Urban Development and Transport Committee
AGENDA

To adhere to Covid-19 alert level restrictions, updates on public access to the meeting will be provided to ensure meetings adhere to requirements. Updates can be found on the Council website: www.ccc.govt.nz

Notice of Meeting:

An ordinary meeting of the Urban Development and Transport Committee will be held on:

Date: **Thursday 7 October 2021**
Time: **9.30am**
Venue: **Council Chambers, Civic Offices, 53 Hereford Street, Christchurch**

Membership

Chairperson	Councillor Mike Davidson
Deputy Chairperson	Councillor Phil Mauger
Members	Mayor Lianne Dalziel
	Deputy Mayor Andrew Turner
	Councillor Jimmy Chen
	Councillor Catherine Chu
	Councillor Melanie Coker
	Councillor Pauline Cotter
	Councillor Anne Galloway
	Councillor James Gough
	Councillor Yani Johanson
	Councillor Aaron Keown
	Councillor Sam MacDonald
	Councillor Jake McLellan
	Councillor Tim Scandrett
	Councillor Sara Templeton

7 October 2021

Principal Advisor
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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.

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Ōtautahi–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

Principles

- Being open, transparent and democratically accountable
- Promoting equity, valuing diversity and fostering inclusion
- Taking an inter-generational approach to sustainable development, prioritising the social, economic and cultural wellbeing of people and communities and the quality of the environment, now and into the future
- Building on the relationship with Te Rūnanga o Ngāi Tahu and the Te Hononga–Council Papatipu Rūnanga partnership, reflecting mutual understanding and respect
- Ensuring the diversity and interests of our communities across the city and the district are reflected in decision-making
- Actively collaborating and co-operating with other local, regional and national organisations

Community Outcomes

Resilient communities

- Strong sense of community
- Active participation in civic life
- Safe and healthy communities
- Celebration of our identity through arts, culture, heritage, sport and recreation
- Valuing the voices of all cultures and ages (including children)

Liveable city

- Vibrant and thriving city centre
- Sustainable suburban and rural centres
- A well connected and accessible city promoting active and public transport
- Sufficient supply of, and access to, a range of housing
- 21st century garden city we are proud to live in

Healthy environment

- Healthy water bodies
- High quality drinking water
- Unique landscapes and indigenous biodiversity are valued and stewardship exercised
- Sustainable use of resources and minimising waste

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

- **Enabling active and connected communities to own their future**
- **Meeting the challenge of climate change through every means available**
- **Ensuring a high quality drinking water supply that is safe and sustainable**
- **Accelerating the momentum the city needs**
- **Ensuring rates are affordable and sustainable**

Ensuring we get core business done while delivering on our Strategic Priorities and achieving our Community Outcomes

- Engagement with the community and partners
- Strategies, Plans and Partnerships
- Long Term Plan and Annual Plan
- Our service delivery approach
- Monitoring and reporting on our progress

URBAN DEVELOPMENT AND TRANSPORT COMMITTEE OF THE WHOLE - TERMS OF REFERENCE NGĀ ĀRAHINA MAHINGA

Chair	Councillor Davidson
Deputy Chair	Councillor Mauger
Membership	The Mayor and All Councillors
Quorum	Half of the members if the number of members (including vacancies) is even, or a majority of members if the number of members (including vacancies) is odd.
Meeting Cycle	Monthly
Reports To	Council

Delegations

The Council delegates to the Urban Development and Transport Committee authority to:

- Monitor and make decisions regarding the Council's Roads, footpaths and streetscapes in accordance with the Council's Long Term Plan.
- Monitor and make decisions on the Council's Transport functions including road operations, parking, public transport, cycle ways, harbours and marine structures in accordance with the Council's Long Term Plan.
- Make all decisions in connection with the Major Cycleway Routes programme, including final route selections and anything precedent to the exercise by the Council of its power to acquire any property, subject to:
    a. The Committee and affected Community Boards being briefed prior to any public consultation commencing on any Major Cycleway Route project.
- Receive regular updates from the Greater Christchurch Partnership Committee, and the Greater Christchurch Joint Public Transport Committee
- Make all decision in connection with the Lincoln Road (Wrights to Curletts) Project.
- Make decisions regarding the District Plan.

Bylaws

The Council delegates to the Committee authority to:

- Oversee the development of new bylaws within the Committee's terms of reference, up to and including adopting draft bylaws for consultation.
- Oversee the review of the following bylaws, up to and including adopting draft bylaws for consultation.
    - Cruising and Prohibited Times on Roads Bylaw 2014
    - Marine, River and Lake Facilities Bylaw 2017
    - Stock on Roads Bylaw 2017
    - Traffic and Parking Bylaw 2017

Submissions

- The Council delegates to the Committee authority:

- To consider and approve draft submissions on behalf of the Council on topics within its terms of reference. Where the timing of a consultation does not allow for consideration of a draft submission by the Council or relevant Committee, that the draft submission can be considered and approved on behalf of the Council.

District Plan Appeals

The Committee is authorised to:

- Consider and resolve any consent orders requested in respect of any proceedings before the Environment Court regarding any appeal on the Christchurch District Plan.
- Authorise counsel and Council witnesses to call evidence in support of a compromise position or positions in the alternative for the purpose of endeavouring to agree with the parties in terms of a consent order in respect of any proceedings before the Environment Court arising out of the Council's decisions on the Christchurch District Plan.
- Authorise any one or more officers holding the positions listed below to participate in a mediation of any proceeding before the Environment Court arising out of the First Schedule to the Resource Management Act 1991.
    - This authority shall include the power to commit the Council to a binding agreement to resolve the proceeding, provided it does not require any Council expenditure not authorised by a Council delegation. Part D - Sub-Part 1 – Community Boards 159 Delegation Date Amended
    - Any authority given under this delegation shall be on such terms and conditions as the Committee considers appropriate.

      Authorised positions:
        - Head of Legal
        - Associate General Counsel
        - Corporate Counsel
        - Head of Planning and Strategic Transport
        - Team Leader City Planning
        - Principal Advisors, Planning
        - The exercise of such delegated powers shall be reported to the Council on a six-monthly basis
- Authorise any two or more officers who, for the time being, hold any of the following positions to jointly consider, and resolve by consent order, any appeal to the Environment Court against a decision of Council on submissions to the Christchurch District Plan, where the appeal relates to an alteration of minor effect or the correction of a minor error.

  Authorised positions:
    - Head of Legal
    - Associate General Counsel
    - Corporate Counsel
    - Head of Planning and Strategic Transport
    - Team Leader City Planning
    - Principal Advisors, Planning
- Make decisions, on behalf of the Council, in relation to any High Court proceedings arising out of decisions by the Environment Court on the Christchurch District Plan provided such decisions are consistent with professional advice.

Limitations

- This Committee does not have the authority to set project budgets, identify preferred suppliers or award contracts. These powers remain with the Finance and Performance Committee.
- The general delegations to this Committee exclude any specific decision-making powers that are delegated to a Community Board, another Committee of Council or Joint Committee. Delegations to staff are set out in the delegations register.
- The Council retains the authority to adopt policies, strategies and bylaws.

Chairperson may refer urgent matters to the Council

As may be necessary from time to time, the Committee Chairperson is authorised to refer urgent matters to the Council for decision, where this Committee would ordinarily have considered the matter. In order to exercise this authority:

- The Committee Advisor must inform the Chairperson in writing the reasons why the referral is necessary
- The Chairperson must then respond to the Committee Advisor in writing with their decision.

If the Chairperson agrees to refer the report to the Council, the Council may then assume decision making authority for that specific report.

Part A **Matters Requiring a Council Decision**
Part B **Reports for Information**
Part C **Decisions Under Delegation**

TABLE OF CONTENTS

Karakia Timatanga

1. Apologies Ngā Whakapāha

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

2. Declarations of Interest Ngā Whakapuaki Aronga

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. Confirmation of Previous Minutes Te Whakaāe o te hui o mua

That the minutes of the Urban Development and Transport Committee meeting held on Thursday, 5 August 2021 be confirmed (refer page 9).

4. Public Forum Te Huinga Whānui

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

4.1 Phillipstown Community Centre Charitable Trust
Viviana Zanetti will speak on behalf of Phillipstown Community Centre Charitable Trust regarding Ferry Road.

4.2 Alex Downard-Wilke
Alex Downard-Wilke will suggest some initiatives he believes can reduce transport emissions.

5. Deputations by Appointment Ngā Huinga Whakaritenga

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.

6. Presentation of Petitions Ngā Pākikitanga

There were no petitions received at the time the agenda was prepared.

Christchurch City Council

Urban Development and Transport Committee
OPEN MINUTES

Date: Thursday 5 August 2021
Time: 9.31am
Venue: Council Chambers, Civic Offices, 53 Hereford Street, Christchurch

Present

Chairperson	Councillor Mike Davidson
Deputy Chairperson	Councillor Phil Mauger
Members	Mayor Lianne Dalziel
	Deputy Mayor Andrew Turner
	Councillor Jimmy Chen
	Councillor Catherine Chu
	Councillor Melanie Coker
	Councillor Pauline Cotter
	Councillor Anne Galloway
	Councillor Yani Johanson
	Councillor Aaron Keown
	Councillor Sam MacDonald
	Councillor Jake McLellan
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Part A **Matters Requiring a Council Decision**

Part B **Reports for Information**

Part C **Decisions Under Delegation**

Karakia Timatanga: Given by Councillor Sara Templeton

The agenda was dealt with in the following order.

1. Apologies Ngā Whakapāha

Part C

Committee Resolved UDATC/2021/00008

That the apologies received from Councillor James Gough for absence, Councillor Sam MacDonald for lateness and Mayor Lianne Dalziel, Councillors Galloway and McLellan for early departure be accepted.

Councillor Cotter/Councillor Scandrett **Carried**

2. Declarations of Interest Ngā Whakapuaki Aronga

Part B

There were no declarations of interest recorded.

3. Confirmation of Previous Minutes Te Whakaāe o te hui o mua

Part C

Committee Resolved UDATC/2021/00009

That the minutes of the Urban Development and Transport Committee meeting held on Thursday, 1 April 2021 be confirmed.

Councillor Chen/Deputy Mayor **Carried**

4. Public Forum Te Huinga Whānui

Part B

There were no public forum presentations.

Mayor Lianne Dalziel arrives at the meeting at 9.33am during Item 5.1
Councillor Chu arrives at the meeting at 9.34am during Item 5.1

5. Deputations by Appointment Ngā Huinga Whakaritenga

Part B

5.1 Riccarton Bush-Kilmarnock Residents' Association

Tony Dale and Tony Simons will speak on behalf of Riccarton Bush-Kilmarnock Residents' Association regarding their concern about the scope of the National Policy Statement on Urban Development and request that areas of Riccarton Bush-Kilmarnock are determined to be a 'qualifying matter' by Council.

5.2 Helen Broughton

Helen Broughton will speak to the Committee in her personal capacity concerning housing intensification in Christchurch.

6. Presentation of Petitions Ngā Pākikitanga

Part B

There was no presentation of petitions.

Councillor Galloway leaves the meeting at 9.56am during consideration of Item 7.
Councillor MacDonald arrives at the meeting at 10.07am during consideration of Item 7.
Councillor MacDonald leaves the meeting at 10.37am and returns at 10.38am during consideration of Item 7.

7. Overview of the rules regarding Intensification

Committee Resolved without amendment UDATC/2021/00010

Part C

That the Urban Development and Transport Committee:

1. Receive the information in this Report and the staff presentation

Councillor Davidson/Councillor Johanson **Carried**

Mayor Lianne Dalziel and Councillor Jake McLellan leave the meeting at 10.43am during consideration of Item 8.

8. Central City Biannual Report January - June 2021

Committee Resolved without amendment UDATC/2021/00011

Part C

That the Urban Development and Transport Committee:

1. Receive this biannual update report on Central City regeneration activities and projects.

Councillor MacDonald/Councillor Templeton **Carried**

The meeting was adjourned at 11.05am. When the meeting reconvened at 11.21am Deputy Mayor Andrew Turner, and Councillors Davidson, Chen, Scandrett, Templeton, Cotter, Johanson, Chu, MacDonald, and Mauger were present.

Councillor Keown returned to the meeting at 11.24am during consideration of Item 15.

15. Transport Bi-Monthly Report to Urban Development and Transport Committee

Committee Resolved without amendment UDATC/2021/00018

Part C

That the Urban Development and Transport Committee:

1. Receive the information in the Transport Bi-Monthly report.

Councillor Cotter/Councillor Templeton **Carried**

9. Lichfield Street & Cashel Street - Parking and Stopping Restrictions

Committee Comment:

1. The Committee expressed reservations about the sufficiency of parking spaces outside the bus exchange and queried whether the taxi stop could be changed to a dual purpose loading zone/taxi stop.

2. The Committee amended the recommendation by adding recommendation 16 and requested staff monitor the effectiveness of changes implemented as a result of this resolution and provide a memorandum to elected members within six months.

Committee Resolved with amendment UDATC/2021/00012

Part C

For the purposes of the following resolutions: (1) an intersection is defined by the position of kerbs on each intersecting roadway; (2) 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 Urban Development and Transport Committee meeting of 5 August 2021; and (3) 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.

That the Urban Development and Transport Committee approve the following resolutions:

Lichfield Street (Manchester Street to Colombo Street, south side) –

1. Approves that all existing parking and stopping restrictions on the south side of Lichfield Street, commencing at its intersection with Manchester Street and extending in a westerly direction to its intersection with Colombo Street be revoked.
2. Approves, pursuant to Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the south side of Lichfield Street, commencing at its intersection with Manchester Street and extending in a westerly direction for a distance of 42 metres, as detailed on Attachment A.

3. Approves, pursuant to Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that a Loading Zone be created and be restricted to a maximum period of five minutes, on the south side of Lichfield Street commencing at point 42 metres west of its intersection with Manchester Street and extending in a westerly direction for a distance of 20.5 metres, as detailed on Attachment A. This restriction is to apply at any time.

4. Approves, pursuant to Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the south side of Lichfield Street, commencing at point 62.5 metres west of its intersection with Manchester Street and extending in a westerly direction for a distance of 61.5 metres, as detailed on Attachment A.

5. Approves, pursuant to Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that a Coach Stop be created on the south side of Lichfield Street commencing at point 124 metres west of its intersection with Manchester Street and extending in a westerly direction for a distance of 29 metres, as detailed on Attachment A.

6. Approves, pursuant to Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the south side of Lichfield Street, commencing at point 153 metres west of its intersection with Manchester Street and extending in a westerly direction for a distance of 27.5 metres, as detailed on Attachment A.

7. Approves, pursuant to Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that a Small Passenger Service Vehicle Stand be installed on the south side of Lichfield Street commencing at a point 180.5 metres west of its intersection with Manchester Street and extending in a westerly direction for a distance of 17 metres, as detailed on Attachment A. This restriction is to apply at any time.

8. Approves, pursuant to Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the south side of Lichfield Street, commencing at point 197.5 metres west of its intersection with Manchester Street and extending in a westerly direction to its intersection with Colombo Street, as detailed on Attachment A.

Cashel Street (West of Cambridge Terrace, north side) –

9. Approves that all existing parking and stopping restrictions on the north side of Cashel Street, commencing at its intersection with Cambridge Terrace and extending in a westerly direction for a distance of 52 metres, be revoked.

10. Approves, pursuant to Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the north side of Cashel Street, commencing at its intersection with Cambridge Terrace and extending in a westerly direction for a distance of 20 metres, as detailed on Attachment B.

11. Approves, pursuant to Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that a Small Passenger Service Vehicle Stand be installed on the north side of Cashel Street commencing at a point 19.5 metres west of its intersection with Cambridge Terrace and extending in a westerly direction for a distance of 32 metres, as detailed on Attachment B. This restriction is to apply at any time.

Cashel Street – (West of Manchester Street, north side)

12. Approves that all existing parking and stopping restrictions on the north side of Cashel Street, commencing at its intersection with Manchester Street and extending in a westerly direction for a distance of 28.5 metres, be revoked. Note 1 Applies.

13. Approves, pursuant to Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the north side of Cashel Street,

commencing at its intersection with Manchester Street and extending in a westerly direction for a distance of 22.5 metres, as detailed on Attachment C. Note 2 Applies.

14. Approves, pursuant to Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that a Loading Zone be created and be restricted to a maximum period of five minutes, on the north side of Cashel Street commencing at point 22.5 metres west of its intersection with Manchester Street and extending in a westerly direction for a distance of 6 metres, as detailed on Attachment C. This restriction is to apply at any time. Note 2 Applies.

General

15. Approves that the restrictions in 1 through 14 above come into force when there is evidence the signs and/or marking restrictions are in place.

16. Request staff to provide a memo to elected members after six months on the effectiveness of these changes.

Councillor Mauger/Councillor Templeton **Carried**

10. Cashel Street, Barbadoes Street to Fitzgerald Avenue - Parking Restriction Review

Committee Resolved without amendment UDATC/2021/00013

Part C

That the Urban Development and Transport Committee:

1. Approves that any previously approved resolutions on both sides of Cashel Street from its intersection with Barbadoes Street to its intersection with Fitzgerald Avenue, pertaining to parking restrictions and stopping restrictions made pursuant to any bylaw, to the extent that they are in conflict with the parking and stopping resolutions described in recommendations 2-9 below, are revoked.

2. Approves that the stopping of vehicles be prohibited at any time, in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, on the north side of Cashel Street commencing at its intersection with Barbadoes Street and extending in an easterly direction for a distance of 8.5 metres.

3. Approves that the parking of vehicles be restricted to a maximum period of 60 minutes in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, on the north side of Cashel Street commencing at a point 8.5 metres east of its intersection with Barbadoes Street and extending in an easterly direction for a distance of 310 metres. This restriction is to apply 8am to 6pm, Monday to Saturday.

4. Approves that the stopping of vehicles be prohibited at any time, in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, on the north side of Cashel Street commencing at a point 318.5 metres east at its intersection with Barbadoes Street and extending in an easterly direction to its intersection with Fitzgerald Avenue.

5. Approves that the stopping of vehicles be prohibited at any time, in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, on the south side of Cashel Street commencing at its intersection with Fitzgerald Avenue and extending in a westerly direction for a distance of seven metres.

6. Approves that the stopping of vehicles be prohibited at any time, in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, on the south side of Cashel Street commencing at its intersection with Clarkson Avenue and extending in an easterly direction for a distance of 10 metres.

7. Approves that the stopping of vehicles be prohibited at any time, in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, on the south side of Cashel Street commencing at its intersection with Clarkson Avenue and extending in a westerly direction for a distance of 12 metres.

8. Approves that the parking of vehicles be restricted to a maximum period of 60 minutes in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, on the south side of Cashel Street commencing at a point 12 metres west of its intersection with Clarkson Avenue and extending in a westerly direction for a distance of 153 metres. This restriction is to apply 8am to 6pm, Monday to Saturday.

9. Approves that the stopping of vehicles be prohibited at any time, in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, on the south side of Cashel Street commencing at a point 165 metres west of its intersection with Clarkson Avenue and extending in a westerly direction to its intersection with Barbadoes Street.

10. Approves that these Parking & Stopping resolutions take effect when signage, and road marking, that evidence the restrictions are in place (or removed in the case of revocations).

Councillor Templeton/Councillor Mauger **Carried**

11. Coastal Pathway Moncks Bay - detailed traffic resolutions

Committee Resolved without amendment UDATC/2021/00014

Part C

That the Urban Development and Transport Committee:

1. Receive the information in the attachments to this report.

2. Resolve the detailed traffic resolutions for the Coastal Pathway contained within this report.

3. Approves the scheme design for the section of Main Road from 70 metres northwest from its intersection with Wakatu Avenue to a point 567 metres northeast of its intersection with Cliff Street as shown on drawing TP357701 Issue 1, dated 26/07/2021, and attached to this report as **Attachment A** including all road markings, signage, kerb alignment and road surface treatments.

4. Approves that under Clause 18 of the Christchurch City Council Traffic and Parking Bylaw 2017, a special vehicle lane for the use of generally east bound bicycles only, be established generally on the northern side of Main Road commencing at a point 70 metres northwest of its intersection with Wakatu Avenue and extending in a generally easterly direction following the road alignment around Moncks Bay to a point 567 metres northeast of its intersection with the prolongation of the new eastern kerb line of Cliff Street detailed on **Attachment A**. This special vehicle lane is to be added to the

Register of Roads or Traffic Lanes Restricted to Specific Classes of Vehicles in the traffic parking bylaw 2008.

5. Approves that under Clause 18 of the Christchurch City Council Traffic and Parking Bylaw 2017, a special vehicle lane for the use of generally west bound bicycles only, be established generally on the southern side of Main Road commencing at a point 70 metres northwest of its intersection with Wakatu Avenue and extending in a generally easterly direction following the road alignment to a point 567 metres northeast of its intersection with Cliff Street, as detailed in **Attachment A**. This special vehicle lane is to be added to the Register of Roads or Traffic Lanes Restricted to Specific Classes of Vehicles in the traffic parking bylaw 2008.

6. Approves, pursuant to Part 4 clause 27 of the Christchurch City Council Traffic and Parking Bylaw 2017 and Land Transport Rule: Setting of Speed Limits 2017, that the speed limits on the following roads be Revoked and set as identified in **Attachment A**, and detailed below in item a to h including resultant changes made to the Christchurch City Council Register of Speed Limits and associated Speed Limit Maps.

    a. Revokes the existing permanent speed limit of 50 kilometres per hour on Main Road commencing from 70 metres northwest from its intersection with Wakatu Avenue and extending in a southeast direction to a point 561 metres northeast of its intersection with Cliff Street.

    b. Approves that the permanent speed limit on Main Road commencing from 70 metres northwest from its intersection with Wakatu Avenue and extending in a southeast direction to a point 561 metres northeast of its intersection with Cliff Road be set at 40 kilometres per hour.

    c. Revokes the existing permanent speed limit of 50 kilometres per hour on Wakatu Avenue (entire length).

    d. Revokes the existing permanent speed limit of 50 kilometres per hour on Bay View Road (entire length).

    e. Revokes the existing permanent speed limit of 50 kilometres per hour on Cliff Street (entire length).

    f. Approves that the permanent speed limit on Wakatu Avenue (entire length) be set at 40 kilometres per hour.

    g. Approves that the permanent speed limit on Bay View Road (entire length) be set at 40 kilometres per hour.

    h. Approves that the permanent speed limit on Cliff Street (entire length) be set at 40 kilometres per hour.

7. Revokes any previous resolutions pertaining to traffic controls made pursuant to any bylaw to the extent that they are in conflict with the traffic controls described in this report.

8. Approves that these resolutions take affect when there is evidence that the restrictions described in the staff report are in place.

9. Approves that a Give-Way control be placed against Bay View Road at its intersection with the southwest side of Main Road, as detailed in drawing TP357701 Issue 1, dated 13/07/2021, and attached to this report as **Attachment A**.

10. Approves that a Give-Way control be placed against Cliff Street at its intersection with the south side of Main Road, as detailed in **Attachment A**.

11. Approves that a bi-directional shared pedestrian/bicycle path be established generally on the northern side of Main Road, commencing at a point 70 metres northwest of its intersection with Wakatu Ave, and extending generally in an easterly direction, following the road alignment for a distance of 1015 metres, as detailed on **Attachment A**, in accordance with sections 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004.

12. Approves that under clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited on the northeast side of Main Road, commencing at a distance 44 metres northwest of its intersection with the prolongation of the western kerb line of Wakatu Avenue, and extending in a south-easterly direction following the kerb line to a point 26 metres southeast of its intersection with Wakatu Avenue. The restriction is to apply at any time.

13. Approves that under clause 8 of the Christchurch City Council Traffic and Parking Bylaw 2017, that a bus stop be installed on the northeast side of Main Road, commencing at a distance 26 metres southeast of its intersection with Wakatu Avenue, and extending in a south-easterly direction for a distance of 14 metres.

14. Approves that under clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited on the northeast side of Main Road, commencing at a distance 40 metres northwest of its intersection with Wakatu Avenue, and extending in a south-easterly direction following the kerb line for a distance of 353 metres. The restriction is to apply at any time.

15. Approves that under clause 8 of the Christchurch City Council Traffic and Parking Bylaw 2017, that a bus stop be installed on the north side of Main Road, commencing at a distance 24 metres east of its intersection with the prolongation of the eastern kerb line of Cliff Street, and extending in an easterly direction for a distance of 14 metres.

16. Approves that under clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited on the north side of Main Road, commencing at a distance 38 metres east of its intersection with the prolongation of the eastern kerb line of Cliff Street, and extending in a generally easterly direction and following the kerb line for a distance of 529 metres. The restriction is to apply at any time.

17. Approves that under clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited on the west side of Main Road, commencing at a distance 70 metres north of its intersection with Wakatu Avenue, and extending in a southerly direction and following the kerb line for a distance of 20 metres. The restriction is to apply at any time.

18. Approves that under clause 8 of the Christchurch City Council Traffic and Parking Bylaw 2017, that a bus stop be installed on the north side of Main Road, commencing at a distance 50 metres north of its intersection with Wakatu avenue, and extending in a southerly direction for a distance of 14 metres.

19. Approves that under clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited on the west side of Main Road, commencing at a distance 36 metres north of its intersection with Wakatu Avenue, and extending in a southerly direction to its intersection with Wakatu Terrace. The restriction is to apply at any time.

20. Approves that under clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited on the southwest side of Main Road,

commencing at its intersection with Wakatu Avenue, and extending in a south-easterly direction and following the kerb line for a distance of 53 metres. The restriction is to apply at any time.

21. Approves that under clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited on the southwest side of Main Road, commencing at a distance 11 metres northwest of its intersection with Bay View Road, and extending in a south-easterly direction and following the kerb line to its intersection with Bay View Road. The restriction is to apply at any time.

22. Approves that under clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited on the southwest side of Main Road, commencing at its intersection with Bay View Road, and extending in a south-easterly direction and follows the kerb line for a distance of 10 metres. The restriction is to apply at any time.

23. Approves that under clause 8 of the Christchurch City Council Traffic and Parking Bylaw 2017, that a bus stop be installed on the west side of Main Road commencing at a distance 140 metres southeast of its intersection with Bay View Road, and extending in a south-easterly direction for a distance of 14 metres.

24. Approves that under clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited on the south side of Main Road, commencing at a distance 154 metres southeast of its intersection with Bay View Road, and extending in an easterly direction and follows the kerb line for a distance of 16 metres. The restriction is to apply at any time.

25. Approves that under clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited on the south side of Main Road, commencing at a distance 179 metres southeast of its intersection with Bay View Road, and extending in an easterly direction and following the kerb line to its intersection with Cliff Street. The restriction is to apply at any time.

26. Approves that under clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited on the southeast side of Main Road, commencing at its intersection with Cliff Street and extending in an easterly direction, and following the kerb line for a distance of 106 metres. The restriction is to apply at any time.

27. Approves that under clause 8 of the Christchurch City Council Traffic and Parking Bylaw 2017, that a bus stop be installed on the south side of Main Road, commencing at a distance 106 metres east of its intersection with Cliff Street, and extending in an easterly direction for a distance of 14 metres.

28. Approves that under clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited on the southeast side of Main Road, commencing at a distance 120 metres east of its intersection with Cliff Street, and extending in a generally easterly direction and following the kerb line for a distance of 256 metres. The restriction is to apply at any time.

29. Approves that under clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited on the southeast side of Main Road, commencing at a distance 285 east of its intersection with Cliff Street, and extending in an easterly direction and follows the kerb line for a distance of 157 metres. The restriction is to apply at any time.

30. Approves that a pedestrian crossing be duly established and marked in accordance section 8.2 of the Land Transport Rule - Traffic Control Devices: 2004 on Main Road, 60 metres northeast inside the unidirectional parking bay that is located on the southeast side of Main Road and at a point 106 metres east of its intersection with Cliff Street, as detailed on **Attachment A**.

31. Approves that under clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the south eastern side of the unidirectional parking bay that is located on the southeast side of Main Road by the access to Mulgans Track, be restricted to 90 degree angle parking as detailed on **Attachment A**. This parking restriction is to apply at any time.

32. Approves that under clause 8 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the parking space to the west of the pedestrian crossing on the south eastern side of the unidirectional parking bay that is located on the southeast side of Main Road by the access to Mulgans Track, be restricted to 90 degree angle parking, and reserved as a parking place for vehicles displaying an approved disabled person's parking permit as detailed on **Attachment A**, installed in accordance with Section 12.4(7) of the Land Transport Rule: Traffic Control Devices 2004. This parking restriction is to apply at any time.

33. Approves that under clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited on the both sides of Wakatu Avenue, commencing at its intersection with Main Road, and extending in a south westerly direction for a distance of 17 metres. The restriction is to apply at all times.

34. Approves that under clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited on the west side of Bay View Road, commencing at its intersection with Main Road, and extending in a south westerly direction for a distance of 23 metres. The restriction is to apply at all times.

35. Approves that under clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited on the east side of Bay View Road, commencing at its intersection with Main Road, and extending in a south westerly direction for a distance of 10 metres. The restriction is to apply at all times.

36. Approves that under clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited on the west side of Cliff Street, commencing at its intersection with Main Road, and extending in a southerly direction for a distance of 17 metres. The restriction is to apply at all times.

37. Approves that under clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited on the east side of Cliff Street, commencing at its intersection with Main Road, and extending in a southerly direction for a distance of 8 metres. The restriction is to apply at all times.

38. Approves that 16 trees are removed and seven trees are planted on Main Road, as detailed in Attachment A.

39. Revokes any previous resolutions pertaining to traffic controls made pursuant to any bylaw to the extent that they are in conflict with the traffic controls described in this report.

40. Approves that these resolutions take affect when there is evidence that the restrictions described in the staff report are in place.

Councillor Templeton/Deputy Mayor **Carried**

12. Appointing the Central City Parking Restrictions Subcommittee

Committee Resolved without amendment UDATC/2021/00015

Part C

That the Urban Development and Transport Committee:

1. Notes the Central City Parking Restrictions Subcommittee was discharged by Council on 31st October 2019.
2. Appoints under clause 30 of Schedule 7 of the Local Government Act 2002, the Parking Restrictions Subcommittee (which is a subcommittee of the Urban Development and Transport Committee).
3. Appoints under clause 31 of Schedule 7 of the Local Government Act 2002 the Chairperson and Deputy Chairperson of the Urban Development and Transport Committee, and the Central Ward Councillor as members of the Parking Restrictions Subcommittee.
4. Resolves that the quorum of the Parking Restrictions Subcommittee is two.
5. Delegates to the Parking Restrictions Subcommittee those delegations attached to this report as shown in **Attachment A**.
6. Notes that the Delegations Register be amended accordingly.

Councillor Cotter/Deputy Mayor **Carried**

Councillor Cotter leaves the meeting at 12.02pm and returns at 12.04pm during consideration of Item 13.

13. Draft submission on Incitement of Hatred and Discrimination in Aotearoa New Zealand

Officer Recommendations Ngā Tūtohu

That the Urban Development and Transport Committee:

1. Approve the draft Council submission to the Ministry of Justice on their *Incitement of Hatred and Discrimination in Aotearoa New Zealand* consultation.

Committee Resolved UDATC/2021/00016

Part C

That the Urban Development and Transport Committee:

1. Approve the draft Council submission to the Ministry of Justice on their *Incitement of Hatred and Discrimination in Aotearoa New Zealand* consultation.
2. Delegate to Mayor and Deputy Mayor to approve the final submission to the Ministry of Justice on their Incitement of Hatred and Discrimination in Aotearoa New Zealand consultation.

Councillor Chen/Councillor Templeton **Carried**

14. Draft submission on Social cohesion for everyone in New Zealand

Officer Recommendations Ngā Tūtohu

That the Urban Development and Transport Committee:

1. Approve the draft Council submission to the Ministry of Social Development on their *Social cohesion for everyone in New Zealand* consultation (**Attachment A**)

Committee Resolved UDATC/2021/00017

Part C

That the Urban Development and Transport Committee:

1. Approve the draft Council submission to the Ministry of Social Development on their *Social cohesion for everyone in New Zealand* consultation (**Attachment A**).
2. Delegate to Mayor and Deputy Mayor to approve the final submission to the Ministry of Social Development on their *Social cohesion for everyone in New Zealand* consultation.

Councillor Chen/Councillor Coker **Carried**

Karakia Whakamutunga: Councillor Sara Templeton

Meeting concluded at 12.09pm.

CONFIRMED THIS 7th DAY OF OCTOBER 2021

COUNCILLOR MIKE DAVIDSON
CHAIRPERSON

Item 7

7. Central City Parking Restrictions Subcommittee Minutes - 1 September 2021

Reference Te Tohutoro:	21/1303587
Report of Te Pou Matua:	Nathaniel Heslop, Committee & Hearings Advisor, Nathaniel.Heslop@ccc.govt.nz
General Manager Pouwhakarae:	Jane Davis, General Manager, Policy, Infrastructure, and Regulatory Services, jane.davis@ccc.govt.nz

1. Purpose of Report Te Pūtake Pūrongo

The Central City Parking Restrictions Subcommittee held a meeting on 1 September 2021 and is circulating the Minutes recorded to the Urban Development and Transport Committee for its information.

2. Recommendation to Urban Development and Transport Committee

That the Urban Development and Transport Committee receives the Minutes from the Central City Parking Restrictions Subcommittee meeting held 1 September 2021.

Attachments Ngā Tāpirihanga

No.	Title	Page
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Signatories Ngā Kaiwaitohu

Author	Nathaniel Heslop - Committee and Hearings Advisor

Central City Parking Restrictions Subcommittee
OPEN MINUTES

Date:	**Wednesday 1 September 2021**
Time:	**1.01pm**
Venue:	**Held by Audio/Video Link**

Present

Members	Councillor Mike Davidson
	Councillor Jake McLellan

Principal Advisor
Lynette Ellis
Head of Transport
Tel: 941 6285

Nathaniel Heslop
Committee and Hearings Advisor
941 6444
nathaniel.heslop@ccc.govt.nz
www.ccc.govt.nz

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Central City Parking Restrictions Subcommittee
01 September 2021

Christchurch City Council

Part A **Matters Requiring a Council Decision**

Part B **Reports for Information**

Part C **Decisions Under Delegation**

Secretarial Note: This meeting was held via audio/visual link on the Zoom platform due to the country being under a Covid 19 Alert Level 4 lockdown. These minutes accordingly provide a detailed written summary of the meeting proceedings.

The following persons were in attendance on the audio/visual link throughout the meeting, in addition to the members and secretariat: Head of Transport, Lynette Ellis; Operations Manager (Transport), Steffan Thomas; Team Leader Traffic Operations, Stephen Wright; and Transport Engineer, Michael Thomson.

Karakia Timatanga: Councillor Davidson.

The agenda was dealt with in the following order.

1. Apologies Ngā Whakapāha

Part C
Committee Resolved CCPRS/2021/00001

That the apologies received from Councillor Phil Mauger be accepted.

Councillor Davidson/Councillor McLellan **Carried**

2. Election of a Chairperson Te Whakatū Poumua

Part B
Committee Resolved CCPRS/2021/00002

It was decided that Councillor Mike Davidson be appointed Chairperson of the Central City Parking Restrictions Subcommittee for this meeting.

Councillor McLellan/Councillor Davidson **Carried**

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3. Declarations of Interest Ngā Whakapuaki Aronga

Part B
There were no declarations of interest recorded.

4. Public Forum Te Huinga Whānui

Part B
There were no public forum presentations.

5. Deputations by Appointment Ngā Huinga Whakaritenga

Part B
There were no deputations by appointment.

6. Presentation of Petitions Ngā Pākikitanga

Part B
There was no presentation of petitions.

7. Huanui Lane -Parking & Stopping Restrictions

Subcommittee Comment

Michael Thomson presented the report to the Subcommittee seeking approval of installing P120 parking restrictions in Huanui Lane. The Subcommittee sought clarification on how this change may affect parking space users, whether a shorter time restriction was more appropriate, whether it was appropriate to install parking meters, and expressed concern that people may park on the footpath. Staff advised that signage made it very clear stopping is not permitted except in sign-posted areas. Staff advised this change will not significantly impact on the use of parking spaces in the area. The proposed P120 parking restriction facilitates a number of uses and can be adjusted to be consistent with other central city parking at a later date. Due to a number of factors staff do not believe parking meters are an appropriate treatment for this environment, this may be reviewed in the future.

Subcommittee Resolved without amendment CCPRS/2021/00003

Part C

That the Central City Parking Restrictions Subcommittee:

1. Approves that all previously resolved parking and stopping restrictions on Huanui Lane, from its intersection with Gloucester Street, and extending in a southerly direction to its intersection with Worcester Street, be revoked.
2. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the east side of Huanui Lane, commencing at its intersection with Gloucester Street and extending in a southerly direction for a distance of 10 metres, as detailed on Attachment A.
3. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that a motor cycle stand be created on the east side of Huanui Lane, commencing at a point 10 metres south of its intersection with Gloucester Street and extending in a southerly direction for a distance of four metres, as detailed on Attachment A. This restriction is to apply at any time.
4. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, 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, on the east side of Huanui Lane, commencing at a point 14 metres south of its intersection with Gloucester Street and extending in a southerly direction for a distance of eight metres, as detailed on Attachment A. This restriction is to apply at any time.
5. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the east side of Huanui Lane, commencing at a point 22 metres south of its intersection with

Gloucester Street and extending in a southerly direction for a distance of 12 metres, as detailed on Attachment A.

6. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the parking of vehicles be restricted to a maximum period of 120 minutes on the east side of Huanui Lane, commencing at a point 34 metres south of its intersection with Gloucester Street and extending in a southerly direction for a distance of 12 metres, as detailed on Attachment A. This restriction is to apply Monday to Thursday 9:00am to 6:00pm, and apply Friday to Sunday 9:00am to 8:30pm.

7. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the east side of Huanui Lane, commencing at a point 46 metres south of its intersection with Gloucester Street and extending in a southerly direction for a distance of 12 metres, as detailed on Attachment A.

8. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the parking of vehicles be restricted to a maximum period of 120 minutes on the east side of Huanui Lane, commencing at a point 58 metres south of its intersection with Gloucester Street and extending in a southerly direction for a distance of 12 metres, as detailed on Attachment A. This restriction is to apply Monday to Thursday 9:00am to 6:00pm, and apply Friday to Sunday 9:00am to 8:30pm.

9. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the east side of Huanui Lane, commencing at a point 70 metres south of its intersection with Gloucester Street and extending in a southerly direction for a distance of 10 metres, as detailed on Attachment A.

10. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the parking of vehicles be restricted to a maximum period of 120 minutes on the east side of Huanui Lane, commencing at a point 80 metres south of its intersection with Gloucester Street and extending in a southerly direction for a distance of 12 metres, as detailed on Attachment A. This restriction is to apply Monday to Thursday 9:00am to 6:00pm, and apply Friday to Sunday 9:00am to 8:30pm.

11. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the east side of Huanui Lane, commencing at a point 92 metres south of its intersection with Gloucester Street and extending in a southerly direction to its intersection with Worcester Street, as detailed on Attachment A.

12. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the west side of Huanui Lane, commencing at its intersection with Worcester Street and extending in a northerly direction to its intersection with Gloucester Street, as detailed on Attachment A.

13. Approves that all previously resolved parking and stopping restrictions on Huanui Lane, from its intersection with Worcester Street, and extending in a southerly direction to its intersection with Hereford Street, be revoked.

14. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the east side of Huanui Lane, commencing at its intersection with Worcester Street and

extending in a southerly direction for a distance of 21 metres, as detailed on Attachment B.

15. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, 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, on the east side of Huanui Lane, commencing at a point 21 metres south of its intersection with Worcester Street and extending in a southerly direction for a distance of eight metres, as detailed on Attachment B. This restriction is to apply at any time.

16. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that a motor cycle stand be created on the east side of Huanui Lane, commencing at a point 29 metres south of its intersection with Worcester Street and extending in a southerly direction for a distance of four metres, as detailed on Attachment B. This restriction is to apply at any time.

17. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the east side of Huanui Lane, commencing at a point 33 metres south of its intersection with Worcester Street and extending in a southerly direction for a distance of 5.5 metres, as detailed on Attachment B.

18. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the parking of vehicles be restricted to a maximum period of 120 minutes on the east side of Huanui Lane, commencing at a point 38.5 metres south of its intersection with Worcester Street and extending in a southerly direction for a distance of 12 metres, as detailed on Attachment B. This restriction is to apply Monday to Thursday 9:00am to 6:00pm, and apply Friday to Sunday 9:00am to 8:30pm.

19. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the east side of Huanui Lane, commencing at a point 50.5 metres south of its intersection with Worcester Street and extending in a southerly direction for a distance of 21.5 metres, as detailed on Attachment B.

20. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the parking of vehicles be restricted to a maximum period of 120 minutes on the east side of Huanui Lane, commencing at a point 72 metres south of its intersection with Worcester Street and extending in a southerly direction for a distance of 12 metres, as detailed on Attachment B. This restriction is to apply Monday to Thursday 9:00am to 6:00pm, and apply Friday to Sunday 9:00am to 8:30pm.

21. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the east side of Huanui Lane, commencing at a point 84 metres south of its intersection with Worcester Street and extending in a southerly direction for a distance of eight metres, as detailed on Attachment B.

22. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the parking of vehicles be restricted to a maximum period of 120 minutes on the east side of Huanui Lane, commencing at a point 92 metres south of its intersection with Worcester Street and extending in a southerly direction for a distance of 12 metres, as detailed on Attachment B. This restriction is to apply Monday to Thursday 9:00am to 6:00pm, and apply Friday to Sunday 9:00am to 8:30pm.

23. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the east side of Huanui Lane, commencing at a point 104 metres south of its intersection with Worcester Street and extending in a southerly direction to its intersection with Hereford Street, as detailed on Attachment B.

24. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the west side of Huanui Lane, commencing at its intersection with Hereford Street and extending in a northerly direction to its intersection with Worcester Street, as detailed on Attachment B.

25. Approves that all previously resolved parking and stopping restrictions on Huanui Lane, from its intersection with Hereford Street, and extending in a southerly direction to its intersection with Cashel Street, be revoked.

26. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the east side of Huanui Lane, commencing at its intersection with Hereford Street and extending in a southerly direction for a distance of 11.5 metres, as detailed on Attachment C.

27. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, 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, on the east side of Huanui Lane, commencing at a point 11.5 metres south of its intersection with Hereford Street and extending in a southerly direction for a distance of eight metres, as detailed on Attachment C. This restriction is to apply at any time.

28. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that a motor cycle stand be created on the east side of Huanui Lane, commencing at a point 19.5 metres south of its intersection with Hereford Street and extending in a southerly direction for a distance of four metres, as detailed on Attachment C. This restriction is to apply at any time.

29. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the east side of Huanui Lane, commencing at a point 23.5 metres south of its intersection with Hereford Street and extending in a southerly direction for a distance of 10 metres, as detailed on Attachment C.

30. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the parking of vehicles be restricted to a maximum period of 120 minutes on the east side of Huanui Lane, commencing at a point 33.5 metres south of its intersection with Hereford Street and extending in a southerly direction for a distance of 12 metres, as detailed on Attachment C. This restriction is to apply Monday to Thursday 9:00am to 6:00pm, and apply Friday to Sunday 9:00am to 8:30pm.

31. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the east side of Huanui Lane, commencing at a point 45.5 metres south of its intersection with Hereford Street and extending in a southerly direction for a distance of 13 metres, as detailed on Attachment C.

32. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the parking of vehicles be restricted to a maximum period of

120 minutes on the east side of Huanui Lane, commencing at a point 58.5 metres south of its intersection with Hereford Street and extending in a southerly direction for a distance of 12 metres, as detailed on Attachment C. This restriction is to apply Monday to Thursday 9:00am to 6:00pm, and apply Friday to Sunday 9:00am to 8:30pm.

33. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the east side of Huanui Lane, commencing at a point 70.5 metres south of its intersection with Hereford Street and extending in a southerly direction for a distance of 15 metres, as detailed on Attachment C.

34. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the parking of vehicles be restricted to a maximum period of 120 minutes on the east side of Huanui Lane, commencing at a point 85.5 metres south of its intersection with Hereford Street and extending in a southerly direction for a distance of 12 metres, as detailed on Attachment C. This restriction is to apply Monday to Thursday 9:00am to 6:00pm, and apply Friday to Sunday 9:00am to 8:30pm.

35. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the east side of Huanui Lane, commencing at a point 97.5 metres south of its intersection with Hereford Street and extending in a southerly direction to its intersection with Cashel Street, as detailed on Attachment C.

36. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the west side of Huanui Lane, commencing at its intersection with Cashel Street and extending in a northerly direction to its intersection with Hereford Street, as detailed on Attachment C.

37. Approves that all previously resolved parking and stopping restrictions on Huanui Lane, from its intersection with Cashel Street, and extending in a southerly direction to its intersection with Lichfield Street, be revoked.

38. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the east side of Huanui Lane, commencing at its intersection with Cashel Street and extending in a southerly direction for a distance of 18 metres, as detailed on Attachment D.

39. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, 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, on the east side of Huanui Lane, commencing at a point 18 metres south of its intersection with Cashel Street and extending in a southerly direction for a distance of eight metres, as detailed on Attachment D. This restriction is to apply at any time.

40. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that a motor cycle stand be created on the east side of Huanui Lane, commencing at a point 26 metres south of its intersection with Cashel Street and extending in a southerly direction for a distance of four metres, as detailed on Attachment D. This restriction is to apply at any time.

41. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the east side of Huanui Lane, commencing at a point 30 metres south of its intersection with

Cashel Street and extending in a southerly direction for a distance of nine metres, as detailed on Attachment D.

42. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the parking of vehicles be restricted to a maximum period of 120 minutes on the east side of Huanui Lane, commencing at a point 39 metres south of its intersection with Cashel Street and extending in a southerly direction for a distance of 12 metres, as detailed on Attachment D. This restriction is to apply Monday to Thursday 9:00am to 6:00pm, and apply Friday to Sunday 9:00am to 8:30pm.

43. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the east side of Huanui Lane, commencing at a point 51 metres south of its intersection with Hereford Street and extending in a southerly direction for a distance of 11 metres, as detailed on Attachment D.

44. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the parking of vehicles be restricted to a maximum period of 120 minutes on the east side of Huanui Lane, commencing at a point 62 metres south of its intersection with Cashel Street and extending in a southerly direction for a distance of 12 metres, as detailed on Attachment D. This restriction is to apply Monday to Thursday 9:00am to 6:00pm, and apply Friday to Sunday 9:00am to 8:30pm.

45. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the east side of Huanui Lane, commencing at a point 74 metres south of its intersection with Cashel Street and extending in a southerly direction for a distance of 14 metres, as detailed on Attachment D.

46. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the parking of vehicles be restricted to a maximum period of 120 minutes on the east side of Huanui Lane, commencing at a point 88 metres south of its intersection with Cashel Street and extending in a southerly direction for a distance of 12 metres, as detailed on Attachment D. This restriction is to apply Monday to Thursday 9:00am to 6:00pm, and apply Friday to Sunday 9:00am to 8:30pm.

47. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the east side of Huanui Lane, commencing at a point 100 metres south of its intersection with Cashel Street and extending in a southerly direction to its intersection with Lichfield Street, as detailed on Attachment D.

48. Approves that in accordance with Clause 7 of the Christchurch City Council Traffic and Parking Bylaw 2017, that the stopping of vehicles be prohibited at any time on the west side of Huanui Lane, commencing at its intersection with Lichfield Street and extending in a northerly direction to its intersection with Cashel Street, as detailed on Attachment D.

49. Approves that these resolutions take effect when parking signage and/or road markings that evidence the restrictions described in the staff report are in place (or removed in the case of revocations).

Councillor McLellan/Councillor Davidson **Carried**

8. Resolution to Include Supplementary Reports

Subcommittee Resolved without amendment CCPRS/2021/00004

That the reports be received and considered at the Central City Parking Restrictions Subcommittee meeting on Wednesday, 1 September 2021.

Open Items

8. Armagh Street - Bus Parking at Te Pae

Councillor Davidson/Councillor McLellan **Carried**

8. Armagh Street - Bus Parking at Te Pae

Subcommittee Comment

The Subcommittee took the report as read, accepting an explanation by staff that heritage issues with another possible location for the coach stop meant the staff recommendation was preferred.

Subcommittee Resolved without amendment CCPRS/2021/00005

Part C

That the Central City Parking Restrictions Subcommittee:

1. Approves that all parking and stopping restrictions on the south side of Armagh Street, commencing at a point 54 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 44 metres, be revoked.
2. Approves that the parking of vehicles be restricted to a maximum period of 30 minutes, and be reserved for Buses and Shuttle vehicles only on the south side of Armagh Street, commencing at a point 54 metres west of its intersection with Colombo Street and extending in a westerly direction for a distance of 44 metres. This restriction is to apply at any time.
3. Approve that these resolutions take effect when parking signage and/or road markings that evidence the restrictions described in the staff report are in place (or removed in the case of revocations).

Councillor McLellan/Councillor Davidson **Carried**

Karakia Whakamutunga: Councillor Davidson.

Meeting concluded at 1.30pm.

CONFIRMED THIS 6th DAY OF OCTOBER 2021

Item 8

8. Coastal Hazards Community Engagement

Reference / Te Tohutoro:	21/535428
Report of / Te Pou Matua:	Jane Morgan, Principal Progamme Advisor Mark Stevenson, Team Leader – City Planning Katy McRae, Engagement Manager Maiki Andersen, Senior Policy Planner Mark Rushworth, Senior Policy Planner
General Manager / Pouwhakarae:	Jane Davis, General Manager Infrastructure, Planning & Regulatory Services

1. Purpose of the Report / Te Pūtake Pūrongo

1.1 The purpose of this report is to seek approval for the initiation of a city-wide community engagement on coastal hazards between the period 8 October – 15 November 2021 and to:

- Note the release of an updated Coastal Hazards Assessment for the Christchurch District, Tonkin + Taylor (2021)
- Approve the release of the Coastal Adaptation Framework for public engagement as part of the Coastal Hazard's Adaptation Planning programme; and to
- Approve the release of the Issues and Options Discussion Paper: Managing New Development in Areas Exposed to Coastal Hazards for public engagement as part of the Coastal Hazard's District Plan Change programme and note the release of 'Analysis/ Technical Advice - Risk Based Coastal Hazard Analysis for Land-use Planning', Jacobs (2021).

1.2 Note that these documents were developed with the oversight and endorsement of the Coastal Hazards Working Group (CHWG) which is comprised of elected members from Council and Environment Canterbury, and two Papatipu Rūnanga representatives.

1.3 The decisions in this report are of high significance in relation to the Christchurch City Council's Significance and Engagement Policy due to impacts of coastal hazards management on low-lying inland and coastal communities, mana whenua, and Council infrastructure.

2. Officer Recommendations / Ngā Tūtohu

That the Urban Development and Transport Committee:

1. Note that Council will release the Coastal Hazards Assessment for the Christchurch District, Tonkin + Taylor (2021) on 8 October 2021.
2. Approve the release of the Coastal Adaptation Framework for community engagement.
3. Approve the release of the Issues and Options Discussion Paper: Managing New Development in Areas Exposed to Coastal Hazards for community engagement and note the release of 'Analysis/ Technical Advice - Risk Based Coastal Hazard Analysis for Land-use Planning', Jacobs (2021).

3. Reason for Report Recommendations / Ngā Take mō te Whakatau

3.1 As a region, Canterbury has around $1B of local government owned infrastructure exposed to coastal hazards, the majority of which is in Christchurch. As sea levels rise, Canterbury has the most public infrastructure exposed to coastal hazards in New Zealand[1].

3.2 As a city, Christchurch is more exposed to coastal hazards than either Auckland or Wellington[2]. Across the Christchurch District approximately 25,000 properties are exposed to coastal hazards risks over the next 120 years.[3] NIWA estimates that with 1m of sea level rise the replacement value of buildings is approximately $6.7B, the majority of which are residential properties[4].

3.3 The New Zealand Coastal Policy Statement (NZCPS) 2010 requires local authorities to consider and plan for these risks through pathways such as adaptation planning with communities, and the District Plan.

3.4 The Coastal Hazards Adaptation Planning (CHAP) programme aims to reduce risks to **existing** land use activities and development. The purpose of the CHAP programme is to provide coastal and low-lying communities and the Council with adaptive pathways that allow us to plan for, and respond to, coastal hazards impacted by sea level rise (through coastal inundation, coastal erosion and rising groundwater).

3.5 As part of the CHAP programme, the attached Coastal Adaptation Framework is a proposed approach to adaptation planning with communities. It sets out respective roles and responsibilities of Council and private asset owners, guiding principles for adaptation planning and a proposed engagement and decision-making process. By establishing clear principles at the outset we hope to ensure the delivery of adaptation pathways that are able to be implemented. An agreed process should also help ensure that we take an equitable approach across all communities, recognising that adaptation pathways will likely differ for different communities.

3.6 The Coastal Hazards Plan Change is concerned with managing **new** development, changes of use and subdivision proposed in the future.

3.7 We have a statutory duty to complete the review of the District Plan, following the withdrawal of the coastal hazard provisions from the District Plan Review. We also have a statutory duty, as part of that review, to ensure that the District Plan gives effect to the national and regional direction in the New Zealand Coastal Policy Statement and the Regional Policy Statement.

3.8 The current District Plan does not define the full extent of areas at risk of coastal hazards and only manages some activities. For example, the City Plan has rules only for an area 20m from around the high tide mark[5], and the Banks Peninsula District Plan only considers the risk of coastal hazards for subdivision, not development. We therefore need to update our District

[1] Simonson, T., & Hall, G. (2019). Vulnerable: the quantum of local government infrastructure exposed to sea level rise. Wellington: Local Government New Zealand.

[2] Parliamentary Commissioner for the Environment. (2015). Preparing New Zealand for rising seas: Certainty and Uncertainty. Wellington.

[3] The 2021 Coastal Hazard Assessment data would potentially impact around 16,000 properties across the city and Banks Peninsula, Of these around 15,000 are at risk of coastal flooding and 1,000 are at risk of erosion over the next 120 years.
The 2017 Coastal Hazard Assessment also included areas further up the rivers, where coastal flooding is less dominant (but remains a factor) and from that assessment approximately 9,000 additional properties (outside of the 2021 assessment) are also likely to experience some coastal flooding.

[4] NIWA. (2019). Coastal Flooding Exposure Under Future Sea-level Rise for New Zealand. Wellington: The Deep South Challenge.

[5] Mean High Water Springs mark

Plan because there is a risk of new development within communities being exposed to the impact of coastal hazards that will become more prevalent in the future. These gaps do not enable the effective management of the risks, and development could occur without appropriate controls.

3.9 The attached Issues and Options discussion document was drafted as a first step in the Plan Change process. It provides the rationale for the proposed Plan Change and seeks feedback on four options for the management of coastal hazard risks. These are:

- A risk-based approach (preferred)
- A 'do minimum' approach – maintaining reliance on existing District Plan objectives and policies.
- Avoiding activities that increase risk across the District.
- Avoiding activities that increase risk outside existing urban areas while enabling a risk-based approach within urban areas.

3.1 Underpinning both programmes of work is the attached updated **Coastal Hazards Assessment**, which incorporates new topographic data, longer datasets (including beach profiles, water level information and wave climates), new analysis of extreme water levels and sediment supply scenarios, and an understanding of rising groundwater hazard due to sea level rise. It covers the entire Christchurch District coastline (including the Banks Peninsula coastline).

3.2 In due course, the Coastal Hazards Assessment will also form the basis for appropriate notifications on Land Information Memorandums (LIMs) in accordance with section 44A of the Local Government Official Information and Meetings Act 1987. The proposed engagement will effectively provide a 'safe harbour' for affected property owners to have time to engage with the hazards information and understand the implications for their property.

4. Alternative Options Considered / Ētahi atu Kōwhiringa

4.1 The CHAP programme could initiate adaptation planning without the development of a Coastal Hazards Assessment or a Coastal Adaptation Framework. However, this would present the following risks:

4.1.1 Limited and dated evidence base for understanding the likely impacts of coastal hazards.

4.1.2 An ad hoc and potentially inequitable approach to adaptation planning between communities.

4.1.3 The development of adaptation pathways that are not able to be implemented by Council.

4.2 The Coastal Hazards Plan Change could be developed by Council without soliciting community feedback. However, this would present the following risks:

4.2.1 Lack of community buy-in for the Council's proposed approach.

4.2.2 An absence of testing of the approach could result in issues being raised in the formal stage of the plan change, adding costs to the process for Council, stakeholders, and the community, even where changes may be appropriate.

4.3 If Council were to not proceed with a plan change, the Council would not have performed its statutory duty to review the District Plan and the District Plan would not implement national and regional direction to the extent required, which would not enable the effective

management of the risks. Development could occur without appropriate controls, exposing people and wider communities to flooding and erosion.

5. Detail / Te Whakamahuki

Engagement to date

5.1 Ngāi Tahu (through Mahaanui Kurataiao Limited) and Environment Canterbury have provided significant input to the CHAP programme, and more recently, input has been provided to the Plan Change. Ngāi Tahu and Environment Canterbury have also reviewed the Coastal Hazards Assessment, Coastal Adaptation Framework and Coastal Hazards Issues and Options paper.

5.2 Acknowledging lessons learned from the release of the previous Coastal Hazards Assessment, Council staff have proactively engaged with a range of community stakeholders on the updated Coastal Hazards Assessment methodology and the design of outputs. Feedback from these stakeholders has helped to refine the approach and improve the accessibility of the outputs.

5.3 Between November – December 2020 the CHAP programme held a series of targeted engagements with coastal communities to introduce adaptation planning. Since then, we have provided stakeholders with programme updates via e-newsletters.

5.4 Both the CHAP and Plan Change teams have also provided briefings and email correspondence with a range of stakeholder groups.

5.5 The management of and adaptation to coastal hazards is an intergenerational issue and the CHAP programme is committed to engaging with children and young people. We have supported the delivery of adaptation lessons in 13 schools across the city and Banks Peninsula.

5.6 Engagement is also underway with Te Hapū o Ngāti Wheke and Te Rūnanga o Koukourarata.

Planned engagement

5.7 From 8 October – 15 November we will be seeking feedback on the Coastal Adaptation Framework and the Issues and Options Discussion Paper.

5.8 The updated Coastal Hazards Assessment will also be released at this time, for information. Processes will also continue for the establishment of the Coastal Panel in the Lyttelton / Whakaraupō Adaptation Area.

5.9 All documents will be available in Council libraries and service centres, and on the Council website.

5.10 We are very mindful that property owners who may be affected by coastal hazards now and in the future may find the information shared through this engagement process confronting. We are therefore keen to ensure that individuals and communities are able to engage with this information in a supported way through the following approaches:

- A focus on plain language and accessibility, with information available for different levels of interest and in different formats so people can engage in a way that suits them best.
- Opportunities across the district for people to talk, face to face, with the project teams.
- Targeted stakeholder engagement, with project team members available to meet with community groups at their request.
- Targeted youth and children's engagement.

Strategic Alignment /Te Rautaki Tīaroaro

5.11 The coastal hazards activity and proposed community engagement supports the Council's strategic priorities for Christchurch; specifically:

- Enabling active and connected communities to own their future.
- Meeting the challenge of climate change through every means available.

Policy Consistency / Te Whai Kaupapa here

5.12 The decision is consistent with Council's Plans and Policies.

5.13 Central Government is currently leading significant reform of the Resource Management Act and has indicated that it will introduce a Climate Adaptation Act that will address legal, technical and funding issues relating to managed retreat. It has also indicated that the provisions of the New Zealand Coastal Policy Statement are likely to be carried forward into the new National Planning Framework, which will seek to consolidate the existing national direction.

5.14 Council staff (with oversight of the CHWG) have endeavoured to develop approaches that are responsive to the future legislative environment, and consider it necessary to progress the CHAP and Plan Change to address the high levels of exposure in the Christchurch District.

Impact on Mana Whenua / Ngā Whai Take Mana Whenua

5.15 The management of coastal hazards is of significant interest to Te Rūnanga o Ngāi Tahu and Papatipu Rūnanga due to the intrinsic values that Māori hold with whenua, wai and the environment. The inclusion of Te Rūnanga representative on the CHWG acknowledges the importance of this relationship as does the partnership approach to the development of key strategic documents.

Climate Change Impact Considerations / Ngā Whai Whakaaro mā te Āhuarangi

5.16 Engagement with communities on coastal hazards sits under Programme 3: Proactive Climate Planning with Communities under the Council's Ōtautahi Christchurch Climate Resilience Strategy.

Accessibility Considerations / Ngā Whai Whakaaro mā te Hunga Hauā

5.17 Access considerations are critical to both the CHAP and Plan Change and will be considered through input from representatives of the disability sector.

6. Resource Implications / Ngā Hīraunga Rauemi

Opex / Ngā Utu Whakahaere

6.1 Engagement funding was included in the allocation for the CHAP programme in the Council's Long Term Plan 2021-31.

7. Legal Implications / Ngā Hīraunga ā-Ture

Statutory power to undertake proposals in the report / Te Manatū Whakahaere Kaupapa

7.1 The Resource Management Act 1991 s73(1A) enables the Council to prepare a change to its District Plan at any time, subject to a consultation process set out in Schedule 1 of the Act.

7.2 Council has a function under Section 31 of the Resource Management Act 1991 to control any actual or potential effects of the use, development, or protection of land, including for the purpose of (i) the avoidance or mitigation of natural hazards. Under section 6(h) of the Act, Council is also required to manage significant risks from natural hazards.

7.3 The statutory power to manage the risks of coastal hazards is anticipated to be in the emerging legislation to replace the Resource Management Act.

Other Legal Implications / Ētahi atu Hīraunga-ā-Ture

7.4 In addition, the Council will be required to comply with its obligations under section 44A of the Local Government Official Information and Meetings Act 1987 in relation to LIMS and coastal hazard information. Section 44A(2)(a) requires that information is included on a LIM for a property that identifies each (if any) special feature or characteristic of the property concerned. This includes potential erosion, avulsion, subsidence, slippage, alluvion, or inundation, being a feature or characteristic that[6]—

7.4.1 is known to the territorial authority; but

7.4.2 is not apparent from the district scheme under the Town and Country Planning Act 1977 or a district plan under the Resource Management Act 1991.

7.5 The proposed engagement will enable members of the public to familiarise themselves with the hazards information and understand the implications for their property before appropriate LIM notifications are included. This approach is in keeping with the case law on section 44A.

7.1 Councils are required to review provisions of District Plan at a maximum of 10 year intervals (s79(1) of the RMA), and these provisions were not reviewed as part of the recent District Plan review. Moreover, the Resource Management Act requires that the District Plan must give effect to any New Zealand coastal policy statement (s75(3)), but the Council has not as yet reviewed the District Plan in order to give effect to the New Zealand Coastal Policy Statement 2010.

7.2 This report has been reviewed and approved by the Legal Services Unit.

Attachments / Ngā Tāpirihanga

No.	Title	Page
A ⇩	Coastal Hazards Assessment for Christchurch District; Summary Report (2021), Tonkin +Taylor	40
B ⇩	Coastal Adaptation Framework, Christchurch City Council	65
C ⇩	Coastal Hazards Plan Change issues and options discussion paper: Managing new development in areas exposed to coastal hazards	80

Additional background information may be noted in the below table:

Document Name	Location / File Link
Coastal Hazards flooding and erosion risk maps for Issues & Options Discussion Paper for Coastal Hazards Plan Change	www.ccc.govt.nz/plan-change-12

[6] See section 44A(2)(a) for additional features or characteristics of the land.

Confirmation of Statutory Compliance / Te Whakatūturutanga ā-Ture

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 / Ngā Kaiwaitohu

Authors	Jane Morgan - Principal Programme Advisor Mark Stevenson - Team Leader City Planning Katy McRae - Manager Engagement
Approved By	David Griffiths - Head of Planning & Strategic Transport Jane Davis - General Manager Infrastructure, Planning & Regulatory Services

Christchurch City Council

REPORT

Tonkin+Taylor

Coastal Hazard Assessment for Christchurch District

Summary Report

Prepared for
Christchurch City Council
Prepared by
Tonkin & Taylor Ltd
Date
September 2021
Job Number
1012976.v1

Exceptional thinking together
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Table of contents

Cover photo: The Christchurch District coastline viewed from the International Space Station in 2014 (Credit: ESA/A.Gerst CC BY-SA 2.0. ID: 2014 945_5391).

1 Why is this coastal hazard assessment needed?

Information about coastal hazards is a vital input to support sound adaptation planning discussions between Christchurch City Council (the Council), Ngāi Tahu rūnanga, and communities across Christchurch District.

While various coastal hazards assessments have been undertaken previously, important new data has recently become available, including information on sediment supply, groundwater and sea level statistics, which has implications for the identification of areas prone to coastal hazards. Updating the coastal hazards assessment also presents an opportunity to include parts of the Christchurch District coastline not assessed previously, and to focus on the types of information needed for adaptation planning (such as looking at a wide range of potential future sea level scenarios to help understand the impact of this uncertainty).

The 2021 Coastal Hazard Assessment (2021 CHA) provides important updated information about the potential effects of coastal erosion, coastal flooding and rising groundwater, and how this might change over time with sea level rise. The scope and analysis approach for this assessment is specifically designed for adaptation planning. It has been developed in conjunction with the Council's adaptation planning team, Environment Canterbury coastal experts and an independent technical reviewer.

The 2021 CHA is a broad-scale assessment which provides a general indication of the magnitude and extent of hazards across neighbourhood-sized areas. It does not provide an assessment of the risk to individual properties or provide answers on what can be done to manage those hazards. However, it will help to inform the Council's decision-making through adaptation planning with low-lying and coastal communities.

While the 2021 CHA does not map out a hazard overlay for inclusion in the District Plan, it does provide information to help guide further analysis and engagement to determine if and where a hazard overlay should apply.

More information about coastal hazard adaptation planning and District Plan changes can be found in the links below:

- Adaptation planning: www.ccc.govt.nz/adaptationplanning
- District plan: www.ccc.govt.nz/plan-change-12

2 What areas does the assessment cover?

The 2021 CHA examines current and future coastal hazards across the entire Christchurch District (comprised of Ōtautahi / Christchurch and Te Pātaka-o-Rākaihautū / Banks Peninsula). The assessment area extends from the Waimakariri River mouth in the north, to the outlet from Te Waihora / Lake Ellesmere in the south. The coastal flooding and rising groundwater assessments look at all low-lying land which is close enough to the coast for changes in future flood hazard to be driven mostly by sea level rise. The coastal erosion assessment looks at the immediate coastal shoreline, which includes large open coast beaches, small local beaches, harbours, estuaries, lagoons, cliffs, and banks.

3 Who is involved in this work?

Council engaged Tonkin + Taylor's (T+T's) specialist coastal hazards team, who combined international and national best practice with their extensive local knowledge of Ōtautahi / Christchurch and the wider Canterbury Region, to undertake the assessment.

At each stage, T+T worked with an independent technical reviewer, the Council's adaptation planning team, and technical staff from the Council and Environment Canterbury. The team also considered the recommendations from peer review of previous assessments. This collaborative approach ensures that the 2021 CHA is suitable from both a technical and project needs perspective to support adaptation planning.

The methodology and website design were presented to representatives from community groups with interests in technical hazard information and/or environmental issues. This allowed the approach to be tested more broadly with the intended audience, and for Council staff to receive feedback on communication approaches and supporting information.

4 What international and national guidance is available?

The 2021 CHA follows the Ministry for the Environment (MfE) 2017 Coastal Hazards and Climate Change Guidance (referred to as the 'national guidance' for adaptation planning). This guidance is based on the climate change and sea level rise projections (predictions of what could happen in future) of the 2013 science report by the Intergovernmental Panel on Climate Change (IPCC).

The national guidance introduced new engagement and adaptive approaches for coastal hazards planning and decision-making in Aotearoa / New Zealand, which is informing Council's coastal management approach. Technical hazard assessments form part of the 'what is happening?' phase of the cycle.

The national guidance recommends that these assessments utilise the best available data to describe coastal processes currently acting on the coast and to predict future hazard for a range of scenarios. The assessments should also incorporate uncertainty, due to both data limitations and incomplete scientific knowledge about the processes. The potential effects of climate change should be integrated while also acknowledging uncertainty of projections.

5 What hazards are included in this study?

The 2021 CHA looks at coastal flooding, coastal erosion, and rising groundwater. These are the three hazards most strongly driven by climate change and the uncertainty it presents to the Christchurch District, both now and in the future.

- ***Coastal flooding*** happens when normally dry, low-lying coastal areas are temporarily flooded by the sea. It is usually caused by a severe storm, but rising sea levels could also cause 'sunny day flooding' (where high tides cause flooding even without a storm).
- ***Coastal erosion*** is a natural process that occurs when land is removed by the sea. Some coastal areas experience short periods of erosion, but then recover (build up again) while others continuously erode and never recover. The 2021 CHA reports and maps refer to land which is 'susceptible to erosion'. This includes land that might potentially be affected by coastal erosion at some point over the timeframe considered, even if it might subsequently recover.
- ***Rising groundwater*** can bring the water table close to the ground surface. This wet ground can impact people's health, buildings, infrastructure and how the land can be used. In some cases, groundwater could rise above ground level and cause temporary or permanent ponding of water.

6 How could climate change affect coastal hazards?

Climate change is slowly raising the level of the sea. Water expands with heat, so warmer temperatures are causing our oceans to expand. At the same time, these higher temperatures are melting icesheets and glaciers adding more water to the oceans. The result is a rise in sea level that will not only affect the open coast, but also allow high tides and the effects of storms to reach further inland. This means that more land may be affected by coastal flooding, erosion and rising groundwater in the future, and the severity of those impacts would likely be greater.

7 When could these higher sea levels be reached?

Sea levels have been rising over the past century globally. Scientists are confident that sea levels will continue to rise over the next century and beyond, but the rate and amount of future sea level rise is uncertain. It depends on many unknown factors, such as the rate of future (and past) greenhouse gas emissions and how the sea level responds to these emissions. This means a range of possible sea level rise scenarios should be considered, to understand which areas may be susceptible to different increments of sea level rise and help guide conversations about future adaptation.

- The national guidance considered several potential future emission pathways to develop representative sea level projections for Aotearoa / New Zealand. Details of these scenarios are shown in Table 7.1 and Figure 7.1.
- The analysis for the 2021 CHA establishes a baseline using the shoreline position and sea level in the year 2020, so this means it measures sea level rise starting from this date. In comparison, the projections shown in the national guidance use the sea levels observed between 1986 and 2005 as a baseline. This new 2020 baseline sea level acknowledges that sea levels have now risen about 10 cm compared to the older baseline. For example, a rise of 20 cm (compared to 2020) specified in the 2021 CHA is equivalent to a rise of 30 cm (compared to 1986 – 2005) specified in the national guidance.
- The national guidance recommends focussing on the 'High' sea level rise scenario (the technical term used in climate science is 'RCP8.5 M') for the first stage of risk screening. This reflects global emissions continuing at the present rate and is most aligned with our current trajectory of emissions. For more detailed risk assessment and adaptation planning the full range of scenarios should be considered to understand the range of possible futures. As explained in Section 12, the 2021 CHA looks at many different amounts of sea level rise which provide good coverage across the range of these four recommended scenarios.
- The sea level rise projections used in the national guidance (Figure 7.1) were based on the Intergovernmental Panel on Climate Change (IPCC) 5th Assessment Report issued in 2013. As the 2021 CHA was being finalised for publication the IPCC released an updated 6th Assessment Report, including updated sea level rise projections. The updated projections broadly align with the previous ones (with some differences in the details), and the various amounts of sea level rise considered for the 2021 CHA still provide good coverage across the range of updated sea level rise projections. This adaptability is one reason why the 2021 CHA considers a wide range of different sea level rise amounts rather than choosing a single fixed scenario. It means that Council can continue to follow the existing national guidance while also being able to check the hazard results against the updated projections.

6

Table 7.1: Sea level rise scenarios from the national guidance.

High (upper estimate) (Technical term = RCP8.5 H+)	
Emissions:	This scenario assumes continued high emissions, with annual global climate pollution continuing to climb through most of the century if we don't act effectively to reduce emissions. High population growth is also a factor. Consistent with 3 or 4°C of warming.
Sea level response:	This upper estimate 'H+' scenario is at the upper end of the likely range for sea level response to emissions. This reflects the possibility of future surprises, including possible instability of polar ice sheets. In short, warmer temperatures could have a strong effect on sea levels.
Adaptation:	This scenario will be used as a 'stress test' in adaptation planning, to understand implications of sea level rise towards the top end of the projected range.
High (median estimate) (Technical term = RCP8.5 M)	
Emissions:	Continued high emissions (same as 'RCP8.5' scenario above).
Sea level response:	This scenario, and the other 'M' scenarios below, assume that warming has a more moderate effect on sea levels. It uses a projection from the middle of the likely range for sea level response to warming caused by emissions.
Adaptation:	This scenario will be the main point of reference for adaptation planning as it is most aligned with our current trajectory of emissions.
Moderate (Technical term = RCP4.5 M)	
Emissions:	This reflects moderate cuts in global emissions. It shows what would happen if annual global climate pollution peaks near 2040 and then declines to half of current levels. It is consistent with about 2°C of warming, the main target from the Paris Agreement.
Sea level response:	Middle of the likely range (same as other 'M' scenarios).
Adaptation:	This scenario will be used as part of adaptation planning to understand implications for more favourable projections of sea level rise.
Low (Technical term = RCP2.6 M)	
Emissions:	This is the likely outcome if we achieve deep and rapid cuts in global emissions. Annual global heat-trapping pollution peaks near 2020 and then declines to zero within 50 years. It is consistent with about 1.5°C of warming, the most ambitious target from the Paris Agreement. Achieving this will be challenging because of the rapid and large reductions in global emissions required. Removing carbon from the atmosphere (carbon sequestration) would probably be needed.
Sea level response:	Middle of the likely range (same as other 'M' scenarios).
Adaptation:	This scenario will be used as part of adaptation planning to understand implications for optimistic projections of sea level rise.

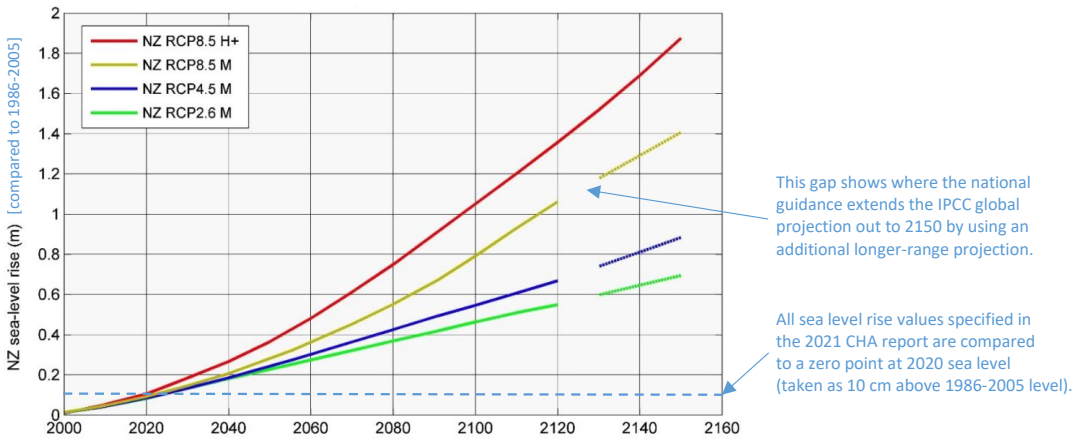


Figure 7.1: Sea level rise projections for New Zealand (relative to 1986-2005) adapted from national guidance.

8 How can ground movement accelerate the effects of sea level rise?

Aotearoa / New Zealand is constantly moving. It is criss-crossed with fault lines which can cause uplift or subsidence of the ground, both as sudden earthquake movement and slow gradual changes. Land movement can also be caused by the natural squeezing of thick soil deposits and changes in groundwater levels. This ongoing change in the level of the land is referred to as 'vertical land movement'.

Global and national projections for sea level rise, such as shown in Figure 7.1, relate to 'absolute sea level rise'. This measures sea level changes sea in relation to the centre of the earth, as would be measured by satellites.

For adaptation planning it is more useful to describe coastal hazards in terms of 'relative sea level rise', which measures changes in the level of the sea relative to the level of the land surface at a particular location. All sea level rise values used for the 2021 CHA are presented in terms of relative sea level rise compared with 2020 sea and land levels for the local coastline.

In Christchurch District, an overall long-term trend of land subsidence is expected. This could mean that a particular amount of relative sea level rise could be reached sooner than suggested by projections of absolute sea level rise such as shown in Figure 7.1. However, detailed monitoring of vertical land movement has only been carried out over the past 10 – 20 years, and only in some locations. This creates considerable uncertainty about the rate and pattern of subsidence across the region. Because of this, the 2021 CHA does not adjust the coastal hazard analysis to include any specific vertical land movement values. Instead, this is noted as an uncertainty to be kept in mind as part of adaptation planning for each individual area.

9 What process does the 2021 CHA follow?

The coastal hazard assessment follows a four-step process, which draws on the international risk management standard ISO 31000:2019. This process is summarised in Figure 9.1, and the key results are summarised in the following sections of this report.

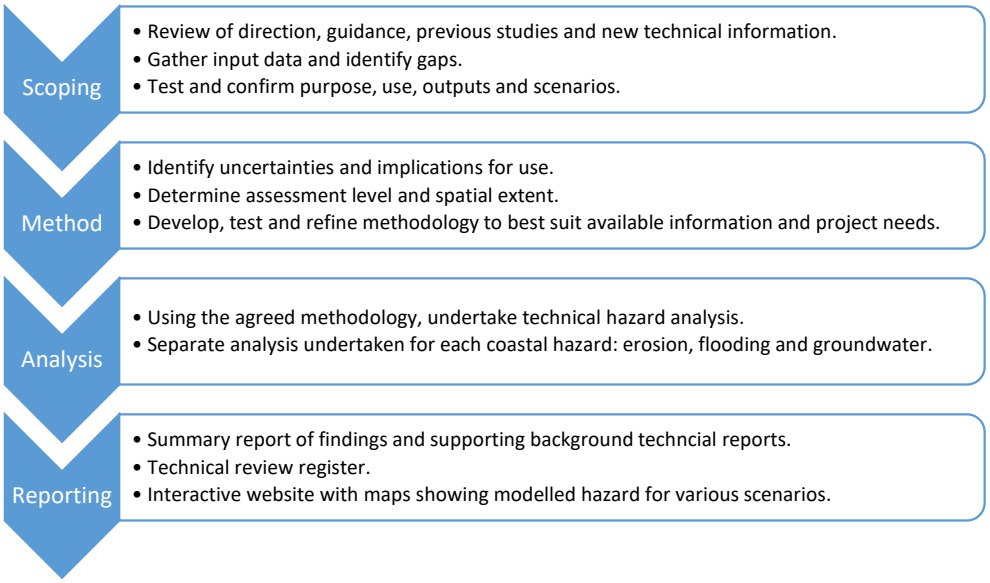


Figure 9.1: Summary of the process followed for the 2021 coastal hazard assessment.

8

10 What input data is used?

Before the hazard analysis was undertaken, the team reviewed existing data and research reports to make sure the assessment used the most up to date information about the local coastal environment. This information is summarised in Table 10.1.

Table 10.1: Key environmental data used for the 2021 CHA.

Information	What data was used	What it was used for
Topography (height and shape of land)	Aerial survey of ground levels from 2018 (or 2008 for Kaitorete spit).	Mapping the extent of coastal flooding for a given water level.
Bathymetry (depth of water)	Various marine charts and water depth surveys.	Used as part of the calculation of erosion and coastal flooding levels.
Aerial imagery	Latest imagery for entire coastline from 2019. Historical imagery dating back as far as the 1940s for Christchurch open coast, 1960s for Lyttelton and 1980-1990s for Banks Peninsula.	Defining the current-day shore baseline position. Measuring changes in shoreline position over time.
Beach profiles	Regular surveys of beach cross-section profiles dating back as far as the 1970s or 1990s for the Christchurch open coast and Kaitorete Spit and 2017 for Lyttelton.	Measuring changes in the height of beaches and dunes over time, and how much short-term erosion can occur due to storms.
Water levels	Most recent analysis of water level gauge data for various locations, mostly dating back as far as the 1990s.	Deriving sea level statistics (the highest water level reached in frequent, occasional or rare events) used to calculate coastal flooding levels.
Waves and wind	Models of highest wave heights at various locations dating back as far as the 1970s. Wind data from across Christchurch District, dating back as far as the 1950s.	Calculating the contributions of wind and waves to erosion and coastal flooding levels.
Sediment supply	Most recent analysis of the coastal sand budget for southern Pegasus Bay.	Used as part of the calculation of beach erosion for the Christchurch open coast.

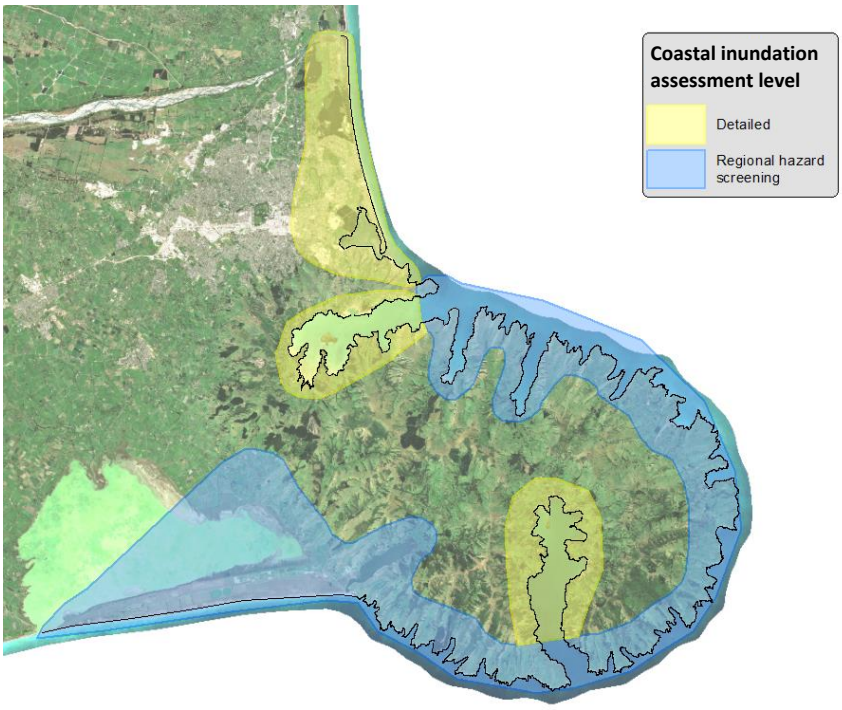
11 How much detail does the hazard analysis go into?

In assessing hazards there are a range of methods that can be used depending on what input data is available, the local coastal environment and the type of hazard information needed.

The national guidance recommends the use of a two-level approach for coastal hazard assessment:

- *A regional hazard screening* is a broad-scale hazard assessment that uses simple methods to identify areas that could be prone to coastal hazards. This approach is recommended in areas where less input data is available and fewer communities or assets are located. It can help to identify higher risk areas where more detailed assessments might be useful in future.
- *A detailed hazard assessment* enables a more thorough understanding of coastal processes, uncertainties, effects of different sea level rise scenarios, and the likelihood of hazard occurrence. To use this approach there needs to be sufficient existing information available about coastal processes in the area, such as beach profiles, water levels, waves and wind. This approach is recommended for areas of more intensive development, where there is a need for more information on how the hazard could change over time.

Figure 11.1 shows where each of these levels of detail are applied for the 2021 CHA.



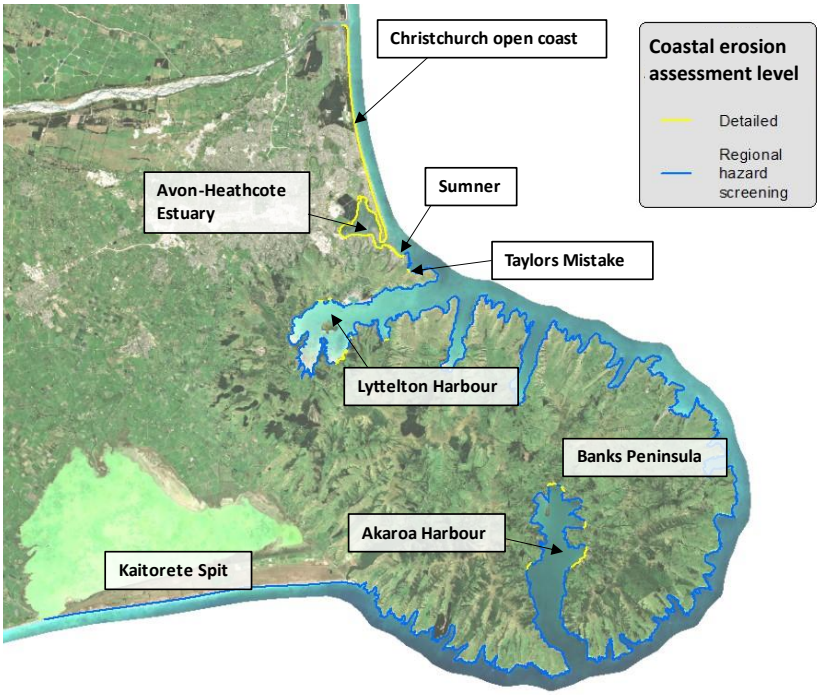


Figure 11.1: Map of Christchurch District, showing the extent of detailed and regional assessment. The detailed erosion assessment covers some parts of Lyttelton Harbour (Corsair, Cass, Rapaki, Charteris, Hays & Purau bays) and Akaroa Harbour (Wainui, Duvauchelle, Takamatua, Childrens, French & Glen bays).

12 How much sea level rise is assumed?

It's important to understand that the 2021 CHA does not predict how much sea level will rise and by when. As shown in Figure 12.1, it looks at many different sea level rise amounts between 0 and 2 metres to understand what could happen across a wide range of scientifically credible possible future sea levels between now and 2150. This approach is more adaptable than the alternative of choosing a fixed sea level rise scenario and timeframe to model. The analysis looks out as far as 2150 because Councils are required to identify what might be at risk from coastal hazards over at least the next 100 years or more.

Flooding analysis

The top chart in Figure 12.1 shows the various amounts of sea level rise modelled for the coastal flooding analysis (the horizontal dashed lines on the chart). The flooding analysis is not fixed to a specific timeframe. For example, a relative sea level rise of 40 cm could occur around 2060 if we follow the 'High – upper estimate' projection, or around 2100 if we follow the 'Low' projection. This allows adaptation planning to first focus on understanding the effect of rising sea level, and then think about when that might occur.

- *The regional hazard screening* (the thick pink dashed lines on the chart) looks at three different sea level rise amounts: 0 cm (current-day), 40 cm and 1.5 m. This provides a simple initial screening to help guide adaptation planning. A sea level rise of 1.5m is just above the most pessimistic national guidance projection for the next 100 years – so areas which are not impacted at this level will likely not be a priority for adaptation planning. A sea level rise of 40 cm is just below the most optimistic projection for the next 100 years – so areas which are impacted at this level are more likely to be a priority for adaptation planning, as they are expected to experience more severe effects sooner.
- *The detailed hazard assessment* (the thin purple dashed lines on the chart) looks at nine different sea level rise amounts: a series of 20 cm steps from 0 to 1.2 m then increasing in larger steps to 1.5 and 2.0 m (to keep the number of models to a manageable number). These steps provide good coverage across the full range between the highest and lowest national guidance projections of sea level rise over the next 100 years or more. The high-end scenario of 2 m of sea level rise (for the year 2150 or beyond) can also be used to 'stress test' for longer time periods or sea level rise exceeding projections.
- *A combined flooding & erosion analysis* (the purple triangle on the chart) looks at the open coast beach from Te Riu-o-Te-Aika-Kawa / Brooklands to Te Karoro Karoro / Southshore, for 1.5 m sea level rise in the year 2130. This is discussed further in Section 13.

Erosion analysis

The bottom chart in Figure 12.1 shows the various amounts of sea level rise modelled for the coastal erosion analysis (the dots and diamonds on the chart). Each erosion analysis is fixed to a specific timeframe as well as a sea level rise amount, as the length of time plays an important part in the long-term shoreline trends. The 2021 CHA considers five points in time, representing approximate current-day (2020), short-term (2050), medium-term (2080), long-term (2130) and beyond (2150+).

- *The regional hazard screening* (the large blue dots on the chart) looks at three of these points in time (2020, 2080 and 2130). Like the flooding analysis, three different sea level rise amounts are considered: 0 cm (current-day), 40 cm and 1.5 m, to provide a simple initial screening to help guide adaptation planning.
- *The detailed hazard assessment* (the small green dots on the chart) looks at all five points in time, with various amounts of sea level rise (using the same steps as the flooding analysis) across the full range between the highest and lowest national guidance projections. For the year 2150 and beyond the assessment looks only at a high-end sea level rise value of 2 m, as a 'stress-test' for longer time periods or sea level rise exceeding projections.
- *A sediment supply sensitivity analysis* (the green diamond on the chart) looks at the open coast beach from Te Riu-o-Te-Aika-Kawa / Brooklands to Te Karoro Karoro / Southshore, for 1.5 m sea level rise in the year 2130. This is discussed further in Section 14.

Rising groundwater analysis

For the Ōtautahi / Christchurch flat-land urban area a detailed groundwater model had already been developed for the Council by Aqualinc. This used sea level rise amounts of 0 cm, 19 cm, 40 cm, 1 m, 1.88 m and 2.4 m. For consistency, the 2021 CHA uses similar sea level rise amounts in the rising groundwater regional hazard screening for Te Pātaka-o-Rākaihautū / Banks Peninsula.

