxford Terrace
 - Phase 3 –
 - Removal of six on-street parks
 - Disruption to businesses and other users of the street during the construction period.

8. Delivery Option 3 – Essential Repairs

Option Description

- 8.1 Carry out essential repairs to road, footpath, kerb and channel and renew infrastructure that is not functioning appropriately and in areas could pose a hazard to members of the public using the space. The extent of this work is shown in **Attachment C**.
- 8.2 This option assumes that the full upgrade of Hereford Street will be undertaken at a later date.

Hearings Panel
19 February 2019

Christchurch
City Council 

Significance

- 8.3 The level of significance of this option is high because of the level of public interest in this street and that the work to complete the upgrade of the street will be delayed.
- 8.4 This option was not consulted on but has been included as an option now because of the high level of interest of key stakeholders and their concerns since consultation.

Impact on Mana Whenua

- 8.5 This option does not involve a significant decision in relation to ancestral land or a body of water or other elements of intrinsic value, therefore this decision does not specifically impact Ngāi Tahu, their culture and traditions.

Community Views and Preferences

- 8.6 The Christchurch Central Streets and Spaces Design Guide indicates a view that Hereford Street should be more pedestrian-friendly and incorporate streetscape elements to make this a greener environment. Repairing the road does not address the issues of the road being a local distributor, cyclist safety, pedestrian safety, amenity or transport mode change required for the central city. An upgrade later will address these issues.

Alignment with Council Plans and Policies

- 8.7 This option, if a full upgrade is not undertaken in the future, would be inconsistent with Council's Plans and Policies
- 8.7.1 Inconsistency – An option for repairs only is inconsistent with the Christchurch Central Recovery Plan and the Christchurch Central Streets and Spaces Design Guide.
- 8.7.2 Reason for inconsistency – A repairs only option fails to address the objectives of the Christchurch Central Recovery Plan and the Christchurch Central Streets and Spaces Design Guide. It is inconsistent with the 2018-2028 Long Term Plan which shows this project being completed in Financial Year 2020.

Financial Implications

- 8.8 Cost of Implementation – The cost associated with this option would be the cost to repair the street to make the footpaths safe, replace kerb and channel and improve stormwater drainage. The estimated cost of undertaking essential repairs is approximately \$1.9 million. If upgrade of the whole street is to be undertaken at a later stage then the estimated total cost would be \$7.33 million. These estimates provide for total project costs.
- 8.9 Maintenance / Ongoing Costs – Modelling of future maintenance and operational costs for this street have assumed that the upgrade would be undertaken. Additional costs for resurfacing and footpath and drainage repairs have not been allowed for.
- 8.10 Funding source – Funding for the additional costs for essential renewals and repairs would be sourced from existing capital (CAPEX) and operational (OPEX) programmes. This would result in reprioritisation of programmes and other works having to be deferred.

Legal Implications

- 8.11 There is a legal context, issue or implication relevant to this decision.
- 8.12 This report has been reviewed and approved by the Legal Services Unit in regard to this option.
- 8.13 The legal consideration arises from the fact the option of essential repairs only was not a specific matter discussed in the consultation (which only concentrated on the proposed upgrade, for which funding has been allocated in the Long Term Plan). However, the Council can determine, where there are good reasons and after consideration of community views, that it will not proceed with any project signalled in the Long Term Plan. The Council would need to consider

Hearings Panel
19 February 2019

Christchurch
City Council 

whether it has sufficient information about wider community views on this option, if it is to adopt this option.

Risks and Mitigations

8.14 The risks associated with the repair option are considered to be high.

8.15 Key risk, consequences and mitigations are:

Risk	Consequence	Mitigation
Public criticism of not delivering this project	Negative media, dissatisfied stakeholders	Implement the Preferred Option Proactive and early communications and engagement
Disruption to businesses	Disruption to the operation of businesses on Hereford Street during the construction period	Daily engagement with the business owners to identify concerns and inform on construction activities. Undertake some construction during hours that businesses are not open.
Some safety issues not fully addressed	Continued narrow vehicle lanes (3 m wide) in the length of Hereford Street between Colombo Street and Oxford Terrace. Cyclists continue to cycle in the vehicle lanes between Manchester Street and Oxford Terrace though on-road cycle lanes provided in Hereford Street east of this.	Communication with the public as to the reasons for the project change and the proposed timing for the upgrade project.
Criticism from developers and business owners	Some developers and business owners have been supportive of the project for the upgrade of Hereford Street. Specifically the owner of 2 Cathedral Square has requested that the footpath, kerb and channel be completed outside this property for its completion of October 2019.	Undertake full footpath, kerb and channel reconstruction outside 2 Cathedral Square. Communication with all developers and business owners as to the reasons for the project change and the proposed timing for the upgrade project.

Implementation

8.16 Implementation dependencies - The implementation of this option will be dependent on allocation of finance for its completion. No specific budget has been set aside for this work

8.17 Implementation timeframe – A preliminary programme for this repair option indicates work commencing in October 2019 with completion in April 2020.

Hearings Panel
19 February 2019

Christchurch
City Council 

Delivery Option Summary - Advantages and Disadvantages

8.18 The advantages of this option include:

- Repair works may not create as much disruption as a total street upgrade, though some disruption is inevitable
- Deferred spending of capital budget
- On-street parking retained after completion of repair work.

8.19 The disadvantages of this option include:

- Some disruption to businesses and other users of the street during the construction period
- Further disruption at a later date if full reconstruction undertaken later
- No improvement to streetscape if repairs only undertaken, or delayed improvement if full reconstruction delayed
- Wider lanes not provided as required for maintaining a local distributor road and safe operation of the passenger transport route
- Existing outdoor dining space with difficult passage for visually impaired pedestrians
- No provision for night-time stopping for taxis and Uber vehicles
- One existing on-street mobility park compared to three in preferred option
- Additional cost to undertake repairs and then reconstruct at a later date.

Attachments

No.	Title	Page
A	Hereford Street (Manchester - Oxford) - Consultation plan	
B	Hereford Street (Manchester - Oxford) - Consultation Plan - modified following consultation input	
C	Hereford Street (Manchester - Oxford) - Repairs option plan	

Confirmation of Statutory Compliance

Compliance with Statutory Decision-making Requirements (ss 76 - 81 Local Government Act 2002).

(a) This report contains:

- (i) sufficient information about all reasonably practicable options identified and assessed in terms of their advantages and disadvantages; and
- (ii) adequate consideration of the views and preferences of affected and interested persons bearing in mind any proposed or previous community engagement.

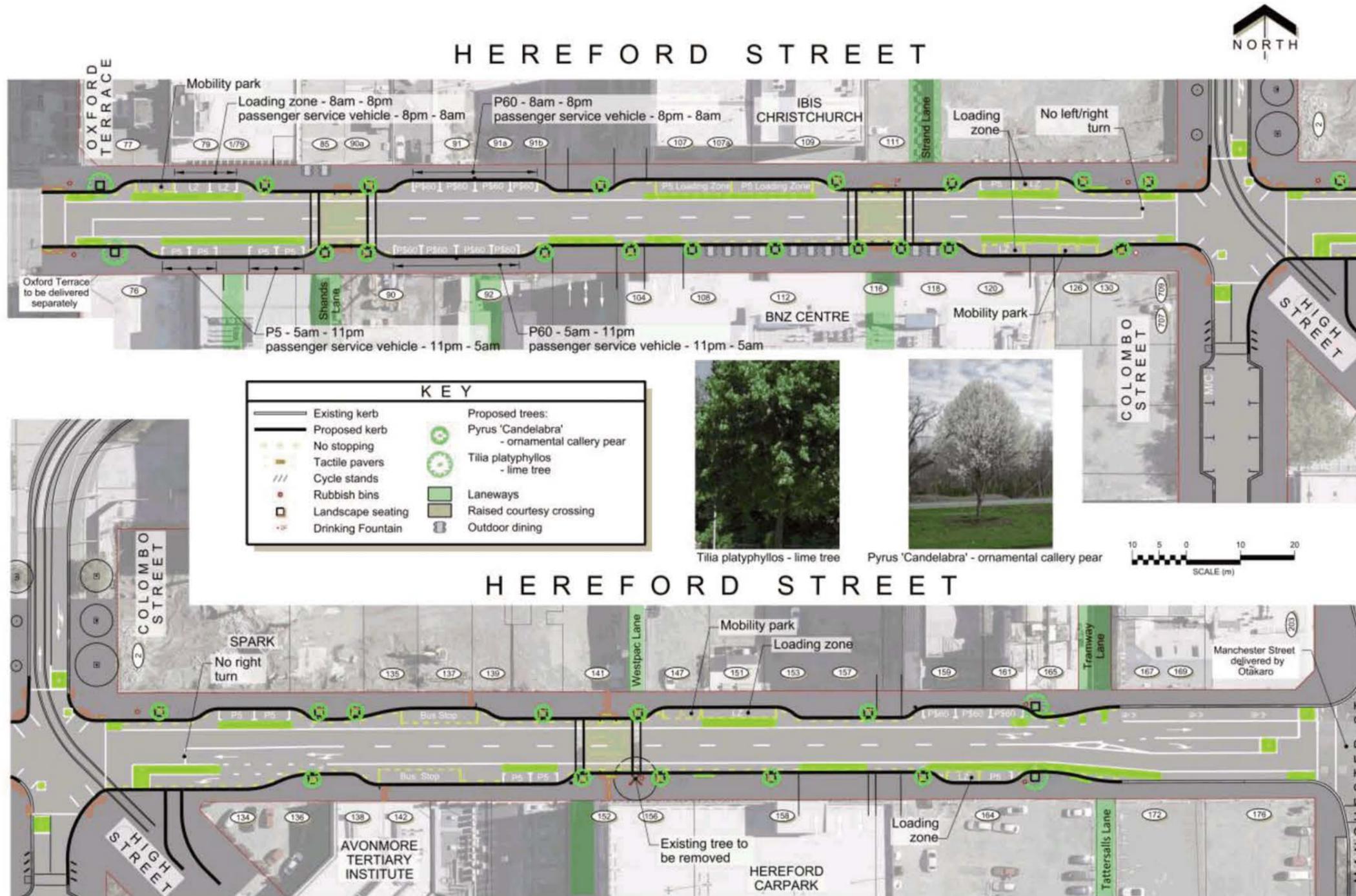
(b) The information reflects the level of significance of the matters covered by the report, as determined in accordance with the Council's significance and engagement policy.