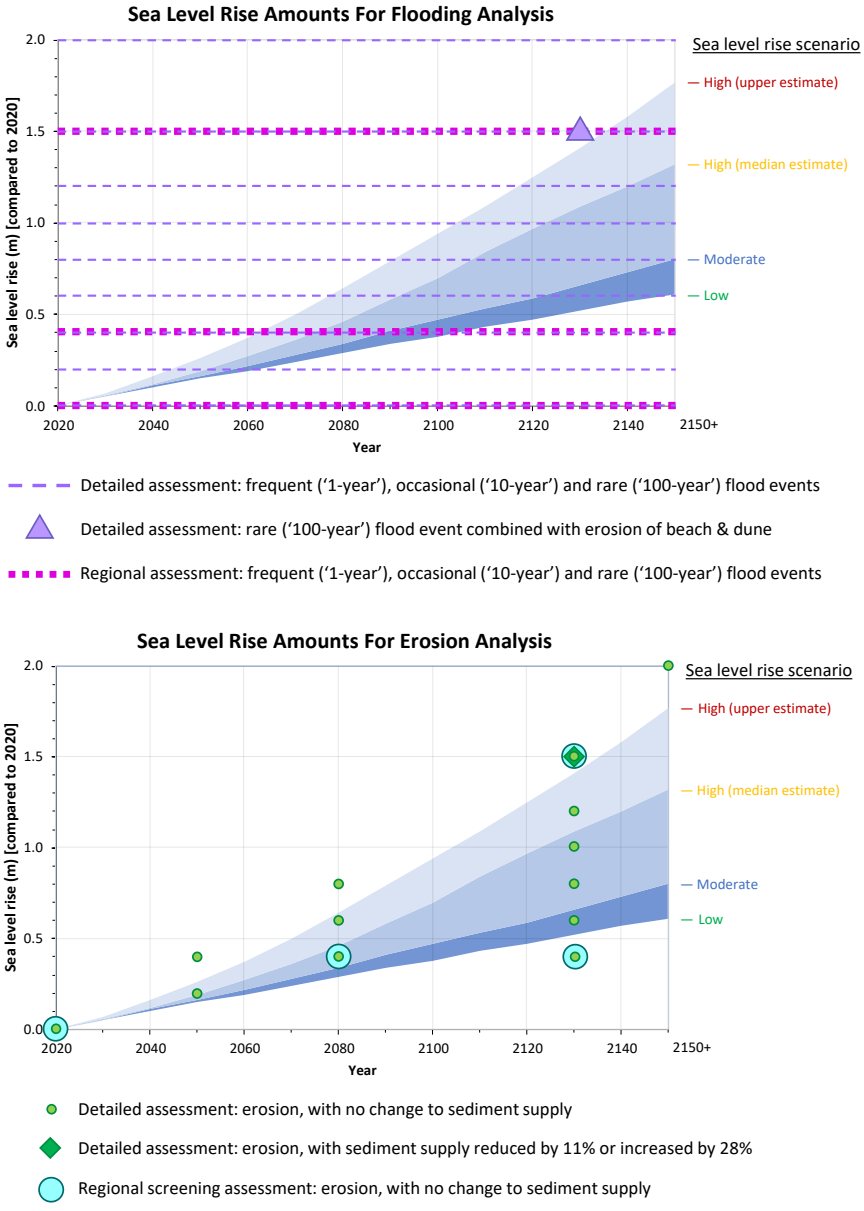


Figure 12.1: The many different sea level rise amounts and timeframes analysed for flooding (dashed horizontal lines in top chart) and erosion (dots on bottom chart), compared to the range of sea level projections recommended for adaptation planning in New Zealand. The national guidance projections from Figure 7.1 have been shifted so the 2021 CHA results are compared to a baseline at 2020 sea levels. Refer to Sections 13 & 14 for more details about the analysis.

13 How is coastal flooding analysed?

A range of factors can contribute to coastal flooding, as illustrated in Figure 13.1 and Table 13.1. This includes normal tides, storm surge from low pressure weather systems, wave effects, long-term sea level rise, and medium-term local sea level fluctuations (from climate cycles such as El Niño).

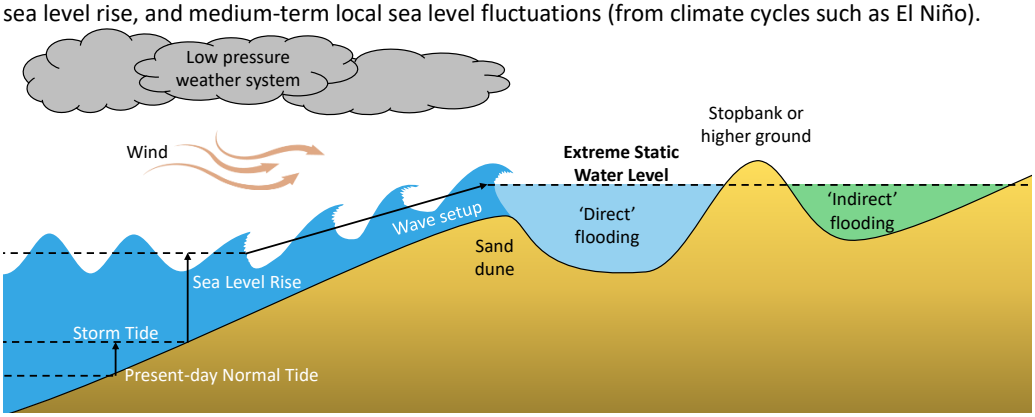


Figure 13.1: Conceptual model for calculating extreme static water levels for coastal flooding analysis.

The 2021 CHA uses a two-step approach to identify areas which could be prone to coastal flooding.

Step 1: Determine coastal flooding water level

The first step is to determine the 'extreme static water level' for each case being assessed:

- While the word 'extreme' might sound like it's unlikely to happen, in this assessment it is a technical term which simply means that the calculations used the highest water levels that have historically occurred. For example, the extreme water level calculated for a current-day occasional ('10-year') event will have occurred several times over the past 50 years.
- The 'static' water level includes the effect of 'wave setup', which is an increase in the average water level as waves approach the beach and break. It does not include 'wave run up' (the extra height waves reach temporarily as they run up the shore) because this usually reaches only about 10 to 30 m inland.
- Coastal flooding levels at a series of locations along the coastline are calculated for current-day (2020) sea levels, based on analysis of water level, wave and wind data. These measured levels already include the complex interactions between the various factors driving coastal flooding levels, such as tide, storm surge, river flows, rainfall, local wind effects and river bars. The coastal flooding levels for the various future scenarios are then calculated by adding the amount of sea level rise on top of the current-day level.

Step 2: Map the extent and depth of coastal flooding

The second step is to map how far inland the flooding from the sea might reach:

- For this a 'bathtub model' is used, which examines the ground topography survey data to identify land that is below the water level for each flood event and then maps the water depth at these locations. The results can be viewed using the online maps on the coastal hazard section of the Council website.
- As coastal flooding is a temporary event, the mapped areas won't be permanently flooded by the sea. However, with sea level rise the frequency and depth of flooding could increase, and rising groundwater could also lead to permanently wet ground or surface ponding (discussed in Section 15).
- The coastal flooding analysis looks only at areas close to the coast, where changes in future flood hazard is driven mostly by sea level rise. Further inland, flooding is driven more by rainfall and rivers, so there is more uncertainty in water levels. For this reason, an inland extent boundary is defined for the analysis and the area inland of this line is greyed-out in the coastal hazard maps. This doesn't mean inland areas won't be affected by sea level rise, just that this flooding is better modelled using different methods which incorporate rainfall and river effects. Council already has information about flood hazard for these areas which can be viewed on the floor level map or District Plan natural hazard maps.

Table 13.1: Key factors influencing coastal flooding.

Flood event severity / frequency	The severity of coastal flood events is described by their Average Recurrence Interval (ARI). Events with longer ARI (e.g., 100-year) result in deeper flooding, but are less frequent on average, than events with shorter ARI (e.g., 1-year). The 2021 CHA looks at three different levels of flood event severity / frequency: • Frequent events (1-year ARI) • Occasional events (10-year ARI) • Rare events (100-year ARI) While a rare ('100-year') flood event sounds like it only occurs once every 100 years, it can actually happen more often. It is an event of a size that will occur on average once every 100 years and is much larger and more significant than a frequent ('1-year') flood event. Because it is an average, several such events might occur within a few years, and then none for a long time afterwards. Another common description is that there is a 1% chance of an event that size or larger in any given year (this is known as an 'annual exceedance probability'). The reason a rare ('100-year') flood event is often used for hazard assessment is that it is likely that a flood event of this size will occur over long-term planning timeframes. Many of our buildings and infrastructure are expected to last well over 50 years and as long as 100 years or more. Looking at a rare ('100-year') flood event gives us a realistic understanding of the hazard that the assets could be exposed to at least once over their lifetime.
Sea level rise	A rise in the everyday sea level means that the water level during flood events can also rise higher. As the sea rises, the depth of flooding for a particular ARI will increase. For example, a rare ('100-year') flood in an area might increase from a depth of 50 cm at present to a depth of 1 m in future. Likewise, the frequency of a particular depth of flooding will increase. For example, flooding deeper than 50 cm in an area might increase in frequency (on average) from once in 100 years at present to once in 10 years in future.
Flood protection structures and indirect flooding	The 2021 CHA analysis is based on a survey of the current-day (2020) ground level, including existing flood protection structures such as stopbanks and bunds. While these structures can help to manage surface flooding, they are less effective at protecting against sea level rise because having permanent water on one side can cause groundwater to rise on the other. Drainage outlets might also allow back-flow during flood events. This means that land can be flooded from below even if the protection structure is higher than the flood level. Because there is no direct connection to the sea, this is called 'indirect flooding' and is shown in green on the hazard maps and Figure 13.1.
Impact of coastal erosion	Erosion can make it easier for flooding to reach further inland. For example, erosion or lowering of dunes might allow waves to run up and flood land further inland. For the 2021 CHA most of the coastal flooding maps assume no change to the current-day shoreline and land levels (i.e., no erosion). But for the section of open coast where the combined impacts of flooding and erosion are most relevant (Brooklands to Southshore) the influence of long-term erosion on the modelled extent and depth of flooding is also checked (shown as the purple triangle in Figure 12.1).

14 How is coastal erosion analysed?

There are various types of shorelines present along the Christchurch District coastline, including sandy beaches and gravel barriers, compacted banks and harder cliffs. So, the first step in the erosion analysis is to divide the shoreline up into 'coastal behaviour cells', which are segments of coastline with similar shoreline types and other factors (such as exposure to waves) which may influence the erosion hazard.

For each shoreline type a conceptual model is used to represent the main processes contributing to erosion, both now and in the future. The contribution of each of these components is then combined to determine the 'Area Susceptible to Coastal Erosion' (ASCE) for each coastal behaviour cell. An example conceptual model for a sand beach shoreline is presented in Figure 14.1. The models for other shorelines follow a similar form, but with some components being more or less relevant.

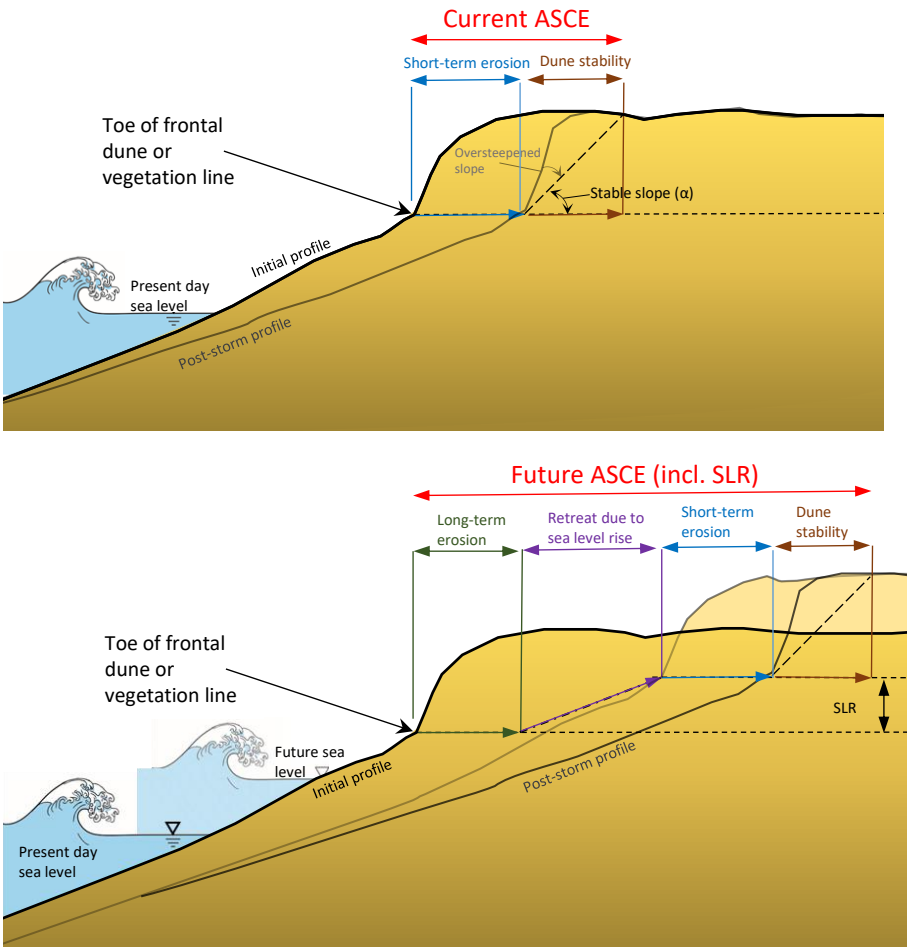


Figure 14.1: Conceptual model for Areas Susceptible to Coastal Erosion (ASCE) on a sand beach shoreline, showing the components contributing to erosion for the current-day (top figure) and in future (bottom figure).

The results of the coastal erosion analysis for the various scenarios can be viewed using the online maps on the coastal hazard section of the Council website. The maps show the modelled hazard as being the same for all points along a coastal behaviour cell, and then changing suddenly between

cells. However, in reality erosion will usually show more of a natural gradual variation, and erosion in any one event might sometimes only affect smaller localised parts of the shoreline.

We can't know for sure what will happen in future, so the maps describe the hazard in terms of the probability (or chance) of land being affected by erosion. Whether or not erosion actually occurs at a particular location could be influenced by the four key factors described in Table 14.1.

Table 14.1: Key factors influencing coastal erosion.

Long-term coastal processes	Various long-term natural processes gradually add and remove sediment (such as sand) over time. One of these processes is sediment from the Waimakariri River, which moves along the coast helping to replenish beaches and reduce erosion. It is uncertain whether the sediment might increase or decrease in future, so for most of the erosion maps the analysis assumes sediment supply reaching beaches will stay the same. The coastal sand budget research recently commissioned by the Council suggests that while a decrease in sediment supply is possible, a slight increase is more likely. So for the section of open coast where sediment supply is most relevant (Brooklands to Southshore) the effect on erosion from a 28% increase or 11% decrease in sediment is also checked (shown as the green diamond in Figure 12.1).
Short-term erosion events	Events such as storms can temporarily remove sediment from the upper beach, often leaving a steep cut in the coast. This sediment generally returns back to the shore over time, rebuilding the coast. For these maps we assumed that the intensity and number of storms and short-term erosion effects remain the same as in the past, including the effect of any existing natural protection such as dunes and vegetation.
Sea level rise	Sea level rise can have various effects on erosion, depending on the type of shoreline at a particular location: • For beaches formed from loose silt, sand or gravel – material is eroded from the upper beach and deposited offshore, which can cause landward retreat of the shoreline. • For banks formed from compacted earth – sea level rise can increase the potential for wave-driven erosion, however as the shoreline retreats landward a shore platform or beach could develop which would dissipate wave energy and slow the rate of erosion. • For hard-rock cliffs without a shore platform – sea level has less influence and erosion is dominated by weathering effects.
Erosion protection structures	At many locations along the Christchurch District coastline there are existing coastal erosion protection structures in place. There is a wide variety in terms of the type, construction, effectiveness, and current condition of these structures. For the 2021 CHA, known structures are shown on the hazard map for context, but the area susceptible to coastal erosion is calculated as if the structure was not present (based on erosion rates of nearby similar shorelines without protection). This allows the long-term importance of these structures to be considered as part of adaptation planning. It acknowledges they may provide some degree of protection against erosion now and into the future but also shows what could be at risk if they were to fail. The exception to this approach is for three sections of coastline where the natural shoreline has been significantly modified with land reclamation and hard protection structures – from Ferrymead to Scarborough, Lyttelton Port and within the Akaroa township. Because these shoreline modifications are so extensive and have been in place for so long, it is not feasible to use past observations to estimate what the long-term erosion rate would be in the absence of structures. In these locations the erosion hazard is mapped as the land immediately behind the structure which could quickly become unstable if the structure were to fail. If the damaged structure was not promptly repaired then the extent of erosion in the longer-term could be greater than mapped.

15 How is rising groundwater analysed?

The national guidance notes that climate change and sea level rise can result in rising groundwater levels in coastal lowlands, and this should be considered as part of a coastal hazards assessment.

As illustrated in Figure 15.1, the 2021 CHA looks at two of the primary groundwater issues which may be worsened by sea level rise in low-lying coastal areas across Christchurch District:

- ***Above-ground flooding*** due to surface groundwater ponding, either temporary or permanent.
- ***Wet ground*** due to a rise in the groundwater table, which can impact buildings, infrastructure and how people can use the land. Groundwater rising to within 70 cm of the surface was adopted as an indicator for when these impacts might become more significant.

High groundwater tables also exist in other parts of Christchurch District further inland from the coast, but groundwater in these areas is not expected to be significantly impacted by sea level rise.

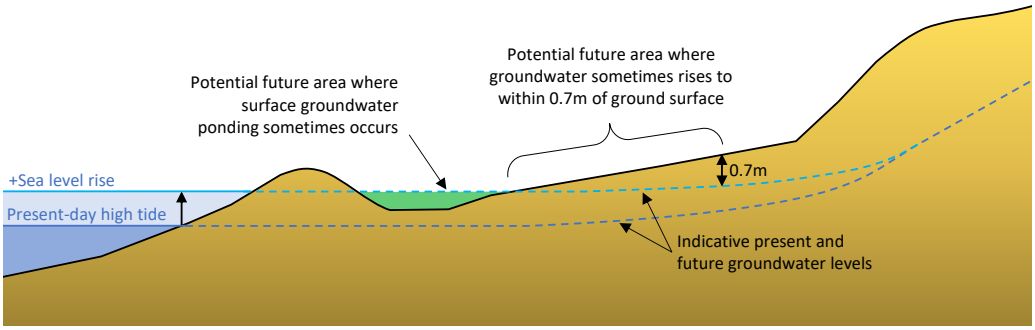


Figure 15.1: Conceptual model for identifying low-lying coastal areas which might be impacted by rising groundwater.

The rising groundwater maps for the 2021 CHA are based on groundwater models:

- Groundwater doesn't stay fixed at the same level all the time, it naturally fluctuates between days, weeks, seasons and years. Peak levels might only happen for a short time and then drop away again for a long time, so the impacts from these peaks might not be particularly significant or long-lasting. Therefore, rather than looking at the maximum groundwater level that might occur, the 2021 CHA follows standard scientific practice of using the 85th percentile groundwater level as a reference point for the groundwater models. Groundwater levels will be higher than this 15% of the time (on average), so it is a more useful indicator of when significant sustained groundwater issues could occur.
- For the Ōtautahi / Christchurch flat-land urban area a detailed groundwater model had already been developed for the Council by Aqualinc. This model was based on long-term monitoring of groundwater at hundreds of locations across the city. It looked at sea level rise amounts of 0 cm, 19 cm, 40 cm, 1.00 m, 1.88 m and 2.40 m. In the eastern half of the city, the model predicts that sea level rise could cause a rise in groundwater up to 1 - 3km inland from the coast and tidal reaches of the rivers.
- For Te Pātaka-o-Rākaihautū / Banks Peninsula there was no previous groundwater model, so the 2021 CHA uses a simple regional hazard screening analysis. Because there is little groundwater data in this area, the model is based only on the height of land above sea level. The 85th percentile groundwater is modelled at a level equivalent to the high tide level at the shoreline, remaining at this same level further inland. The analysis adopts similar sea level rise amounts as the Aqualinc model and assumes the groundwater level rises the same amount as the sea level. These modelling assumptions are reasonable for hazard screening of low-lying land near the coast but become less reliable further inland and at the base of hills.

The results of the rising groundwater analysis for various amounts of sea level rise can be viewed using the online maps on the coastal hazard section of the Council website.

There are some limitations with these groundwater models that are important to understand:

- The models are intended solely to help inform district-wide adaption planning. Their purpose is to identify general areas that are more likely to be impacted by rising groundwater caused by sea level rise. The models are not sufficiently detailed to give a precise prediction of the groundwater level at a particular location or to identify individual property risk.
- The national guidance also identifies various other groundwater-related issues which might worsen with climate change, such as saltwater entering groundwater, reduced soakage capacity for stormwater and increased potential for earthquake-induced liquefaction. The 2021 CHA doesn't look at these issues or other secondary effects, however it may help to identify locations where future efforts could be focussed to help inform adaption planning.

16 What areas could be affected by these hazards, now or in future?

On the following pages are coastal hazard summary sheets for each section of the Christchurch District coastline. These highlight the main areas which could be prone to coastal hazards now or in the future. The description of the shorter-term and longer-term hazard in these summary sheets is based on the scenarios shown in Table 16.1.

The summary sheets highlight key locations where coastal hazards could have more extensive impacts on existing coastal communities. Elsewhere along the coast there are many other locations exposed to coastal hazards – but these have less intensive existing development or a smaller affected area, so are not included in these high-level summary sheets.

For more detail about which areas could be affected by coastal hazards and how they change with different timeframes, amounts of sea level rise and storm events, you can view the full suite of results using the online map viewer in the coastal hazard section of the Council website.

Nobody can be certain what will happen in future, in the short-term or in the long-term. For example, we don't know exactly how severe the next storm will be, or how fast sea levels will rise over the coming years. Different areas could be affected by coastal hazards in different ways depending on how these uncertain factors play out. An important part of adaptation planning is managing this uncertainty. The project team recommends that Council consider the full suite of hazard analysis results, the range of uncertainties involved, and the broader community contexts to help prioritise and guide adaptation planning discussions with potentially affected communities.

Table 16.1: Scenarios for summary sheet descriptions.

	Level of detail	Short-term (ST)	Long-term (LT)
Coastal flooding and rising groundwater	Detailed hazard assessment & Regional hazard screening	20 cm sea level rise	1 m sea level rise
Coastal erosion	Detailed hazard assessment	Year 2050 20 cm sea level rise	Year 2130 1 m sea level rise
	Regional hazard screening	Year 2020 0 cm sea level rise	Year 2130 1.5 m sea level rise

NOTES:

1. The sea level rise values specified in the 2021 CHA are relative to 2020 baseline sea levels, which were about 10 cm higher than the 1986 – 2005 levels used for the national guidance (Figure 7.1). For example, a rise of 20 cm specified in the 2021 CHA is equivalent to a rise of 30 cm in the national guidance.
2. The erosion scenarios are different for detailed and regional analysis, because of the different amount of information available (see Section 11 and Figure 11.1). In locations where a detailed hazard assessment was undertaken there were results available for numerous scenarios, but where a regional analysis was undertaken this only included one low-end and one high-end scenario (to provide an initial hazard screening).

COASTAL HAZARD SUMMARY

Environmental setting

This part of the Ōtautahi / Christchurch coast includes dunes bordering the open coast beach, the Waimakariri River and mouth to the north, the Pūharakekenui / Styx River which flows into Te Riu O Te Aika Kawa / Brooklands Lagoon, and the adjacent coastal plain.

The open coast is a sandy beach shoreline which faces east and is sheltered from southerly swell by Te Pātaka-o-Rākaihautū / Banks Peninsula. Over the past 6000 years the shoreline has built out seaward several kilometres with sediment (sand and silt) deposited from rivers and the sea. This seaward movement is called accretion, and has created a series of beach deposits, sand hills, swamps, estuaries and lagoons across the low-lying coastal plain. More recently, people have modified the land by draining it, clearing vegetation and flattening out dunes and hollows.

The dynamic nature of this environment is demonstrated by the formation of the Te Riu O Te Aika Kawa / Brooklands Lagoon. This happened when the Waimakariri River mouth shifted to its current position in a large storm in 1940, with the old river channel then filling in to form the lagoon.

Sediment discharged by the Waimakariri River is transported southwards and deposited along the shore, helping replace material removed by other coastal processes. Observations of the beach position since the 1940s show an overall long-term trend of accretion. However, several significant short-term erosion events have also been observed over this time, with single storms causing 10 to 15m width of beach erosion. The shoreline at the northern tip of the Brooklands Spit moves in response to the dynamic influence of the Waimakariri River.

The dune reaches heights ranging from about 5 to 10m above normal high tide level. Minor tracks and access roads have been cut through the dunes, but there has been no larger-scale modification such as dune flattening or seawalls.

How the hazard is assessed

Coastal flooding

The 2021 CHA looks at frequent (‘1-year’), occasional (‘10-year’) and rare (‘100-year’) events. The area and depth of flooding is mapped by comparing the flood level to the current land level (a ‘bathtub analysis’). The analysis combines the effect of:

- Storm tide levels, based on analysis of tide gauge data and a recent (2021) study of tide statistics.
- Set-up (temporary increase in water level along the coast due to wind and breaking waves), assessed using offshore wave data along the open coast.
- The effect of sea level rise on coastal flooding, assessed by adding the projected sea level rise amount on to the 2020 flood level.

Coastal erosion

For the open coast shoreline the 2021 CHA looks at the overall erosion hazard by combining the effect of:

- Long-term accretion and erosion trends, assessed using historic air photos (1941 to 2019) and beach profile data (1990 to 2020). The assessment also considers how these trends could change if more or less sediment was supplied from the Waimakariri River in future.
- Short-term erosion events, assessed using beach profile data (1990 to 2020).
- Erosion of dunes, assessed based on their height and how steeply they can stand before they become unstable.
- The effect of sea level rise on erosion, assessed based on a sandy beach response model. A rise in sea level causes material to be eroded from the upper beach and deposited offshore, which can cause landward retreat of the shoreline (or slow the rate of accretion).

Rising groundwater

For this area a detailed groundwater model had already been developed for the Council by Aqualinc:

- The 2020 groundwater model was based on data from water level monitoring in the Pūharakekenui / Styx River and 18 groundwater monitoring wells across Brooklands and Spencerville.
- The model looks at groundwater levels that will only sometimes be reached (about 15% of the time) and could last for days to months.
- In future, sea level rise is predicted to cause a rise in groundwater up to 1 - 3km inland from the coast and tidal reaches of the rivers.

TE RIU O TE AIKA KAWA / BROOKLANDS LAGOON TO BOTTLE LAKE FOREST

Key findings

Short Term *= now to 2050; 0 to 20cm sea level rise.* ***Long Term*** *= 2100 and beyond; 1 to 1.5m sea level rise.*

Overall hazard context

This area can be affected by storm surge, which is a temporary rise in sea and lagoon water level due to a low-pressure weather system. The open coast is also exposed to open ocean swell and wind-generated waves which can further elevate water levels. The dunes are currently high enough to limit waves running up over the dune crest, protecting the coastal plain further inland from the higher dynamic water levels at the coast. However, much of the inland coastal plain is low-lying so is prone to coastal flooding from Te Riu O Te Aika Kawa / Brooklands Lagoon and Pūharakekenui / Styx river. With sea level rise this area could be prone to rising groundwater, which could sometimes rise close or up to the surface (especially near the river and lagoon).

This northern section of the open coast beach is more prone to erosion than the beach further south. This is because the northern section has lower accretion rates (much of the sediment from the Waimakariri River is transported further down the coast) and greater short-term erosion in storms (it is more exposed). This means that compared to the beach further south, this northern section is more sensitive to shoreline changes caused by sea level rise, but less sensitive to changes in sediment supply from the Waimakariri River.

① Ōtautahi / Christchurch Open coast beach – northern section

Short Term The dunes are high enough to protect the inland area from direct flooding by the open sea in a rare (‘100-year’) event. Up to 20 - 25m width of coastline is prone to short-term storm erosion, or up to 35m at the Waimakariri River mouth.

Long Term The current dune height would be enough to protect the inland area from direct flooding by the open sea in a rare (‘100-year’) event, however if there is significant erosion of dunes along Brooklands Spit then this could allow the sea to flood into the lagoon. While the shoreline currently has an overall long-term trend of accretion, how the shoreline position moves in future depends on the balance between supply of sediment from rivers, erosion in storms and shoreline changes caused by sea level rise. For most of this coast, if sea level rise exceeds about 40 – 60 cm over the next 100 years then a switch to a long-term trend of erosion is more likely than continued accretion. Up to 30 - 50m width of beach shoreline could be prone to erosion, or up to 100m at the Waimakariri River mouth.

② Brooklands

Short Term Most of this area (both east and west of the river) is low-lying land which is prone to coastal flooding from the lagoon in an occasional (‘10-year’) event. Groundwater could sometimes rise close or up to the surface on the lower terraces adjacent and to the west of the river, and close to the surface in some locations between the river and lagoon.

Long Term Almost all this area (both east and west of the river) could become prone to coastal flooding in a frequent (‘1-year’) event, with groundwater sometimes rising close or up to the surface.

③ Spencerville

Short Term Coastal flooding from the lagoon and river could reach 300 - 500m inland in an occasional (‘10-year’) event, increasing to cover most of the area (both east and west of the river) in a rare (‘100-year’) event. Groundwater could sometimes rise close to the surface in lowest-lying areas alongside the river.

Long Term Almost all this area (both east and west of the river) could become prone to coastal flooding in a frequent (‘1-year’) event, with groundwater sometimes rising close to the surface.

④ Bottle Lake Forest

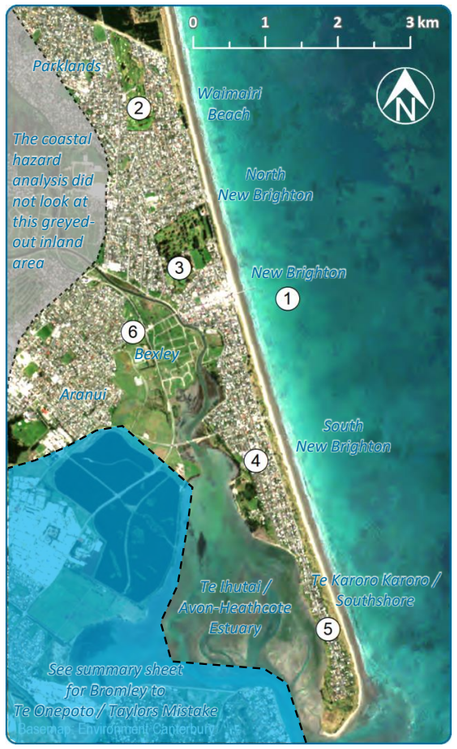
Short Term Lower-lying land within about 500m of the beach could experience flooding from groundwater in an occasional (‘10-year’) event.

Long Term Lower-lying hummocky land within about 500 - 1000m of the beach could become prone to coastal flooding from the river and lagoon in an occasional (‘10-year’) event. Groundwater could sometimes rise close or up to the surface at some locations within about 1.5km of the beach.

To see the hazard maps and explore a range of future scenarios, you can use the online map viewer on the Council website.

Version 1, September 2021

COASTAL HAZARD SUMMARY



Environmental setting

This part of the Ōtautahi / Christchurch coast includes dunes bordering the open coast beach, the adjacent low-lying coastal plain, and the Ōtākaro / Avon River which flows into Te Ihutai / Avon-Heathcote Estuary to the south.

The open coast is a sandy beach shoreline which faces east and is sheltered from southerly swell by Te Pātaka-o-Rākaihautū / Banks Peninsula. Over the past 6000 years the shoreline has built out seaward several kilometres with sediment (sand and silt) deposited from rivers and the sea. This seaward movement is called accretion, and has created a series of beach deposits, sand hills, swamps, estuaries and lagoons across the coastal plain. More recently, people have modified the land by draining it, clearing vegetation and flattening out dunes and hollows.

Sediment discharged by the Waimakariri River is transported southwards and deposited along the shore, helping replace material removed by other coastal processes. Observations of the beach position since the 1940s show an overall long-term trend of accretion. However, several significant short-term erosion events have also been observed over this time, with single storms causing 10 to 15m width of beach erosion. The shoreline at the southern tip of Te Karoro Karoro / Southshore Spit moves in response to the dynamic influence of Te Ihutai / Avon-Heathcote Estuary.

The dune reaches heights ranging from about 6 to 8m above normal high tide level, except at North Beach and New Brighton where dunes were historically removed for beach-side development and are as low as 2m above high tide level. Flood and erosion protection structures (of varying type, effectiveness and condition) are present at some locations along the river, estuary and beach shorelines.

How the hazard is assessed

Coastal flooding

The 2021 CHA looks at frequent (‘1-year’), occasional (‘10-year’) and rare (‘100-year’) events. The area and depth of flooding is mapped by comparing the flood level to the current land level (a ‘bathtub analysis’). The analysis combines the effect of:

- Storm tide levels, based on analysis of tide gauge data and a recent (2021) study of tide statistics.
- Set-up (temporary increase in water level along the coast due to wind and breaking waves), assessed using offshore wave data along the open coast and computer software which models the waves generated across the estuary by wind.
- Flood protection structures may provide a degree of protection now and into the future. To show what could be at risk, the 2021 CHA identifies land behind these structures that could be flooded indirectly (e.g., by drainage back-flow) or if the structure was not present.
- The effect of sea level rise on coastal flooding, assessed by adding the projected sea level rise amount on to the 2020 flood level.

Coastal erosion

For the open coast and estuary shoreline the 2021 CHA looks at the overall erosion hazard by combining the effect of:

- Long-term accretion and erosion trends, assessed using historic air photos (1941 to 2019) and beach profile data (1978 to 2020). The assessment also considers how these trends could change if more or less sediment was supplied from the Waimakariri River in future.
- Short-term erosion events. For the open coast this is based on beach profile data (1978 to 2020). For the estuary shore this is based on storm response models, which consider storm tide levels, wave heights, and how the tidal flats can help to reduce erosion.
- Erosion of dunes and banks, assessed based on their height and how steeply they can stand before they become unstable.
- The effect of sea level rise on erosion, assessed based on a sandy beach response model. A rise in sea level causes material to be eroded from the upper beach and deposited offshore, which can cause landward retreat of the shoreline (or slow the rate of accretion).
- Coastal protection structures may provide a degree of protection against erosion now and into the future. To show what could be at risk, the 2021 CHA identifies land that could be prone to erosion if the structure was not present.

Rising groundwater

For this area a detailed groundwater model had already been developed for the Council by Aqualinc:

- The 2020 groundwater model was based on water level monitoring in the Ōtākaro / Avon River and 250 monitoring wells across this area.
- The model looks at groundwater levels that will only sometimes be reached (about 15% of the time) and could last for days to months.
- Sea level rise is predicted to cause a rise in groundwater up to 1 - 3km inland from the coast and tidal reaches of the rivers.

WAIMAIRI BEACH TO TE KARORO KARORO / SOUTHSHORE SPIT

Key findings

Short Term *= now to 2050; 0 to 20cm sea level rise.* ***Long Term*** *= 2100 and beyond; 1 to 1.5m sea level rise.*

Overall hazard context

This area can be affected by storm surge, which is a temporary rise in sea and estuary water level due to a low-pressure weather system. The open coast is also exposed to open ocean swell and wind-generated waves which can further elevate water levels. The dunes are currently high enough (where not removed) to limit waves running up over the dune crest, protecting the coastal plain further inland from the higher dynamic water levels at the coast. However, parts of the inland coastal plain are low-lying so are prone to coastal flooding from Te Ihutai / Avon-Heathcote Estuary and the Ōtākaro / Avon River, and to rising groundwater caused by sea level rise.

This southern section of the open coast beach is less prone to erosion than the beach further north. This is because the northern section has lower accretion rates (much of the sediment from the Waimakariri is transported further down the coast) and greater short-term erosion in storms (it is more exposed). This means that compared to the beach further north, this southern section is less sensitive to shoreline changes caused by sea level rise, but more sensitive to changes in sediment supply from the Waimakariri River.

① Ōtautahi / Christchurch open coast beach – southern section

Short Term The dunes are high enough to protect the inland area from direct flooding by the open sea in a rare (‘100-year’) event. Up to 10 - 20m width of beach is prone to short-term erosion caused by storms between periods of gradual accretion.

Long Term The current dune height would be enough to protect the inland area from direct flooding by the open sea in a rare (‘100-year’) event. However, storms may be able to break through the locations at North Beach and New Brighton with no (or very low) dunes, especially if there is significant long-term erosion. This could increase the area and depth of flooding inland. While the shoreline currently has an overall long-term trend of accretion, how the shoreline position moves in future depends on the balance between supply of sediment from rivers, erosion in storms and shoreline changes caused by sea level rise. For most of this beach, if sea level rise exceeds about 40 - 60cm over the next 100 years then a switch to a long-term trend of erosion is more likely than continued accretion. In the long term, up to 10 - 60m width of shoreline could be prone to erosion.

② Parklands, Waimairi Beach and North New Brighton

Short Term Not prone to coastal flooding in a rare (‘100-year’) event, as dunes provide protection from the sea and it is away from the river.

Long Term Coastal flooding through breaks in the dunes, and indirect flooding via groundwater or stormwater pipe backflow, could reach 150 - 300m inland from the dunes in a rare (‘100-year’) event, as well as affecting lower-lying parts of Parklands. Groundwater could sometimes rise close to the surface in lower-lying areas.

③ New Brighton & ④ South New Brighton

Short Term Coastal flooding from the estuary and river could reach 150 - 550m inland in an occasional (‘10-year’) event, increasing to 250 - 600m in a rare (‘100-year’) event. In lowest-lying areas within 150 - 250m of the river groundwater could sometimes rise close to the surface. Up to 15m width of estuary shoreline is prone to short-term storm erosion.

Long Term Coastal flooding from the estuary and river could reach 300 - 800m inland in a frequent (‘1-year’) event, increasing in depth and covering much of this area in a rare (‘100-year’) event. Groundwater could sometimes rise close or up to the surface over much of this area. Up to 35m width of estuary shoreline could be prone to erosion.

⑤ Southshore / Te Karoro Karoro

Short Term Coastal flooding from the estuary could reach 150 - 400m inland from the estuary in an occasional (‘10-year’) event, with a similar area but greater depth in a rare (‘100-year’) event. In lowest-lying areas groundwater could sometimes rise close to the surface. Up to 15m width of estuary shoreline is prone to short-term storm erosion.

Long Term Most of the area could be prone to coastal flooding from the estuary in a frequent (‘1-year’) event. Groundwater could sometimes rise close or up to the surface over much of this area. Up to 15 - 40m width of estuary shoreline could be prone to erosion, depending on long-term trends along the spit (long-term erosion rates at the south end of the spit are particularly uncertain).

⑥ Bexley and Aranui

Short Term Coastal flooding from the river could reach 300 - 900m inland in an occasional (‘10-year’) event, with a similar area but greater depth in a rare (‘100-year’) event. In the lowest-lying areas groundwater could sometimes rise close to or up to the surface.

Long Term Coastal flooding from the river could reach 300 - 1000m inland in a frequent (‘1-year’) event, increasing to 600 - 1200m with greater depth in a rare (‘100-year’) event. In the lowest-lying areas groundwater could sometimes rise close or up to the surface.

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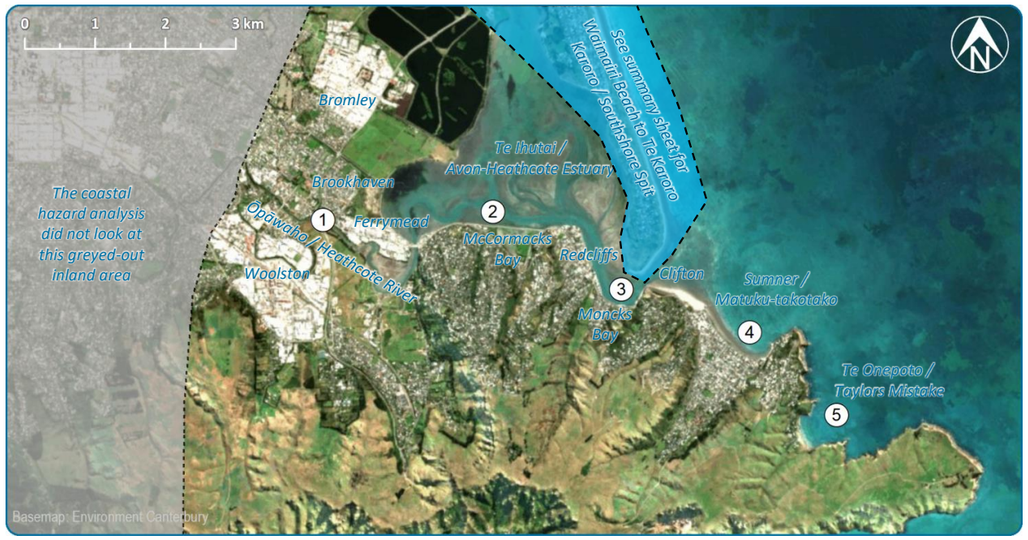
Version 1, September 2021

COASTAL HAZARD SUMMARY



Environmental setting

This area includes the Ōpāwaho / Heathcote River which flows into Te Ihutai / Avon-Heathcote Estuary, flat-land areas to the east, the southern estuary shoreline, and fine sand open coast beaches at Matuku-takotako / Sumner and Te Onepoto / Taylors Mistake. The sometimes-narrow coastal margin is bounded by the steep rock hills of Te Pātaka-o-Rākaihautū / Banks Peninsula, which also help to shelter the area from southerly storms. The low-lying coastal plain was historically swamp and grasslands, but people have drained the land and cleared vegetation. Most of the shoreline from Ferrymead to Sumner has been modified with coastal protection structures (of varying type, effectiveness and condition), with some areas of reclamation.

How the hazard is assessed

Coastal flooding

The 2021 CHA looks at frequent ('1-year'), occasional ('10-year') and rare ('100-year') events. The area and depth of flooding is mapped by comparing the flood level to the current land level (a 'bathtub analysis'). The analysis combines the effect of:

- Storm tide levels, based on analysis of tide gauge data and a recent (2021) study of tide statistics.
- Set-up (temporary increase in water level along the coast due to wind and breaking waves), assessed using offshore wave data along the open coast and computer software which models the waves generated across the estuary by wind.
- The effect of sea level rise on coastal flooding, assessed by adding the projected sea level rise amount on to the 2020 flood level.

Coastal erosion

For the open coast and estuary shoreline the 2021 CHA looks at the overall erosion hazard by combining the effect of:

- Long-term accretion and erosion trends, assessed using historic air photos (1941 to 2019) and beach profile data (1990 to 2020).
- Short-term erosion events. For the open coast this is based on beach profile data (1990 to 2020). For the estuary shore this is based on storm response models, which consider storm tide levels, wave heights, and how the tidal flats can help to reduce erosion.
- Erosion of dunes, banks and cliffs assessed based on their height and how steeply they can stand before they become unstable.
- The effect of sea level rise on erosion, assessed based on a sandy beach response model. A rise in sea level causes material to be eroded from the upper beach and deposited offshore, which can cause landward retreat of the shoreline (or slow the rate of accretion).
- Coastal protection structures may provide a degree of protection against erosion now and into the future. To show what could be at risk, the 2021 CHA identifies the land immediately behind the structure which could quickly become unstable if the structure were to fail.

Rising groundwater

For this area a detailed groundwater model had already been developed for the Council by Aqualinc:

- The 2020 groundwater model was based on water level monitoring in the Ōtākaro / Avon River and 160 monitoring wells across this area.
- The model looks at groundwater levels that will only sometimes be reached (about 15% of the time) and could last for days to months.
- In future, sea level rise is predicted to cause a rise in groundwater up to 1 - 3km inland from the coast and tidal reaches of the rivers.

BROMLEY TO TE ONEPOTO / TAYLORS MISTAKE

Key findings

Short Term *= now to 2050; 0 to 20cm sea level rise.* ***Long Term*** *= 2100 and beyond; 1 to 1.5m sea level rise.*

Overall hazard context

This area can be affected by storm surge, which is a temporary rise in sea and estuary water level due to a low-pressure weather system. The open coast is also exposed to open ocean swell and wind-generated waves which can further elevate water levels. Parts of the inland coastal plain and the valleys at the base of the Port Hills are low-lying so are prone to coastal flooding, and to rising groundwater caused by sea level rise. The steep hills are close to the shoreline in some places – in these locations flooding could cover most of the flat land between the estuary/sea and the hills.

The beach at Clifton moves in response to the dynamic influence of the estuary, while the beach at Te Onepoto / Taylors Mistake currently shows a long-term trend of maintaining a stable position or slight erosion. For the coastal protection structures from Ferrymead to Sumner, about 10m width of shoreline could be prone to erosion if the structures were to fail (or more if the damaged structure was not promptly repaired). For cliff and steep rocky shorelines the width that could be prone to instability usually varies between 20 and 100m depending on slope angle and height.

① Bromley, Brookhaven, Ferrymead & Woolston

Short Term Much of the bare land between SH74 and the estuary is prone to coastal flooding from the estuary and river in a frequent ('1-year') event, and groundwater could sometimes rise close to the surface. Flooding in an occasional ('10-year') event could cover low-lying land (especially roads) in Brookhaven and Ferrymead, with a greater area and depth of flooding in a rare ('100-year') event. About 10m width of estuary shoreline is prone to short-term storm erosion.

Long Term Most of Bromley, Brookhaven and Ferrymead, and large parts of Woolston, could be prone to coastal flooding from the estuary and river in a frequent ('1-year') event – with a similar area of flooding but greater depth in a rare ('100-year') event. Groundwater could sometimes rise close or up to the surface. Up to 35m width of estuary shoreline could be prone to erosion.

② McCormacks Bay

Short Term Coastal flooding from the estuary could reach 30 - 100m inland in an occasional ('10-year') event, with a similar area of flooding but greater depth in a rare ('100-year') event.

Long Term Coastal flooding could reach 30 - 200m inland in a frequent ('1-year') event, with a similar area of flooding but greater depth in a rare ('100-year') event. Groundwater could sometimes rise close to the surface in the lowest-lying areas near the estuary.

③ Redcliffs & Moncks Bay

Short Term Coastal flooding from the estuary could reach 80 - 250m inland in an occasional ('10-year') event, with a similar area of flooding but greater depth in a rare ('100-year') event.

Long Term Coastal flooding could reach 90 - 280m inland in a frequent ('1-year') event, with a slightly larger area of flooding (by about 20 - 30m) and greater depth in a rare ('100-year') event. Groundwater could sometimes rise close to the surface.

④ Matuku-takotako / Sumner

Short Term While the Sumner seawall is more than 2 m above normal high tide level, flooding from the sea is able to pass around the ends of the wall at Marriner St and Heberden Ave. This means large areas (both near the beach and further up the valley) are prone to coastal flooding in an occasional ('10-year') event, with a larger area and depth of flooding in a rare ('100-year') event. About 5 - 10m width of beach shoreline is prone to short-term storm erosion.

Long Term Large areas could be prone to flooding in a frequent ('1-year') event, increasing to most of the valley floor in a rare ('100-year') event. Groundwater could sometimes rise close to the surface in the lowest-lying areas near the beach. At Clifton Beach up to 40m width of shoreline could be prone to erosion.

⑤ Te Onepoto / Taylors Mistake

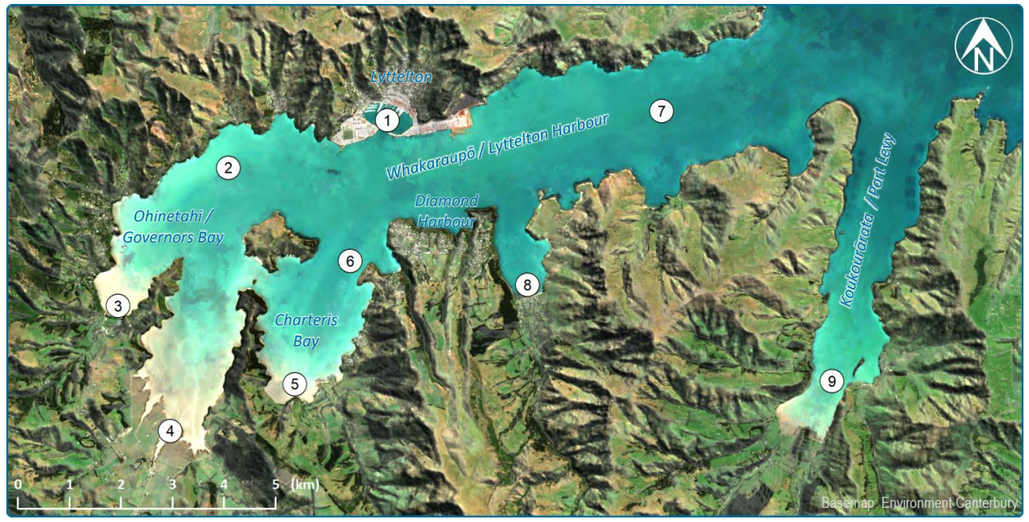
Short Term The lowest-lying land south of the carpark is prone to coastal flooding from the sea in a rare ('100-year') event, and groundwater could sometimes rise close to the surface. About 20m width of beach shoreline is prone to short-term storm erosion.

Long Term Much of the lower valley floor (the carpark area) could be prone to flooding in a rare ('100-year') event. Up to 70m width of beach shoreline could be prone to erosion.

To see the hazard maps and explore a range of future scenarios, you can use the online map viewer on the Council website.

Version 1, September 2021

COASTAL HAZARD SUMMARY



Environmental setting

Whakaraupō / Lyttelton Harbour and Koukourārata / Port Levy are long rock-walled inlets on the northern side of Te Pātaka-o-Rākaihautū / Banks Peninsula, formed from a collapsed volcanic cone and valleys which have been eroded over millions of years and filled by the sea. At the head of the bays shallow tidal flats have gradually built up from silt washed down from the surrounding hills. Between headlands, small beaches have formed from sandy gravel or fine sand, surrounded by steep cliffs or banks. Elsewhere steep rocky slopes descend to a near-flat seabed with a maximum water depth of about 15m.

How the hazard is assessed

Coastal flooding

The 2021 CHA looks at frequent ('1-year'), occasional ('10-year') and rare ('100-year') events. The area and depth of flooding is mapped by comparing the flood level to the current land level (a 'bathtub analysis'). The analysis combines the effect of:

- Storm tide levels, based on a recent (2021) study of tide statistics.
- Set-up (temporary increase in water level along the coast due to wind and breaking waves), assessed using computer software to model the waves generated across the harbour by wind.
- The effect of sea level rise on coastal flooding, assessed by adding the projected sea level rise amount on to the 2020 flood level.

Coastal erosion

For beach and bank shorelines the 2021 CHA looks at the overall erosion hazard by combining the effect of:

- Long-term erosion trends, assessed using historic air photos (1965 to 2019) and inspections to confirm evidence of ongoing erosion.
- Short-term erosion events, assessed based on storm tide levels and wave heights. Where tidal flats are present, they can reduce erosion.
- Erosion of dunes and banks, assessed based on their height and how steeply they can stand before they become unstable.
- The effect of sea level rise on erosion, assessed based on the shoreline type at each location.
- Coastal protection structures (of varying type, effectiveness and condition) are present at some locations. These may provide a degree of protection against erosion now and into the future. To show what could be at risk, the 2021 CHA identifies land that could be prone to erosion if the structure was not present.

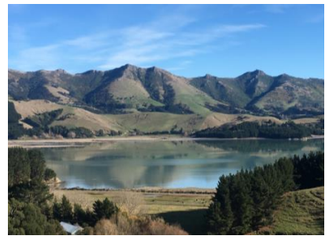
For the steep rocky coastlines:

- Coastal processes could worsen broader hillside instability, so this is assessed based on slope angle and height, and cliff-collapse setback.
- The specific influence of sea level rise on hillside instability is not separated out from the other coastal processes, as this requires site-specific analysis and is unlikely to significantly change the overall erosion hazard results for steep rocky shorelines.

Rising groundwater

- The 2021 CHA uses ground height survey data to identify areas where the land is only slightly above high tide level. These areas are more likely to experience flooding or wet ground from shallow groundwater, which could worsen as sea levels rise.
- The model looks at groundwater levels that will only sometimes be reached (about 15% of the time) and could last for days to months.

WHAKARAUPŌ / LYTTELTON HARBOUR TO KOUKOURĀRATA / PORT LEVY



Key findings

Short Term *= now to 2050; 0 to 20cm sea level rise.* ***Long Term*** *= 2100 and beyond; 1 to 1.5m sea level rise.*

Overall hazard context

This area can be affected by storm surge, which is a temporary rise in sea and harbour water level due to a low-pressure weather system. It can also be affected by open ocean swell entering through the harbour entrance, and wind-generated waves within the harbour, which can further elevate water levels at the shore. The present-day coastal flooding and groundwater hazard in this area mostly affects low-lying land at the heads of the bays. Most of this land is surrounded by hill slopes, so the area of flooding usually increases only slightly as water levels rise. Much of the remaining coast is cliff or steep rocky shore, so is less susceptible to flooding or rising groundwater.

The present-day and shorter-term coastal erosion hazard is dominated by short-term events (storm erosion on beaches or bank instability). Over longer timeframes, ongoing long-term erosion and sea level rise have a greater influence on the hazard.

① Lyttelton port

Short Term Not prone to flooding in a rare ('100-year') event.

Long Term Low-lying areas could be prone to flooding from the harbour in a frequent ('1-year') event. Groundwater could sometimes rise close to the surface. About 15m width of port edge could be prone to erosion if seawalls/revetments were to fail (or more if the damaged structure was not promptly repaired).

② Steep rocky coastline, banks and beaches from Motukauatiiti / Corsair Bay to Ohinetahi / Governors Bay

Short Term Up to 10 - 30m width of rocky, bank and beach shoreline is prone to erosion or instability.

Long Term Up to 20 - 35m width of rocky, bank and beach shoreline could be prone to erosion or instability.

③ Allandale & ④ Teddington & ⑤ Beaches from Te Wharau / Charteris Bay to Hays Bay

Short Term Low-lying land at the head of the bay is prone to coastal flooding from the harbour in an occasional ('10-year') event – within 200m of the shore for Allandale, 300 - 600m for Teddington, and 100m for Charteris Bay. Groundwater could sometimes rise close to the surface. About 10m width of beach and bank shoreline is prone to short-term storm erosion.

Long Term Flooding could affect a slightly larger area (by about 30m in Allandale and Charteris Bay, and 100m in Teddington), become deeper and happen more often, eventually becoming a frequent ('1-year') event and covering the main road in places. Groundwater could sometimes rise close or up to the surface. Up to 20 - 30m width of beach and bank shoreline could be prone to erosion.

⑥ Steep cliff and rocky coastline from Te Wharau / Charteris Bay to Purau Bay & ⑦ Outer harbour

Short & Long Term Up to 30 - 60m width of steep cliff and rocky coastline is currently prone to erosion or instability, depending on the slope angle and height. In many cases sea level rise is unlikely to significantly increase the area of land prone to erosion.

⑧ Head of Purau Bay

Short Term Low-lying land within 130m of the shore at the head of the bay is prone to coastal flooding from the harbour in an occasional ('10-year') event. Groundwater could sometimes rise close to the surface in lowest-lying areas. About 10m width of beach and bank shoreline is prone to short-term storm erosion.

Long Term Flooding could affect a slightly larger area (by about 30 – 50m), become deeper and happen more often, eventually becoming a frequent ('1-year') event. Groundwater could sometimes rise close or up to the surface. Up to 25m width of beach and bank shoreline could be prone to erosion.

⑨ Head of Koukourārata / Port Levy and Puāri

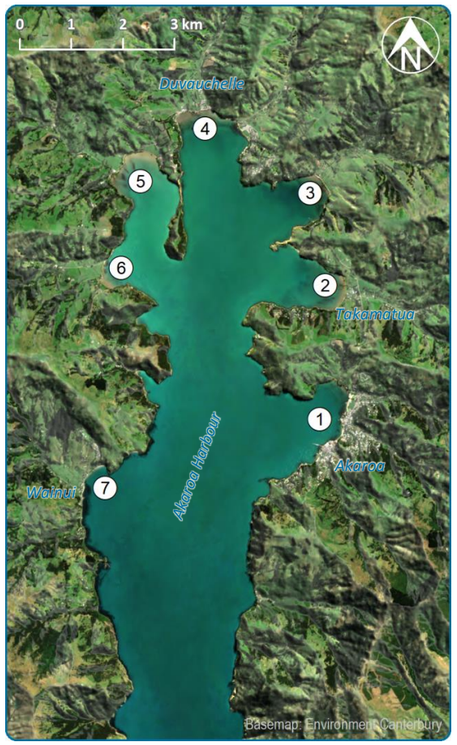
Short Term Low-lying land within 160m of the shore at the head of bay and 30 - 60m of the shore at Puāri is prone to flooding in an occasional ('10 year') event. Groundwater could sometimes rise close to the surface. About 5 - 10m width of beach and bank shoreline is prone to short-term storm erosion.

Long Term Flooding could affect a slightly larger area (by about 30 – 80m), become deeper and happen more often, eventually becoming a frequent ('1-year') event. Groundwater could sometimes rise close or up to the surface. Up to 25m width of beach and bank shoreline could be prone to erosion.

To see the hazard maps and explore a range of future scenarios, you can use the online map viewer on the Council website.

Version 1, September 2021

COASTAL HAZARD SUMMARY



Environmental setting

Akaroa Harbour is a long rock-walled inlet on the southern side of Te Pātaka-o-Rākaihautū / Banks Peninsula, formed from a collapsed volcanic cone and valleys which have been eroded over millions of years and filled by the sea. In the bays at the head of the harbour shallow tidal flats have gradually built up from silt washed down from the surrounding hills. In the middle section of the harbour the beaches are mostly sand and gravel. The southern part of the harbour has mostly cliff and steep rocky shorelines, with small gravel beaches surrounded by steep cliffs or banks.

Almost all the Akaroa Township shoreline from Glen Bay to Ōtāhuahua / Childrens Bay has been heavily modified with continuous concrete seawalls and rock revetments. At some locations elsewhere around the harbour there are more localised coastal protection structures (of varying type, effectiveness and condition).

How the hazard is assessed

Coastal flooding

The 2021 CHA looks at frequent ('1-year'), occasional ('10-year') and rare ('100-year') events. The area and depth of flooding is mapped by comparing the flood level to the current land level (a 'bathtub analysis'). The analysis combines the effect of:

- Storm tide levels based on a recent (2021) study of tide statistics, adjusted for different normal tide levels around the peninsula.
- Set-up (temporary increase in water level along the coast due to wind and breaking waves), assessed using computer software to model the waves generated across the harbour by wind.
- The effect of sea level rise on coastal flooding, assessed by adding the projected sea level rise amount on to the 2020 flood level.

Coastal erosion

For beach and bank shorelines the 2021 CHA looks at the overall erosion hazard by combining the effect of:

- Long-term erosion trends, assessed using historic air photos (1980 to 2019) and inspections to confirm evidence of ongoing erosion.
- Short-term erosion events, based on previous research and historic observations. Where tidal flats are present, they can reduce erosion.
- Erosion of banks, assessed based on their height and how steeply they can stand before they become unstable.
- The effect of sea level rise on erosion, assessed based on the shoreline type at each location.
- Coastal protection structures may provide a degree of protection against erosion now and into the future. To show what could be at risk, the 2021 CHA identifies land that could be prone to erosion if the structure was not present, except for the seawalls at Akaroa Township where the maps show the land immediately behind the structure which could quickly become unstable if the structure were to fail.

For steep rocky coastlines:

- Various coastal processes could worsen hillside instability, so this is assessed based on slope angle and height, and cliff-collapse setback.
- The specific influence of sea level rise on hillside instability is not separated out from the other coastal processes, as this requires site-specific analysis and is unlikely to significantly influence the overall erosion hazard results for steep rocky shorelines.

Rising groundwater

- The 2021 CHA uses ground height survey data to identify areas where the land is only slightly above high tide level. These areas are more likely to experience flooding or wet ground from shallow groundwater, which could worsen as sea levels rise.
- The model looks at groundwater levels that will only sometimes be reached (about 15% of the time) and could last for days to months.

AKAROA HARBOUR

Key findings

Short Term *= now to 2050; 0 to 20cm sea level rise.* ***Long Term*** *= 2100 and beyond; 1 to 1.5m sea level rise.*

Overall hazard context

This area can be affected by storm surge, which is a temporary rise in sea and harbour water level due to a low-pressure weather system. It can also be affected by swell entering through the harbour entrance, and wind-generated waves within the harbour, which can further elevate water levels. The coastal flooding and rising groundwater hazard is concentrated in low-lying land at the heads of bays. This land is surrounded by hill slopes, so the area of flooding usually increases only slightly as water levels rise. The rest of the harbour has cliff or steep rocky shores, so is less susceptible to flooding and rising groundwater.

Around the harbour, soil banks are more sensitive than beaches to short-term erosion in storms (because banks can't build up again), but the beaches are more sensitive to long-term erosion caused by sea level rise. For cliff and steep rocky shorelines, the width that could be prone to instability usually varies between 20 and 100m depending on slope angle and height.

① Akaroa Township

Short Term Low-lying land within 80m of the shore near the main wharf and 50 - 200m of shore near the sports field is prone to coastal flooding from the sea in an occasional event ('10-year'). Groundwater could sometimes rise close to the surface.

Long Term Flooding could affect a slightly larger area (by about 20 - 50m), become deeper and happen more often, eventually becoming a frequent ('1-year') event. Groundwater could sometimes rise close or up to the surface. About 5 - 10m width of shoreline could be prone to erosion if coastal protection structures were to fail (or more if the damaged structure was not promptly repaired).

② Takamatua & ③ Kākakaiau / Robinsons Bay

Short Term Low-lying land within 80 - 140m of shore is prone to coastal flooding from the sea in an occasional ('10-year') event. Groundwater could sometimes rise close to the surface. Up to 10 - 15m width of beach and bank shoreline is prone to short-term storm erosion.

Long Term Flooding could affect a slightly larger area (by about 20 - 40m), become deeper and happen more often, eventually becoming a frequent ('1-year') event. Groundwater could sometimes rise close or up to the surface. Up to 25 - 30m width of beach and bank shoreline could be prone to erosion.

④ Duvauchelle

Short Term Low-lying land within 80m of the shore is prone to coastal flooding from the sea in an occasional ('10-year') event. Groundwater could sometimes rise close to the surface. Up to 10m width of beach and bank shoreline is prone to short-term storm erosion.

Long Term Flooding could affect a slightly larger area (by about 20 - 60m), become deeper and happen more often, eventually becoming a frequent ('1-year') event. Groundwater could sometimes rise close or up to the surface. Up to 15 - 25m width of beach and bank shoreline could be prone to erosion.

⑤ Barrys Bay & ⑥ French Farm

Short Term Low-lying land within 50 - 150m of shore is prone to coastal flooding from the sea in an occasional ('10-year') event. Groundwater could sometimes rise close to the surface. Up to 5 - 15m width of beach and bank shoreline is prone to short-term storm erosion.

Long Term Flooding could affect a slightly larger area (by about 20 - 60m), become deeper and happen more often, eventually becoming a frequent ('1-year') event. Groundwater could sometimes rise close or up to the surface. Up to 20 - 35m width of beach and bank shoreline could be prone to erosion.

⑦ Wainui

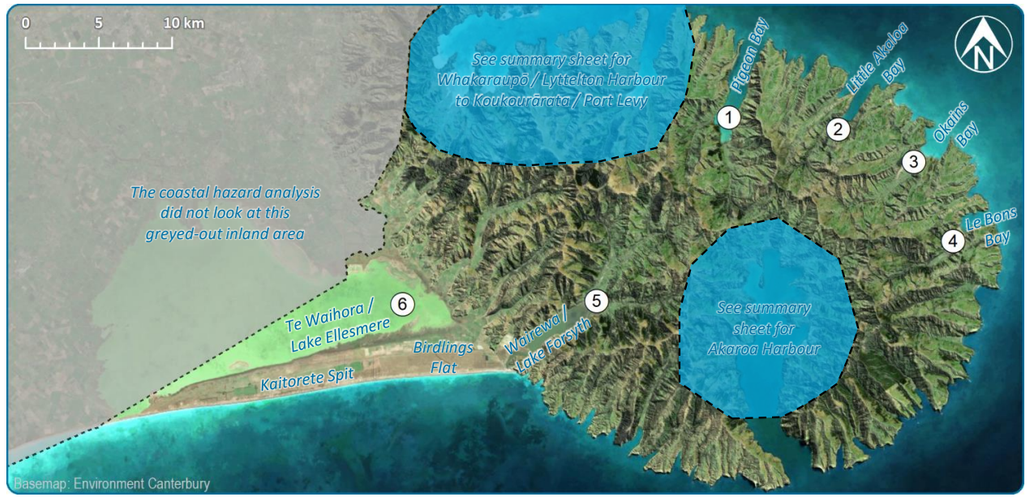
Short Term Low-lying land near the stream within 100m of the shore is prone to coastal flooding from the sea in an occasional ('10-year') event. Groundwater could sometimes rise close to the surface. Up to 5 - 15m width of beach and bank shoreline is prone to short-term storm erosion.

Long Term Flooding could affect a slightly larger area (by about 50m), become deeper and happen more often, eventually becoming a frequent ('1-year') event. Groundwater could sometimes rise close or up to the surface. Up to 25m width of beach and bank shoreline could be prone to erosion.

To see the hazard maps and explore a range of future scenarios, you can use the online map viewer on the Council website.

Version 1, September 2021

COASTAL HAZARD SUMMARY



Environmental setting

Te Pātaka-o-Rākaihautū / Banks Peninsula is formed from volcanic cones which eroded over millions of years to create cliffs and valleys which were filled by the sea to become bays. At the head of many bays shallow tidal flats have gradually built up from silt washed down from surrounding hills. Between headlands, small beaches have formed from sandy gravel or fine sand, surrounded by steep cliffs or banks. On the southern side of the peninsula Kaitorete Spit has formed from gravels moving northwards along the coast over thousands of years, creating lakes Wairewa / Forsyth and Te Waihora / Ellesmere. Both lakes are often manually opened to the sea to prevent flooding of surrounding low-lying land and allow movement of migrating fish.

How the hazard is assessed

In this area the 2021 CHA provides a ***regional hazard screening***, a broad-scale assessment to identify areas that could be prone to coastal hazards. This helps identify higher risk areas where more detailed assessment might be useful in future.

Coastal flooding

The 2021 CHA looks at frequent ('1-year'), occasional ('10-year') and rare ('100-year') events. The area and depth of flooding is mapped by comparing the flood level to the current land level (a 'bathtub analysis'). The analysis combines the effect of:

- Storm tide levels based on a recent (2021) study of tide statistics, adjusted for different normal tide levels around the peninsula. For the lakes this is based on statistical analysis looking at historic water levels (1994 to 2020).
- Set-up (temporary increase in water level along the coast due to wind and breaking waves), assessed using offshore wave data.
- The effect of sea level rise on coastal flooding, assessed at the coast by adding the projected sea level rise on to the 2020 flood level.

Coastal erosion

For beach and bank shorelines the 2021 CHA looks at the overall erosion hazard by combining the effect of:

- Long-term erosion trends, assessed using historic air photos (1980/1995 to 2019) and inspections to confirm evidence of ongoing erosion.
- Short-term erosion events, based on previous research and historic observations. Where tidal flats are present, they can reduce erosion.
- Erosion of dunes and banks, assessed based on their height and how steeply they can stand before they become unstable.
- The effect of sea level rise on erosion, assessed based on the shoreline type at each location.
- Coastal protection structures (of varying type, effectiveness and condition) are present at some locations. These may provide a degree of protection against erosion now and into the future. To show what could be at risk, the 2021 CHA identifies land that could be prone to erosion if the structure was not present.

For steep rocky coastlines:

- Various coastal processes could worsen hillside instability, so this is assessed based on slope angle and height, and cliff-collapse setback.
- The specific influence of sea level rise on hillside instability is not separated out from the other coastal processes, as this requires site-specific analysis and is unlikely to significantly influence the overall erosion hazard results for steep rocky shorelines.

Rising groundwater

- The 2021 CHA uses ground height survey data to identify areas where the land is only slightly above high tide level. These areas are more likely to experience flooding or wet ground from shallow groundwater, which could worsen as sea levels rise.
- The model looks at groundwater levels that will only sometimes be reached (about 15% of the time) and could last for days to months.

TE PĀTAKA-O-RĀKAIHAUTŪ / BANKS PENINSULA

Key findings

Short Term *= now to 2050; 0 to 20cm sea level rise.* ***Long Term*** *= 2100 and beyond; 1 to 1.5m sea level rise.*

Overall hazard context

This area can be affected by storm surge, which is a temporary rise in sea and harbour water level due to a low-pressure weather system. It is also exposed to open ocean swell and wind-generated waves which can further elevate water levels along the coast, especially the south side of the peninsula and Kaitorete Spit which are exposed to severe southerly storms. The coastal flooding and rising groundwater hazard is concentrated in low-lying land at the heads of bays. Most of this land is surrounded by hill slopes, so the area of flooding usually increases only slightly as water levels rise. Much of the remaining coast is cliff, steep rocky shore or steep gravel beach, so is less susceptible to flooding and rising groundwater.

Most beaches around the peninsula currently show an overall long-term trend of maintaining a stable shoreline or accreting (building out towards the sea), but storm events can still cause short-term erosion. With sea level rise the current overall trend of accretion could slow or switch to erosion. For cliff and steep rocky shorelines, the width that could be prone to instability usually varies between 20 and 100m depending on slope angle and height.

① Pigeon Bay

Short Term Low-lying land close to the shore (within 90m at Holmes Bay, 190m alongside the stream at the head of Pigeon Bay, and 60m at the domain and boat ramp) is prone to coastal flooding from the sea in an occasional ('10-year') event. Up to 10m width of beach shoreline is prone to storm erosion.

Long Term Flooding could affect a slightly larger area (by about 10 - 50m), become deeper and happen more often, eventually becoming a frequent ('1-year') event. Groundwater in the lowest-lying areas could sometimes rise close to the surface. Up to 30m width of beach shoreline could be prone to erosion.

② Little Akaloa

Short Term Low-lying land within 100m of the shore (especially on the north side of the stream) is prone to coastal flooding from the sea in an occasional ('10-year') event. Up to 20m width of beach shoreline is prone to storm erosion.

Long Term Flooding could affect a slightly larger area (by about 10 - 30m), become deeper and happen more often, eventually becoming a frequent ('1-year') event. Groundwater in the lowest-lying areas could sometimes rise close to the surface. Up to 40m width of beach shoreline could be prone to erosion.

③ Okains Bay

Short Term Low-lying land in the floor of the valley up to 3km inland from the shore is prone to coastal flooding from the sea, estuary and stream in an occasional ('10-year') event. Groundwater in the lowest-lying areas could sometimes rise close to the surface. Up to 20m width of beach shoreline is prone to storm erosion.

Long Term Flooding could affect a similar area but become deeper and happen more often, eventually becoming a frequent ('1-year') event. Groundwater could sometimes rise close to or up to the surface. The overall trend of accretion could continue moving the beach seawards, but this may slow with sea level rise, and storms could still cause short-term erosion of up to 20m width of shoreline.

④ Le Bons Bay

Short Term Low-lying land in the floor of the valley up to 2.3km inland from the shore (especially towards the head of the valley) is prone to coastal flooding from the sea and stream in an occasional ('10-year') event. Groundwater in the lowest-lying areas could sometimes rise close to the surface. Up to 25m width of beach shoreline is prone to storm erosion.

Long Term Flooding could affect a similar area but become deeper and happen more often, eventually becoming a frequent ('1-year') event. Groundwater could sometimes rise close to or up to the surface. Up to 85m width of beach shoreline could be prone to erosion.

⑤ Wairewa / Lake Forsyth & ⑥ Te Waihora / Lake Ellesmere

Short Term Low-lying land up to 1.5km inland from the lake shore is prone to coastal flooding from the lakes in an occasional ('10-year') event, and groundwater could sometimes rise close to the surface. On the sea side of Kaitorete Spit, up to 30m width is prone to erosion.

Long Term Lake water levels are driven by rainfall and streams, and are controlled by manually opening them to the sea. If this continues then 1m sea level rise is unlikely to cause a significant increase in coastal flooding, but groundwater could sometimes rise close or up to the surface. The orientation of Kaitorete Spit could change, with up to 120m erosion in the west and 40m accretion in the east.

To see the hazard maps and explore a range of future scenarios, you can use the online map viewer on the Council website.

Version 1, September 2021

17 Applicability

This report has been prepared for the exclusive use of our client Christchurch City Council, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

The 2021 CHA was undertaken at a broad scale across the entire Christchurch District and is intended to approximately describe the magnitude and extent of current-day and future hazards across neighbourhood-sized areas. It is not intended to precisely describe hazards at individual-property scale, and in many cases there will be other sources of information which provide more relevant site-specific details (such as District Plan controls for Resource Consent and minimum floor levels for Building Consent). As recommended by the national guidance, the analysis considers a range of potential likelihoods, sea level rise scenarios and effects, to help understand the impact of uncertainty both due to data limitations and incomplete scientific knowledge about the processes.

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Document Control

Title: Coastal Hazard Assessment for Christchurch District - Summary Report					
Date	**Version**	**Description**	**Prepared by:**	**Reviewed by:**	**Authorised by:**
September 2021	1	Report issue	RHAU, PPK, MEJ	TDS, MSP	PRC

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KŌRERO MAI / HAVE YOUR SAY

COASTAL ADAPTATION FRAMEWORK

Have your say on the Council's flexible proposed approach for how we will work with communities to develop adaptation pathways that respond to coastal hazards.

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GLOSSARY

Term	Definition
Adaptation	The process of adjusting to change. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities.
Adaptation Area	Large sections of coastal and low-lying inland areas that are likely to be affected by coastal hazards. We have identified seven Adaptation Areas in the Christchurch district, based on similar coastal environments and access dependencies.
Priority location	A defined at-risk location within an Adaptation Area that will receive an adaptation pathway.
Adaptation options	The array of interventions that are available and appropriate for addressing adaptation. These include policies, practices, built structures and ecological interventions.
Adaptation pathways	A decision-making strategy that is made up of a sequence of adaptation options, as well as triggers and decision-points that will be revisited over time. The wide range of options considered, evaluated and left on the table allows decisions to respond to future realities.
Signal	Signals warn that a system may soon no longer perform to the existing standard. Signals highlight changes in risk by using indicators such as increasing insurance premiums or increased flood frequency. Signals can be determined by working backwards from a trigger and threshold.
Trigger	Triggers activate a chain of decisions to ensure that implementation of the next option is complete before a threshold is reached. These pre-determined indicators build in implementation actions such as time for District Plan changes to be made or public funds to be approved and allocated. Triggers can be determined by working backwards from a threshold.
Threshold	Thresholds describe possible scenarios that mean we have not acted quickly enough to address the risk. These scenarios can be time-based or event-based. An example may be when a certain level of sea level rise is reached and assets are flooded.
Assets	Things that are of value (tangible and intangible) to the Council, community or stakeholders. Assets can be natural or built, and in private or public ownership.
Coastal Panel	The Coastal Panel is a group of rūnanga and community representatives tasked with undertaking analysis of the adaptation options and identifying preferred adaptation pathways for their Adaptation Area which are then submitted to Council for a decision. The Coastal Panel will include wider-city and youth representatives.
STAG	The Specialist and Technical Advisory Group (STAG) provides information and advice to support evidence-based decision-making by Council and the Coastal Panel. It is comprised of experts from different disciplines.
Short term	Less than 30 years into the future from 2020.
Long term	30 to 100 years into the future from 2020.

WHAT IS THE COASTAL ADAPTATION FRAMEWORK?

This Coastal Adaptation Framework is a starting point for the work by the Christchurch City Council (the Council) and communities.

The Framework sets out our initial approach to:

- Roles and responsibilities
- Proposed principles to guide decision-making
- A proposed flexible process for engagement and decision-making

The Framework might need to be reviewed and adapted in the future to better respond to issues or respond to new information or new ideas. The Council hasn't done this before, so nothing is set in concrete. This Framework describes our current thoughts on an approach to developing adaptation pathways, regardless of the Adaptation Area, or when the adaptation planning takes place. This approach, and any changes that we make to it, is designed to align with the New Zealand Coastal Policy Statement 2010, the 2017 Ministry for the Environment's (MfE) *Coastal Hazards and Climate Change Guidance for Local Government,* and relevant strategies, policies and plans from the Council.

Central Government is currently replacing the Resource Management Act (1991) with three new laws, and has indicated that one of these, the Climate Adaptation Act, will be introduced in 2023. This new Act will address the complex legal and technical issues associated with managed retreat and funding and financing adaptation. It is anticipated that the Climate Adaptation Act will clarify Central Government's approach to any funding for the retreat or protection of private assets. Although this clarity is not available yet, we think it is essential that we start this process with communities sooner rather than later.

If necessary, we can change this Framework to respond to these legislative changes, as well as to any future potential changes to our current decision-making frameworks.

There is a range of supporting information, including a *Management Framework* and *Catalogue of Coastal Hazard Adaptation Options* that sit alongside this Framework. You can read more about the supporting information on pages 14 and 15 of this document.

WE WANT TO HEAR WHAT YOU THINK

This Framework sets out our proposed initial approach to adaptation planning to address the risk of the three main coastal hazards – coastal inundation, coastal erosion and rising groundwater – that are exacerbated by climate change in low-lying inland and coastal communities across the Christchurch district.

Do you agree with our initial thoughts? Have we missed something?

Let us know what you think: www.ccc.govt.nz/haveyoursay

PUTTING IT ALL IN CONTEXT

What is adaptation planning?

Adaptation planning is about preparing now, so that we are ready for what may happen in the future. We are generally following the approach recommended by the 2017 MfE guidance, with modifications undertaken where appropriate. The guidance document sets out a ten-step decision cycle of structured engagement which aims to increase awareness of the impacts of sea level rise, and lead to the development of community-led adaptation pathways that consider the social, cultural, natural and built environments.

The adaptation planning process is flexible in that it might change at any time to account for new information, new processes or new Council priorities but regardless of any changes, it puts community engagement at the centre of decision-making. It also gives us an adaptable, versatile way to progress things and make decisions, even when there is uncertainty about the rate and effects of climate change.

Why do we need to do adaptation planning?

It is predicted that New Zealand will experience 30cm of sea level rise by 2050, 50cm of rise by 2075 and 1m of rise by 2115[1]. Even if emissions are reduced, it is virtually certain that global mean sea level will continue to rise through 2100, and there is high confidence that longer term impacts will be seen for centuries to millennia to come[2].

Low lying coastal and inland communities across Ōtautahi Christchurch will be increasingly impacted by intense storms leading to more frequent and extensive coastal flooding, erosion, and rising groundwater.

The New Zealand Coastal Policy Statement 2010 requires local authorities to consider and plan for these risks through pathways such as adaptation planning with communities, and the management of risks through the District Plan[3].

As a region, Canterbury has around $1B of local government owned infrastructure exposed to coastal hazards, the majority of which is in Christchurch. As sea levels rise, Canterbury has the most public infrastructure exposed to coastal hazards in New Zealand[4].

As a city, Ōtautahi Christchurch is more exposed to coastal hazards than either Auckland or Wellington[5]. Across the Christchurch District, approximately 25,000 properties are exposed to coastal hazards risks over the next 120 years[6]. The National Institute of Water and Atmospheric Research (NIWA) estimates that with 1m of sea level rise the replacement value of buildings in Ōtautahi Christchurch is approximately $6.7B, the majority of which are residential properties[7].

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[1] Bell, R., Lawrence, J., Allan, S., Blackett, P., & Stephens, S. (2017). *Coastal Hazards and Climate Change: Guidance for local government.* Ministry for the Environment. (Note: This statistic uses a baseline period of 1986-2005. We have experienced around 10cm of sea level rise since this baseline period and therefore expect to see around 20cm of additional sea level rise over the next 30 years, by 2050).

[2] Intergovernmental Panel on Climate Change. (2021). Summary for Policymakers. In *Climate Change 2021: The Physical Science Basis*. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press.

[3] Department of Conservation. (2010). New Zealand Coastal Policy Statement. https://www.doc.govt.nz/globalassets/documents/conservation/marine-and-coastal/coastal-management/nz-coastal-policy-statement-2010.pdf

[4] Simonson, T., & Hall, G. (2019). V*ulnerable: the quantum of local government infrastructure exposed to sea level rise*. Local Government New Zealand.

[5] Parliamentary Commissioner for the Environment. (2015). *Preparing New Zealand for rising seas: Certainty and Uncertainty*.

[6] The 2021 Coastal Hazard Assessment data would potentially impact around 16,000 properties across Christchurch and Banks Peninsula. Of these, around 15,000 are at risk of coastal flooding and 1,000 are at risk of erosion over the next 120 years. The 2017 Coastal Hazard Assessment also included areas further up the rivers, where coastal flooding is less dominant (but remains a factor) and from that assessment approximately 9,000 additional properties (outside of the 2021 assessment) are also likely to experience some coastal flooding.

[7] National Institute of Water and Atmospheric Research. (2019). *Coastal Flooding Exposure Under Future Sea-level Rise for New Zealand*. The Deep South Challenge.

Unless we adapt, the impacts of coastal inundation, coastal erosion and rising groundwater will greatly affect us and our environment into the future.

We have identified the coastal and low-lying communities within the Ōtautahi Christchurch district that are most at risk from coastal hazards through an updated Coastal Hazards Assessment. Given the extent of our district's exposure, we will be taking a staggered approach to community-led adaptation planning in different Adaptation Areas. In the first instance, we will focus adaptation planning on priority locations where coastal hazards will arise in the short-term – the next 30 years. Where hazards will arise in the longer-term – over 30 years, we will focus on raising awareness of hazards to ensure communities are aware of the risk.

What are Coastal Hazards?

In line with the 2017 MfE Guidance, the Coastal Hazards Adaptation Planning programme focusses on three main coastal hazards that are made worse by climate change:

- **Coastal flooding** (also sometimes referred to as coastal inundation) happens when normally dry, low-lying coastal areas are flooded by the sea. This usually happens as a result of a severe storm, but rising sea levels could also cause 'sunny day' flooding from high tides.

- **Coastal erosion** is a natural, ongoing process that occurs when the sea wears away the land. Some coastal areas experience short periods of erosion, but then recover (build up again) while others continuously erode and never recover. Coastal erosion may become more severe as a result of the impacts of climate change such as rising sea levels and increased storminess.

- **Rising groundwater** can bring the water table closer to the ground surface. Near the coast, the level of the sea often influences groundwater levels. We can therefore expect to see the groundwater rising as sea levels rise. At its most extreme, groundwater could rise above ground level and cause temporary or permanent ponding of water.

How can we adapt to coastal hazards?

Options that can be used to adapt to coastal hazards are typically grouped into five different types:

- **Maintain:** *We enhance what we're already doing*
  We continue to live in an area while increasing knowledge of the environment and aiming to increase community risk awareness. Options include things like emergency response management, maintaining existing infrastructure, broad district-wide land use planning, environmental monitoring and community awareness raising.

- **Accommodate**: *We live with the hazard*
  We continue to use land in an area by raising our tolerance to the hazards, which means we can avoid or delay the need to remove or relocate at-risk assets in the short term. Options include things like adapting buildings and infrastructure, raising land levels and managing ground and storm water.

- **Protect**: *We keep the hazard away*
  We interrupt coastal hazards using soft engineering approaches, hard-engineered structures, or a combination of the two, to form a barrier between assets and the hazard. Options include things like shoreline nourishment, seawalls, or stopbanks.

- **Retreat**: *We move away from the hazard*

We retreat from coastal areas, or relocate existing and planned development to reduce our exposure to the hazards. The hazard risk to assets is reduced or removed entirely, leaving the coast to respond to natural processes. Options include things like buyouts, land swaps, or leasebacks where property rights are purchased with the provision that the land is leased back to the former owner.

- **Avoid**: *We don't move into the way of the hazard in the first place*
  We use planning tools to avoid increasing the risk of harm to people and property. Options include things like land zoning or setbacks that prevent development in some areas.

More detail about specific options can be found in the *Catalogue of Coastal Hazard Adaptation Options*.

ROLES AND RESPONSIBILITIES

While the Council, on behalf of the community, is responsible with Environment Canterbury for managing risks posed by coastal hazards and is responsible for managing the risk to Council owned assets and income, the Council does not have an explicit legal obligation to protect privately owned assets from coastal hazards.

Private asset owners (individuals, organisations, businesses, and iwi who own built structures on private land) are responsible for managing risks to their assets and incomes. The private asset owner's role is to:

- Be aware of the risks and their responsibility for managing them.
- Comply with regulations that apply to their assets and activities.
- Take steps to understand the magnitude and nature of the specific risks to their assets and activities.
- Develop and implement strategies and actions to manage these risks.

The Council's role is to:

- Prepare and implement civil defence and emergency management plans.
- Develop and implement plans, policies and regulations for the identification and management of coastal hazards.
- Facilitate the building of resilience and adaptive capacity within communities including providing information about known risks posed by coastal hazard.
- Where appropriate, work in partnership with communities to identify and manage the risks posed by coastal hazards, and their impacts.

OUR DRAFT COASTAL ADAPTATION GUIDING PRINCIPLES

As we have mentioned, adaptation planning will take place in different Adaptation Areas at different times. To encourage an equitable approach across all communities, we want to establish some clear principles now, to help guide our adaptation planning programme.

We have come up with the following draft principles with input from our partners Papatipu Rūnanga and Environment Canterbury:

Uphold te Tiriti o Waitangi

We will uphold the principles of the Treaty, including the principles of partnership and the active protection of Ngāi Tahu interests in land and water. This commitment includes recognising rangatiratanga and the duty to actively engage with mana whenua.

Develop local plans for local communities and environments

Adaptation planning will respond to the scale of the risks and vulnerabilities of each Adaptation Area and its assets. It will reflect local values, and other considerations that may exacerbate community vulnerabilities. Adaptation planning may produce different results in each place – there is no 'one size fits all' solution or timeline for addressing coastal hazards.

Focus on public assets that contribute to the health, safety and wellbeing of communities

While the adaptation planning process will consider communities as a whole and will identify private assets at risk of coastal hazards, Council's resources (including public funds) will primarily be used to manage risks to public assets that contribute to the health, safety and wellbeing of communities. Public assets may include infrastructure systems such as water pipes and roads, facilities such as libraries, pools and parks, and services such as waste collection.

Privately owned assets that directly contribute to the health, safety and wellbeing of communities may also be a focus for adaptation planning (but not necessarily public funding) if they provide critical community infrastructure. These assets may for example include: marae, urupa, churches, surf lifesaving services, and buildings and/or land used for civil defence and emergency services. This does not include privately owned recreation facilities or entertainment and hospitality venues.

Private asset owners are responsible for managing risks to their assets and incomes. Any private benefits from Council funded adaptation should be indirect or incidental.

Be flexible and responsive

Adaptation planning acknowledges that, while the sea is rising, there is uncertainty around when and how different areas will be impacted. This means we need to consider and accommodate a wide range of scenarios and potential options. We need to be responsive to future opportunities, technologies, funding sources and changes resulting from the Government's reform of the resource management system.

Recognise inter-generational equity issues

We will take a long-term view to ensure adaptation planning is sustainable, provides benefits to current and future generations, and is not driven by short-term decisions on cost savings or avoiding loss. We will prioritise options and pathways that minimise the burden on future generations and maximise inter-generational equity. Where appropriate, this may mean action is needed now, to avoid shifting the financial burden of implementing adaptation pathways on to future generations.

Prioritise natural and nature-based options

We will identify and prioritise natural and nature-based options wherever feasible, in preference to any hard protection options. This is in line with the New Zealand Coastal Policy Statement 2010 which recognises that natural options provide additional benefits including protecting and enhancing the natural environment and taonga, and maintaining and creating recreational assets. Examples of natural and nature-based adaptation options can be found in the *Catalogue of Coastal Hazard Adaptation Options*.

Keep managed retreat on the table

We will consider all options for managing the risks posed by coastal hazards for communities, including managed retreat. This is in in line with the New Zealand Coastal Policy Statement 2010. While managed retreat is a challenging adaptation option in terms of implementation, and social and economic impacts, it offers a long-term sustainable option that can remove the risk of coastal hazards, allowing natural coastal processes to unfold. It can also be used to create natural protection buffers for other at-risk assets.

Different managed retreat techniques can be found in the *Catalogue of Coastal Hazard Adaptation Options*.

LET US KNOW WHAT YOU THINK

What do you think of the guiding principles?

Have we missed anything?

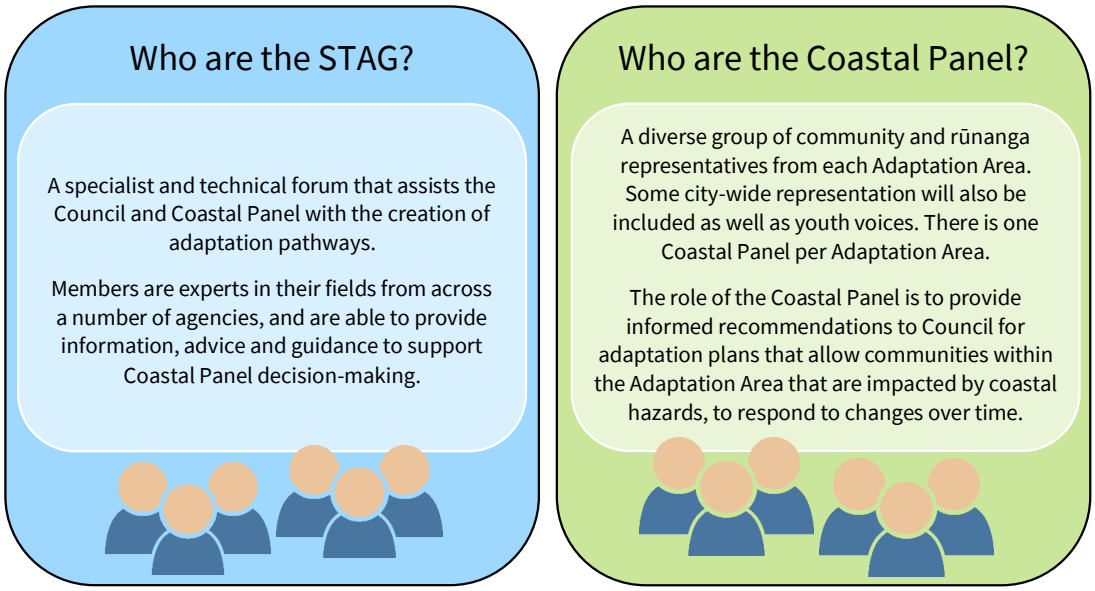
Have we appropriately captured the issues of intergenerational equality that are a fundamental consideration for adaptation planning?