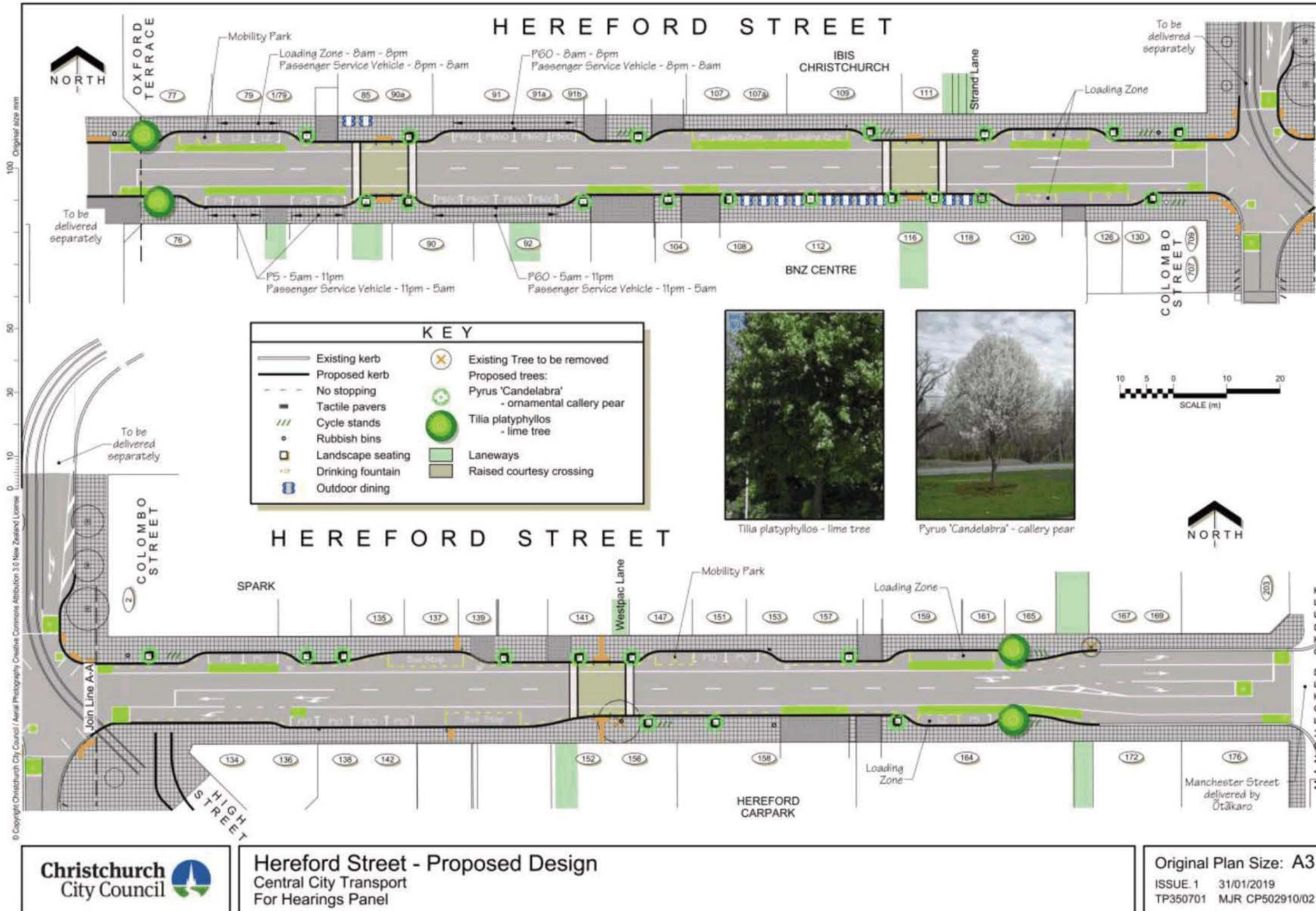
Hearings Panel
19 February 2019

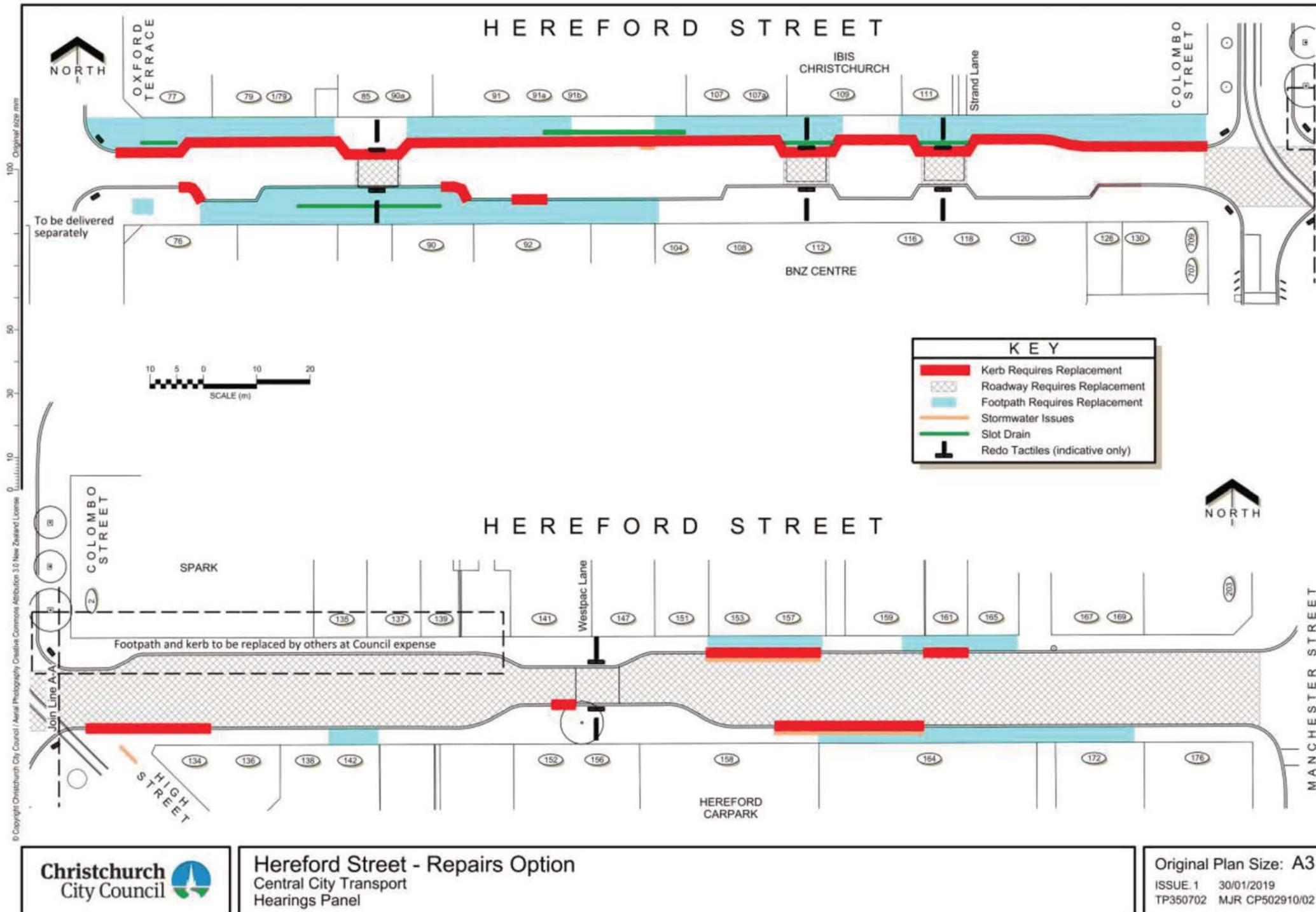
Christchurch
City Council 

Signatories

Authors	Neil Gillon - Senior Project Manager Jennie Hamilton - Senior Engagement Advisor Judith Cheyne - Associate General Counsel
Approved By	Lynette Ellis - Manager Planning and Delivery Transport Richard Osborne - Head of Transport Peter Langbein - Finance Business Partner David Adamson - General Manager City Services







23. Draft Council Submission on the Productivity Commission Paper on Local Government Funding and Finance

Reference: 19/157699

Presenter(s): Gavin Thomas, Principal Advisor Economic Policy and Diane Brandish, Head of Financial Management

1. Purpose and Origin of Report

Purpose of Report

- 1.1 The purpose of this report is for the Council to approve the draft submission on the Productivity Commission paper on Local Government Funding and Finance.

2. Staff Recommendation

That the Council:

1. [Approve the draft submission on the Productivity Commission paper on Local Government Funding and Finance.](#)

3. Key Points

- 3.1 This report supports the [Council's Long Term Plan \(2018 - 2028\)](#):

- 3.1.1 Activity: Strategic Planning and Policy

- Level of Service: 17.0.1.7 Advice to Council on high priority policy and planning issues that affect the City. Advice is aligned with and delivers on the governance expectations as evidenced through the Council Strategic Framework - Policy advice to Council on emerging an

- 3.2 The following feasible options have been considered:

- Option 1 – Approve the draft submission – Attachment A (preferred option)
- Option 2 – Don't approve the draft submission

- 3.3 Option Summary - Advantages and Disadvantages (preferred option)

- 3.1.1. The advantages of this option include:

- Provides clear support and endorsement of the SOLGM submission to the Productivity Commission

- 3.1.2. The disadvantages of this option include:

- The submission doesn't provide Christchurch-specific issues for the Productivity Commission to consider (though staff believe the SOLGM submission covers all matters well).

4. Background

Report into Local Government Funding and Finance

- 4.1 The NZ Productivity Commission has published an issues paper for its inquiry into local government funding and financing.