Let us know what you think: www.ccc.govt.nz/haveyoursay

OUR APPROACH TO ADAPTATION PLANNING WITH EACH ADAPTATION AREA

To encourage an equitable process that results in adaptation plans that are supported, where possible, by both residents and the Council, we are initially proposing to follow an approach that will include engagement with mana whenua and communities, technical work by the Specialist and Technical Advisory Group (the STAG), and a recommendation from the Coastal Panel for Council decision on adaptation pathways.

We estimate that to get through this process, it will take approximately 12-18 months. Once we have completed planning in one Adaptation Area, we will move onto the next Adaptation Area.



Initial community engagement about the Adaptation Area

Adaptation planning about an Adaptation Area starts with a period of engagement with people who live in the Adaptation Area in order to:

- Develop a shared understanding of coastal hazards and risk, and local knowledge and issues.
- Build an understanding of the roles and responsibilities, and the guiding principles.
- Ensure that the *Risk and Vulnerability Assessment* includes important assets and values that have been identified by the community (more information about the *Risk and Vulnerability Assessment* can be found on page 14 of this document).
- Identify community values in order to create community objectives and understand community aspirations.
- Seek community input to any adaptation options that are missing from the *Catalogue of Coastal Hazard Adaptation Options* (more information about the *Catalogue of Coastal Hazard Adaptation Options* can be found on page 14 of this document).

We will also seek the views of the wider community who are interested.

Technical analysis

The STAG with input from Council staff will prepare information for the Coastal Panel to consider. This range of work might include:

- Analysing community values in order to develop draft community objectives. The Coastal Panel will be involved in this analysis.
- Incorporating community input to the *Risk and Vulnerability Assessment* and identify priority locations where short-term impacts of coastal hazards are anticipated.
- Establishing a range of example high-level adaptation pathways (as can be seen in the examples below), signals, triggers and thresholds for Council infrastructure.
- Preliminary assessment of adaptation options to consider their effectiveness, feasibility and environmental impact, and whether they align with the guiding principles. The types of questions here are:

Effectiveness	Will the option effectively address risks and vulnerabilities of the area?
Feasibility	Are there legal, technical or other requirements that present significant implementation barriers?
Environmental	Are the environmental impacts acceptable?
Guiding principles	Does the option align with the guiding principles?

It is highly unlikely that options which are not sufficiently effective or feasible, will be considered when creating adaptation pathways.

Below, are just two examples of what high-level pathways could look like. Please note that these are not based on any real life scenario.

In Example 1 under a 'hold the line' pathway, we attempt to mitigate the effects of coastal hazards initially with one or more of the potential adaptation options listed under the accommodation approach. Once the pre-determined signals and triggers have been met (for example, a specified sea level rise is reached), this example shows a move to a protection approach with a different set of possible adaptation options. However, a 'hold the line' pathway in a different location could start with a different approach and utilise different option types at different points in time.

In Example 2, a 'work with nature' pathway could utilise environmentally driven accommodate and avoid approaches at the same time. Once the pre-determined signal and trigger have been met, this example shows a move to protect and at the next decision point, a move to managed retreat. Again, this is just one example of what a 'work with nature' pathway could look like, but it is not the only possible combination of option types and potential options.

You can see more about the adaptation types and options in the *Catalogue of Coastal Hazard Adaptation Options*.

What may example high level draft pathways in one priority location look like?

Example 1:

Strategy: **Hold the line**								
Option type:	Accommodate	Signal	Trigger	Protect	Signal	Trigger	Protect
Potential options:	Groundwater mgmt. ($: Medium – Extreme) Stormwater mgmt. ($: Medium - Extreme) Adaptable buildings ($: Low – Medium) Flood proofing buildings ($: Low - Medium)			Shore nourishment ($: Medium) Dune regeneration ($: Medium) Wetland enhancement ($: Low) Detached breakwater ($: High)			Seawall ($: High) Revetment ($: High) Stopbank ($: Medium)

Example 2:

Strategy: **Work with nature**									
Option type:	Avoid + Accommodate		Signal	Trigger	Protect	Signal	Trigger	Retreat
Potential options:	Land use restrictions ($: Low)	Groundwater mgmt. ($: Medium – Extreme) Stormwater mgmt. ($: Medium - Extreme)			Shore nourishment ($: Medium) Dune regeneration ($: Medium) Riparian management ($: Medium)			Property acquisition ($: Medium - High)

Understanding mātauranga Māori and rūnanga values

A wider understanding of mātauranga Māori and rūnanga values will be woven through the adaptation planning process. We will be seeking rūnanga feedback on examples of high-level adaptation pathways. Rūnanga will, if they wish, advise us of their assessment of adaptation options against cultural values.

Cultural	Are the impacts on, or consequences for, culturally significant land, assets, resources and other taonga acceptable to rūnanga?

Coastal Panel analysis

The Coastal Panel will start to develop possible adaptation pathways. To help them achieve this, they are likely to undertake a range of work which might include:

- Considering the *Risk and Vulnerability Assessment.*
- Considering any general signals, triggers and thresholds prepared by the STAG.
- Considering the existing information on effectiveness, feasibility, environmental, guiding principles and cultural values.
- Considering how well adaptation options support community objectives.

Community objectives	Does the option achieve the community objectives?

We are likely to ask the Coastal Panel to draft high-level adaptation pathways to test with the wider community. These high-level adaptation pathways could include recommended options, potential benefits and impacts of these options, some high-level costings, and suggestions for ways the pathways could be funded and implemented.

Further community engagement about the Adaptation Area

We need to continue to check in with the wider community. Further engagement is likely to include testing the draft high-level adaptation pathways with the community, to get their feedback.

Coastal Panel evaluation of adaptation pathways

It is intended that the Coastal Panel will narrow things down to a preferred pathway. To help them achieve this, the Panel might consider matters that include the following:

- Feedback gathered from community-wide engagement on possible high-level adaptation pathways;
- The financial implications of the identified pathways including capital and maintenance/ongoing costs;
- The guiding principles as outlined in this document;
- Long-term sustainability;
- Flexibility;
- Effectiveness;
- Environmental impacts;
- Cultural impacts;
- Social impacts; and
- Alignment with community objectives.

We intend to ask the Coastal Panel to identify a preferred pathway, along with recommended funding arrangements for implementation and we will then aim to check back in with the wider Adaptation Area to understand their views on this pathway.

Council makes final decision

Ultimately, it's the Council that makes the final decision on adaptation pathways that have been through this process.

Once adaptation pathways are decided by Council, the implementation phase begins. If public funding needs to be allocated, then this will be proposed by Council staff via an Annual Plan or Long Term Plan process. It's important to be aware that some adaptation options may not need to be implemented for some time, and may therefore be scheduled for delivery in 10 or even 20 years' time.

LET US KNOW WHAT YOU THINK

What do you think of our proposed approach to adaptation planning with adaptation area communities?

Have we missed a step? Or could we skip a step? Are there enough opportunities for people to be involved?

Let us know what you think: www.ccc.govt.nz/haveyoursay

SUPPORTING INFORMATION

Coastal Hazards Assessment 2021

The Council has engaged Tonkin + Taylor to assess three main coastal hazards; coastal inundation, coastal erosion and rising groundwater for the entire Christchurch district. Good planning requires the best available data, and although there are uncertainties, the data will allow us to broadly understand how the hazards will change in the future and what areas may be impacted, to support sound adaptation planning discussions with communities and robust decision making by the Council. Tonkin + Taylor provided the Council with that assessment in Coastal Hazards Assessment 2021.

You can read more about the Coastal Hazards Assessment 2021 at ccc.govt.nz/link

Risk and Vulnerability Assessment

The Risk and Vulnerability Assessment, created in collaboration with the University of Canterbury, identifies which assets and values are at most immediate risk to the coastal hazards identified in the *Coastal Hazards Assessment*, so that we can prioritise where adaptation planning will occur. The Risk and Vulnerability Assessment will not be complete until the community has had a chance to provide feedback on whether the community assets and values are accurate, inclusive and representative.

The Risk and Vulnerability Assessment seeks to answer the following key questions:

- What assets and values are at risk from each coastal hazard, and what is their level of exposure?
- What are the likely consequences of exposure (i.e. number of people and assets affected, social and economic disruption, damage and losses)?
- What cascading, dependent or flow on effects might occur (e.g. roads, impact on community services)?
- When are these impacts likely to occur?
- Where is the most immediate and severe risk – and therefore priority for adaptation planning?

Management Framework

This document outlines the international, national and local level statutory and non-statutory context for the Council's coastal hazards planning activity. At a broader level, it also outlines the roles and responsibilities of territorial and regional authorities in relation to coastal hazards caused by climate change.

You can read the Management Framework at ccc.govt.nz/link

Catalogue of Coastal Hazard Adaptation Options

This document is a literature review that provides contextual information on a wide range of overarching adaptation strategies and possible adaptation options for low-lying inland and coastal communities. This review is not intended to be the sole tool for identifying potential adaptation options or an exhaustive list of all available adaptation options. Instead, it is intended to inform and support the identification of suitable adaptation options for consideration in the development of adaptation pathways for low-lying inland and coastal communities in the Christchurch district.

You can read the Catalogue of Coastal Hazard Adaptation Options at ccc.govt.nz/link

COASTAL HAZARDS DISTRICT PLAN CHANGE

Alongside the Coastal Hazards Adaptation Planning programme, we are also seeking input into a Coastal Hazards Plan Change which is required to give effect to the New Zealand Coastal Policy Statement and meet our statutory obligations under the Resource Management Act.

The Coastal Hazards Plan Change is about managing **new** development, changes of use and subdivision proposed in the future. Reducing risks to **existing** land use activities and development will be considered through the Coastal Hazards Adaptation Planning programme.

An Issues and Options paper has been drafted to provide the rationale for the proposed Plan Change and to set out four options for the management of coastal hazard risks, including Council's preferred option of adopting a risk based approach. The risk-based approach gives effect to the New Zealand Coastal Policy Statement while still enabling communities to utilise their property as far as reasonably and safely possible.

You can read the Issues and Options paper and provide your feedback at ccc.govt.nz/link

COASTAL HAZARDS DISTRICT PLAN CHANGE

Issues and options discussion paper: Managing new development in areas exposed to coastal hazards

Introduction

The Christchurch City Council needs to make changes to its District Plan to avoid new developments being exposed to coastal hazards such as flooding (including tsunami) and erosion, and also to ensure Council meets its legal obligations under the Resource Management Act.

Coastal hazards have the potential to affect a large number of people and communities along the coastline and in low-lying parts of our district. The risks associated with these hazards for property, people and the wider community are likely to intensify as the impacts of climate change increase.

WE WANT TO HEAR WHAT YOU THINK

We are at the start of this plan change process and want to hear what you think. This discussion paper identifies how coastal hazards might affect communities across Christchurch and Banks Peninsula, discusses the issues that we are facing and why we need to change the District Plan, and sets out a range of options for how the District Plan could manage the risks associated with these hazards.

Let us know what you think: www.ccc.govt.nz/haveyoursay

The Coastal Hazards Plan Change is about managing **new** development, changes of use and subdivision proposed in the future. Reducing risks to **existing** land use activities and development will be considered through the Coastal Hazards Adaptation Planning programme. You can find more information about the Coastal Hazards Adaptation Planning programme at www.ccc.govt.nz/adaptation-planning

If you have any questions or require further information, please get in touch:
insert details here

Glossary

Term	Definition
Activity Status	Refers to whether an activity (development, use or subdivision of land) is permitted or requires an application for resource consent under the Resource Management Act. Activities needing consent can be classified as follows: Controlled – will be granted consent, but conditions can be applied, Restricted Discretionary, Discretionary – resource consent may be granted or declined, Non complying – If adverse effects are minor, or its not contrary to objectives and policies, resource consent may be granted or declined, or Prohibited – an application for resource consent cannot be made and resource consent cannot be granted.
Annual Exceedance Probability (AEP)	the probability that a coastal hazard event of a particular magnitude or greater (storm severity, storm-tide level, etc.) will occur in any one year. This is usually expressed as a percentage (e.g. 1%), but can be expressed as a decimal (e.g. 0.01). This probability will change over time if the hazard (e.g. storm-tide level) is changing, for example from climate change effects.
Coastal erosion	is a natural, ongoing process that occurs when the sea wears away the land. Some coastal areas experience short periods of erosion, but then recover (build up again) while others continuously erode and never recover. In the 2021 Coastal Hazards Assessment reports and maps we refer to land which is 'prone to erosion'. This includes all land that might be affected by coastal erosion at some point over the timeframe considered, even if it might subsequently recover.
Coastal flooding	happens when normally dry, low-lying coastal areas are flooded by the sea. It is usually caused by a severe storm but rising sea levels could also cause 'sunny day flooding' from high tides.
Consequence	the outcome of an event that may result from a hazard. It can be expressed quantitatively (e.g. units of damage or loss, disruption period, monetary value of impacts or environmental effect), semi-quantitatively by category (e.g. high, medium, low level of impact) or qualitatively (a description of the impacts) (adapted from Ministry of Civil Defence and Emergency Management [MCDEM], 2019). It is also defined as the outcome of an event affecting objectives (ISO/IEC 27000:2014 and ISO 31000: 2009) (Ministry for the Environment, 2019).
District Plan	is a document prepared under the Resource Management Act in conjunction with the community. It sets a framework for development and the management of resources in the district in a manner that meets the goal of sustainable management of those resources. It includes objectives, policies and rules to manage the environmental effects of land use activities. It defines the various zones and the rules for what activities are

	permitted to occur in each zone. In this way a district plan has a very strong influence over all activities that occur in the district.
Existing Use Rights	are where someone has a right to continue a use/ activity if it was lawfully established by resource consent or permitted by the plan at the time, and the effects of the use are the same or similar in character, intensity and scale to the effects when the activity was established, and has not stopped for any time lasting more than 12 months.
Exposure	the lack of systems (i.e., properties, infrastructures, human)/ protection against adversity (adverse hazard factors) in a hazard prone area, that could cause negative impacts.
Minimum Floor level	the Council can set minimum floor levels to protect buildings throughout the city from the risk of flooding. The minimum floor level can be defined as a height above ground level so that flood waters do not enter a building during a specific flood event.
Hazard	severity and magnitude of a natural or human-induced event or trend that causes harmful impacts (consequences) on natural, built environment, or social systems (MfE 2020).
Likelihood	the chance of an outcome occurring, where this might be estimated probabilistically (IPCC, 2014). For coastal erosion is a combination of Sea Level Rise scenario, time frames and probability of occurrence needs to be considered so risk can be expressed as: "xxx probability that erosion will occur within yyy time frame under zzz SLR scenario".
Long Term	30 to 100 years into the future from 2020.
New Zealand Coastal Policy Statement (NZCPS)	provides national direction on how the coastal environment and activities within it are to be managed to implement the Resource Management Act. Councils are required to 'give effect' to the direction contained in the NZCPS.
Plan Change	a method under the Resource Management Act to amend a District Plan. A plan change can be initiated by Council or any member of the public and is to follow a statutory process including inviting submissions, submissions supporting/ opposing others submissions, followed by a hearing and then decisions on submissions. After a decision is made, appeals can be made to the Environment Court, unless use of a streamlined plan change process under the RMA changes those rights.
Regional Policy Statement (RPS)	is a strategic planning document required to be prepared under the Resource Management Act. All regional councils must prepare a RPS. They help set the direction for managing all resources across the region. The Canterbury Regional Policy Statement applies to Christchurch.
Resource Consent	permission under the RMA from the local council for an activity that might affect the environment, and that isn't allowed 'as of right' under the district or regional plan. As defined in Section 87 of the Resource Management Act.
Rising Groundwater	can bring the water table closer to the ground surface. Near the coast, the level of the sea often influences groundwater levels. We can therefore expect to see the

	groundwater rising as sea levels rise. At its most extreme, groundwater could rise above ground level and cause temporary or permanent ponding of water.
Risk	the interaction between the hazard, exposure of things to that hazard and the vulnerability of the things that are exposed. Risk is often represented as probability or likelihood of occurrence of hazardous events or trends multiplied by the impacts if these events or trends occur.
Sea Level Rise (SLR)	sea level rise is an increase in the level of the world's oceans due to the effects of global warming.
Short Term	Less than 30 years into the future from 2020.
Urban Areas	includes those areas that are zoned for residential, commercial or industrial activities in the District Plan, are already built up and are serviced by infrastructure.
Vulnerability	the propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm, and lack of capacity to cope and adapt.

How might coastal hazards affect Christchurch and Banks Peninsula communities?

We recognise that there are uncertainties in assessing coastal hazards risks. However, what is certain is that the risks exist and will not go away in the foreseeable future. Under current conditions, it is predicted that New Zealand will experience around 30cm of sea-level rise by 2050, 50cm of rise by 2075 and 1m of rise by 2115[1]. Even if emissions are reduced, it is virtually certain that the global mean sea level will continue to rise through 2100, and there is high confidence that longer term impacts will be seen for centuries to millennia to come.[2] This will affect the frequency, severity and extent of existing coastal hazards such as coastal flooding, erosion and groundwater.

In line with the New Zealand Coastal Policy Statement and Ministry for the Environment's guidance for local government on coastal hazards and climate change[3], the Council commissioned Tonkin + Taylor to produce an updated Coastal Hazards Assessment[4]. This report identifies the future extent and magnitude of areas *potentially* at risk of coastal erosion and coastal flooding across the district. It also identifies low-lying land that could be susceptible to rising groundwater for a range of different sea level rise scenarios and storm events.

Unlike previous studies, the Coastal Hazards Assessment does not predict how much sea level will rise and by when. Rather than make any fixed assumptions, it considers a series of incremental changes to understand what could happen across the full range of scientifically credible scenarios for sea level rise. For the analysis of erosion, the assessment also considers four points in time – current-day, 2050, 2080 and 2130. A summary of the Coastal Hazards Assessment in plain language, the full Coastal Hazards Assessment and online map viewer are available at ccc.govt.nz/link

The Coastal Hazards Assessment is our starting point to identify how and where we manage land use, development and subdivision in the District Plan. Put simply, the Coastal Hazard Assessment provides the data that is then translated into lines on a map in the District Plan

[1] Bell, R., Lawrence, J., Allan, S., Blackett, P., & Stephens, S. (2017). *Coastal Hazards and Climate Change: Guidance for local government.* Ministry for the Environment; Wellington. https://environment.govt.nz/assets/Publications/Files/coastal-hazards-guide-final.pdf. (Note: This statistics uses a baseline period of 1986-2005. We have experienced around 10cm of sea-level rise since this period of time and therefore expect to see around 20cm of additional sea-level rise over the next 30 years, by 2050).

[2] Intergovernmental Panel on Climate Change (IPCC). (2021). Summary for Policymakers. In *Climate Change 2021: The Physical Science Basis*. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)]. Cambridge University Press. https://www.ipcc.ch/report/ar6/wg1/

[3] Section 6.1 describes the matters to be considered in undertaking a Coastal Hazards Assessment, in order to meet the requirement to identify areas potentially at risk of coastal hazards under Policy 24 of the NZCPS (p116 onwards in '*Coastal Hazards and Climate Change Guidance for Local Government')*
https://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/coastal-hazards-guide-final.pdf
"A long-term risk assessment is a necessary first step towards developing strategic options that seek to reduce the risk of harm from coastal hazards over the long term" (section 6.2, p28 of *NZCPS 2010 guidance note: Coastal Hazards Objective 5 and Policies 24, 25, 26 & 27.*
https://www.doc.govt.nz/globalassets/documents/conservation/marine-and-coastal/coastal-management/guidance/policy-24-to-27.pdf

[4] Coastal Hazard Assessment: link

In addition, we have a number of studies modelling the effects of different tsunami scenarios, with most assuming a worst-case scenario of a 1 in 2,500 event. A recent study from 2018[5], prepared by NIWA for Christchurch City Council of a 1 in 500 year event shows that 39km^2 of the city would be subject to coastal flooding, with depths ranging between 1.5 – 2m around Brooklands Lagoon and low-lying areas around the Avon-Heathcote estuary and Lower River channels.

For Banks Peninsula, Environment Canterbury commissioned GNS Science to undertake modelling over 2019[6] and 2020[7], which included scenarios from 20 sources across the Pacific ocean. The modelling shows maximum depths of water in the head of Lyttelton Harbour and in the bays facing north/ north east of up to 6m for a 3m tsunami wave.

Note that for tsunami, the speed and depth of flooding would be much greater which could cause a much greater risk to life.

WE WANT TO HEAR WHAT YOU THINK

The areas affected by rising groundwater, a 1 in 500 year tsunami[8], and coastal flooding[9] are very similar. It's therefore possible for us to address groundwater and tsunami risks through coastal flooding risk management. However, we want to hear what you think:

- Should we have specific policies and rules on groundwater, or rely on policies and rule for managing coastal flooding?

- Should we manage risks to life and property from tsunami through rules in the District Plan, or rely on policies and rule for managing coastal flooding, or rely on civil defence activities? If we do rely solely on civil defence activities (e.g. evacuation zones) it would be important that everyone in an area could safely evacuate in a timely manner. Depending on the nature of the event, there is a risk that routes from some areas could become congested, so we need to consider how people may be impacted by this.

Let us know what you think: www.ccc.govt.nz/haveyoursay

[5] Passarella C., Arnold J., Lane E.; Land Drainage Recovery Programme: Tsunami Study. NIWA report 2018039CH Prepared for CCC.
[6] Mueller, C., Wang, X., Power, W.L., Lukovic, B., 2019, Multiple scenario tsunami modelling for Canterbury. Report prepared for Environment
Canterbury. GNS Science consultancy report; 2018/198, GNS Science, Lower Hutt, New Zealand.
[7] Mueller, C., Wang, X., Lukovic, B., 2020. Multiple scenario tsunami modelling for the Selwyn coastline, Kaitorete Barrier and Akaroa Harbour. Report
prepared for Environment Canterbury. GNS Science consultancy report 2020/47, GNS Science, Lower Hutt, New Zealand
[8] Based on 1.06m of sea level rise
[9] Based on a 1 in 100 year event and 1.2m of sea level rise

Our objectives for this plan change

The objectives we are seeking to achieve from this Plan Change reflect those from the Resource Management Act, New Zealand Coastal Policy Statement and Regional Policy Statement:

- **Ensuring that coastal hazard risks are addressed by managing activities in areas prone to coastal hazards, having regard to the level of risk.** This aligns with our responsibilities to implement national and regional direction that seeks the following:
    - Management of significant risks of natural hazards[10], and controlling potential effects of the use of land including for the purpose of avoiding or mitigating natural hazards[11].
    - New subdivision, use and development is to be avoided where it increases risks associated with coastal hazards[12].

- **Enabling people and communities to provide for their social, economic and cultural well-being and their health and safety** through subdivision, use and development[13].

In order to achieve these objectives, there are two main issues with the provisions in our current District Plan that we need to address:

- There is a risk of communities being exposed to the impact of coastal hazards that will become more prevalent in the future. We need to act now, otherwise land use activities and development will continue to occur in areas exposed to coastal hazards without appropriate ways to manage the risk.

- The Council has statutory responsibilities to implement national and regional direction in the New Zealand Coastal Policy Statement and the Regional Policy Statement. The current District Plan does not define the full extent of areas at risk of coastal hazards and only manages some activities in defined areas. For example, the City Plan has rules only for an area 20m from around the high tide mark[14], and the Banks Peninsula District Plan only considers the risk of coastal hazards for subdivision, not development. These gaps do not enable the effective management of the risks and development could occur without appropriate controls.

You can read more about these issues in Appendix A.

[10] Section 6(h) of the Resource Management Act.
[11] Section 31(1)(b) of the Resource Management Act.
[12] Objective 11.2.1 of the Canterbury Regional Policy Statement
[13] Objective 6 of the New Zealand Coastal Policy Statement.
[14] Mean High Water Springs mark

Options for how the District Plan could manage coastal hazards

We have identified four options as potential ways forward for a Plan Change. For an assessment matrix that shows the pros and cons of each option, see Appendix B.

We have not included maintaining the status quo as an option because it does not adequately manage risks to people and property from coastal hazards. It also does not implement national or regional direction.

Option 1 (preferred) – Risk-based approach to coastal hazards

This involves managing activities according to the level of risk in that location, acknowledging the uncertainty (of when land may be affected by rising sea levels) and the vulnerability of the activity to risk. It reflects the approach taken to other hazards in the District Plan[15], and is consistent with international risk management best practice[16].

It recognises that the level of risk is not the same in every location and that a range of restrictions should therefore apply to reflect the circumstances in different areas.

The risk-based approach to coastal hazards would limit land use, development and subdivision in areas at High risk, and would remove or reduce the opportunities for further investment and development in some of these areas.

In areas of Lower to Medium risk, there would continue to be development opportunities with people still able to extend their house, subdivide their property, and change the use of a building. However, there would be conditions on land use and development to improve the adaptability and resilience of any future development.

Areas of Very low, Low, Medium and High risk are identified on maps accompanying this Issues and Options paper – **www.ccc.govt.nz/plan-change-12**. This shows the likely effects of this option on opportunities for further development in areas affected by coastal hazards.

How we are identifying different levels of risk

The identification of different levels of risk was based on work by Jacobs with input from Council planners and technical specialists. It draws on data in the Coastal Hazards Assessment to define a range of 'thresholds' for different levels of risk, using different scenarios[17].

To account for climate change and the impact of sea level rise, Jacobs and Council staff selected 60cm sea level rise by 2080 and 1.2m sea level rise by 2130 as the most appropriate to apply to

[15] Areas identified at a higher risk of river flooding that could cause harm are classified as High Hazard Management Areas. Similarly on the Port Hills, a graduated approach is taken with a more restrictive set of rules applying to properties subject to a higher risk of rock fall, cliff collapse and mass movement compared with other areas where there is a lower risk.
[16] ISO 31000: 2009, Risk Management – Principles and Guidelines;
[17] Scenario" refers to a combination of a future time period and climate change scenario (RCP) which together determine a projected rise in mean sea level or sea level rise and consequent increase in hazard.

both erosion and coastal flooding hazard scenarios. These scenarios reflect the closest sea level rise to the more conservative global projections as recommended by the Ministry for the Environment based on the data available for around 50 and 100 year timeframes.

The sea levels of 60cm and 1.2m also indicate higher and lower levels of certainty. All of the global projection scenarios forecast 60cm of sea level rise by at least 2130, so the effects will need to be managed in any case over the life of a development. However, 1.2m of sea level rise is only expected to occur in this timeframe based on conservative global projections. It still needs to be managed, but in a way that recognises the higher degree of uncertainty.

Coastal flooding

Four different hazard zones of coastal flooding have been identified - High, Medium, Low and Very Low. They were determined using the three main factors which define flood risk:

- Likelihood of flooding (we used a 1 in 100 year event, being a 1% chance of it occurring in any year, which is reasonably likely to occur over the lifetime of a building).
- Consequence of flooding (we looked at depths of flooding which have the potential to cause damage, injury or harm)
- Change in likelihood and consequence in the future with sea level rise (60cm sea level rise is more certain, while 1.2m sea level rise is less certain).

Table 0: Recommended definitions for coastal flood risk mapping using the Coastal Hazards Assessment coastal flooding depth data (d = water depth from the Coastal Hazards Assessment for a 1 in 100 year flood event)

Possible District Plan hazard categories	Flood depths based on 60cm of sea level rise (higher certainty)	Flood depths based on 1.2m of sea level rise (lesser certainty)
Very low	(dry)	(d < 0.5m)
Low	(d < 0.5m)	(0.5m < d < 1.1m)
Medium	(0.5m < d < 1.1m)	(d > 1.1m)
High	(d > 1.1m)	(d > 1.7m)

Note: 'd' represents the depth of coastal flooding in a flood event, which factors in the sea level amount considered i.e. 60cm of sea level rise does not equate to 60cm of flooding.

This risk-based approach recognises that in areas where we have a higher degree of confidence that the hazard will occur and that the effects will be of a high consequence (such as over 1.1m of flooding with 60cm of sea level rise), this poses a high risk. Areas which could be impacted by similar depths of flooding, but only if sea levels rise much higher, is a less certain outcome, so at this stage it may only pose a medium risk.

The depths referred to in Table 1 were informed by international guidance from Australia and the UK and reflect the need to manage the safety of people who need to access, exit or use buildings during a flood, rather than just the building or activity affected.

In terms of flooding, the higher the level of risk, the greater the level of control needed to ensure that the risk is appropriately managed. Table 2 provides a high-level overview of the general approach to the level of controls that could apply to activities across a range of zones.

Erosion

Based on the Coastal Hazards Assessment and the type of coastal environment, two types of erosion zones have been identified (High-Medium and Low Hazard Areas) for the open coast and estuary, and a single zone elsewhere. In the High-Medium Hazards Areas, it is more likely that erosion will occur over a shorter timeframe. In any case, the consequence of erosion occurring is high (e.g. loss of land) so a restrictive approach is required (see Table 2).

You can read more information about how areas of coastal flooding and erosion have been identified at **ccc.govt.nz/link**

Methods for managing the risks of coastal hazards through a risk-based approach

By using different methods in the District Plan, we can strike a balance between enabling land use and development so that people and communities can provide for their well-being, and health and safety, while ensuring that coastal hazard risks are addressed to avoid increasing the risk of harm.

These methods could include:

- Identifying ***thresholds*** within which development and activities are acceptable – for example, until a specified level of sea level rise is reached and further action is required. These actions could include relocating a building to higher ground or requiring a building to be removed.
- Requiring that ***buildings are relocatable/removable or adaptable***[18] without a specified threshold.
- Identifying and restricting **vulnerable/sensitive activities**. A range of activities are more vulnerable/sensitive to the effects from coastal hazards than others because they put more people at risk or those affected are more vulnerable (for example, the elderly). For example, residential activities are more sensitive than some business activities, as are facilities such as care homes where the residents may have restricted mobility and health conditions that limit their ability to respond quickly to hazard alerts. We need to be careful when considering any new development for sensitive activities and this, combined with the categorisation of areas of Very Low, Low, Medium and High risk, will inform the District Plan activity status and regulatory controls. The District Plan could either identify and list all potentially highly vulnerable activities, or it could use a criteria based approach that would consider factors such as:
    - Operational period - time of day
    - Number of users
    - Mobility of users
    - Evacuation potential

- Specifying ***minimum floor levels*** to reduce the likelihood of floodwaters entering homes.
- Requiring ***specific types of building foundation or construction types or designs***, and site design that reduces the risk of damage while incorporating access requirements to ensure people can safely leave if the property is flooded.

[18] More information on these types of buildings is available in the Catalogue of Coastal Hazard Adaptation Options, available at www.ccc.govt.nz/adaptation-planning

- Requiring ***setbacks***[19] from areas identified at risk of coastal flooding and/or erosion.
- Increasing ***minimum lot sizes and reducing densities*** to protect buildings from flooding by providing more spacing for flood water to pool on surrounding land.
- Developing ***policy direction that is responsive to the decisions made through adaptation planning*** and enables subsequent implementation without necessitating a plan change in all circumstances.

Where there is uncertainty about whether an activity would result in increased risk, a resource consent may be required to assess the level of increased risk of a proposal on a particular site, and other properties.

The coastal hazards policies and rules would be applied to areas identified as susceptible to coastal hazards, which would be additional to the zone rules, for example for Residential or Commercial Zones. They would not affect people's existing rights, unless existing use rights have been removed, either by Environment Canterbury under the Resource Management Act or in future by changes to the resource management system, which have been signalled by Central Government.

Case Studies:

Image

Alyson wants to build a house on a vacant section. Alyson's property is unlikely to flood in the next 30 years but beyond that, the section may start to flood in large storm events. In 70 years time Alyson's section could be flooded annually by up to 1m of water in a large storm.

This site is identified as having a medium risk of coastal flooding because it is not currently a high risk, but could have impacts of a high consequence in the longer term (beyond 30 years).

Alyson can get a resource consent to build, provided she can demonstrate the house can be relocated or designed to adapt to sea level rise, and that there is a safe evacuation route in the event of flooding.

Image 2

Carl wants to extend his house of 100m^2 by adding an additional 50m^2 for a living area and bedroom at existing ground floor level. Even though Carl has never experienced flooding on his property, it is currently at risk of small amounts of flooding in a large storm event. In the next 10 years Carl's property may be flooded on an annual basis. A large storm could flood the house by more than 1m, including the area identified for the extension.

This site is identified as having a high risk of coastal flooding because it is expected to have high impacts in the short term (next 30 years).

[19] More information on setbacks is available in the Catalogue of Coastal Hazard Adaptation Options, available at www.coastalfutures.nz.

Carl would be unlikely to get a resource consent because of the high risk of flooding in the near future.

Image 3

Sam wants to subdivide his 1000m^2 section to create two 500m^2 sections. There has been no recent history of flooding on the land.

The site is identified as having a low risk of coastal flooding in the next 30 – 50 years.

Sam can apply for consent to subdivide and any subsequent development would need to meet floor level requirements.

How the risk-based approach could be applied to activities

Generally, the higher the level of risk the greater the level of control needed to ensure that the risk is appropriately managed. Table 2 provides a high-level overview of the general approach to the level of controls that could apply to activities across a range of zones.

A more refined approach would be needed for activities within the risk areas reflecting the outcomes sought for different zones.

Regulatory control level[20]	**Enabled***	**Regulated***	**Restricted**
	Permitted/Controlled	**Restricted Discretionary / Discretionary**	**Non complying/Prohibited**

* Subject to meeting standards and assessment criteria

[20] This is based on the different types of activities described in sections 77A and 87A of the Resource Management Act.

Table 2: High Level Activity Status by Risk category

Activity		**Emerging Level of Risk from Coastal Hazards**			
	Inundation	**Very Low**[21]	**Low**	**Medium**	**High**
	Erosion			**Low**[22]	**High-Medium/ Single zone**[23]
Coastal Hazard management works	a) New and upgraded community flood and erosion protection structures				
	b) Maintenance works				
New Infrastructure	a) Strategic/ critical coastal infrastructure (port)				
	b) Critical infrastructure/ lifeline links (Road and rail networks)				
	c) Conventional infrastructure e.g. water, electricity, telecommunications				
New or extension to existing Dwelling; family flat on the same property.	Conventional design e.g. concrete slab fixed foundation				
	Innovative design e.g. relocatable or amphibious				
Non habitable building secondary to house e.g. garage.					
Recreation/ new facilities e.g. yacht/rowing clubs					
New commercial buildings/places of work					

[21] In areas of 'very low' risk, activities would be enabled with rules requiring minimum floor levels and safe exit from the building in the event of flooding.
[22] This applies to the Low Hazard Coastal Erosion zone on the open coast of the City and around the Avon-Heathcote estuary.
[23] This applies to the High/High-Medium Hazard coastal erosion zones on the open coast of the City and around the Avon-Heathcote estuary; the beaches and bays of Banks Peninsula, Lyttelton Harbour and Akaroa Harbour; the setback from cliffs; and where there is land reclamation/ substantial hard protection structures along the southern shore of the Avon-Heathcote Estuary, Sumner Beach, Lyttelton Port and Akaroa Township.

Non habitable buildings – sheds, farm buildings				
Health & Care facilities – e.g. new Health clinic & elderly peoples home				
Education facility – pre-school centre, school				
Fencing				
Subdivision for housing				

Option 2 – Minimal changes (do minimum)

This option bolsters existing District Plan policies and rules with practical methods that would better manage risk, for example, requirements to raise floor levels and identifying areas of high risk where subdivision, land use and development would be restricted

This option involves relying on the existing objective of the District Plan below, which is generic to all hazards.

> *New subdivision, use and development (other than new critical infrastructure or strategic infrastructure)… is to be avoided in areas where the risks from natural hazards to people, property and infrastructure are assessed as being unacceptable',* while ensuring that the *'risks of natural hazards to people, property and infrastructure are appropriately mitigated'* in other areas *(Objective 3.3.6 of the Christchurch District Plan).*

The existing objective aligns with direction in the New Zealand Coastal Policy Statement and Regional Policy Statement and is therefore included as part of this option. However, the methods of achieving this objective, described below, would not give effect to either document to the extent that Option 1 would.

The change to the existing District Plan would be in the methods to achieve the existing objective including:

- Definition of coastal hazards on the planning maps
- Requirements for higher floor levels
- Inclusion of additional matters of discretion to enable assessment of the risks to subdivision, land use and development from coastal hazards
- Reliance would otherwise be on existing rules, where resource consent is already required for other reasons, to assess the risks of coastal hazards.

Methods of implementation in District Plan:

- *Application of Objectives and Policies to the assessment of resources consents*
- District Plan Rules & standards for flood hazard areas, which include coastal as well as inland areas.

This option is not preferred because land use, development and subdivision would likely continue to occur in areas at risk of coastal hazards, where resource consent is obtained, including on sites subject to coastal flooding and erosion over the next 100 years and beyond. This means there is a high likelihood that people and communities are exposed to harm/adverse effects at some time in the future. The lack of specific provisions also creates uncertainty for those living in and developing the area, and there is a risk of ad hoc and inconsistent decisions.

Option 3 – Avoiding activities that increase risk across the District

This option would seek to avoid all land use, development, and subdivision that increases any level of risk of harm or adverse effects from coastal hazards – within and outside of the existing urban areas.

Development, subdivision and land use activities would only be allowed where it can be demonstrated that there is no increase in 'adverse effects' – which means everything from physical effects on people and property, to environmental, economic, financial, social or other effects.

Opportunities for development, changes in land use, and improvements to existing developments would therefore be limited in affected areas. 'Non-complying' activity status would apply to subdivision and development, being activities that are not generally consistent with objectives of the District Plan and subject to additional requirements.

Methods of implementation in District Plan:

- *Objectives and policies that seek to avoid new development in identified coastal hazard areas.*
- *Restrictive activity status requiring resource consent for most development, land use and subdivision.*
- *Non habitable buildings and recreational activities would continue to be enabled subject to meeting standards.*

While this option provides the greatest resilience to future events, **it is not preferred** because it does not differentiate between relative levels of risk, and would therefore not reflect that the risk in one location could be quite different to another. We have a much better understanding of the different levels of risk and can respond accordingly.

Limitations on new development and increased costs are unlikely to be justified across the existing urban area, and outside of it. Option 3 would therefore be unduly restrictive.

Option 4 – Avoiding activities that increase risk outside the existing urban area while enabling a risk-based approach within the existing urban area

This option is a two-pronged approach, comprising elements of options 1 (risk-based approach) and 3 (avoiding activities):

- **It would seek to avoid land use, development, and subdivision that increase the risk of harm or adverse effects from coastal hazards, *outside* of the urban area.**

The opportunities for development and land use would be limited under this option unless it could be demonstrated that there is not an increased risk of harm or adverse effect. This would preclude further urban growth in areas where there is increased risk beyond the existing urban area.

- **In the existing urban area, it would take an approach of managing the risk to new development and changes in land use.**
  Within urban areas, a managed approach would enable development and land use activities to occur in areas of lower risk while limiting development and land use activities in areas at high risk, removing or reducing the opportunities for further investment and development.

Urban areas includes those areas that are zoned for residential, commercial or industrial activities in the District Plan, are already built up and are serviced by infrastructure. The Canterbury Regional Policy Statement defines existing and future urban areas in Map A [link].

Methods of implementation in District Plan:

- *A combination of Options 1 & 3 above.*

This option is not preferred because it does not reflect the differences in the nature of the hazard which has a strong influence on the level of risk. As a result, there could be unnecessary restrictions on people's ability to develop outside the urban area. Conversely, within urban areas, it may not adequately manage development in areas at higher risk where avoidance may be more appropriate.

We want to hear from you

We are at the start of this plan change process and we want to hear from you. We have a preferred option that we believe would best manage coastal hazards in the District Plan, but we want your feedback on the issues and options for addressing these before we go any further.

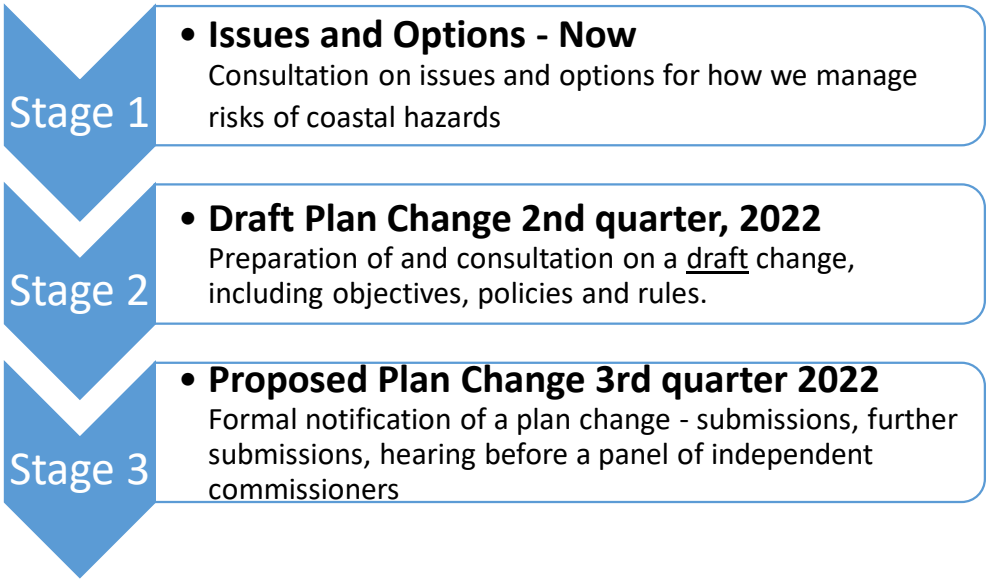
- Which option do you think is the most appropriate way forward?
- Are there other options we should be considering?
- Are there other types of innovative development e.g. relocatable or amphibious that could be considered suitable within areas of low or medium risk?
- Are there other types of vulnerable/susceptible development or activity that need to be more carefully managed in areas of risk?
- Should the District Plan manage areas at risk of a tsunami?
- Should we have specific policies and rules on groundwater, or rely on policies and rules for managing coastal flooding?

To give your feedback, go online to www.ccc.govt.nz/haveyoursay

Next steps

Preparing the draft change to the District Plan

We will consider the feedback received on this issues and options paper, and then prepare a draft change to the District Plan. Currently we are planning to have a draft plan change completed in the first half of 2022 for informal feedback. We'll then invite submissions on it as part of the formal notification process under the Resource Management Act.



Stages 1 and 2 are opportunities to influence the drafting of the plan change.

Stage 3 is a statutory process which starts with notification of the Plan Change, when we invite submissions. After this, further submissions can be made, supporting or opposing what others have said. This will be followed by a hearing before an panel of independent commissioners who will make recommendations to Council on whether the Plan Change is approved or rejected. By appointing an independent panel, we want to ensure there is thorough testing of the Plan Change and supporting documents.

Resource Management reforms and the timing of the Plan Change

The Government is proposing a reform of the planning system, including replacement of the Resource Management Act. Changes proposed include the replacement of District Plans and regional planning documents with a single plan for each region, being Canterbury. It will take time for new plans to be prepared and for the Christchurch District Plan to be replaced.

Managing the risks of hazards remains a priority in the emerging reforms and existing national direction in the New Zealand Coastal Policy Statement is not anticipated to change significantly[24]. With this in mind, and given the risks to communities of coastal hazards, we think there is a need to act now and to start a conversation on how land use and development is managed in the future.

[24] The governments proposed National Planning Framework proposes the "consolidation of national direction" rather than significant changes to the direction (para. 101 of Cabinet Paper https://environment.govt.nz/assets/Publications/Cabinet-papers-briefings-and-minutes/cabinet-paper-reforming-the-resource-management-system_1.pdf

APPENDIX A: Issues to be addressed by a Plan Change

Managing risks to areas and communities of coastal hazards

Christchurch communities have lived through the devastating impacts of the Canterbury earthquakes and understand the importance of being proactive in addressing known risks.

Data on sea level rise and climate change continues to be updated, and our knowledge of the extent and nature of potential risks associated with this is improving. However, despite the increasing risk from coastal hazards, the levels of investment in residential property in areas exposed to coastal flooding in Christchurch (and in urban centres across New Zealand) are continuing to increase.

As a region, Canterbury has around $1B of local government owned infrastructure exposed to coastal hazards, the majority of which is in Christchurch. As sea levels rise, Canterbury has the most public infrastructure exposed to coastal hazards in New Zealand[25].

As a city, Christchurch is more exposed to coastal hazards than either Auckland or Wellington[26]. Across the Christchurch District approximately 25,000 properties are exposed to coastal hazards risks over the next 120 years[27]. NIWA estimates that with 1m of sea level rise, the replacement value of buildings is approximately $6.7B, the majority of which are residential properties[28].

We need consistent and up-to-date direction in the District Plan to manage development, subdivision and land use in areas affected by coastal hazard risks. People, property and infrastructure could otherwise be at risk of harm, damage and loss in the future. Assets in these areas will become increasingly exposed to damage, and some may become uninsurable. There will likely be increased costs of recovery, together with reduced productivity and associated impacts on economic growth for both property/business owners and the district. In addition, the potential harm to future residents and visitors could be significant. This will also increase social costs as people and communities recover from natural hazard events that have adversely impacted them.

National and regional requirements, and legislative compliance

National and regional direction to manage the risks of coastal hazards:

- Both the Christchurch City Council and Environment Canterbury are responsible for managing the risks of natural hazards and work together in an integrated way to manage land use activities and development. This integration is achieved, in part, through the Regional Policy Statement and Canterbury Regional Coastal Environment Plan, which contain policies and rules relating to the wider coastal environment.

[25] Simonson, T., & Hall, G. (2019). Vulnerable: the quantum of local government infrastructure exposed to sea level rise. Wellington: Local Government New Zealand.
[26] Parliamentary Commissioner for the Environment. (2015). Preparing New Zealand for rising seas: Certainty and Uncertainty. Wellington
[27] The 2021 Coastal Hazard Assessment data would potentially impact around 16,000 properties across the city and Banks Peninsula. Of these, around 15,000 are at risk of coastal flooding and 1,000 are at risk of erosion over the next 120 years. The 2017 Coastal Hazard Assessment also included areas further up the rivers, where coastal flooding is less dominant (but remains a factor) and from that assessment, approximately 9,000 additional properties (outside of the 2021 assessment) are also likely to experience some coastal flooding.
[28] NIWA. (2019). Coastal Flooding Exposure Under Future Sea-level Rise for New Zealand. Wellington: The Deep South Challenge.

Objective 11.2.1 of the Regional Policy Statement directs that in Canterbury any new subdivision, use and development that increases the risk to people, property and infrastructure is avoided, or where avoidance is not possible, mitigation measures minimise such risks.

- Policy 25 of the New Zealand Coastal Policy Statement directs that councils across New Zealand *avoid* increasing the risk of social, environmental and economic harm from coastal hazards, in areas *potentially* affected by coastal hazards over at least the next 100 years. In identifying areas potentially affected by coastal hazards, Councils are to prioritise the identification of those areas at high risk of being affected[29].
- In planning for coastal hazards under the Resource Management Act, the Council is required to control the effects of land use and development in a way that avoids or reduces the effects of hazards on people and property.

The District Plan needs to be reviewed every 10 years and must implement national direction in the New Zealand Coastal Policy Statement 2010[30] and regional direction in the Canterbury Regional Policy Statement 2013[31] about how land use activities and development should be managed in areas at risk from coastal hazards. The current District Plan provisions were developed prior to the New Zealand Coastal Policy Statement and the Regional Policy Statement. Consequently, those provisions do not define the full extent of areas at risk of coastal hazards, and only manage some activities. For example, the City Plan has rules only for an area 20m from around the high tide mark[32], and the Banks Peninsula District Plan only considers the risk of coastal hazards for subdivision, not development.

Furthermore, the opportunity to respond to coastal hazards through new ways of building is not currently expressly supported by the District Plan. Options for better enabling communities to adapt and live with the changing hazards, including relocatable or removable houses or innovative forms of housing such as floating or amphibious homes, are not specifically identified in the District Plan. Instead, they are treated the same as traditional forms of housing under a broader category of residential activity. A plan change would an provide opportunity to consider how different approaches could be better enabled.

The Council has previously notified possible changes to the District Plan on coastal hazards as part of the District Plan review in July 2015. However, the government (at the request of the Council) amended the Canterbury Earthquake (Christchurch Replacement District Plan) Order in Council in 2015 to recognise that coastal hazards were not a recovery matter that required a fast-tracked process. The amendment removed coastal hazard provisions from the District Plan review and directed that the Council address that separately. This plan change is intended to take this process forward and enable the Council to fully meet its statutory obligations to review the District Plan, and to give effect to the New Zealand Coastal Policy Statement and Regional Policy Statement. Undertaking a comprehensive review of how we manage the risks of coastal hazards through the District Plan now will provide greater certainty as to where the New Zealand Coastal Policy Statement applies and what it means in a Christchurch context, and will improve the future resilience of the district to these growing risks.

[29] Policy 24 of the NZCPS
[30] Prepared by the Department of Conservation
[31] Prepared by the Canterbury Regional Council
[32] Mean High Water Springs mark

You can read more information about regional and national guidance in the Coastal Hazards Management Framework summary: www.ccc.govt.nz/link

APPENDIX B: Assessment of options

Each option has been assessed against the following criteria:

- Effectiveness in achieving the objective of ensuring that coastal hazard risks are addressed by managing activities in areas prone to coastal hazards, having regard to the level of risk.
- Effectiveness in enabling people and communities to provide for their social, economic and cultural well-being and their health and safety
- Benefits
- Cost implications
- Responsive to risk of hazards and changes in the level of risk over time *(this acknowledges that the District Plan needs to be flexible enough to respond to changing circumstances while also continuing to enable people and communities to provide for their wellbeing).*

Consideration	**Preferred option** – Option 1 Risk-based approach	**Option 2 Do minimum**	**Option 3 Avoidance** of the risk of harm **across District**	**Option 4 Avoid outside urban area, risk based approach within** rural areas
Effectiveness **in ensuring that coastal hazard risks are addressed by managing activities in areas prone to coastal hazards, having regard to the level of risk**	Option 1 manages subdivision, land use and development in a way that risk of harm or damage is avoided, having regard to the level of risk. In areas exposed to the risk of harm, for instance, depths of coastal flooding pose a risk to life, this option seeks to avoid development being located in these areas.	Option 2 enables the risks of coastal hazards to be managed where resource consent is otherwise required. However, it does not adequately manage all subdivision, land use and development in areas at risk, and could result in harm to people, the environment and the economy.	Option 3 reduces the risk of exposure of subdivision, land use and development by seeking the avoidance of harm from coastal hazards. This contributes to improved resilience.	Option 4 reduces the risk of exposure, similar to option 3, in rural areas. In doing so, it will avoid the location of urban expansion into rural areas that may not be suitable for development. This option is as effective as Option 1 in the urban area.
Effectiveness **in enabling people and communities to provide for their social, economic and cultural well-being and their health and safety**	Option 1 enables subdivision, land use and development in areas of risk where the effects of coastal hazards can be adequately managed. In areas of lower risk, this option provides for the ongoing use of land and development until such time that the risk emerges i.e. sea levels reach a defined point. In doing so, it enables people	Option 2 enables subdivision, use and development where resource consent is not required or is otherwise enabled by the plan. While introducing additional matters of discretion for restricted discretionary activities, it is more permissive than the other options and similar to the status quo.	Option 3 restricts people and communities in how they use their property in seeking to avoid subdivision, land use and development that increases any level of risk of harm. In doing so, it does not enable people to provide for their social and economic well-being to the extent as other options.	Option 4 provides measured flexibility to enable new activities within established urban areas at risk subject to appropriate mitigation. It is therefore as effective as Option 1 in the urban area. In rural areas, the effectiveness of this option is as described for Option 3. It could harm the ability of rural

	to provide for their social and economic well-being.			communities to meet their social and economic needs.
Benefits	Option 1 is enabling of development where there is a lower level of risk, providing certainty of opportunities for subdivision, land use and development. It also provides certainty for landowners by clearly defining the extent of areas exposed and enabling landowners to plan, even if the risk is deemed high.	Option 2 provides flexibility for landowners where resource consent is currently not required, consistent with the status quo. In doing so, there is a reduced level of regulation compared with the other options. It provides certainty for those in areas subject to risks of coastal hazards by increasing awareness of the risk.	Option 3 provides for resilience by restricting subdivision, land use and development, avoiding further risks of harm. In defining the extent of areas exposed, it provides certainty for communities while increasing awareness of the risks of hazards. It gives people a level of confidence that Council is acting to address the risks of climate change.	This option supports an outcome of urban growth being located away from areas at risk of coastal hazards. In doing so, it provides confidence to communities that Council is acting to address the risks as well as providing certainty in defining areas exposed to hazards. In urban areas, this option is enabling in the same way as option 1.
Costs	In managing the risk of harm, there are reduced economic and social costs of recovery (including repair and rebuilding) from future events relative to the status quo, allowing communities to recover faster. This option has the potential to increase compliance costs relative to the status quo, due to controls on subdivision,	Option 2 does not manage the risk posed by coastal hazards for all subdivision, land use and development. While it will reduce the costs of recovery relative to the status quo, it will continue to result in harm to communities in the absence of comprehensive management of the risks. This will contribute to costs from repair and rebuilding.	Option 3 will have reduced economic and social costs of recovery (including repair and rebuilding) from future events relative to the status quo, allowing communities to recover faster. Option 3 would introduce a high level of additional regulatory burden, with costs associated with a consenting process.	This option would have the same costs for rural landowners as option 3. Option 4 would not provide an equitable approach for land owners and developers across the district, increasing the regulatory burden for rural communities more than urban areas.

	land use and development that do not exist at present. Methods to mitigate the risk may result in additional costs of development e.g. higher floor levels. This option limits or precludes development opportunities in areas defined as having a high risk of harm. This may reduce investment and property values, leading to a reduced level of amenity.	There are additional compliance costs with floor level requirements introduced where they may not apply at present and additional matters of discretion for restricted discretionary activities.	While resource consent may be obtained, this option may reduce the potential for subdivision, land use and development across all areas identified as prone to coastal hazards. This would lead to reduced levels of investment and property values, leading to reduced levels of amenity.	In not having regard to the different levels of risk, it places a burden on landowners wishing to use or develop their land. Even if consent may be obtained, it necessitates a consenting process.
Responsive to risk of hazards and changes in the level of risk over time	Option 1 enables a nuanced approach to managing risk, with restrictions varying according to levels of risk. It allows communities to make informed decisions that avoid increasing risk. The categorisation of areas at risk has regard to changing sea levels. It does this by defining areas with a lower level of risk where coastal flooding / erosion is not anticipated to occur in the short term.	Option 2 Is not comprehensive in managing risks where resource consent is already required. It is therefore not responsive to the risk of hazards where activities are otherwise enabled by the District Plan. The option includes the identification of areas of risk. In doing so, people and communities are better informed of risks and can respond as they see fit where	Option 3 fails to recognise differing levels of risk across the District and unnecessarily restricts subdivision, land use and development even where there are changes in risk e.g. sea levels not rising at the rate anticipated.	Option 4 uses the spatial extent of the urban area to determine the approach for managing risks, which does not have regard to varying levels of risk in rural areas. It is therefore a blunt approach that is not responsive to the nature or extent of risk and places greater restrictions in areas that are less populous and where there is a lower level of development.

	there is not a requirement for resource consent.

Item 9

9. Major Cycleway South Express Section 2 - Detailed Traffic Resolutions

Reference / Te Tohutoro: 20/1538199

Report of / Te Pou Matua: Donal Hanrahan, Project Manager Transport, Donal.Hanrahan@ccc.govt.co.nz

General Manager / Pouwhakarae: Jane Davis, General Manager Infrastructure, Planning & Regulatory Services, Jane.Davis@ccc.govt.nz

1. Purpose of the Report / Te Pūtake Pūrongo

1.1 The purpose of this report is for the Committee to approve the detailed traffic resolutions for the Major Cycleway South Express (Section 2). The project was approved by the Infrastructure, Transport and Environment Committee on 22 July 2019 (Attachment A), with the recommendation that detailed traffic resolutions to be brought back to Committee for approval once detailed design was completed. Attachment B contains the drawings that relate to the final design for Section 2.

1.2 The decisions in this report are of low significance in relation to the Christchurch City Council's Significance and Engagement Policy. The level of significance was determined on the basis that all the delivery decisions have been previously made and this report seeks to set in place the traffic by-laws for enforcement.

1.3 There are no fundamental changes between the approved scheme design and the layout as detailed in the 22 July 2019 report and the resolutions contained in this report for the road, footpath and cycle facilities.

2. Officer Recommendations / Ngā Tūtohu

That the Urban Development and Transport Committee:

1. Receive the information in the attachments to this report.
2. Resolve the detailed traffic resolutions for the South Express Major Cycleway Route as detailed in **Attachment B**.
    a. Make the following resolutions relying on its powers under Christchurch City Council Traffic and Parking Bylaw 2008 and Part 21 of the Local Government Act 1974.
    b. For the purposes of the following resolutions: (1) An intersection of roadways 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 the kerb line location referenced as exists on the road immediately prior to the Committee meeting of 7th October 2021; and (4) If the resolution states "Note 2 applies", any distance specified in the resolution relates the approved kerb line location on the on the road resulting from the Committee resolutions on the South Express Major Cycleway at the Committee meeting of 7th October 2021
3. Existing Craven St - Main South Rd to Middlepark Rd - Traffic Controls
    a. Approve that all traffic controls on Craven St from its intersection with Main South Rd to its intersection with Middlepark Rd be revoked. Note 2 applies.

4. New Craven St - Main North Rd to Middlepark Rd - Traffic Controls

    a. Approve the lane marking changes, kerb alignment changes, islands and road surface changes on Craven St from its intersection with Main South Rd to its intersection with Middlepark Rd, as detailed in Attachment B.

    b. Approve that a bi-directional bicycle path be established on the north-east side of Craven St commencing at its intersection with Main South Rd and extending in a north westerly direction for a distance of 145 m, as detailed on Attachment B, in accordance with sections 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 2 applies.

    c. Approve that a Give Way control be placed against the special vehicle lane (north-westbound bicycles) on the Craven St approach at a point 145 m north-west of its intersection with Main South Rd, as detailed in Attachment B. Note 2 applies.

    d. Approve that a Give Way control be placed against the special vehicle lane (south-eastbound bicycles) on the Craven St approach at a point 155 m north-west of its intersection with Main South Rd, as detailed in Attachment B. Note 2 applies.

    e. Approve that a special vehicle lane for the use of south-east bound bicycles only, be established on the north-east side of Craven St in the new berm, commencing at a point 162 m north west of its intersection with Main South Rd and extending in a south-easterly direction for a distance of 7 m. This special vehicle lane is to be added to the Register of Roads or Traffic Lanes Restricted to Specific Classes of Vehicles in the traffic parking bylaw 2008.

    f. Approve that a special vehicle lane for the use of north-west bound bicycles only, be established on the south-west side of Craven St in the new berm, commencing at a point 138 m north-west of its intersection with Main South Rd and extending in a north-westerly direction for a distance of 7 m. This special vehicle lane is to be added to the Register of Roads or Traffic Lanes Restricted to Specific Classes of Vehicles in the traffic parking bylaw 2008.

    g. Approve that a bi-directional bicycle path be established on the south-west side of Craven St commencing at its intersection with Middlepark Rd and extending in a south-easterly direction for a distance of 271 m, as detailed on Attachment B, in accordance with sections 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 2 applies.

5. Existing Craven St - Main South Rd to Middlepark Rd - Parking and Stopping

    a. Approve that all parking and stopping restrictions on both sides of Craven St from its intersection with Main South Rd to its intersection with Middlepark Rd be revoked.

6. New Craven St - Main South Rd to Middlepark Rd - Parking and Stopping

    a. Approve that the stopping of vehicles be prohibited on the north-east side of Craven St commencing at its intersection with Main South Rd, and extending in a north-westerly direction for a distance of 53 m. Note 2 applies.

    b. Approve that the stopping of vehicles be prohibited on the south west side of Craven St commencing at its intersection with Main South Rd, and extending in a north-westerly direction for a distance of 14 m. Note 2 applies.

    c. Approve that the stopping of vehicles be prohibited on the north-east side of Craven St commencing at a distance 35 m north-west of its intersection with Main South Rd, and extending in a north-westerly direction for a distance of 17 m. The restriction is to apply at all

times. This restriction is located on the south-western side of the cycle lane separation kerb, inclusive of gaps for access points. Note 2 applies.

d. Approve that the stopping of vehicles be prohibited on the south-west side of Craven St commencing at a distance 35 m north-west of its intersection with Main South Rd, and extending in a north-westerly direction for a distance of 8 m. The restriction is to apply at all times. Note 1 applies.

e. Approve that the stopping of vehicles be prohibited on the north-east side of Craven St commencing at a distance 64 m north-west of its intersection with Main South Rd, and extending in a north-westerly direction for a distance of 10 m. The restriction is to apply at all times. This restriction is located on the south-western side of the cycle lane separation kerb, inclusive of gaps for access points. Note 2 applies.

f. Approve that the stopping of vehicles be prohibited on the north-east side of Craven St commencing at a distance 80 m north-west of its intersection with Main South Rd, and extending in a north-westerly direction for a distance of 13 m. The restriction is to apply at all times. This restriction is located on the south-western side of the cycle lane separation kerb, inclusive of gaps for access points. Note 2 applies.

g. Approve that the stopping of vehicles be prohibited on the south-west side of Craven St commencing at a distance 90 m north-west of its intersection with Main South Rd, and extending in a north-westerly direction for a distance of 15 m. The restriction is to apply at all times. Note 1 applies.

h. Approve that the stopping of vehicles be prohibited on the north-east side of Craven St commencing at a distance 98 m north-west of its intersection with Main South Rd, and extending in a north-westerly direction for a distance of 17 m. The restriction is to apply at all times. This restriction is located on the south-western side of the cycle lane separation kerb, inclusive of gaps for access points. Note 2 applies.

i. Approve that a loading zone be created and restricted to a maximum period of five minutes. The restriction is to be on the south-west side of Craven St commencing at a distance 105 m north-west of its intersection with Main South Rd, and extending in a north-westerly direction for a distance of 17 m. The restriction is to apply Monday to Sunday between the hours of 8 am and 6 pm. This parking restriction is located on the m. The restriction is to apply at all times. Note 1 applies.

j. Approve that the parking of vehicles be restricted to a maximum period of ten minutes on the north east side of Craven St commencing at a point 115 m north-west of its intersection with Main South Rd, and extending in a north-westerly direction for a distance of 11 m. The restriction is to apply Monday to Friday between the hours of 8 am and 6 pm. Note 2 applies.

k. Approve that the stopping of vehicles be prohibited on the north-east side of Craven St commencing at a distance 126 m north-west of its intersection with Main South Rd, and extending in a north-westerly direction for a distance of 36 m. The restriction is to apply at all times. Note 2 applies.

l. Approve that the stopping of vehicles be prohibited on the south-west side of Craven St commencing at a distance 134 m north-west of its intersection with Main South Rd, and extending in a north-westerly direction for a distance of 54 m. The restriction is to apply at all times. This restriction is located on the north-eastern side of the cycle lane separation kerb, inclusive of gaps for access points. Note 2 applies.

m. Approve that the stopping of vehicles be prohibited on the north-east side of Craven St commencing at a distance 167 m north-west of its intersection with Main South Rd, and

extending in a north-westerly direction for a distance of 10 m. The restriction is to apply at all times. Note 1 applies.

n. Approve that the stopping of vehicles be prohibited on the south-west side of Craven St commencing at a distance 193 m north-west of its intersection with Main South Rd, and extending in a north-westerly direction for a distance of 52 m. The restriction is to apply at all times. This restriction is located on the north-eastern side of the cycle lane separation kerb, inclusive of gaps for access points. Note 2 applies.

o. Approve that the stopping of vehicles be prohibited on the north-east side of Craven St commencing at a distance 196 m north-west of its intersection with Main South Rd, and extending in a north-westerly direction for a distance of 5 m. The restriction is to apply at all times. Note 1 applies.

p. Approve that the stopping of vehicles be prohibited on the north-east side of Craven St commencing at its intersection with Algidus Street, and extending in a south easterly direction for a distance of 12 m. The restriction is to apply at all times. Note 2 applies.

q. Approve that the stopping of vehicles be prohibited on the north-east side of Craven St commencing at its intersection with Algidus Street, and extending in a north-westerly direction for a distance of 13 m. The restriction is to apply at all times. Note 2 applies.

r. Approve that a bus stop be installed on the south-west side of Craven St commencing at a distance 245 m north-west of its intersection with Main South Rd, and extending in a north-westerly direction for a distance of 13 m. The bus stop is located on the north-eastern side of the cycle lane separation kerb,

s. Approve that the stopping of vehicles be prohibited on the north-east side of Craven St commencing at a distance 46 m north-west of its intersection with Algidus St, and extending in a north-westerly direction for a distance of 7 m. The restriction is to apply at all times. Note 1 applies.

t. Approve that a bus stop be installed on the north-east side of Craven St commencing at a distance 53 m north-west of its intersection with Algidus St, and extending in a north-westerly direction for a distance of 13 m.

u. Approve that the stopping of vehicles be prohibited on the north-east side of Craven St commencing at a distance 66 m north-west of its intersection with Algidus St, and extending in a north-westerly direction for a distance of 7 m. The restriction is to apply at all times. Note 1 applies.

7. Existing Craven St / Algidus St intersection - Traffic Controls

    a. Approve that all traffic controls at the intersection of Craven St and Algidus St be revoked.

8. New Craven St / Algidus St intersection - Traffic Controls

    a. Approve the lane marking changes, kerb alignment changes, islands and road surface changes at the intersection of Craven St and Algidus St, as detailed in Attachment B.

    b. Approve that a Stop control be placed against Algidus St at its intersection with the north-east side of Craven St, as detailed in Attachment B.

9. Existing Algidus St - Parking and Stopping

    a. Approve that all parking and stopping restrictions on both sides of Algidus St from its intersection with Craven St to its intersection with Gladson Ave be revoked.

10. New Algidus St - Parking and Stopping

a. Approve that the stopping of vehicles be prohibited on the north-west side of Algidus St commencing at its intersection with Craven St, and extending in a north-easterly direction for a distance of 11 m. The restriction is to apply at all times. Note 2 applies.

b. Approve that the stopping of vehicles be prohibited on the south-east side of Algidus St commencing at its intersection with Craven St, and extending in a north-easterly direction for a distance of 11 m. The restriction is to apply at all times. Note 2 applies.

11. Existing Craven St / Middlepark Rd intersection - Traffic Controls

a. Approve that all traffic controls at the intersection of Craven St and Middlepark Rd be revoked.

12. New Craven St / Middlepark Rd intersection- Traffic Controls

a. Approve the lane marking changes, kerb alignment changes, islands and road surface changes at the intersection of Craven St and Middlepark Rd, as detailed in Attachment B

b. Approve that the intersection of Craven St and Middlepark Rd be controlled by a roundabout in accordance with the Land Transport Act - Traffic Control Devices rule: 2004, as detailed in Attachment B.

c. Approve that a Give Way control be placed against Middlepark Rd (northern approach) at its intersection with Craven St, as detailed in Attachment B.

d. Approve that a Give Way control be placed against Middlepark Rd (southwest approach) at its intersection with Craven St, as detailed in Attachment B.

e. Approve that a Give Way control be placed against Craven St at its intersection with Middlepark Rd, as detailed in Attachment B.

13. Existing Middlepark Rd – Epsom Rd to Doncaster St– Parking and Stopping

a. Approve that all parking and stopping restrictions on both sides of Middlepark Rd from a point 223 m north-east of its intersection with Epsom Rd to its intersection with Craven St be revoked. Note 1 applies.

b. Approve that all parking and stopping restrictions on both sides of Middlepark Rd from its intersection with Craven St to its intersection with Doncaster St be revoked. Note 1 applies.

14. New Craven St / Middlepark Rd intersection – Parking and Stopping

a. Approve that the stopping of vehicles be prohibited on the south-west side of Craven St and the south-east side of Middlepark Rd commencing at a point 160 m south-east of the intersection of Craven St and Middlepark Rd and extending in a north-west then south-westerly direction to a point 168 m south-west of the intersection of Craven St and Middlepark Rd. The restriction is to apply at all times. This restriction is located on the northern side of the cycle lane separation kerb, inclusive of gaps for access points. Note 2 applies.

b. Approve that the stopping of vehicles be prohibited on the north-east side of Craven St and the east side of Middlepark Rd commencing at a point 41 m south-east of the intersection of Craven St and Middlepark Rd and extending in a north-west then northerly direction to a point 30 m north of the intersection of Craven St and Middlepark Rd. The restriction is to apply at all times. Note 1 applies.

c. Approve that the stopping of vehicles be prohibited on the west side of Middlepark Rd commencing at a distance 41 m north of its intersection with Craven St, and extending in a south then south-westerly direction and follows the kerb line for a distance of 77 m. The restriction is to apply at all times. Note 1 applies.

15. Existing Middlepark Rd - Craven St to Epsom Rd - Traffic Controls

    a. Approve that all traffic controls on Middlepark Rd from its intersection with Craven St to its intersection with Epsom Rd be revoked. Note 2 applies.

16. New Middlepark Rd - Craven St to Epsom Rd - Traffic Controls

    a. Approve that a bi-directional bicycle path be established on the south-east side of Middlepark Rd commencing at its intersection with Craven St and extending in a south-westerly direction for a distance of 121 m, as detailed on Attachment B, in accordance with sections 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 2 applies.

    b. Approve that a Give Way control be placed against the special vehicle lane (south-westbound bicycles) on the Middlepark Rd approach at a point 121 m south-west of its intersection with Craven St, as detailed in Attachment B. Note 2 applies.

    c. Approve that a bi-directional shared pedestrian/bicycle path be established on the south-east side of Middlepark Rd commencing at a point 121 m south-west of its intersection with Craven St and extending in a south-westerly direction for a distance of 48 m, as detailed on Attachment B, in accordance with sections 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 2 applies.

    d. Approve that a bi-directional shared pedestrian/bicycle path be established on the north-west side of Middlepark Rd commencing at a point 111 m south-west of its intersection with Craven St and extending in a south-westerly direction for a distance of 36 m, as detailed on Attachment B, in accordance with sections 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 2 applies.

    e. Approve that a bi-directional bicycle path be established on the north-west side of Middlepark Rd commencing at a point 127 m south-east of its intersection with Craven St and extending in a south-westerly direction for a distance of 290 m, as detailed on Attachment B, in accordance with sections 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 2 applies.

    f. Approve that a Give Way control be placed against the special vehicle lane (north-eastbound bicycles) on the Middlepark Rd approach at a point 127 m south-east of its intersection with Craven St, as detailed in Attachment B. Note 2 applies.

    g. Approve that a special vehicle lane for the use of north-east bound bicycles only, be established on the north-west side of Middlepark Rd in the existing grass berm, commencing at a point 437 m south east of its intersection with Craven St and extending in a south-easterly direction for a distance of 7 m. This special vehicle lane is to be added to the Register of Roads or Traffic Lanes Restricted to Specific Classes of Vehicles in the traffic parking bylaw 2008.

17. New Middlepark Rd - Craven St to Epsom Rd - Parking and Stopping

    a. Approve that a bus stop be installed on the north-west side of Middlepark Rd commencing at a distance 83 m south-west of its intersection with Craven St, and extending in a south-westerly direction for a distance of 14 m.

    b. Approve that the stopping of vehicles be prohibited on the north-west side of Middlepark Rd commencing at a distance 97 m south-east of its intersection with Craven St, and extending in a south-westerly direction for a distance of 346 m. The restriction is to apply at all times.

This stopping restriction is located on the south-eastern side of the cycle lane separation kerb, inclusive of gaps for access points. Note 2 applies.

c. Approve that the parking of vehicles be restricted to a maximum period of three minutes on the south-east side of Middlepark Road commencing at a point 167 m southwest of its intersection with Craven Street, and extending in a southwesterly direction for a distance of 5 m. The restriction is to apply on school days, between the hours of 8:00 am and 9:00 am, and 2:00 pm and 3:00 pm. Note 1 applies.

d. Approve that the stopping of vehicles be prohibited on the south-east side of Middlepark Rd commencing at a distance 172 m south-west of its intersection with Craven St, and extending in a south-westerly direction for a distance of 6 m. The restriction is to apply at all times. Note 1 applies.

e. Approve that the parking of vehicles be restricted to a maximum period of three minutes on the south-east side of Middlepark Road commencing at a point 178 m southwest of its intersection with Craven Street, and extending in a southwesterly direction for a distance of 35 m. The restriction is to apply on school days, between the hours of 8:00 am and 9:00 am, and 2:00 pm and 3:00 pm. Note 1 applies.

f. Approve that the stopping of vehicles be prohibited on the south-east side of Middlepark Rd commencing at a distance 213 m south-west of its intersection with Craven St, and extending in a south-westerly direction for a distance of 8 m. The restriction is to apply at all times. Note 1 applies.

g. Approve that a bus stop be installed on the south-east side of Middlepark Rd commencing at a distance 221 m south-west of its intersection with Craven St, and extending in a south-westerly direction for a distance of 14 m.

18. Existing Middlepark Rd / Takaro Ave intersection - Traffic Controls

    a. Approve that all traffic controls at the intersection of Middlepark Rd and Takaro Ave be revoked.

19. New Middlepark Rd / Takaro Ave intersection - Traffic Controls

    a. Approve the lane marking changes, kerb alignment changes, islands and road surface changes at the intersection of Middlepark Rd and Takaro Ave, as detailed in Attachment B.

    b. Approve that a Stop control be placed against Takaro Ave at its intersection with the south-east side of Middlepark Rd, as detailed in Attachment B.

20. Existing Middlepark Rd / Takaro Ave intersection – Parking and Stopping

    a. Approve that all parking and stopping restrictions on both sides of Takaro Ave from its intersection with Middlepark Rd to a point 20 m south-west of its intersection with Middlepark Rd be revoked.

21. New Middlepark Rd / Takaro Ave intersection – Parking and Stopping

    a. Approve that the stopping of vehicles be prohibited on the south-east side of Middlepark Rd and the north-east side of Takaro Ave commencing at a point 7 m north-east of the intersection of Middlepark Rd and Takaro Ave and extending in a south-west then south-easterly direction to a point 14 m south-east of the intersection of Middlepark Rd and Takaro Ave. The restriction is to apply at all times. Note 2 applies.

    b. Approve that the stopping of vehicles be prohibited on the south-east side of Middlepark Rd and the south-west side of Takaro Ave commencing at a point 12 m south-east of the intersection of Middlepark Rd and Takaro Ave and extending in a north-west then south-

westerly direction to a point 14 m south-west of the intersection of Middlepark Rd and Takaro Ave. The restriction is to apply at all times. Note 2 applies.

22. New Middlepark Reserve – Traffic Control

    a. Approve that a pathway, located at the southeast end of Middlepark Reserve and extending in a north west then south west direction to Taggart Pl as a bi-directional shared pedestrian/bicycle pathway, as detailed in Attachment B, in accordance with section 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 1 applies.

23. Existing Taggart Pl – Traffic Controls

    a. Approve that all traffic controls on Taggart Pl from its intersection with Epsom Rd north-east be revoked. Note 2 applies.

24. New Taggart Pl - Traffic Controls

    a. Approve the lane marking changes, kerb alignment changes, islands and road surface changes on Taggart Pl from its intersection with Epsom Rd to the end of Taggart Pl, as detailed in Attachment B.

    b. Approve that a Give Way control be placed against the bi-directional shared pedestrian/ bicycle path (south-westbound bicycles) on the Taggart Pl north-east approach at its intersection with Taggart Pl as detailed in Attachment B. Note 2 applies.

    c. Approve that a special vehicle lane for the use of south-east bound bicycles only, be established on the south-west side of Taggart Pl along the existing berm, commencing at a point 51 m north-west of its intersection with Epsom Rd and extending in a south-easterly direction for a distance of 8 m. This special vehicle lane is to be added to the Register of Roads or Traffic Lanes Restricted to Specific Classes of Vehicles in the traffic parking bylaw 2008.

    d. Approve that a Give Way control be placed against the special vehicle lane (south-westbound bicycles) on the Taggart Pl approach at a point 43 m north-west of its intersection with Epsom Rd, as detailed in Attachment B. Note 2 applies.

    e. Approve that a bi-directional bicycle path be established on the north-west side of Taggart Pl commencing at its intersection with Epsom Rd and extending in a north-easterly direction for a distance of 38 m, as detailed on Attachment B, in accordance with sections 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 2 applies.

    f. Approve that a Give Way control be placed against the special vehicle lane (north-eastbound bicycles) on the Taggart Pl approach at a point 38 m north-east of its intersection with Epsom Rd, as detailed in Attachment B. Note 2 applies.

25. Existing Taggart Pl - Parking and Stopping

    a. Approve that all parking and stopping restrictions on both sides of Taggart Pl from its intersection with Epsom Rd to the end of Taggart Pl be revoked.

26. New Taggart Pl - Parking and Stopping

    a. Approve that the stopping of vehicles be prohibited on the north-west side of Taggart Pl commencing at a distance 186 m north-east of its intersection with Epsom Rd, and extending in a north-easterly direction, then following the north-western kerb line (around the cul-de-sac) for a distance of 25 m. The restriction is to apply at all times. Note 1 applies.

27. Existing Epsom Rd / Taggart Pl intersection - Traffic Controls

a. Approve that all traffic controls at the intersection of Epsom Rd and Taggart Pl be revoked.

28. New Epsom Rd / Taggart Pl intersection - Traffic Controls

a. Approve the lane marking changes, kerb alignment changes, islands and road surface changes at the intersection of Epsom Rd and Taggart Pl, as detailed in Attachment B.

b. Approve that a Give Way control be placed against Taggart Pl at its intersection with the north-east side of Epsom Rd.

29. Existing Taggart Pl / Epsom Rd intersection – Parking and Stopping

a. Approve that all parking and stopping restrictions on the north-west side of Taggart Pl from its intersection with Epsom Rd to a point 76 m north east be revoked. Note 2 applies.

b. Approve that all parking and stopping restrictions on the south-east side of Taggart Pl from its intersection with Epsom Rd to a point 59 m north east be revoked. Note 2 applies.

c. Approve that all parking and stopping restrictions on the north east side of Epsom Rd from its intersection with Taggart Pl to a point 71 m north-west be revoked. Note 2 applies.

d. Approve that all parking and stopping restrictions on the north east side of Epsom Rd from its intersection with Taggart Pl to a point 13 m south-east be revoked. Note 2 applies.

30. New Taggart Pl / Epsom Rd intersection – Parking and Stopping

a. Approve that the stopping of vehicles be prohibited on the north-east side of Epsom Rd and the north-west side of Taggart Pl commencing at a point 71 m north-west of the intersection of Epsom Rd and Taggart Pl and extending in a south-east then north-easterly direction to a point 76 m north-east of the intersection of Epsom Rd and Taggart Pl. The restriction is to apply at all times. This stopping restriction is located on the south-eastern and south-western sides of the cycle lane separation kerb, inclusive of gaps for access points. Note 2 applies.

b. Approve that the stopping of vehicles be prohibited on the north-east side of Epsom Rd and the south-east side of Taggart Pl commencing at a point 13 m south-east of the intersection of Epsom Rd and Taggart Pl and extending in a north-west then north-easterly direction to a point 59 m north-east of the intersection of Epsom Rd and Taggart Pl. The restriction is to apply at all times. Note 2 applies.

31. Existing Epsom Rd - Taggart Pl to Carbine Pl - Traffic Controls

a. Approve that all traffic controls on Epsom Rd from its intersection with Taggart Pl to its intersection with Carbine Pl be revoked. Note 2 applies.

32. New Epsom Rd - Taggart Pl to Carbine Pl - Traffic Controls

a. Approve the lane marking changes, kerb alignment changes, islands and road surface changes on Epsom Rd from its intersection with Taggart Pl to its intersection with Carbine Pl, as detailed in Attachment B

b. Approve that a bi-directional bicycle path be established on the north-east side of Epsom Rd commencing at its intersection with Taggart Pl and extending in a north-westerly direction for a distance of 59 m, as detailed on Attachment B, in accordance with sections 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 2 applies.

c. Approve that a Give Way control be placed against the special vehicle lane (north-westbound bicycles) on the Epsom Rd approach at a point 59 m north-east of its intersection with Taggart Pl, as detailed in Attachment B. Note 2 applies.

d. Approve that a bi-directional shared pedestrian/bicycle path be established on the north-east side of Epsom Rd commencing at a point 59 m north-east of its intersection with Taggart Pl and extending in a north-easterly direction for a distance of 28 m, as detailed on Attachment B, in accordance with sections 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 2 applies.

e. Approve the lane marking changes, kerb alignment changes, road surface changes and islands on Epsom Rd at the pedestrian and cycle crossing as detailed in Attachment B. Note 2 applies.

f. Approve that a pedestrian and bicycle crossing, controlled by traffic signals in accordance with sections 6 and 8.5(3) of the Land Transport Action - Traffic Control Devices Rule 2004, be installed on Epsom Rd at a point 75 m north-east of its intersection with Taggart Pl.

g. Approve that a bi-directional shared pedestrian/bicycle path be established on the south-west side of Epsom Rd commencing at a point 64 m north-east of its intersection with Taggart Pl and extending in a north-easterly direction for a distance of 24 m, as detailed on Attachment B, in accordance with sections 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 2 applies.

h. Approve that a bi-directional bicycle path be established on the south-east side of Epsom Rd commencing at a point 88 m north-east of its intersection with Epsom Rd and extending in a north-easterly direction for a distance of 139 m, as detailed on Attachment B, in accordance with sections 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 2 applies.

i. Approve that a bi-directional shared pedestrian/bicycle path be established on the west side of Epsom Rd commencing at a point 227 m north-west of its intersection with Taggart Pl and extending in a northerly direction for a distance of 14 m, as detailed on Attachment B, in accordance with sections 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 2 applies.

j. Approve that a special vehicle lane for the use of north bound bicycles only, be established on the west side of Epsom Rd along the existing kerb line, commencing at a point 241 m north-west of its intersection with Taggart Pl and extending in a northerly direction for a distance of 15 m. This special vehicle lane is to be added to the Register of Roads or Traffic Lanes Restricted to Specific Classes of Vehicles in the traffic parking bylaw 2008.

33. Existing Epsom Rd - Carbine Pl to Taggart Pl - Parking and Stopping

a. Approve that all parking and stopping restrictions on both sides of Epsom Rd from a point 83 m south of its intersection with Carbine Pl to a point 85 m north-west of its intersection with Epsom Rd be revoked. Note 1 applies.

34. New Epsom Rd - Carbine Pl to Taggart Pl - Parking and Stopping

a. Approve that the stopping of vehicles be prohibited on the south west side of Epsom Rd commencing at a distance 44 m north west of its intersection with Taggart Pl, and extending in a north-westerly direction for a distance of 200 m. This stopping restriction is located on the north-eastern side of the cycle lane separation kerb, inclusive of gaps for access points. The restriction is to apply at all times. Note 2 applies.

b. Approve that the stopping of vehicles be prohibited on the north east side of Epsom Rd commencing at its intersection with Taggart Pl, and extending in a north-westerly direction for a distance of 109 m. The restriction is to apply at all times. This stopping restriction is

located on the north-eastern side of the cycle lane separation kerb, inclusive of gaps for access points. Note 2 applies.

c. Approve that the stopping of vehicles be prohibited on the north east side of Epsom Rd commencing at a distance 192 m north west of its intersection with Taggart Pl, and extending in a north-westerly then north-easterly direction for a distance of 37 m. The restriction is to apply at all times. Note 1 applies.

35. New Pararoa Stream Reserve – Traffic Controls

a. Approve that a pathway, located at the southeast end of Pararoa Stream Reserve and extending in a north west direction to Racecourse Rd as a bi-directional shared pedestrian/bicycle pathway, as detailed in Attachment B, in accordance with section 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 1 applies.

36. Existing Racecourse Rd - Transmission Corridor Crossing - Traffic Controls

a. Approve that all traffic controls on Racecourse Rd from a point 57 m north east of its intersection with O'Briens Rd to a point 77 m north east of its intersection with O'Briens Rd be revoked. Note 2 applies

37. New Racecourse Rd - Transmission Corridor Crossing - Traffic Controls

a. Approve the lane marking changes, kerb alignment changes, islands and road surface changes on Racecourse Rd from a point 57 m north east of its intersection with O'Briens Rd to a point 78 m north east of its intersection with O'Briens Rd, as detailed in Attachment B.

b. Approve that a bi-directional shared pedestrian/bicycle path be established on the south-east side of Racecourse Rd commencing at a point 57 m north east of its intersection with O'Briens and extending in a north-easterly direction for a distance of 20 m, as detailed on Attachment B, in accordance with sections 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 2 applies.

c. Approve the lane marking changes, kerb alignment changes, road surface changes and islands on Racecourse Rd at the pedestrian and cycle crossing as detailed in Attachment B. Note 2 applies.

d. Approve that a pedestrian and bicycle crossing, controlled by traffic signals in accordance with sections 6 and 8.5(3) of the Land Transport Action - Traffic Control Devices Rule 2004, be installed on Racecourse Rd at a point 258 m west then south-west of its intersection with Epsom Rd.

e. Approve that a bi-directional shared pedestrian/bicycle path be established on the north-west side of Racecourse Rd commencing at a point 61 m north east of its intersection with O'Briens Rd and extending in a north-easterly for a distance of 17 m, as detailed on Attachment B, in accordance with sections 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 2 applies.

38. Existing Racecourse Rd – Transmission Corridor Crossing – Parking and Stopping

a. Approve that all parking and stopping restrictions on both sides of Racecourse Rd from a point 49 m north-east of its intersection with O'Briens Rd to a point 70 m north-east of its intersection with O'Briens Rd be revoked. Note 1 applies.

39. New Racecourse Rd - Transmission Corridor Crossing - Parking and Stopping

a. Approve that the stopping of vehicles be prohibited on the north-west side of Racecourse Rd commencing at a distance 49 m north-east of its intersection with O'Briens Rd, and extending in a north-easterly direction for a distance of 14 m. The restriction is to apply at all times. Note 2 applies.

b. Approve that the stopping of vehicles be prohibited on the south-east side of Racecourse Rd commencing at a distance 54 m north-east of its intersection with O'Briens Rd, and extending in a north-easterly direction for a distance of 8 m. The restriction is to apply at all times. Note 2 applies.

c. Approve that the stopping of vehicles be prohibited on the north-west side of Racecourse Rd commencing at a distance 67 m north-east of its intersection with O'Briens Rd, and extending in a north-easterly direction for a distance of 8 m. The restriction is to apply at all times. Note 2 applies.

d. Approve that the stopping of vehicles be prohibited on the south-east side of Racecourse Rd commencing at a distance 68 m north-east of its intersection with O'Briens Rd, and extending in a north-easterly direction for a distance of 12 m. The restriction is to apply at all times. Note 2 applies.

40. New Transmission Corridor – Racecourse Rd to Carmen Rd – Traffic Controls

a. Approve that a pathway, located at the southeast end of the Transmission Corridor beginning at Racecourse Rd and extending in a north west direction to Carmen Rd as a bi-directional shared pedestrian/bicycle pathway, as detailed in Attachment B, in accordance with section 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 1 applies.

b. Approve that a Give Way control be placed against the bi-directional shared pedestrian/ bicycle path (north-westbound bicycles) on the Zenith Pl eastern approach at its intersection with Zenith Pl as detailed in Attachment B. Note 1 applies.

c. Approve that a Give Way control be placed against the bi-directional shared pedestrian/ bicycle path (south-eastbound bicycles) on the Zenith Pl western approach at its intersection with Zenith Pl as detailed in Attachment B. Note 1 applies.

41. Existing Buchanans Rd - Carman Rd to Hei Hei Rd - Traffic Controls

a. Approve that all traffic controls along Buchanans Rd from its intersection with Carmen Rd to its intersection with Hei Hei Rd be revoked. Note 2 applies

42. New Buchanans Rd - Carman Rd to Hei Hei Rd - Traffic Controls

a. Approve the lane marking changes, kerb alignment changes, islands and road surface changes on Buchanans Rd from its intersection with Carmen Rd to its intersection with Hei Hei Rd, as detailed in Attachment B

b. Approve that a bi-directional shared pedestrian/bicycle path be established on the north-east side of Buchanans Rd commencing at its intersection with Carmen Rd and extending in a north-westerly direction for a distance of 66 m, as detailed on Attachment B, in accordance with sections 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 1 applies.

c. Approve that a bi-directional bicycle path be established on the north-east side of Buchanans Rd commencing at a distance of 66 m north-east of its intersection with Carmen Rd and extending in a north-westerly direction to its intersection with Vanguard Dr, as detailed on Attachment B, in accordance with sections 11.4 of the Land Transport Act - Traffic Control

Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 1 applies.

d. Approve that a Give Way control be placed against the special vehicle lane (south-eastbound bicycles) on the Buchanans Rd approach at a point 66 m north-west of its intersection with Carmen Rd, as detailed in Attachment B. Note 1 applies.

e. Approve that a Give Way control be placed against the special vehicle lane (north-westbound bicycles) on the Buchanans Rd approach at a point 1 m south-east of its intersection with Vanguard Dr, as detailed in Attachment B. Note 1 applies.

f. Approve that a bi-directional bicycle path be established on the north-east side of Buchanans Rd commencing at its intersection with Vanguard Dr and extending in a north-westerly direction for a distance of 129 m, as detailed on Attachment B, in accordance with sections 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 1 applies.

g. Approve that a Give Way control be placed against the special vehicle lane (south-eastbound bicycles) on the Buchanans Rd approach at a point 1 m north-west of its intersection with Vanguard Dr, as detailed in Attachment B. Note 1 applies.

h. Approve that a bi-directional shared pedestrian/bicycle path be established on the north-west side of Buchanans Rd commencing at a point 129 m north-west of its intersection with Vanguard Dr and extending in a westerly direction for a distance of 7 m, as detailed on Attachment B, in accordance with sections 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 1 applies.

i. Approve that a special vehicle lane for the use of east bound bicycles only, be established on the north-east side of Buchanans Rd in the existing grass berm, commencing at a point 136 m north-west of its intersection with Vanguard Dr and extending in a westerly direction for a distance of 9 m. This special vehicle lane is to be added to the Register of Roads or Traffic Lanes Restricted to Specific Classes of Vehicles in the traffic parking bylaw 2008.

j. Approve that a Give Way control be placed against the special vehicle lane (south-eastbound bicycles) on the Buchanans Rd approach at a point 137 m north-west of its intersection with Vanguard Dr, as detailed in Attachment B. Note 1 applies.

k. Approve the lane marking changes, kerb alignment changes, road surface changes and islands on Buchanans Rd at the pedestrian and cycle crossing as detailed in Attachment B. Note 1 applies.

l. Approve that a pedestrian and bicycle crossing, controlled by traffic signals in accordance with sections 6 and 8.5(3) of the Land Transport Action - Traffic Control Devices Rule 2004, be installed on Buchanans Rd at a point 19 m south-east of its intersection with Hei Hei Rd.

m. Approve that a bi-directional shared pedestrian/bicycle path be established on the south-west side of Buchanans Rd commencing at its intersection with Hei Hei Rd and extending in a south-easterly direction for a distance of 30 m, as detailed on Attachment B, in accordance with sections 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 2 applies.