- 4.2 The issues paper briefly describes local government in New Zealand and how funding and financing currently works. It asks questions about current pressure points and ways that councils can manage cost pressures and seeks views on options for future funding and financing tools.
- 4.3 The Productivity Commission's paper can be found at:
https://www.productivity.govt.nz/sites/default/files/Local%20government%20funding%20and%20financing%20issues%20paper_FINAL.pdf
- 4.4 Submissions closed on 15 February 2019 but staff requested and received an extension through to March 2019. The extension was sought because key staff were fully utilised preparing the draft Annual Plan 2019/20.
- The Productivity Commission plans to release a draft report in June 2019 and deliver a final report to Government on 30 November 2019.
- 4.5 This is the first significant report into local government funding since the 2007 Local Government Rates Inquiry panel, chaired by David Shand.

Summary of issues raised in the Productivity Commission paper

- 4.6 The paper provides an outline of the inquiry scope, description of local government in New Zealand and funding and financing tools and trends before focusing on more specific cost drivers and options for managing those drivers and utilising funding tools.
- 4.7 The cost drivers focused on are:
- Population growth and decline
 - Tourism
 - An expansion of local government responsibilities
 - Treaty of Waitangi settlements
 - Climate change and other natural hazards
 - Rising prices
 - 'Non-core' expenditure
 - Other factors
- 4.8 Cost management approaches looked at are:
- Managing cost pressures through efficiency gains
 - Measures to improve affordability for specific groups
 - Allocation of costs across local communities
- 4.9 The paper then explores possible future funding and financing approaches.

Sector response

- 4.10 The Society of Local Government Managers (SOLGM) has provided the Productivity Commission with a submission that staff consider to be comprehensive and well-reasoned. The SOLGM submission is available from:
https://www.solgm.org.nz/Article?Action=View&Article_id=112
- 4.11 Key recommendations put forward by SOLGM in its submission are:
- Central government and local government are in the wellbeing business together – that requires a partnership approach that should include national funding for national good
 - Investigating alternative tax bases (such as a land tax) should not be a high priority

- Rates exemptions contained in the Local Government (Rating) Act 2002, including those on Crown land should be removed
- Environmental taxes send good economic signals that may aid in the pursuit of other objectives
- The establishment of a climate change adaptation fund is essential
- Some form of taxation of tourism may make a real difference to the ability of councils to provide infrastructure and services to cater for visitors with little real impact on the industry
- Local authorities should be permitted to toll any road – new or existing
- Enhancing elected members’ financial governance skills and knowledge at induction may enhance decision-making

Draft Council submission

- 4.12 The draft Council submission strongly endorses the SOLGM submission recommendations. The SOLGM submission provides comprehensive, well-reasoned recommendations that would significantly enhance the local government funding and finance situation. Furthermore the SOLGM recommendations would add knowledge and understanding about local government funding and rates in particular among elected members and the community.
- 4.13 Staff considered adding examples from Christchurch contexts to illustrate points made in the SOLGM submission but decided these would be more usefully discussed when the Productivity Commission makes its presentation to the Council on 27 March.

NZ Productivity Commission presentation

- 4.14 The Productivity Commission is in Christchurch to provide the Council with a presentation on the inquiry on 27 March 2019. The Productivity Commission has advised its representatives will likely include:
- Murray Sherwin (Chair) and other Commissioners
 - Steven Bailey (Inquiry Director) and members of the inquiry team.
- 4.15 This provides elected members and staff with the opportunity to discuss current funding issues in the Christchurch context and to ask questions and raise any other matters relevant to the inquiry. It is considered that this will provide a better means of raising issues and discussing in more depth than is possible through the presentation of a more detailed submission than the one proposed.

Attachments

No.	Title	Page
A ↓	DRAFT CCC Submission to Productivity Commission Inquiry into Local Government Funding and Finance	653

Confirmation of Statutory Compliance

Compliance with Statutory Decision-making Requirements (ss 76 - 81 Local Government Act 2002).

(a) This report contains:

- (i) sufficient information about all reasonably practicable options identified and assessed in terms of their advantages and disadvantages; and

- (ii) adequate consideration of the views and preferences of affected and interested persons bearing in mind any proposed or previous community engagement.
- (b) The information reflects the level of significance of the matters covered by the report, as determined in accordance with the Council's significance and engagement policy.

Signatories

Authors	Gavin Thomas - Principal Advisor Economic Policy Judith Cheyne - Associate General Counsel
Approved By	Diane Brandish - Head of Financial Management Carol Bellette - General Manager Finance and Commercial (CFO)



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DRAFT updated 25 February 2019 ¶

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15 March 2019 ¶

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New Zealand Productivity Commission ¶

Level 15, Fujitsu Tower, ¶

141 The Terrace, Wellington 6011 ¶

PO Box 8036, Wellington 6143 ¶

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Email: info@productivity.govt.nz ¶

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Christchurch City Council submission on the Inquiry into Local Government Funding and Finance – Issues Paper ¶

¶

Introduction ¶

1. → Christchurch City Council (the Council) thanks the NZ Productivity Commission for the opportunity to provide comment on its issues paper. The Council values the analysis and advice the NZ Productivity Commission provides on matters of importance to the Government and to New Zealand as a whole. This inquiry has the potential to make a significant and enduring change to how local government is funded and to the way local government and central government work better together. ¶
2. → The Council looks forward to the Commission team visiting Christchurch in March to provide a presentation on the inquiry. We trust this will provide an excellent opportunity for a meaningful exchange of ideas on what is a complex topic. ¶

Submissions ¶

3. → The Council makes this submission in support of the submission made by the Society of Local Government Managers (SOLGM). The SOLGM submission provides an excellent appraisal of the key issues and provides thoughtful responses and suggestions for change. ¶
4. → In summary, the key points raised by the SOLGM submission that the Council would like to draw the Commission's attention to are: ¶
 - → **Partnership** – Central government and local government are in the wellbeing business together. This requires a partnership approach that should include national funding for national good. Taking a partnership approach will enable local government to contribute more effectively to improving community wellbeing in ways that benefit wider New Zealand and reduce the call on the government in areas such as health, housing and policing. ¶
 - → **Prioritise** – Investigating alternative tax bases (such as a land tax) should not be a high priority. The SOLGM submission details ways in which the current approach to rating can be supplemented and reconfigured to provide improved value for money and outcome achievement for communities. ¶
 - → **Equity** – Rates exemptions contained in the Local Government (Rating) Act 2002, including those on Crown land should be removed. Rate exemptions should be a decision for individual councils and communities. ¶
 - → **Sustainability** – Environmental taxes send good economic signals that may aid in the pursuit of other objectives. Achieving behaviour change through these price signals

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www.ccc.govt.nz ¶

DRAFT updated 25 February 2019

and allocating the revenue to further pursue environmental objectives makes compelling good sense.