43. Existing Buchanans Rd / Vanguard Dr (east end) intersection - Traffic Controls

a. Approve that all traffic controls at the intersection of Buchanans Rd and Vanguard Dr be revoked.

44. New Buchanans Rd / Vanguard Dr (east end) intersection - Traffic Controls

a. Approve the lane marking changes, kerb alignment changes, islands and road surface changes at the intersection of Buchanans Rd and Vanguard Dr, as detailed in Attachment B.

b. Approve that a Give Way control be placed against Vanguard Dr at its intersection with the north-east side of Buchanans Rd, as detailed in Attachment B.

45. Existing Buchanans Rd / Vanguard Dr (east end) intersection – Parking and Stopping

a. Approve that all parking and stopping restrictions on both sides of Vanguard Dr (east end) from its intersection with Buchanans Rd to a point 27 m north-east of its intersection with Buchanans Rd be revoked.

46. New Buchanans Rd / Vanguard Dr (east end) intersection – Parking and Stopping

a. Approve that the stopping of vehicles be prohibited on the north-east side of Buchanans Rd and the south-east side of Vanguard Dr commencing at a point 14 m south-east of the intersection of Buchanans Rd and Vanguard Dr and extending in a north-west then north easterly direction to a point 26 m north-east of the intersection of Buchanans Rd and Vanguard Dr. The restriction is to apply at all times. Note 1 applies.

b. Approve that the stopping of vehicles be prohibited on the north-east side of Buchanans Rd and the north-west side of Vanguard Dr commencing at a point 27 m north-east of the intersection of Buchanans Rd and Vanguard Dr and extending in a south-west then north-westerly direction to a point 11 m north-west of the intersection of Buchanans Rd and Vanguard Dr. The restriction is to apply at all times. Note 1 applies.

47. Existing Buchanans Rd – Vanguard Dr (east end) to Hei Hei Rd - Parking and Stopping

a. Approve that all parking and stopping restrictions on both sides of Buchanans Rd from its intersection with Vanguard Dr to its intersection with Hei Hei Rd be revoked. Note 1 applies.

48. New Buchanans Rd - Vanguard Dr (east end) to Hei Hei Rd - Parking and Stopping

a. Approve that the stopping of vehicles be prohibited on the north-east side of Buchanans Rd commencing at a distance 74 m north-west of its intersection with Vanguard Dr, and extending in a north-westerly direction for a distance of 13 m. The restriction is to apply at all times. Note 1 applies.

b. Approve that the stopping of vehicles be prohibited on the south-west side of Buchanans Rd commencing at a distance 81 m north-west of its intersection with Vanguard Dr, and extending in a westerly direction for a distance of 11 m. The restriction is to apply at all times. Note 1 applies.

c. Approve that a bus stop be installed on the north-east side of Buchanans Rd commencing at a distance 87 m north-west of its intersection with Vanguard Dr, and extending in a north-westerly direction for a distance of 14 m.

d. Approve that a bus stop be installed on the south-west side of Buchanans Rd commencing at a distance 92 m north-west of its intersection with Vanguard Dr, and extending in a north-westerly direction for a distance of 14 m.

e. Approve that the stopping of vehicles be prohibited on the north-east side of Buchanans Rd commencing at a distance 100 m north-west of its intersection with Vanguard Dr, and extending in a north-westerly direction for a distance of 9 m. The restriction is to apply at all times. Note 1 applies.

f. Approve that the stopping of vehicles be prohibited on the south-west side of Buchanans Rd commencing at a distance 106 m north-west of its intersection with Vanguard Dr, and extending in a north-westerly direction for a distance of 5 m. The restriction is to apply at all times. Note 1 applies.

g. Approve that the stopping of vehicles be prohibited on the north-east side of Buchanans Rd commencing at a distance 121 m north-west of its intersection with Vanguard Dr, and extending in a north-westerly direction for a distance of 9 m. The restriction is to apply at all times. Note 1 applies.

h. Approve that the stopping of vehicles be prohibited on the south-west side of Buchanans Rd commencing at a distance 120 m north-west of its intersection with Vanguard Dr, and extending in a north-westerly direction for a distance of 10 m. The restriction is to apply at all times. Note 1 applies.

i. Approve that the stopping of vehicles be prohibited on the north-east side of Buchanans Rd commencing at a distance 134 m north-west of its intersection with Vanguard Dr, and extending in a north-westerly direction for a distance of 24 m. The restriction is to apply at all times. Note 1 applies.

49. Existing Buchanans Rd / Hei Hei Rd intersection - Traffic Controls

a. Approve that all traffic controls at the intersection of Buchanans Rd and Hei Hei Rd be revoked.

50. New Buchanans Rd / Hei Hei Rd intersection - Traffic Controls

a. Approve the lane marking changes, kerb alignment changes, islands and road surface changes at the intersection of Buchanans Rd and Hei Hei Rd, as detailed in Attachment B

b. Approve that a Stop control be placed against Hei Hei Rd at its intersection with the south-west side of Buchanans Rd, as detailed in Attachment B

51. Existing Hei Hei Road - Buchanans Road to Waterloo Road - Traffic Controls

a. Approve that all traffic controls along Hei Hei Road from its intersection with Buchanans Road to its intersection with Waterloo Road be revoked. Note 2 applies.

52. Existing Buchanans Rd / Hei Hei Rd intersection – Parking and Stopping

a. Approve that all parking and stopping restrictions on the south side of Buchanans Rd from its intersection with Hei Hei Rd to a point 17 m east be revoked. Note 2 applies.

b. Approve that all parking and stopping restrictions on the south side of Buchanans Rd from its intersection with Hei Hei Rd to a point 18 m west be revoked. Note 2 applies.

c. Approve that all parking and stopping restrictions on the east side of Hei Hei Rd from its intersection with Buchanans Rd to a point 21 m south be revoked. Note 2 applies.

d. Approve that all parking and stopping restrictions on the west side of Hei Hei Rd from its intersection with Buchanans Rd to a point 28 m south-west be revoked. Note 2 applies.

53. New Buchanans Rd / Hei Hei Rd intersection – Parking and Stopping

a. Approve that the stopping of vehicles be prohibited on the south side of Buchanans Rd and the east side of Hei Hei Rd commencing at a point 17 m east of the intersection of Buchanans Rd and Hei Hei Rd and extending in a west then southerly direction to a point 21 m south of the intersection of Buchanans Rd and Hei Hei Rd. The restriction is to apply at all times. Note 2 applies.

b. Approve that the stopping of vehicles be prohibited on the south side of Buchanans Rd and the west side of Hei Hei Rd commencing at a point 18 m west of the intersection of Buchanans Rd and Hei Hei Rd and extending in an east then south direction to a point 28 m south of the intersection of Buchanans Rd and Hei Hei Rd. The restriction is to apply at all times. Note 2 applies.

54. New Hei Hei Road - Buchanans Road to Waterloo Road - Traffic Controls

    a. Approve the lane marking changes, kerb alignment changes, refuge islands and road surface changes on Hei Hei Road from its intersection with Buchanans Road to its intersection with Waterloo Road, as detailed in Attachment B

    b. Approve that a bi-directional shared pedestrian/bicycle path be established on the southeast side of Hei Hei Road commencing at its intersection with Buchanans Road and extending in a southwesterly direction for a distance of 43 m, as detailed on Attachment B, in accordance with sections 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 2 applies.

    c. Approve that a bi-directional bicycle path be established on the southeast side of Hei Hei Road commencing at a point 43 m southwest of its intersection with Buchanans Road and extending in a southwesterly direction for a distance of 906 m, as detailed on Attachment B, in accordance with sections 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 2 applies.

    d. Approve that a Give Way control be placed against the special vehicle lane (southwest bound bicycles) on the Hei Hei Road approach at a point 492 m southwest of its intersection with Buchanans Road, as detailed in Attachment B. Note 2 applies.

    e. Approve that a Give Way control be placed against the special vehicle lane (northeast bound bicycles) on the Hei Hei Road approach at a point 506 m southwest of its intersection with Buchanans Road, as detailed in Attachment B. Note 2 applies.

    f. Approve that a Give Way control be placed against the special vehicle lane (southwest bound bicycles) on the Hei Hei Road approach at a point 138 m northeast of its intersection with Waterloo Road, as detailed in Attachment B. Note 2 applies.

    g. Approve that a bi-directional shared pedestrian/bicycle path be established on the northeast side of Hei Hei Road commencing at a point 138 m northeast of its intersection with Waterloo Road and extending in a southeasterly direction for a distance of 16 m, as detailed on Attachment B, in accordance with sections 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 2 applies.

    h. Approve that a zebra crossing be duly established and marked in accordance with section 8.2 of the Land Transport Rule: Traffic Control Devices 2004, on Hei Hei Road located at a point 128 m northeast of its intersection with Waterloo Road, as detailed in Attachment B. Note 2 applies.

    i. Approve that a bi-directional bicycle path be established on the southeast side of Hei Hei Road commencing at a point 122 m northeast of its intersection with Waterloo Road and extending in a southwesterly direction for a distance of 95 m, as detailed on Attachment B, in accordance with sections 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 2 applies.

    j. Approve that a Give Way control be placed against the special vehicle lane (northeast bound bicycles) on the Hei Hei Road approach at a point 122 m northeast of its intersection with Waterloo Road, as detailed in Attachment B. Note 2 applies.

    k. Approve that a Give Way control be placed against the special vehicle lane (southwest bound bicycles) on the Hei Hei Road approach at a point 137 m northeast of its intersection with Waterloo Road, as detailed in Attachment B. Note 2 applies.

    l. Approve that a bi-directional shared pedestrian/bicycle path be established on the southeast side of Hei Hei Road commencing at its intersection with Waterloo Road and extending in a

northeasterly direction for a distance of 27 m, as detailed on Attachment B, in accordance with sections 11.4 of the Land Transport Act - Traffic Control Devices Rule: 2004 and Clause 1.6 of the Land Transport (Road User) Rule 2004. Note 2 applies.

55. Existing Hei Hei Road - Buchanans Road to Waterloo Road - Parking and Stopping

    a. Approve that all parking and stopping restrictions on both sides of Hei Hei Road from its intersection with Waterloo Road to its intersection with Buchanans Road be revoked.

56. New Hei Hei Road - Buchanans Road to Waterloo Road - Parking and Stopping

    a. Approve that the stopping of vehicles be prohibited on the southeast side of Hei Hei Road commencing at a distance 37 m southwest of its intersection with Buchanans Road, and extending in a southwesterly direction to its intersection with Tirangi Street. The restriction is to apply at all times. This stopping restriction is located on the northwestern side of the cycle lane separation kerb, inclusive of gaps for access points. Note 2 applies.

    b. Approve that the stopping of vehicles be prohibited on the northwest side of Hei Hei Road commencing at a point 14 m northeast of its intersection with Aurora Street and extending in a southwestly direction to its intersection with Aurora Street. The restriction is to apply at all times. Note 2 applies.

    c. Approve that the stopping of vehicles be prohibited on the northwest side of Hei Hei Road commencing at its intersection with Aurora Street and extending in a southwesterly direction to a point 13 m southwest of its intersection with Aurora Street. The restriction is to apply at all times. Note 2 applies.

    d. Approve that the stopping of vehicles be prohibited on the southeast side of Hei Hei Road commencing at its intersection with Tirangi Street, and extending in a southwesterly direction to its intersection with Keri Place. The restriction is to apply at all times. This stopping restriction is located on the northwestern side of the cycle lane separation kerb, inclusive of gaps for access points. Note 2 applies.

    e. Approve that the stopping of vehicles be prohibited on the southeast side of Hei Hei Road commencing at its intersection with Keri Place, and extending in a southwesterly direction for a distance of 100 m. This stopping restriction is located on the northwestern side of the cycle lane separation kerb, inclusive of gaps for access points. Note 2 applies.

    f. Approve that the stopping of vehicles be prohibited on the southeast side of Hei Hei Road commencing at a distance 140 m southwest of its intersection with Keri Place, and extending in a southwesterly direction for a distance of 33 m. The restriction is to apply at all times. This stopping restriction is located on the northwestern side of the cycle lane separation kerb, inclusive of gaps for access points. Note 2 applies.

    g. Approve that the stopping of vehicles be prohibited on the northwest side of Hei Hei Road commencing at a distance 329 m southwest of its intersection with Aurora Street, and extending in a southwesterly direction for a distance of 18 m. The restriction is to apply at all times. Note 1 applies.

    h. Approve that the stopping of vehicles be prohibited on the northwest side of Hei Hei Road commencing at a distance 373 m southwest of its intersection with Aurora Street, and extending in a southwesterly direction for a distance of 7 m. The restriction is to apply at all times. Note 1 applies.

    i. Approve that a loading zone be created and restricted to a maximum period of five minutes. The restriction is to be on the south east side of Hei Hei Road commencing at a distance 173 m southwest of its intersection with Keri Place, and extending in a southwesterly direction for a distance of 14 m. The restriction is to apply Monday to Sunday between the hours of 8am

and 6pm. This parking restriction is located on the northwest side of the cycle lane separation kerb, inclusive of gaps for access points. Note 2 applies.

j. Approve that the stopping of vehicles be prohibited on the southeast side of Hei Hei Road commencing at a distance 187 m southwest of its intersection with Keri Place, and extending in a southwesterly direction to its intersection with Whelan Place. The restriction is to apply at all times. This stopping restriction is located on the northwestern side of the cycle lane separation kerb, inclusive of gaps for access points. Note 2 applies.

k. Approve that the stopping of vehicles be prohibited on the northwest side of Hei Hei Road commencing at a point 18 m north east of its intersection with Wycola Avenue and extending in a southwest direction to its intersection with Wycola Avenue. The restriction is to apply at all times. Note 2 applies.

l. Approve that the stopping of vehicles be prohibited on the northwest side of Hei Hei Road commencing at its intersection with Wycola Avenue and extending in a southwest direction to a point 17 m southwest of its intersection with Wycola Avenue. The restriction is to apply at all times. Note 2 applies.

m. Approve that the stopping of vehicles be prohibited on the northwest side of Hei Hei Road commencing at a point 151 south west of its intersection with Wycola Avenue and extending in a southwest direction to a point 39 m southwest of its intersection with Wycola Avenue. The restriction is to apply at all times. Note 2 applies.

n. Approve that the stopping of vehicles be prohibited on the southeast side of Hei Hei Road commencing at its intersection with Whelan Place, and extending in a southwesterly direction to its intersection with Waterloo Road. Note 2 applies.

o. Approve that the stopping of vehicles be prohibited on the northwest side of Hei Hei Road commencing at its intersection with Waterloo Road, and extending in a northeasterly direction for a distance of 23 m. Note 2 applies.

57. Existing Aurora Street / Hei Hei Road intersection - Traffic Controls

a. Approve that all traffic controls at the intersection of Hei Hei Road and Aurora Street be revoked.

58. New Aurora Street / Hei Hei Road intersection- Traffic Controls

a. Approve the lane marking changes, kerb alignment changes, islands and road surface changes at the intersection of Hei Hei Road and Aurora Street, as detailed in Attachment B.

b. Approve that a Stop control be placed against Aurora Street at its intersection with the northwest side of Hei Hei Road, as detailed in Attachment B

59. Existing Aurora Street – Hei Hei Road to Manurere Street -Parking and Stopping

a. Approve that all parking and stopping restrictions on the northeast side of Aurora Street from its intersection with Hei Hei Road to a point 10 m northwest of its intersection with Hei Hei Road be revoked.

b. Approve that all parking and stopping restrictions on the southwest side of Aurora Street from its intersection with Hei Hei Road to a point 13 m northwest of its intersection with Hei Hei Road be revoked.

60. New Aurora Street – Hei Hei Road to Manurere Street -Parking and Stopping

a. Approve that the stopping of vehicles be prohibited on the northeast side of Aurora Street commencing at its intersection with Hei Hei Road, and extending in a northwesterly direction for a distance of 10 m. The restriction is to apply at all times. Note 2 applies.

b. Approve that the stopping of vehicles be prohibited on the southwest side of Aurora Street commencing at its intersection with Hei Hei Road, and extending in a northwesterly direction for a distance of 13 m. The restriction is to apply at all times. Note 2 applies.

61. Existing Tirangi Street / Hei Hei Road intersection- Traffic Controls

    a. Approve that all traffic controls at the intersection of Hei Hei Road and Tirangi Street be revoked.

62. New Tirangi Street / Hei Hei Road intersection - Traffic Controls

    a. Approve the lane marking changes, kerb alignment changes, islands and road surface changes at the intersection of Hei Hei Road and Tirangi Street, as detailed in Attachment B.

    b. Approve that a Stop control be placed against Tirangi Street at its intersection with the southeast side of Hei Hei Road, as detailed in Attachment B

63. Existing Tirangi Street - Hei Hei Road to Ariki Place - Parking and Stopping

    a. Approve that all parking and stopping restrictions on both sides of Tirangi Street from its intersection with Hei Hei Road to a point 12 m southeast of its intersection with Ariki Place be revoked.

64. New Tirangi Street - Hei Hei Road to Ariki Place - Parking and Stopping

    a. Approve that the stopping of vehicles be prohibited on the northeast side of Tirangi Street commencing at its intersection with Hei Hei Road, and extending in a southeasterly direction for a distance of 12 m. The restriction is to apply at all times. Note 2 applies.

    b. Approve that the stopping of vehicles be prohibited on the southwest side of Tirangi Street commencing at its intersection with Hei Hei Road, and extending in a southeasterly direction for a distance of 12 m. The restriction is to apply at all times. Note 2 applies.

65. Existing Keri Place / Hei Hei Road intersection- Traffic Controls

    a. Approve that all traffic controls at the intersection of Hei Hei Road and Keri Place be revoked.

66. New Keri Place / Hei Hei Road intersection - Traffic Controls

    a. Approve the lane marking changes, kerb alignment changes, islands and road surface changes at the intersection of Hei Hei Road and Keri Place, as detailed in Attachment B

    b. Approve that a Stop control be placed against Keri Place at its intersection with the east side of Hei Hei Road, as detailed in Attachment B

67. Existing Keri Place - Parking and Stopping

    a. Approve that all parking and stopping restrictions on both sides of Keri Place from its intersection with Hei Hei Road to a point 13 m east of its intersection with Hei Hei Road be revoked.

68. New Keri Place - Parking and Stopping

    a. Approve that the stopping of vehicles be prohibited on the north side of Keri Place commencing at its intersection with Hei Hei Road, and extending in an easterly direction for a distance of 13 m. The restriction is to apply at all times. Note 2 applies.

    b. Approve that the stopping of vehicles be prohibited on the south side of Keri Place commencing at its intersection with Hei Hei Road, and extending in an easterly direction for a distance of 13 m. The restriction is to apply at all times. Note 2 applies.

69. Existing Whelan Place / Hei Hei Road intersection - Traffic Controls

a. Approve that all traffic controls at the intersection of Hei Hei Road and Whelan Place be revoked.

70. New Whelan Place / Hei Hei Road - Traffic Controls

a. Approve the lane marking changes, kerb alignment changes, islands and road surface changes at the intersection of Hei Hei Road and Whelan Place, as detailed in Attachment B.

b. Approve that a Stop control be placed against Whelan Place at its intersection with the east side of Hei Hei Road, as detailed in Attachment B

71. New Whelan Place - Parking and Stopping

a. Approve that the stopping of vehicles be prohibited on the north side of Whelan Place commencing at its intersection with Hei Hei Road, and extending in an easterly direction for a distance of 8 m. The restriction is to apply at all times. Note 2 applies.

b. Approve that the stopping of vehicles be prohibited on the south side of Whelan Place commencing at its intersection with Hei Hei Road, and extending in an easterly direction for a distance of 16 m. The restriction is to apply at all times. Note 2 applies.

72. Existing Wycola Avenue / Hei Hei Road intersection- Traffic Controls

a. Approve that all traffic controls at the intersection of Hei Hei Road and Wycola Avenue be revoked.

73. New Wycola Avenue / Hei Hei Road intersection- Traffic Controls

a. Approve the lane marking changes, kerb alignment changes, islands and road surface changes at the intersection of Hei Hei Road and Wycola Avenue, as detailed in Attachment B

b. Approve that a Stop control be placed against Wycola Avenue at its intersection with the northwest side of Hei Hei Road, as detailed in Attachment B

74. Existing Wycola Avenue – Hei Hei Road to Ngata Place – Parking and Stopping

a. Approve that all parking and stopping restrictions on the northeast side of Wycola Avenue from its intersection with Hei Hei Road to a point 14 m northwest of its intersection with Hei Hei Road be revoked.

b. Approve that all parking and stopping restrictions on the southwest side of Wycola Avenue from its intersection with Hei Hei Road to a point 18 m northwest of its intersection with Hei Hei Road be revoked.

75. New Wycola Avenue – Hei Hei Road to Ngata Place – Parking and Stopping

a. Approve that the stopping of vehicles be prohibited on the northeast side of Wycola Avenue commencing at its intersection with Hei Hei Road, and extending in a northwesterly direction for a distance of 14 m. The restriction is to apply at all times. Note 2 applies.

b. Approve that the stopping of vehicles be prohibited on the southwest side of Wycola Avenue commencing at its intersection with Hei Hei Road, and extending in a northwesterly direction for a distance of 18 m. The restriction is to apply at all times. Note 2 applies.

76. Existing Hei Hei Rd / Waterloo Rd intersection – Traffic Controls

a. Approve that all traffic controls at the intersection of Waterloo Rd and Hei Hei Rd be revoked.

77. New Hei Hei Rd / Waterloo Rd intersection – Traffic Controls

a. Approve the lane marking changes, kerb alignment changes, islands and road surface changes at the intersection of Buchanans Rd and Hei Hei Rd, as detailed in Attachment B

b. Approve that a Stop control be placed against Hei Hei Rd at its intersection with the north side of Waterloo Rd, as detailed in Attachment B

78. Existing Hei Hei Rd / Waterloo Rd intersection – Parking and Stopping

a. Approve that all parking and stopping restrictions on the east side of Hei Hei Rd from its intersection with Waterloo Rd to a point 39 m north east of its intersection with Waterloo Rd be revoked.

b. Approve that all parking and stopping restrictions on the west side of Hei Hei Rd from its intersection with Waterloo Rd to a point 6 m north of its intersection with Waterloo Rd be revoked.

c. Approve that all parking and stopping restrictions on the north side of Waterloo Rd from its intersection with Hei Hei Rd to a point 23 m east of its intersection with Waterloo Rd be revoked.

d. Approve that all parking and stopping restrictions on the north side of Waterloo Rd from its intersection with Hei Hei Rd to a point 19 m west of its intersection with Waterloo Rd be revoked.

79. New Hei Hei Rd / Waterloo Rd intersection – Parking and Stopping

a. Approve that the stopping of vehicles be prohibited on the east side of Hei Hei Rd commencing at its intersection with Waterloo Rd, and extending in a north then north easterly direction for a distance of 39 m. The restriction is to apply at all times. Note 2 applies.

b. Approve that the stopping of vehicles be prohibited on the east side of Hei Hei Rd commencing at its intersection with Waterloo Rd, and extending in a northerly direction for a distance of 6 m. The restriction is to apply at all times. Note 2 applies.

c. Approve that the stopping of vehicles be prohibited on the north side of Waterloo Rd commencing at its intersection with Hei Hei Rd, and extending in an easterly direction for a distance of 21 m. The restriction is to apply at all times. Note 2 applies.

d. Approve that the stopping of vehicles be prohibited on the north side of Waterloo Rd commencing at its intersection with Hei Hei Rd, and extending in a westerly direction for a distance of 19 m. The restriction is to apply at all times. Note 1 applies.

80. Existing Waterloo Rd – Hei Hei Road to Smarts Rd – Parking and Stopping

a. Approve that all parking and stopping restrictions on the north side of Waterloo Rd from a point 39 m east of its intersection with Hei Hei Rd to a point 133 m east of its intersection with Hei Hei Rd be revoked.

b. Approve that all parking and stopping restrictions on the south side of Waterloo Rd from a point 9 m east of its intersection with Hei Hei Rd to a point 45 m east of its intersection with Hei Hei Rd be revoked.

81. New Waterloo Rd – Hei Hei Road to Smarts Rd – Parking and Stopping

a. Approve that the stopping of vehicles be prohibited on the south side of Waterloo Rd commencing at a distance 9 m east of its intersection with Hei Hei Rd, and extending in an easterly direction for a distance of 15 m. The restriction is to apply at all times. Note 2 applies.

b. Approve that the stopping of vehicles be prohibited on the south side of Waterloo Rd commencing at a distance 28 m east of its intersection with Hei Hei Rd, and extending in an easterly direction for a distance of 15 m. The restriction is to apply at all times. Note 2 applies.

c. Approve that the stopping of vehicles be prohibited on the north side of Waterloo Rd commencing at a distance 28 m east of its intersection with Hei Hei Rd, and extending in an easterly direction for a distance of 8 m. The restriction is to apply at all times. Note 2 applies.

d. Approve that the parking of vehicles be restricted to a maximum period of three minutes on the north side of Waterloo Rd commencing at a point 36 m east of its intersection with Hei Hei Rd, and extending in an easterly direction for a distance of 29 m. The restriction is to apply between the hours of 8:15 am and 9:15 am, and 2:30 pm and 3.30 pm, on school days only. Note 1 applies.

e. Approve that the stopping of vehicles be prohibited on the north side of Waterloo Rd commencing at a distance 65 m east of its intersection with Hei Hei Rd, and extending in an easterly direction for a distance of 28 m. The restriction is to apply at all times. Note 1 applies.

f. Approve that the parking of vehicles be restricted to a maximum period of three minutes on the north side of Waterloo Rd commencing at a point 93 m east of its intersection with Hei Hei Rd, and extending in an easterly direction for a distance of 40 m. The restriction is to apply between the hours of 8:15 am and 9:15 am, and 2:30 pm and 3.30 pm, on school days only. Note 1 applies.

82. New Waterloo Rd Crossing - Traffic Controls

a. Approve the lane marking changes, kerb alignment changes, road surface changes and islands on Waterloo Rd at the pedestrian and cycle crossing as detailed in Attachment B. Note 2 applies.

b. Approve that a pedestrian and bicycle crossing, controlled by traffic signals in accordance with sections 6 and 8.5(3) of the Land Transport Action - Traffic Control Devices Rule 2004, be installed on Waterloo Rd at a point 26 m east of its intersection with Hei Hei Rd.

3. Reason for Report Recommendations / Ngā Take mō te Whakatau

3.1 On 22 July 2019 the scheme design for South Express Major Cycle Route project was approved for detailed design and construction by the Infrastructure, Transport and Environment Committee. It recommended that the detailed design traffic resolutions be brought back to ITE Committee at the end of detailed design prior to beginning of construction. This delegation now lies with the Urban Development and Transport Committee.

3.2 The resolution to the Infrastructure, Transport and Environment Committee meeting is recorded in ITEC/2019/00022 as per **Appendix A**.

4. Alternative Options Considered / Ētahi atu Kōwhiringa

4.1 There are no alternative options considered for this report, as the option of not passing the resolutions would mean the changes could not be enforced after construction of the cycle route.

4.2 There are no fundamental changes between the approved scheme design and the layout as detailed in the 22 July 2019 report and the resolutions contained in this report for the road, footpath and cycle facilities.

5. Detail / Te Whakamahuki

5.1 The South Express Major Cycle Route scheme was approved on the 22 July 2019. The report presented at that meeting detailed the community views and preferences of the engagement process that took place in early 2019.

5.2 As the design has not changed, the community views and preferences remain the same and not further consultation is required.

5.3 The decision affects the following wards/Community Board areas:

5.3.1 Halswell-Hornby-Riccarton Community Board

6. Policy Framework Implications / Ngā Hīraunga ā- Kaupapa here

Strategic Alignment /Te Rautaki Tīaroaro

6.1 This project supports Council's Strategic Priority *Increasing active, public and shared transport opportunities* by providing a safe option for cyclists particularly those who would not normally feel comfortable biking among the main stream of traffic.

6.2 This report supports the :

6.2.1 Activity: Active Travel

- Level of Service: 10.5.39 Increase the numbers of people cycling into the central city. - 353 peak hour cyclists (>=5% increase)

Policy Consistency / Te Whai Kaupapa here

6.3 The decision is consistent with Council's Plans and Policies.

Impact on Mana Whenua / Ngā Whai Take Mana Whenua

6.4 The decision 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 specifically impact Mana Whenua, their culture and traditions.

Climate Change Impact Considerations / Ngā Whai Whakaaro mā te Āhuarangi

6.5 This option helps reduce vehicle emissions by encouraging more residents to cycle or walk for local trips and longer trips.

Accessibility Considerations / Ngā Whai Whakaaro mā te Hunga Hauā

6.6 Accessibility has been prioritised in the design for the route through the inclusion of tactile pavers and audible pedestrian crossings.

7. Resource Implications / Ngā Hīraunga Rauemi

Capex/Opex / Ngā Utu Whakahaere

7.1 Cost to Implement – pre tender estimate this section of South Express is $15 million. This is consistent with the original report.

7.2 Maintenance/Ongoing costs – consistent with original report

7.3 Funding Source – CPMS 47031 Major Cycleway South Express Route (Section 2)

Other / He mea anō

8. Legal Implications / Ngā Hīraunga ā-Ture

Statutory power to undertake proposals in the report / Te Manatū Whakahaere Kaupapa

8.1 The statutory power used to undertake proposals as contained in this report is under the Local Government Act 2002.

8.2 Part 1, Clauses 7 and 8 of the Christchurch City Council Traffic and Parking Bylaw 2017 provides Council with the authority to install parking restrictions by resolution.

8.3 The installation of any signs and/or markings associated with traffic control devices must comply with the Land Transport Rule: Traffic Control Devices 2004.

8.4 The decisions within this report falls within the Committee's Terms of Reference.

Other Legal Implications / Ētahi atu Hīraunga-ā-Ture

8.5 There is no legal context, issue or implication relevant to this decision.

8.6 This report has not been reviewed and approved by the Legal Services Unit

9. Risk Management Implications / Ngā Hīraunga Tūraru

9.1 If these resolutions are not approved the legalities relating to the uses of the road space including parking and cycle lanes will not be able to be enforced.

Attachments / Ngā Tāpirihanga

No.	Title	Page
A	ITE Committee Meeting Minutes 22/07/2019	132
B	Major Cycleway South Express Route Section 2 - Traffic Resolution Plans	136

In addition to the attached documents, the following background information is available:

Document Name	Location / File Link
Not applicable	Not applivable

Confirmation of Statutory Compliance / Te Whakatūturutanga ā-Ture

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 / Ngā Kaiwaitohu

Author	Donal Hanrahan - Project Manager
Approved By	Ekin Sakin - Manager Planning & Delivery Lynette Ellis - Head of Transport Jane Davis - General Manager Infrastructure, Planning & Regulatory Services

Infrastructure, Transport and Environment Committee
OPEN MINUTES

Date:	**Monday 22 July 2019**
Time:	**9.06am**
Venue:	**Council Chambers, Civic Offices, 53 Hereford Street, Christchurch**

Present

Chairperson	Councillor Pauline Cotter
Deputy Chairperson	Councillor Mike Davidson
Members	Councillor Vicki Buck
	Councillor Phil Clearwater
	Councillor Anne Galloway
	Councillor Aaron Keown
	Councillor Tim Scandrett
	Councillor Sara Templeton

17 July 2019

Principal Advisor
David Adamson
General Manager City Services
Tel: 941 8235

Aidan Kimberley
Committee and Hearings Advisor
941 6566
aidan.kimberley@ccc.govt.nz
www.ccc.govt.nz

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Infrastructure, Transport and Environment Committee
22 July 2019

Part A **Matters Requiring a Council Decision**

Part B **Reports for Information**

Part C **Decisions Under Delegation**

The agenda was dealt with in the following order.

1. Apologies

There were no apologies.

2. Declarations of Interest

Part B
There were no declarations of interest recorded.

3. Confirmation of Previous Minutes

Part C
Committee Resolved ITEC/2019/00021

That the open and public excluded minutes of the Infrastructure, Transport and Environment Committee meeting held on Wednesday, 10 July 2019 be confirmed.

Councillor Cotter/Councillor Clearwater **Carried**

4. Public Forum

Part B
There were no public forum presentations heard at this meeting.

5. Presentation of Community Board Feedback

Part B
Mr Mike Mora, Chairperson of the Halswell-Hornby-Riccarton Community Board, indicated he would present the Community Board's feedback after the public submissions.

6. Hearing of Verbal Submissions

Verbal submissions on the South Express Major Cycle Route were heard in the following order:

1. Tiger Lu
2. Henk Buunk
3. Warren and Wendy Hill
4. Jenny Whiteside
5. Howard Dawson
6. Diane White
7. Wendy Marshall
8. Ross Houliston
9. Ross Houliston and Mark Peters on behalf of the Greater Hornby Residents' Association
10. Gwyneth Carlaw

The meeting adjourned at 10.25am and reconvened at 11.00am.

11. Filip Chernishoff
12. Kay Flanagan
13. Phil Stedman, Alan Aitken and Mark Wells on behalf of the Riccarton Community Church
14. Rose Grieve on behalf of Warren Grieve
15. Kurt Hewson
16. Kurt Hewson on behalf of Ron Greaves
17. Robert Fleming on behalf of Spokes Canterbury
18. Heather Casperson on behalf of St Peter's Anglican Church
19. Peter Simonds
20. Jolene Eager on behalf of the Templeton Residents' Association
21. Peter Kelly

Following the public submissions, Mr Mike Mora, Chairperson of the Halswell-Hornby-Riccarton Community Board, joined the table to present the Community Board's feedback.

The meeting adjourned at 12.26pm and reconvened at 1.34pm.

7. South Express Major Cycle Route

Committee Comment

The Committee discussed the Middlepark Road section of the route, where two options were presented in the agenda. One option was for the route to continue on Middlepark Road to the Epsom Road intersection, and the other for the route to go along Taggart Place and through the Reserve. The Committee decided to approve the Taggart Place option. The Committee also requested staff to work with the Community Board regarding a planting project in the reserve, which was raised by a submitter.

The Committee also noted the submission received regarding the proposed P120 parking restrictions on Lyndon Street and decided not to approve these.

Committee Resolved ITEC/2019/00022

Part C

That the Infrastructure, Transport and Environment Committee:

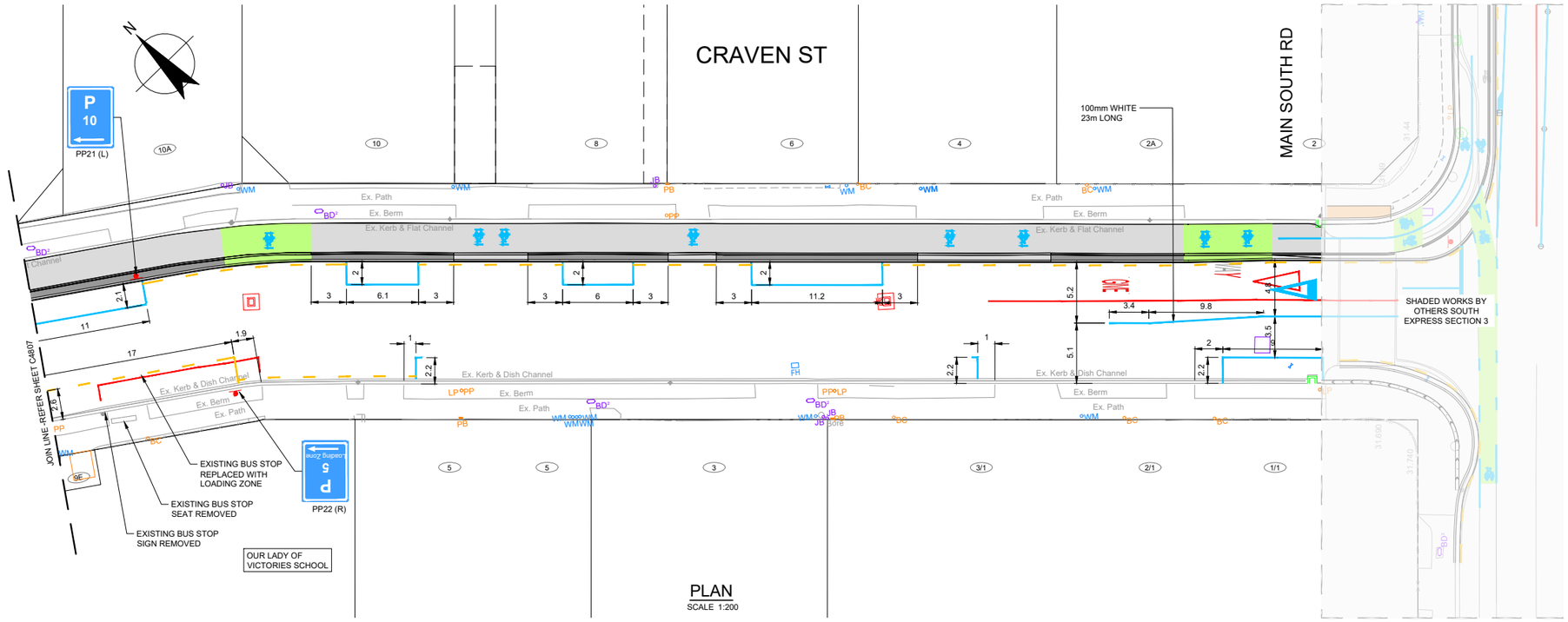
1. Approves the South Express MCR scheme for detailed design and construction as shown in Attachment A, South Express MCR Drawings 1-56 inclusive, subject to resolutions 5. and 6. set out below.
2. Approves removal of the identified trees to allow implementation of the proposed scheme, as detailed in Attachment A.
3. Approves the purchase of land parcels required to complete the cycleway, as detailed in attachment A.
4. Recommends that the detailed traffic resolutions required for the implementation of the route are brought back to the ITE committee for approval at the end of the detailed design phase prior to the beginning of construction.
5. Resolves that the route uses the alternative option through Taggart Place as set out in Plan SK130b and requests staff to work with the Community Board around future plans for a planting project in the reserve.
6. Does not approve the P120 parking restrictions on Lyndon Street.

Councillor Clearwater/Councillor Templeton **Carried**
Councillor Keown requested that his vote against the above decision be recorded.

Meeting concluded at 2.35pm.