- **Climate change adaptation** – The establishment of a climate change adaptation fund is essential. Local government cannot fund this on its own.
- **Sustainable tourism** – Taxing tourism may make a real difference to the ability of councils to provide infrastructure and services to cater for visitors with little real impact on the industry. The most effective and efficient way of doing this seems to be to provide councils with the ability to levy a visitor charge (or bed tax) through accommodation providers. This enables the revenue to be applied to providing infrastructure and services at the local level. This needs to be complemented by appropriate funding from central government (ideally from an additional local tax or levy collected through the mechanisms that are used to collect GST revenues) to support the further development of New Zealand as a compelling visitor destination.
- **Enhancing elected members' financial governance skills and knowledge at induction** may enhance decision making

Conclusion

5. → The Council appreciates this inquiry is at an early information gathering and testing stage and that the Commission will produce a draft report in June that will again provide opportunity for feedback. The Council will provide more detailed feedback at that point.
6. → At this point the Council urges the Commission to take the feedback and suggestions provided by SOLGM as being considered and thoughtful and that it should strongly flavour the Commission's draft report.
7. → Christchurch is a city that has had significant unforeseen call on its finances and the Council has had to test its own thinking with respect to funding and finance. In doing this it has been clear that central government partnership and funding is essential to establish a more sustainable future for New Zealand's communities. This can be done in a measured and strategic way to ensure community wellbeing is optimised at a cost that the community can bear.

¶

The Council looks forward to Commission representatives coming to Christchurch and making its presentation to staff and elected members.

Thank you again for the opportunity to provide this submission at this early stage of the inquiry.

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If you require clarification on points within this submission please contact Diane Brandish, Head of Financial Management at diane.brandish@ccc.govt.nz.

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Yours faithfully

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Lianne Dalziel

MAYOR OF CHRISTCHURCH

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24. 2018/19 Metropolitan Discretionary Response Fund application from Living Springs

Reference: 19/192636

Presenter(s): Gary Watson, Community Partnerships and Planning Manager
Sam Callander, Team Leader Community Funding

1. Purpose of Report

- 1.1 The purpose of this report is to inform the Council of the decision by Living Springs to withdraw their application to the Metropolitan Discretionary Response Fund and advise their intention to present an application to the Capital Endowment Fund Scheme, to be considered by the Council on 28 March 2019.

2. Staff Recommendations

That the Council:

1. Receive the information.

3. Key Points

- 3.1 The Council resolved that the application to the Discretionary Response Fund from Living Springs presented on 14 February 2019 be left to lie on the table to enable staff to investigate other funding options including the Capital Endowment Fund and Community Loan Scheme.
- 3.2 Following discussions with Living Springs and other funding partners Living Springs will bring an application to the Capital Endowment Fund for Council consideration on 28 March 2019.

Attachments

There are no attachments for this report.

Signatories

Author	Gary Watson - Manager Community Partnerships and Planning
Approved By	John Filsell - Head of Community Support, Governance and Partnerships Mary Richardson - General Manager Citizen and Community

25. Chief Executive's Report - February 2019

Reference: 19/194588

Presenter(s): Karleen Edwards, Chief Executive

1. Purpose of Report

- 1.1 This Chief Executive's Report provides a summary of the Council's organisational performance for February 2019.

2. Recommendation to Council

That the Council:

1. Receive the report.
2. Notes that Christchurch City Council has been approached to be the New Zealand lead city for The Big Sleep Out event in December 2019, and the Chief Executive has approached the Christchurch City Mission to deliver this event in a partnership.
3. Approve Council's leadership of The Big Sleep Out event, and delegate to the Chief Executive the decision-making responsibilities for the event.

Attachments

No.	Title	Page
A ↓	Chief Executive's Report - February 2019	658

Signatories

Author
Karleen Edwards - Chief Executive

Chief Executive's Report to Elected Members

—
February 2019

Chief Executive's Foreword

Christchurch residents and visitors to our city were spoiled once again this month by wonderful weather and a stunning array of events – some sombre and reflective and others celebrating the diversity of Christchurch and the best the city has to offer.

Town Hall re-opening

An undoubted highlight was the official opening of the Christchurch Town Hall on Saturday 23 February.



It was one of the more emotional “re-openings” of the last eight years and feedback has been overwhelmingly positive. The general consensus, as people wandered through the building, sharing fond memories of the “old” Town Hall, was that holding on to this familiar and much loved piece of heritage has been well worthwhile. More than

11,000 people toured the newly restored building over the two public open days. We have spent the last three years strengthening, repairing and restoring the 47 year-old building to bring it up to modern standards, and it is good that the city is celebrating this incredible milestone. Congratulations to all of those who been involved in this journey.

Waitangi Day Citizenship Ceremony

On Waitangi Day we welcomed 49 new citizens from 12 countries at a beautiful citizenship ceremony held at Ōnuku Marae, overlooking Akaroa Harbour. Special guests included the Governor-General Dame Patsy Reddy and Ngāi Tahu elder Sir Tipene O'Regan and in spite of some chilly winds, it was a warm and inclusive occasion.



The World's Big Sleep Out

The Council has been approached to be the New Zealand face of The World's Big Sleep Out- a global event to tackle homelessness. I am

recommending that Council resolve to be the New Zealand city to lead the event (see the recommendation in the cover report above). I have approached the Chief Executive of the Christchurch City Mission to partner with them, and I am pleased to advise that the City Mission are in agreement with this approach.

The Sleep Out is international in nature (London, Edinburgh, New York and other global cities have signed up) scheduled for Saturday 7 December 2019. It is being launched on 13 March in Edinburgh by Malala Yousafzai.

The aim is to raise money globally, and locally, for charities tackling homelessness and refugee crises internationally. In addition the aims are to promote compassionate policy and find solutions for that homelessness and refugee issues.

The Saturday 7 December event itself focuses on the public sleeping out, on the night, globally.

22 February Commemorations

Friday 22 February was the eighth anniversary of the 2011 Canterbury earthquake. The anniversary was marked with a civic memorial service which took place on the north bank of Ōi Manawa – the Canterbury Earthquake National Memorial. The Council-organised gathering was hosted in partnership with the Quake Families Trust. The theme of this year's service was caring for each other and rekindling the spirit of kindness and

community which flourished in the immediate aftermath of the earthquakes. A minute's silence at 12.51pm marked the time the quake struck. During the service, the names of the 185 people who lost their lives were read out from the Memorial Wall.

Water update

At the end of February, the Council agreed to introduce water restrictions after receiving advice that reducing the usage of water across the city will help us with our endeavours to remove chlorine from the city's water supply.

Level three water restrictions were introduced across Christchurch, effective from Monday 4 March to Friday 31 May, to help keep water use down to assist while critical work is done to upgrade the city's well heads. Level three restrictions mean that residents will be allowed to water their lawns and gardens on alternate days only, using hand-held hoses. Unattended hoses, sprinklers or garden irrigation systems cannot be used.

We are mindful of how we ourselves as an organisation use water in our public spaces such as Hagley Park and the Botanic Gardens, taking steps such as reducing watering frequency for some areas, and watering during cooler parts of the day (noting that some of our water use is not taken from the public supply). We are also

working with other organisations such as Ōtākaro about how they can use water more effectively.

The well head remediation programme's timetable for the removal of temporary chlorine treatment should have approximately 90 percent of the water supply delivered from secure wells, and consequentially chlorine free, by May 2019; and 100 per cent of the winter demand water supply from our wells by October 2019.

Canterbury Multi Use Arena

Council staff, Government officials and consultants held a series of stakeholder engagement workshops in February to seek input from the organisations that will potentially be using the Multi Use Arena and update them on how the investment case is progressing. Attendees were shown some possible concepts for the Multi Use Arena. Stakeholder feedback from these and other workshops will help inform decisions on the design of the Arena. The Government has earmarked \$220m of the \$300m Christchurch Regeneration Acceleration Facility for the Multi Use Arena, subject to investment case approval. The investment case is due to go before the Government around mid-year, after being fast-tracked last April.

Ngā Puna Wai

This month the new Ngā Puna Wai sports hub hosted its first major event, the FIH Hockey Pro League, with the Black Sticks taking on the world

on our turf. The Council made its bid for the games while the facility was still in development, and it's been incredibly gratifying for the project team and our sports partners to see nearly 10,000 people descend upon the new venue for the games, and to see the facility televised live in New Zealand and throughout the world.

The official opening of Ngā Puna Wai will be held on 8 March 2019.

Fire restrictions

Fire restrictions continue across Canterbury, with a total fire ban being put in place across the Christchurch City area, including Banks Peninsula. The ban prohibits any outdoor fires being lit in both rural and urban areas. Any concerns about fire risk in overgrown sections of private land must be reported to FENZ.

Annual Plan consultation

Elected members approved the Draft Annual Plan 2019/20 for consultation on 12 February. The draft plan reflects a strong desire to reduce rates increases, remove chlorine from the city's drinking water and to focus attention on roads, footpaths and parks. A lot of work has been invested in keeping the average residential rates increase to 4.96 per cent (average 4.92 per cent for residential rates), which is lower than the 5.5 per cent forecast for this year in our Long Term Plan 2018-28. The Draft Annual Plan opened for community consultation from 1 March for the

whole month, with hearings planned in April.

Lime scooters

Following a successful summer trial of e-scooters, on 28 February the Council agreed to give Lime a 12-month permit to trade in Christchurch. Under the terms of the permit approved by the Council, Lime will have to pay a standard rental charge for the use of its scooters. The door has also been left open for other scooter share companies to operate in Christchurch. The number of scooters permitted in the city will however be capped at 1600.

Diversity in the city

A number of events were held in the city this month, showcasing the incredible diversity of those who now call Christchurch home. Around 55,000 people attended the South Island Lantern Festival, which this year started at the Bridge of Remembrance and headed all the way down the City Promenade into Victoria Square and The Commons. This proved to be a very successful location for the event which was a wonderful opportunity to experience Chinese culture, with vibrantly coloured lanterns lighting up the central city. This Festival is part of Christchurch's Chinese New Year celebrations, and this year marked 2019 as the year of the Pig.

The Night Noodle Markets also made a welcome return to Hagley Park and the iconic fireworks and music event, Sparks, delighted families once again this year with an estimated 55,000 people attending.

Strategy and Transformation

Urban regeneration, design and heritage

Heritage Strategy

In December 2018, the Hearings Panel for the Council's new Heritage Strategy completed its work and a formal report is being presented to Council in late February 2019 summarising the public submissions and how they have been incorporated into the strategy document where appropriate. It is hoped that the document, produced in partnership with Ngāi Tahu, will be formally adopted by both parties prior to World Monuments Day on the 18th April 2019.

Central City Action Plan

This month:

- A Central City Activator commenced work on 4 February, in a short term capacity to end June 2019.
- Four barrier sites were removed from the barrier sites list.
- A 'best for city', cross agency decision making framework was agreed by the City Executives.

Summer Village master plan

Two community drop-in sessions were held in mid-February ahead of works starting on the streetscape enhancement project through the commercial centre.

Main Road master plan

Consultation has commenced on a draft landscape plan for Scott Park in Ferrymead, to make the space more user-friendly.

Enliven Places Programme

The final pop-up garden has been installed in Cathedral Square: Stained Glass Garden designed by Tamsin Harrington features tinted acrylic set within laser-cut steel panels to create the look of a stained glass walkway surrounded by lush greenery. The trio of gardens has so far been well enjoyed by visitors to the square.



A short video has been released to promote the Enliven Places Projects Fund and celebrate a few

of the community led projects funded to date. It is available on our Facebook page at: <https://www.facebook.com/ChristchurchCityCouncil/videos/315660082488089/>

Citizens and Community

Capital Delivery

Property Council of New Zealand awards

Aecom has entered Tūranga and RTDT have entered Taiora QEII into the Property Council of New Zealand awards. Judging commences Monday 25 March with the announcements scheduled for Friday 14 June.

Community Support, Governance & Partnerships

Culture Galore

The 17th Culture Galore festival was held at Ray Blank Park on 23 February. Over 6000 people attended to enjoy the colourful and vibrant performances, the tasty ethnic cuisine and free children's activities. With five new performing groups on stage this year and new food vendors, the park was extremely busy with the community enjoying the cultural diversity of our city.

Youth Pool Party Jellie Park

Despite the cooler weather, local youth groups enjoyed our annual Jellie Park Pool Party on 15 February. The event featured great music, dancing and a 'bomb' competition. Thank you to Hellers for providing free sausages for the barbecue.

Parklands at Play

The sun came out for the annual Parklands@Play event on 17 February at Parklands Reserve. There were entertaining performances from local schools, clubs and bands and plenty of free activities provided for the kids by local organisations and the Council.

This event is a great example of community recreation working in partnership with key local organisations to plan and deliver another popular and well attended event.

Youth Initiative Fund

On 21 February, leaders from the youth sector gathered at the Riccarton Park Function Centre to celebrate and showcase some of the incredible work carried out as a result of funding from the Youth Initiative Fund.

Councillor Anne Galloway spoke to the attendees about council's support of the programme, and how the strength of Christchurch's youth sector continues to show itself across the city.

The Initiatives started by the fund have continued to grow, with some set to showcase in the coming months, such as the Christchurch Youth Council-led '[Amazing Race](#)' on March 31.

Customer Services

January was busy again for Customer Services, despite the New Year holidays, with almost 46,000 calls and emails handled in the Contact Centre and over 9,000 transactions processed at our Service Desks.

A number of outages, both planned and unplanned, had an impact on our ability to fully support our customers in January. We continue to work with our technology providers to deliver system improvements and mitigate the disruption caused to our citizens.

Planning is also underway to complete a review of processes and handling time for Service Requests to understand and ensure a positive citizen experience and efficient management of resources.

The Fendalton Service desk is about to undergo a replacement of the heating and ventilation equipment (Hvac), as part of a 10 year programmed refurbishment, between 4 March and 28 July. In the interim, the Service Desk will re-locate to Fendalton Village, Ilam Road (only 500 metres away). All of the same services will be

available in the temporary location, which includes the New Zealand Post Services, and the hours of operation are the same (Monday to Friday, 9am – 5pm).

Planning has been completed this month for NZ Postal Services to be offered at the Papanui Service Centre from 1 February. Additional bill paying servicing are planned for the end of May.

Libraries

The Christchurch Documentary Project: Woolston, 2019

Between March and September this year photography students from the University of Canterbury's School of Fine Arts will be photographing the Woolston area for the Christchurch Documentary Project. This project is a collaboration between Christchurch City Libraries and the School of Fine Arts to create a documentary photographic record of communities across our city.

The full collection of images will be available to view on the Library website from mid-November and an exhibition of a selection of images will be shown from mid-November through December.

Lunar New Year Celebration of Culture

A Lunar New Year "Celebration of Culture" event was held at Te Hāpua on 9 February. The colourful event included over 160 performers from many different community groups who all share significant Lunar New Year traditions; from China to Vietnam, to Korea and Taiwan. The community embraced the day with over 300 spectators. There was a great vibe of warmth and celebration and everyone was excited to participate.

A project team from Libraries liaised with a number of community groups in the months building up to the event to plan all of the elements making this a special celebration of music, dance and culture.

Libraries celebrations for "2019 the Year of the Pig", continued through until February 26 with a range of events being held around the Libraries network, including special bilingual Storytimes and Chinese traditional arts, colouring in pictures and pig stamps.



Tūranga Scrabble Club and Board Games Club

Mondays have become a busy day for gamers at Tūranga, with staff hosting both the Scrabble Club in the morning at 10:30am and the Board Games Club in the evening at 5:00 pm.

The first few weeks of the two clubs have received extremely positive feedback from customers who say they'll continue to regularly attend.

Both clubs have drawn in a variety of age groups from within the community who are having fun learning new games or replaying some of the old classics. A successful space has been created for patrons to socialise or get very competitive with each other (if they choose too)!

Parks

A warm, dry summer ensured the Regional Parks team have been kept very busy with lots of recreational users of beaches and lakes. Events such as 'Summer in the Styx' and 'Farewell the Godwits' were very well attended. ⁴

With the unusual vigorous vegetation growth, the Parks team continue to mow, cut and line trim tracks and park areas.

Recreation & Sports

Deep South Lazy Sundays

Beautiful weather, all ages welcome, and free admission saw 3000 thousand people attend the Deep South Lazy Sundays event in the Botanic Gardens on Sunday February 3.

Ngā Puna Wai

On 23 February, Ngā Puna Wai hosted the Warriors at its new Rugby League facility.



The Warriors team said the ground and facilities were better than those they use in Auckland – even though they played on the community fields, not the sand based fields. The Warriors also used Hockey & Athletics' changing facilities rather than the Rugby League's changing spaces. We are

looking forward to the feedback when they get to use the dedicated spaces and places.

Sparks – Free Bus Trial

Over 55,000 citizens turned out for this year's Sparks, held on Saturday February 16. This year the Events Team trialled a new initiative in partnership with ECan to provide free busses. Using 8 routes across the city and 24 buses, we transported people home after the event, from Sumner to Northwood, New Brighton to Hornby.



Summertimes Events Programme

The Events and Arts team have once again produced a wonderful programme of Summertimes events for the city. Summer staples included New Year's Eve, City Sounds, Lazy Sundays, Kite Day, Sparks, Summer Theatre and,

in conjunction with ChristchurchNZ, the South Island Lantern Festival.

The Events Partnerships & Development Team also worked closely with event organisers and council staff to ensure events like International Cricket, Bread & Circus, the Wine & Food Festival, Holi Festival, Night Noodle Markets, multiple concerts in Hagley Park, and Nostalgia continue to be delivered to a high standard.

SwimSmart Membership

In February we reached a milestone of over 5000 SwimSmart memberships. The Swim Education team have worked very hard on each component of the SwimSmart programme. The skills developed through our programmes provide essential water safety skills to the next generation of Kiwis, increasing confidence and enjoyment of being in around water.

Civil Defence & Emergency Management

Nelson/Tasman Bushfire Response

On 6 February, the Council's Civil Defence Emergency Management Unit received a request from Canterbury's Civil Defence Group requesting personnel to travel to the Nelson/Tasman area to assist with the bushfire response. Eleven

Response Team members and three Emergency Operations Centre (EOC) personnel were deployed. The Response Team members undertook a variety of tasks including participation in patrols in the Wakefield area to reassure residents along with managing cordons and undertaking property checks in the Eves Valley. The presence of the teams was well received by both local residents and emergency services personnel. The note of appreciation was written by a local resident (aged 10) and included in one of the lunch packs distributed to the team.

A further request was received on 13 February for Response Team personnel and three team members were deployed to assist with the management of cordons. On February 21, a further Christchurch City Council C10 Team Member was activated for a second deployment as Public Information Manager.



A note of appreciation from a local resident

Canterbury 10

Nine people have been selected to attend the Canterbury 10 (C10) training course, which is scheduled to take place at the end of March. C10 is a team of trained Emergency Operations Centre (EOC) personnel from 10 territorial authorities across Canterbury who can assist in the management of emergencies, both within Canterbury and further afield. This week-long course will be managed and run by the Canterbury CDEM group.

In addition to the C10 training course, EOC2 and EOC3 training has been scheduled for the coming weeks.

South Brighton Preparedness Day

On 16 February, the CDEM Community Resilience Coordinators participated in the South Brighton Preparedness Day to talk to residents about emergency preparedness, in particular about tsunami preparedness and Emergency Mobile Alerts. The event was organised by a community group, Sustain South Brighton, and it gave local residents a wonderful opportunity to ask questions or get information on emergency preparedness from Civil Defence as well as from other agencies who attended the event.

Christchurch Art Gallery

Quasi, the five metre tall, steel, polystyrene and resin sculpture by artist Ronnie van Hout, has been moved from the location it has sat atop the Art Gallery since June 2016, and is now on its way to sit on top of Wellington's City Gallery from May.



Vbase

Phil Collins

Earlier in the month Vbase played host to 25,000 guests at the Phil Collins concert, held at the Christchurch Stadium. It was a magical evening enjoyed by all with a very special performance from Phil and his supporting band. With over 40 percent of attendees from outside the Canterbury region, it was a fantastic opportunity for guests to see how well Christchurch runs events.

Christchurch Town Hall Opening



The extremely memorable and iconic Christchurch Town Hall reopened to the public with the Mayor officially opening this with a Ribbon Cutting ceremony on Saturday February 23. Following the ribbon cutting, Vbase hosted the Public Open Days on both the Saturday and Sunday. The public embraced the chance to reconnect with this iconic building with an official

count of 11,329 citizens being shown through the building over the two days.

Consenting and Compliance

Building consenting

2452 building consent applications were processed in January, and 97.9% of those were processed within the 20 day statutory timeframe. 302 Code Compliance Certificates were processed with 98.3% processed within the statutory timeframe.

Earthquake Prone Buildings

By the end of January 2019 there were 602 buildings on the national earthquake prone buildings register. During January there were four Christchurch buildings added, and ten removed due to structural strengthening being completed. We only sent one 133AH notice to an owner requesting a Detailed Seismic Assessment report to clarify the earthquake prone building status of their building. The register is available at: <https://epbr.building.govt.nz/>.

Building Warrants of Fitness

During January there were eight audits completed, making a total of 140 audits carried out this financial year.

Eco-Design Advice (EDA)

The Eco-Design service continues to be popular, with 31 individual consultations carried out in January, against a target of 25. The EDA service staff are in the midst of planning for the 2019 National EDA Conference, which will be hosted by Auckland Council.

Resource Consents

Application numbers decreased in January to 186 (down from 229 in December), which is a typical seasonal decrease. 100 percent of applications processed in January were processed within the 20 day statutory timeframe. This result is above the 99 percent target.

Included in the decision letter for every resource consent is a link to an electronic survey, which provides feedback on the service and fees into our continuous improvement programme. For this financial year to date, 85 percent of applicants were satisfied with the service.

City Services

Three Waters and Waste

Lyttelton Harbour Wastewater Pipeline scheme

McConnell Dowell (MCD) is completing the last of the construction items in the road tunnel portion of the works. MCD have completed the physical works on the sub-marine and associated land based for the new pipelines between Diamond Harbour and Lyttelton and Governors Bay and Lyttelton.

Fulton Hogan is progressing with works at Diamond Harbour and Governors Bay wastewater treatment plants to convert them to pump stations. In February they are commissioning the Governors Bay pipeline, making it the first of the treated discharge to be removed from the harbour.

Works on the new Simeon Quay pump station will start in March. The works on the pipeline from the road tunnel to Alport place start in March, with completion expected by the end of 2019.

Riccarton Road Upgrade (Harakeke to Matipo)

Construction began in February. Water supply works are expected to get underway in March 2019 and the wastewater works are due to begin in April 2019. The project runs until December 2020.

Colombo and Beckenham Wastewater Scheme

Seipp Construction has completed 1,023m of the 1,490m of new wastewater main. They are now working on Colombo Street, between Fisher Ave and Ashgrove Tce, before carrying out the Heathcote River crossing works. Works are expected to be complete in June.

Tuam Street Brickbarrel Renewal

Physical works are starting in March and expected to run for twelve months. This project will see the removal and replacement of 740m of one of Christchurch's brick barrel sewers, which was installed in the 1880s.

Akaroa wastewater scheme

An inner harbour re-use option has been developed for the Akaroa wastewater scheme. This involves a combination of reducing wastewater flows (through reducing stormwater

and groundwater getting into our wastewater network, and reducing water demand), non-potable re-use within Akaroa, irrigation to land in Robinsons Bay and Takamatua Valley, and a wetland for additional treatment and storage. We expect public consultation on this and the other options (irrigation to land in the Eastern Bays and a harbour outfall) to start in April, with a hearings panel in June/July.

Public consultation on the proposal to irrigate treated wastewater from Duvauchelle to the golf course will start in April. This is the only practical land based alternative to the existing harbour outfall.

Land Drainage

Comprehensive Stormwater Network Discharge Consent (CSNDC) application

CCC submitted its written right of reply, finalised conditions, and finalised Environmental Monitoring Programme on 1 March, with a decision from the hearing panel possible by the end of March.

City Wide Modelling Project

The City Wide Modelling project successfully delivered the Avon River component of the model. This is critical for the ongoing work on options for

floodplain management in the Residential Red Zone and the surrounding areas.

There will be a number of Land Drainage Recovery Programme projects celebrating their completion in the coming months. These include the Richardson Terrace Pump station (Bells Creek catchment), No. 1 Drain (Horseshoe Lake catchment) and Cranford Basin Active Management (Dudley Creek catchment). There will be opening celebrations to recognise the added protection granted to the community, and the additional water quality benefits provided by these facilities.

Solid Waste

As of 12 February 2019, 407,419 wheelie bins have been fitted with RFID tags representing a completion rate of 85.9% and on target for the three year project completion. 6,531 additional bins have been removed from circulation as of this date.

Summer groundwater and surface water monitoring took place at Burwood Landfill, all results were below trigger values, with no actions required.

Record volumes of Kerbside Organics were collected at 5,715 tonnes for December 2018

(4,202 tonnes December 2017) and 5,435 tonnes for January 2019 (5,232 tonnes January 2018).

Wastewater Treatment Plant

The Christchurch Wastewater Treatment Plant performed well in February. The prolonged dry spell has caused no significant issues with odour generation or plant performance.

The warm weather has resulted in an increase in the temperature of the oxidation ponds which has caused a jump in the number of midges emerging from the ponds. This has also been an associated increase in the number of midge complaints and a media requests for information. The midge control programme is continuing with regular updates provided on the Council's [website](#).

Water Supply

February has seen the highest water demand for the summer season so far, with a peak of over 200,000m³/day being pumped into the city's reticulation.

Reticulation and Maintenance

During the week of 25 February, there were four water mains that burst in Diamond Harbour within the space of 48 hours. Investigations showed a fault with a pressure reducing valve which is believed to have increased the pressure of the mains causing the failures.

We continue to see an increase in water jobs and as a result our contractor is continuing to be stretched. City Care has increased resources with an additional six crews working over the weekend, it is expected they will get through an additional 100 jobs. The trend looks like it is flattening out. Our contractor still has a significant number of jobs to be completed and as a result of the backlog we could expect continued complaints.

Asset Management

The team are continuing to update the Water Safety Plans in order to satisfy the Ministry of Health's Water Safety Plan Framework requirements.

Work continues to document the asset handover processes and to build the workflow processes for Pumping Stations & Wells, Local Pressure Sewer Systems and Reticulation assets.

Work also continues on the roll-out and testing of the new controlled document register systems, these are also supporting the new 3 Waters maintenance contract.

Corporate Services

Project Management

The SCIRT GIS Viewer was created in 2013 as a stand-alone system to support the SCIRT Alliance. This viewer provided people with access to spatial information about our Council utility network assets for water supply, storm water and waste water – and helped SCIRT to plan and manage projects in/around our Council assets. With declining use, aging technology and many data layers becoming out of date, it was time to retire/decommission this viewing tool.

We have transitioned to our new Council spatial platform and worked with key stakeholders across the Council to identify and prioritise the critical utility asset information layers and functionality that was still needed from the old system. This valuable information is now available on our new publicly-available GIS platform, which also includes a self-service portal, where people can copy layers and create new layers. We have also created a new public -facing, fully open viewer that lets our external partners and anyone else, access this Utility Network Asset information when they need it. The map is available online at <https://gis.ccc.govt.nz/portal/apps/webappviewer/index.html?id=57a8069dc3534b86b986860b01401150>.