CONFIRMED THIS 7TH DAY OF AUGUST 2019

COUNCILLOR PAULINE COTTER
CHAIRPERSON



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ROADMARKING KEY

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RRPMs:

- WHITE MONO
- RED MONO
- WHITE BI DIECTIONAL
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SIGNS \ SIGNALS

- CANTILEVER STYLE SIGN/POST
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EPSOM \ PAPARUA RESERVE
TO MAIN SOUTH RD \ CRAVEN ST

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SIGNAGE AND LINEMARKING PLAN SHEET 8

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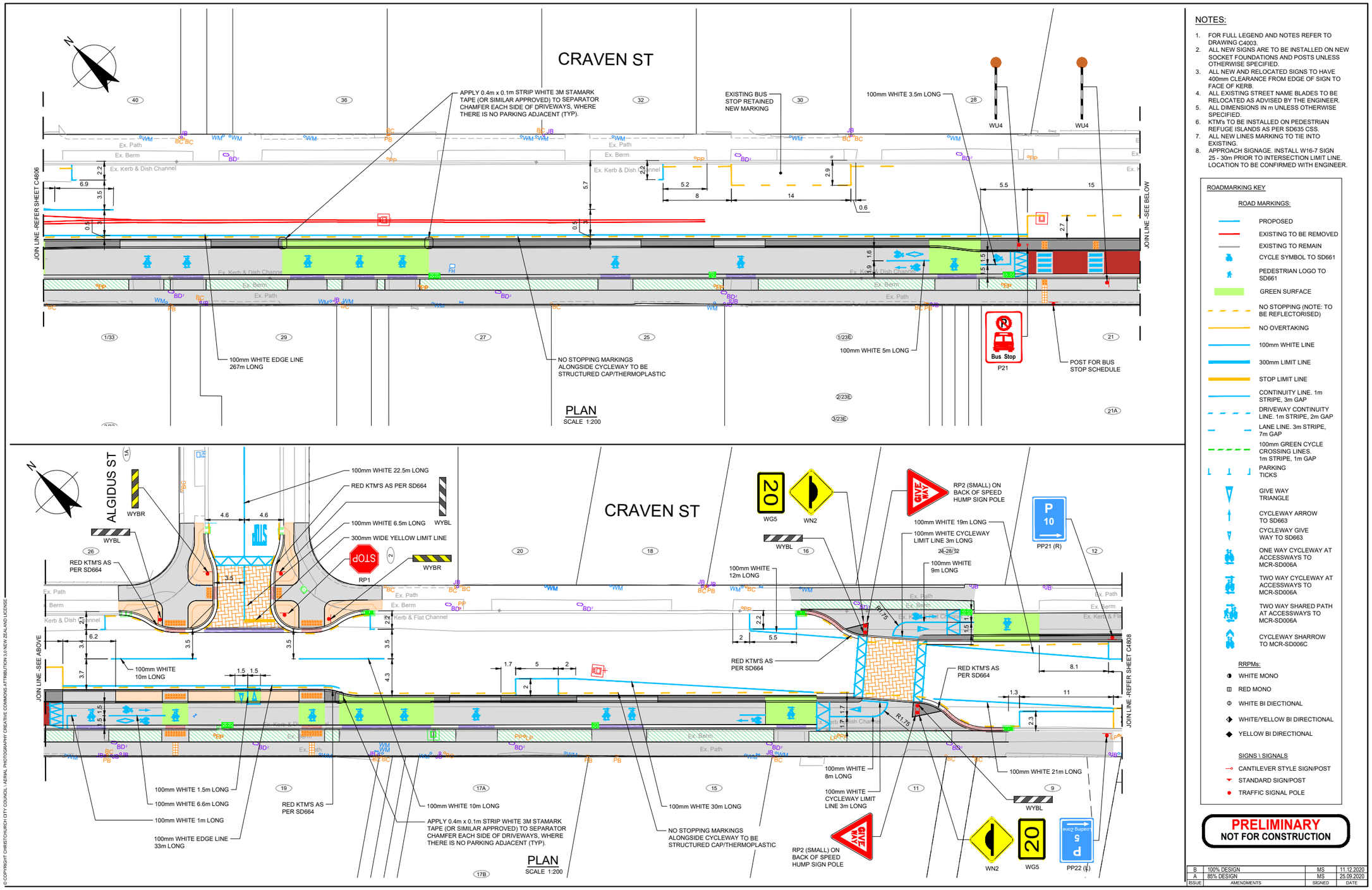

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SIGNAGE AND LINEMARKING PLAN SHEET 7

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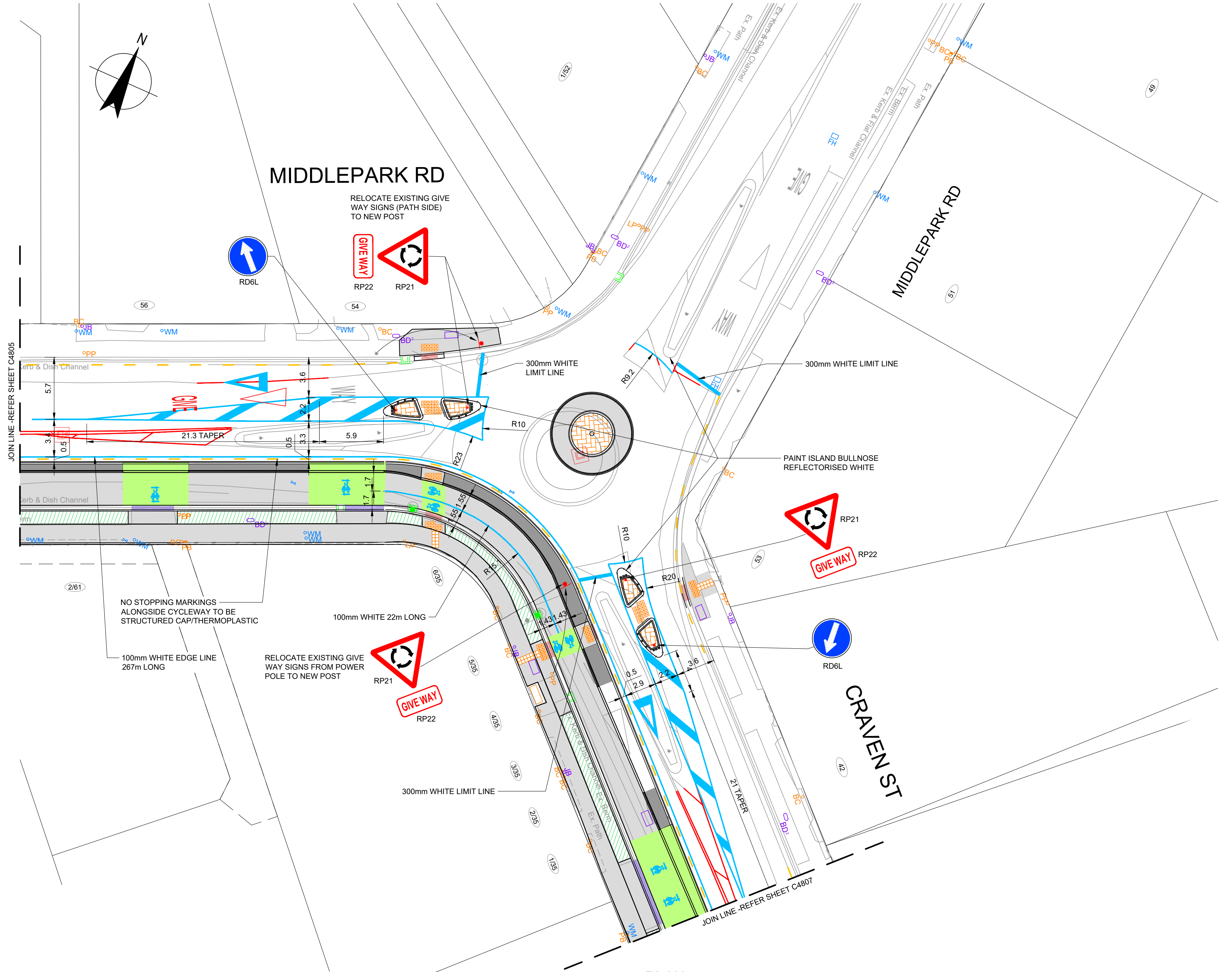
Item 9

Attachment B



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SIGNAGE AND
LINEMARKING PLAN
SHEET 6

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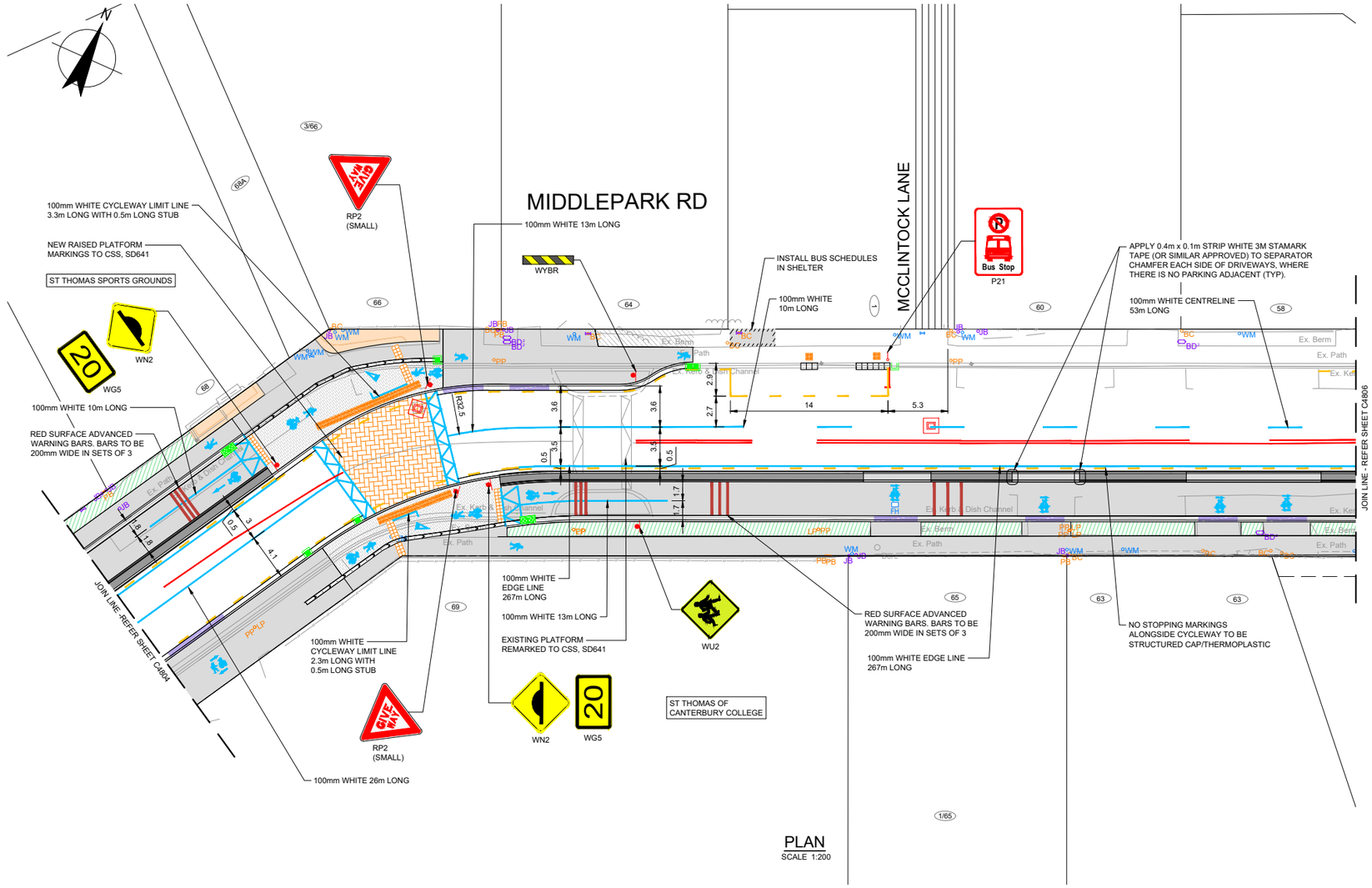

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CONSULTANT FILE REF.: C4805

PROJECT TITLE: MCR - SOUTH EXPRESS SECTION 4 EPSOM \ PAPARUA RESERVE TO MAIN SOUTH RD \ CRAVEN ST

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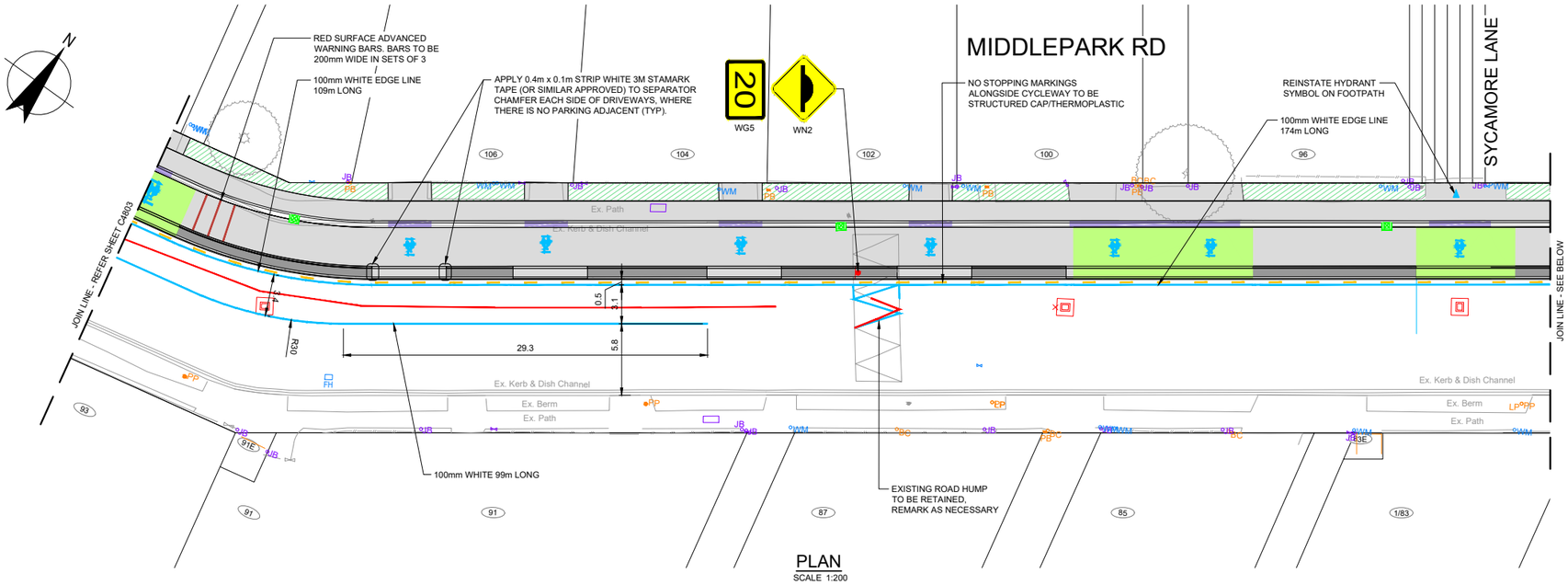

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2. ALL NEW SIGNS ARE TO BE INSTALLED ON NEW SOCKET FOUNDATIONS AND POSTS UNLESS OTHERWISE SPECIFIED.
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6. KTM's TO BE INSTALLED ON PEDESTRIAN REFUGE ISLANDS AS PER SD635 CSS.
7. ALL NEW LINES MARKING TO TIE INTO EXISTING.
8. APPROACH SIGNAGE. INSTALL W16-7 SIGN 25 - 30m PRIOR TO INTERSECTION LIMIT LINE. LOCATION TO BE CONFIRMED WITH ENGINEER.

ROADMARKING KEY

ROAD MARKINGS:

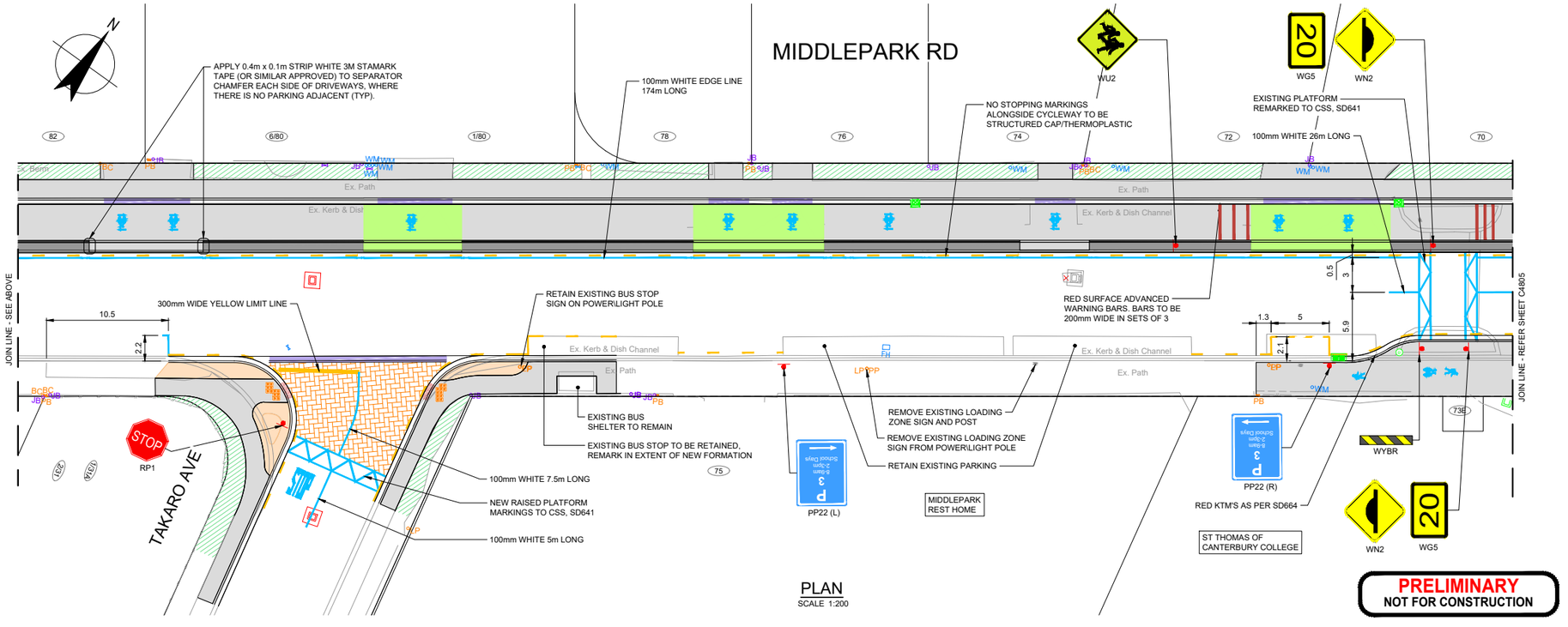
- PROPOSED
- EXISTING TO BE REMOVED
- EXISTING TO REMAIN
- CYCLE SYMBOL TO SD661
- PEDESTRIAN LOGO TO SD661
- GREEN SURFACE
- NO STOPPING (NOTE: TO BE REFLECTORISED)
- NO OVERTAKING
- 100mm WHITE LINE
- 300mm LIMIT LINE
- STOP LIMIT LINE
- CONTINUITY LINE. 1m STRIPE, 3m GAP
- DRIVEWAY CONTINUITY LINE. 1m STRIPE, 2m GAP
- LANE LINE. 3m STRIPE, 7m GAP
- 100mm GREEN CYCLE CROSSING LINES. 1m STRIPE, 1m GAP
- PARKING TICKS
- GIVE WAY TRIANGLE
- CYCLEWAY ARROW TO SD663
- CYCLEWAY GIVE WAY TO SD663
- ONE WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY SHARED PATH AT ACCESSWAYS TO MCR-SD006A
- CYCLEWAY SHARROW TO MCR-SD006C

RRPMs:

- WHITE MONO
- RED MONO
- WHITE BI DIECTIONAL
- WHITE/YELLOW BI DIRECTIONAL
- YELLOW BI DIRECTIONAL

SIGNS \ SIGNALS

- CANTILEVER STYLE SIGN/POST
- STANDARD SIGN/POST
- TRAFFIC SIGNAL POLE



PRELIMINARY
NOT FOR CONSTRUCTION

ISSUE	AMENDMENTS	SIGNED	DATE
B	100% DESIGN	MS	11.12.2020
A	85% DESIGN	MS	25.09.2020

Christchurch City Council
TECHNICAL SERVICES & DESIGN

DATUM	CDD JAN 2014		NAME	SIGNED	DATE
BENCH MK.	BM 353	DESIGNED	B. Timblick		
RL	21.344m	DES. REVIEW	O. Brown		
SURVEY	F10027	DRAWN	B. Timblick		
SURVEY LB	1825	DRW. CHECK	N. Mackie		
	MT PLEASANT 2000	FILE LOCATION	0600 South Express\CAD		
DRAIN. REF.		3385027-600-C4801 To C4808.dwg			
SAP WBS		PRINTED ON 11/12/2020 2:37 pm Kyle Liu			

Note: * indicates signatures on original issue of drawing or last revision of drawing

APPROVED		
FOR TENDER		
DATE	SIGNED	
FOR CONSTRUCTION		
DATE	SIGNED	

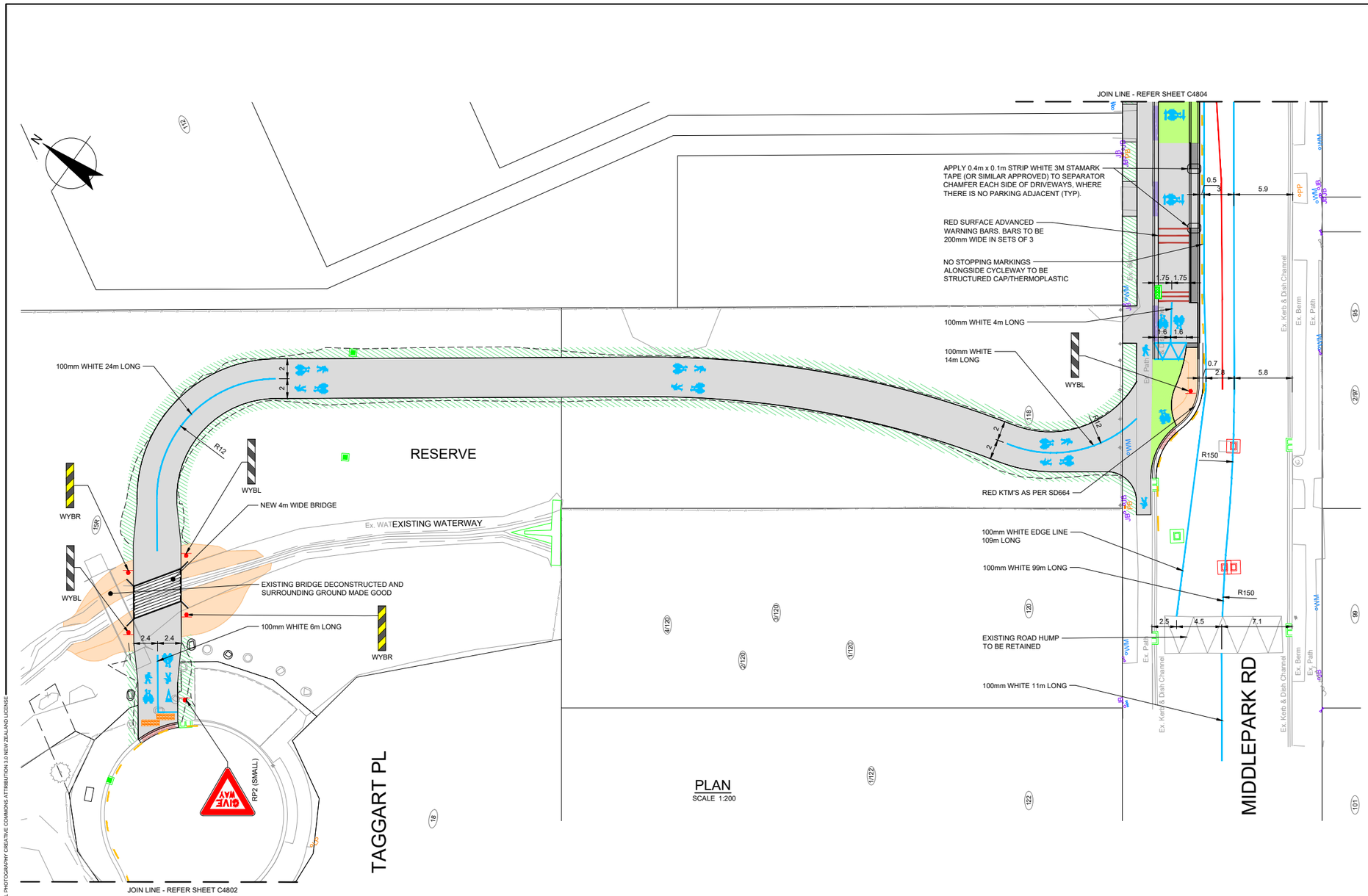
CONSULTANT: PELOTON, Beca, GHD, Stantec
CONSULTANT PROJECT REF.: 3385027 / 0600
CONSULTANT FILE REF.: C4804

PROJECT TITLE: MCR - SOUTH EXPRESS SECTION 4 EPSOM \ PAPARUA RESERVE TO MAIN SOUTH RD \ CRAVEN ST

This Drawing must not be used for Construction unless signed as Approved

DRAWING TITLE: SIGNAGE AND LINEMARKING PLAN SHEET 4

CONTRACT NUMBER	-	ORIGINAL SHEET SIZE	A1
CAD DRAWING FILE REF.	RD366501	SCALES	1:200 DO NOT SCALE
CPG PROJECT FILE NUMBER	CP502846	SHEET	R69 - 77



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ROADMARKING KEY

ROAD MARKINGS:

- PROPOSED
- EXISTING TO BE REMOVED
- EXISTING TO REMAIN
- CYCLE SYMBOL TO SD661
- PEDESTRIAN LOGO TO SD661
- GREEN SURFACE
- NO STOPPING (NOTE: TO BE REFLECTORISED)
- NO OVERTAKING
- 100mm WHITE LINE
- 300mm LIMIT LINE
- STOP LIMIT LINE
- CONTINUITY LINE. 1m STRIPE, 3m GAP
- DRIVEWAY CONTINUITY LINE. 1m STRIPE, 2m GAP
- LANE LINE. 3m STRIPE, 7m GAP
- 100mm GREEN CYCLE CROSSING LINES. 1m STRIPE, 1m GAP
- PARKING TICKS
- GIVE WAY TRIANGLE
- CYCLEWAY ARROW TO SD663
- CYCLEWAY GIVE WAY TO SD663
- ONE WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY SHARED PATH AT ACCESSWAYS TO MCR-SD006A
- CYCLEWAY SHARROW TO MCR-SD006C

RRPMs:

- WHITE MONO
- RED MONO
- WHITE BI DIECTIONAL
- WHITE/YELLOW BI DIRECTIONAL
- YELLOW BI DIRECTIONAL

SIGNS \ SIGNALS

- CANTILEVER STYLE SIGN/POST
- STANDARD SIGN/POST
- TRAFFIC SIGNAL POLE

PRELIMINARY
NOT FOR CONSTRUCTION

ISSUE	AMENDMENTS	SIGNED	DATE
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Christchurch City Council
TECHNICAL SERVICES & DESIGN

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SURVEY	F10927	DRAWN	B. Timblick		
SURVEY LB	1825	DRW. CHECK	N. Mackie		
	MT PLEASANT 2000	FILE LOCATION	0600 South ExpressCAD		
DRAIN. REF.			3385027-600-C4801 To C4808.dwg		
SAP WBS		PRINTED ON	11/12/2020 2:36 pm Kyle Liu		

Note: * indicates signatures on original issue of drawing or last revision of drawing

APPROVED		
FOR TENDER		
DATE	SIGNED	
FOR CONSTRUCTION		
DATE	SIGNED	

CONSULTANT: PELOTON, Beca, GHD, Stantec

CONSULTANT PROJECT REF.	CONSULTANT FILE REF.
3385027 / 0600	C4803

PROJECT TITLE: MCR - SOUTH EXPRESS SECTION 4 EPSOM \ PAPARUA RESERVE TO MAIN SOUTH RD \ CRAVEN ST

This Drawing must not be used for Construction unless signed as Approved

DRAWING TITLE: SIGNAGE AND LINEMARKING PLAN SHEET 3

CONTRACT NUMBER	ORIGINAL SHEET SIZE	SCALES
-	A1	1:200
CAD DRAWING FILE REF.		DO NOT SCALE
RD366501		
CPG PROJECT FILE NUMBER	SHEET	
CP502846	R68 - 77	

JOIN LINE - REFER SHEET C4801

ENTERPRISE HOMES LTD

EPSOM RD

100mm CONTINUITY LINE 13m LONG

300mm WIDE WHITE LIMIT LINE

100mm LANE EDGE LINE 109m LONG

100mm WHITE 8.5m LONG

100mm WHITE 5.5m LONG

100mm WHITE 7m LONG

100mm WHITE 46m LONG

RP2 (SMALL)

RP2

WYBR

WYBL

TIE EX MA

34.4 TAPER

TAGGART PL

RS1 (30)

RS1 (50)

Ex. Kerb & Flat Channel

Ex. Path

Ex. Berm

JOIN LINE - SEE BELOW

PLAN
SCALE 1:200

JOIN LINE - SEE ABOVE

JOIN LINE - REFER SHEET C4803

100mm WHITE 6m LONG

PRELIMINARY
NOT FOR CONSTRUCTION

NOTES:

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ROADMARKING KEY

ROAD MARKINGS:

- PROPOSED
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- PEDESTRIAN LOGO TO SD661
- GREEN SURFACE
- NO STOPPING (NOTE: TO BE REFLECTORISED)
- NO OVERTAKING
- 100mm WHITE LINE
- 300mm LIMIT LINE
- STOP LIMIT LINE
- CONTINUITY LINE. 1m STRIPE, 3m GAP
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- PARKING TICKS
- GIVE WAY TRIANGLE
- CYCLEWAY ARROW TO SD663
- CYCLEWAY GIVE WAY TO SD663
- ONE WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY SHARED PATH AT ACCESSWAYS TO MCR-SD006A
- CYCLEWAY SHARROW TO MCR-SD006C

RRPMs:

- WHITE MONO
- RED MONO
- WHITE BI DIECTIONAL
- WHITE/YELLOW BI DIRECTIONAL
- YELLOW BI DIRECTIONAL

SIGNS \ SIGNALS

- CANTILEVER STYLE SIGN/POST
- STANDARD SIGN/POST
- TRAFFIC SIGNAL POLE

ISSUE	AMENDMENTS	SIGNED	DATE
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A	85% DESIGN	MS	25.09.2020

Christchurch City Council
TECHNICAL SERVICES & DESIGN

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RL	21.344m	DES. REVIEW	O. Brown		
SURVEY	P10927	DRAWN	B. Timblick		
SURVEY LB	1825	DRW. CHECK	N. Mackie		
	MT PLEASANT 2000	FILE LOCATION	0600 South Express\CAD		
DRAWN. REF.		3385027-600-C4801 To C4808.dwg			
SAP WBS		PRINTED ON	11/12/2020 2:36 pm	Kyle Liu	

Note: * indicates signatures on original issue of drawing or last revision of drawing

APPROVED	
FOR TENDER	
DATE	SIGNED
FOR CONSTRUCTION	
DATE	SIGNED

CONSULTANT: PELORON, Beca, GHD, Stantec

CONSULTANT PROJECT REF.: 3385027 / 0600

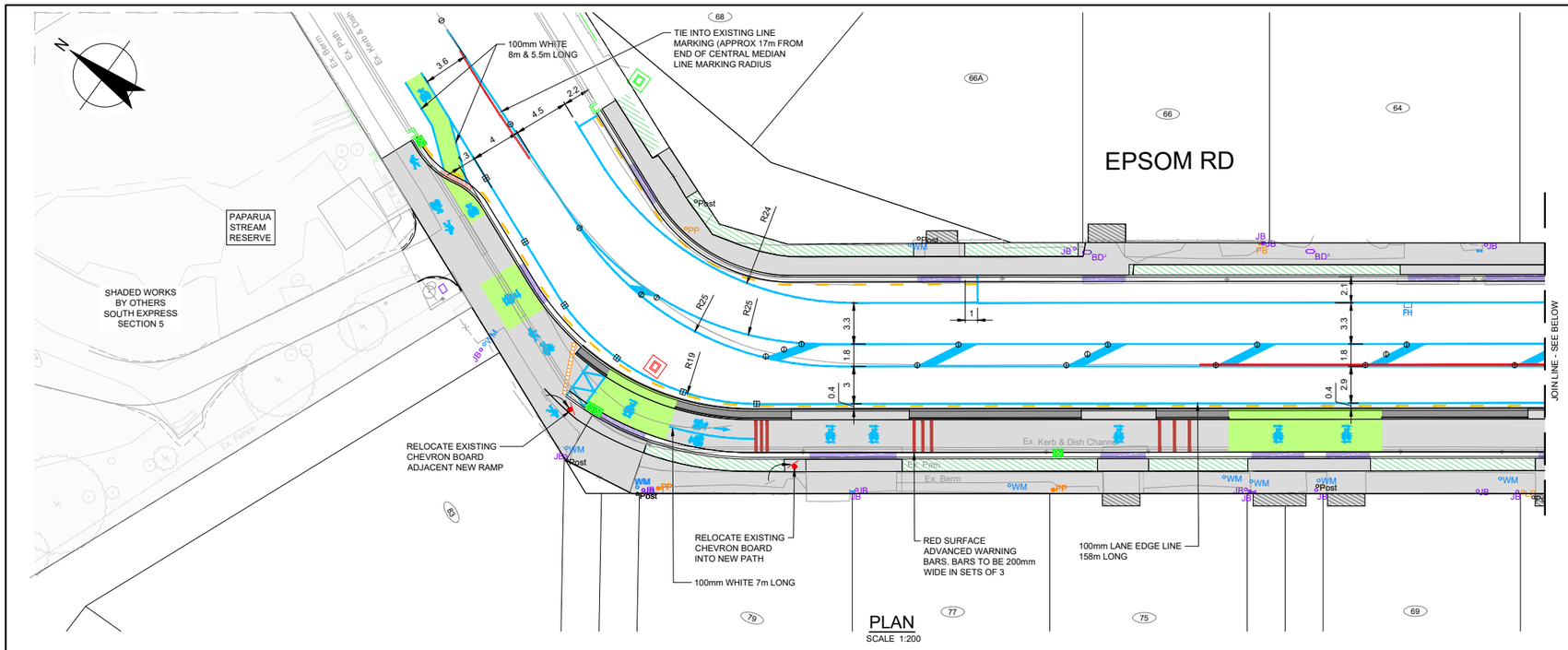
CONSULTANT FILE REF.: C4802

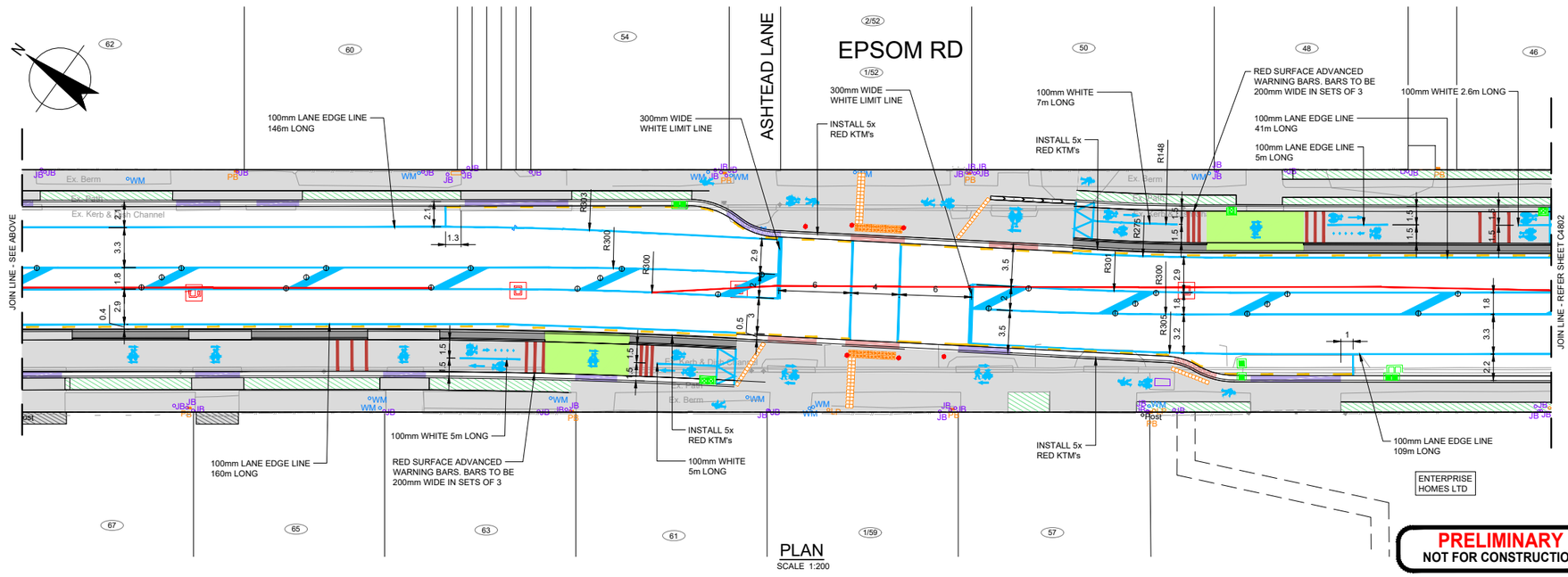
PROJECT TITLE: MCR - SOUTH EXPRESS SECTION 4
EPSOM \ PAPARUA RESERVE
TO MAIN SOUTH RD \ CRAVEN ST

This Drawing must not be used for Construction unless signed as Approved

DRAWING TITLE: SIGNAGE AND LINEMARKING PLAN SHEET 2

CONTRACT NUMBER	-	ORIGINAL SHEET SIZE	A1
CAD DRAWING FILE REF.	RD366501	SCALES	1:200 DO NOT SCALE
CPG PROJECT FILE NUMBER	CP502846	SHEET	R67 77





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ROADMARKING KEY

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- 100mm GREEN CYCLE CROSSING LINES. 1m STRIPE, 1m GAP
- PARKING TICKS
- GIVE WAY TRIANGLE
- CYCLEWAY ARROW TO SD663
- CYCLEWAY GIVE WAY TO SD663
- ONE WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY SHARED PATH AT ACCESSWAYS TO MCR-SD006A
- CYCLEWAY SHARROW TO MCR-SD006C

RRPMs:

- WHITE MONO
- RED MONO
- WHITE BI DIECTIONAL
- WHITE/YELLOW BI DIRECTIONAL
- YELLOW BI DIRECTIONAL

SIGNS \ SIGNALS

- CANTILEVER STYLE SIGN/POST
- STANDARD SIGN/POST
- TRAFFIC SIGNAL POLE

PRELIMINARY
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ISSUE	AMENDMENTS	SIGNED	DATE
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Christchurch City Council
TECHNICAL SERVICES & DESIGN

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SURVEY	F10927	DRAWN	B. Timblick		
SURVEY LB	1825	DRW. CHECK	N. Mackie		
	MT PLEASANT 2000	FILE LOCATION	0600 South Express\CAD		
DRAIN. REF.			3385027-600-C4801 To C4808.dwg		
SAP WBS		PRINTED ON 11/12/2020 2:35 pm Kyle Liu			

Note: * indicates signatures on original issue of drawing or last revision of drawing

APPROVED
FOR TENDER — DATE — SIGNED
FOR CONSTRUCTION — DATE — SIGNED

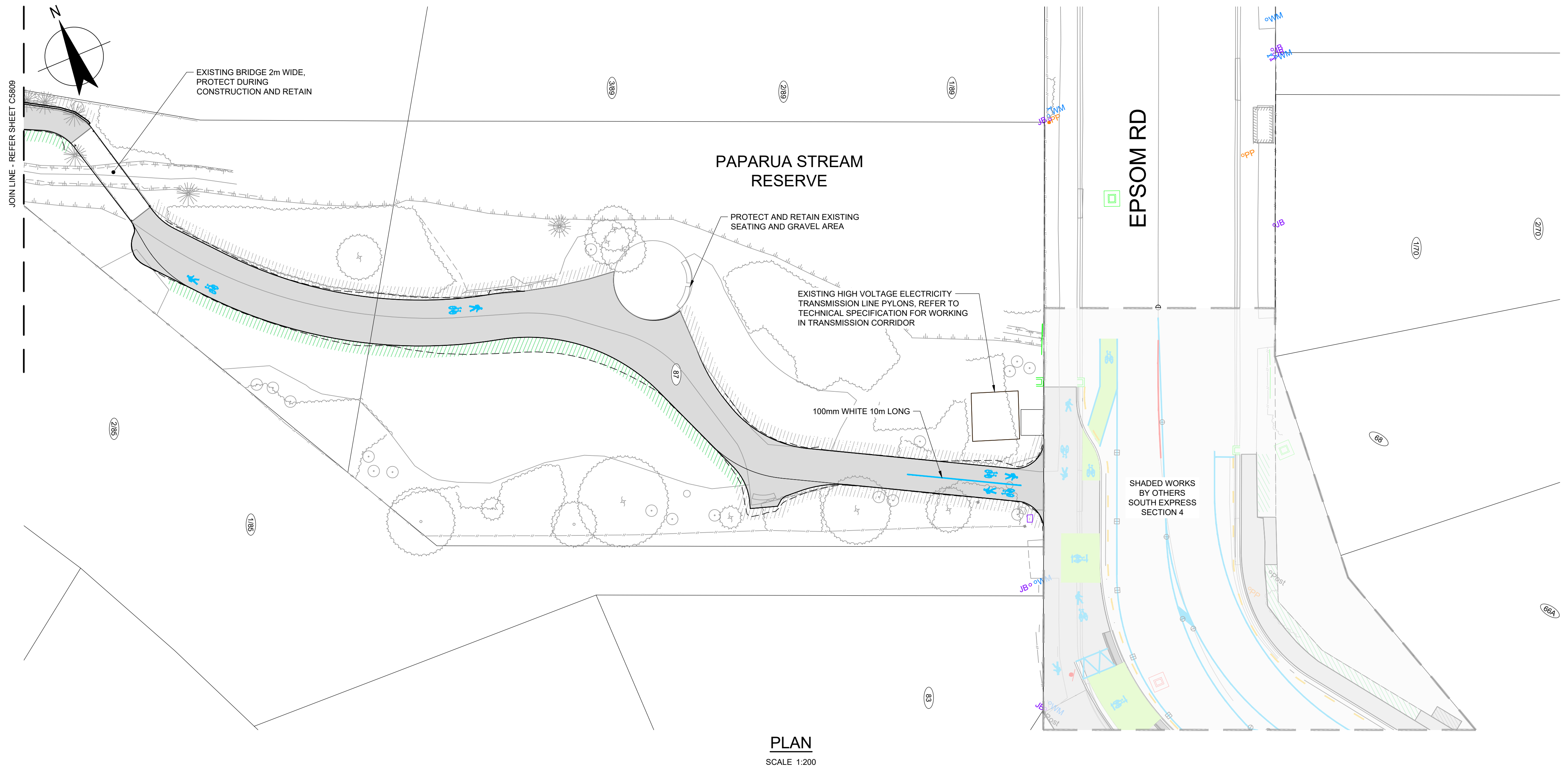
CONSULTANT: PELOTON, Beca, GHD, Stantec
CONSULTANT PROJECT REF.: 3385027 / 0600
CONSULTANT FILE REF.: C4801

PROJECT TITLE: MCR - SOUTH EXPRESS SECTION 4 EPSOM \ PAPARUA RESERVE TO MAIN SOUTH RD \ CRAVEN ST

This Drawing must not be used for Construction unless signed as Approved

DRAWING TITLE: SIGNAGE AND LINEMARKING PLAN SHEET 1

CONTRACT NUMBER	-
CAD DRAWING FILE REF.	RD366501
ORIGINAL SHEET SIZE	A1
SCALES	1:200 **DO NOT SCALE**
CPG PROJECT FILE NUMBER	CP502846
SHEET	R66 - 77



PLAN

SCALE 1:200

NOTES:

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ROADMARKING KEY

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- CYCLEWAY SHARROW TO MCR-SD006C

RRPMs:

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- RED MONO
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SIGNS \ SIGNALS

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Christchurch City Council
TECHNICAL SERVICES & DESIGN

			NAME	SIGNED	DATE
DATUM	CDD JAN 2014				
BENCH MK.	BM EHDO	DESIGNED	N. Mackie	NM	
RL	26.331m	DES. REVIEW	O. Brown	OB	
SURVEY	CCC	DRAWN	N. Mackie	NM	
SURVEY LB	GNSS/ROBOTIC	DRW. CHECK	B. Timblick	BT	
	MT PLEASANT 2000	FILE LOCATION	0600 South Express\CAD		
DRAIN. REF.			3385027-600-C5801 To C5810.dwg		
SAP WBS		PRINTED ON	16/10/2020 3:31 pm	Kyle Liu	

Note: * indicates signatures on original issue of drawing or last revision of drawing

APPROVED
FOR TENDER — DATE / SIGNED
FOR CONSTRUCTION — DATE / SIGNED

CONSULTANT: PELOTON — Beca, GHD, Stantec
CONSULTANT PROJECT REF. 3385027 / 0600
CONSULTANT FILE REF. C5810

PROJECT TITLE
MCR - SOUTH EXPRESS SECTION 5
BUCHANANS RD \ HEI HEI RD
TO EPSOM RD \ PAPARUA RESERVE

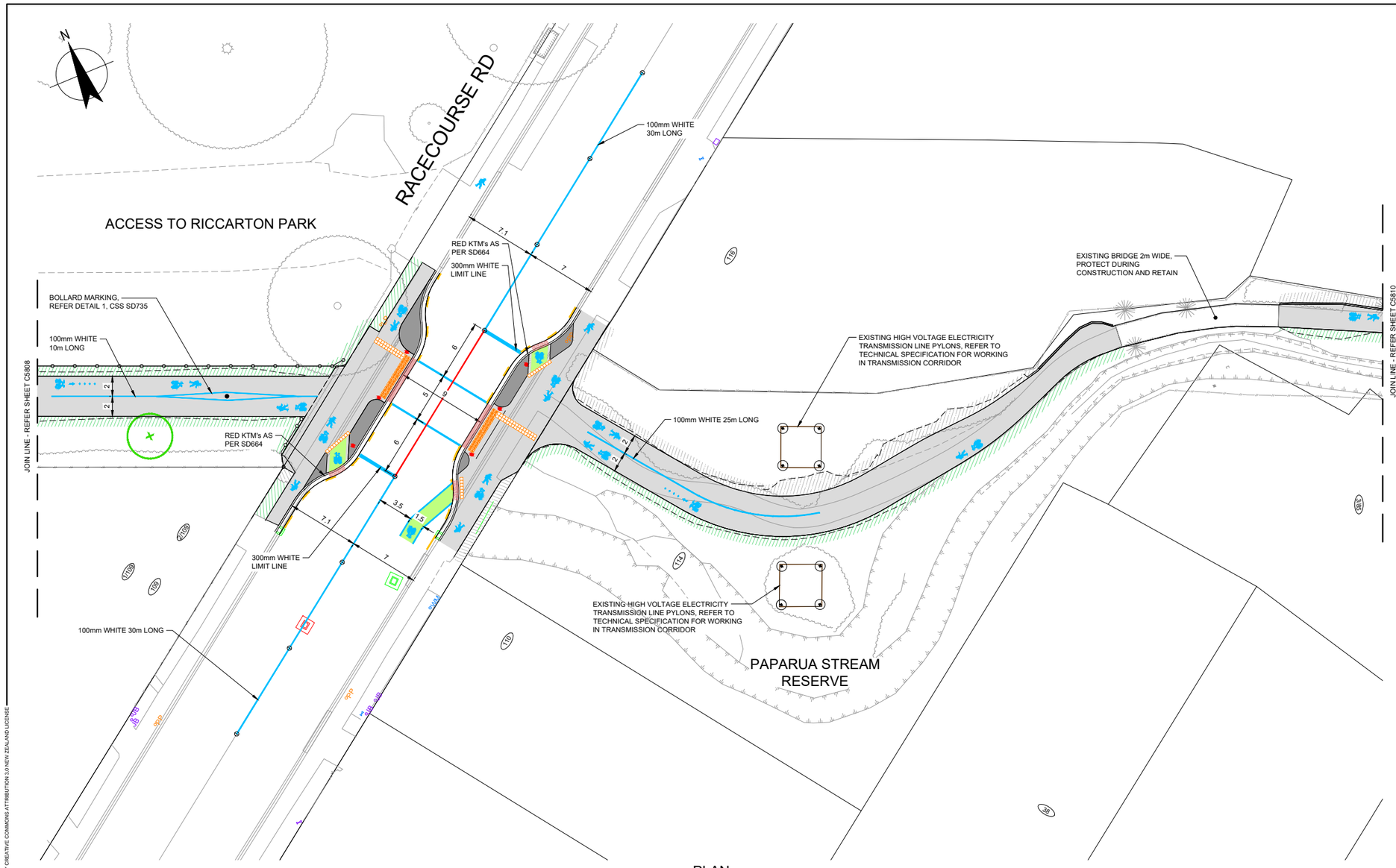
This Drawing must not be used for Construction unless signed as Approved

DRAWING TITLE
SIGNAGE AND LINEMARKING PLAN SHEET 10

CONTRACT NUMBER: -
CAD DRAWING FILE REF. RD366501
ORIGINAL SHEET SIZE: A1
SCALES: 1:200
DO NOT SCALE
CPG PROJECT FILE NUMBER: CP502846
SHEET: R61 OF 68

Item 9

Attachment B



PLAN

SCALE 1:200

NOTES:

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RRPMs:

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SIGNS \ SIGNALS

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- STANDARD SIGN/POST
- TRAFFIC SIGNAL POLE

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RL	26.331m	DES. REVIEW	O. Brown	OB	
SURVEY	CCC	DRAWN	N. Mackie	NM	
SURVEY LB	GNSS/ROBOTIC	DRW. CHECK	B. Timblick	BT	
	MT PLEASANT 2000	FILE LOCATION	0600 South Express\CAD		
DRAIN. REF.		3385027-600-C5801 To C5810.dwg			
SAP WBS		PRINTED ON 16/10/2020 3:31 pm Kyle Liu			

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APPROVED	
FOR TENDER	
DATE	SIGNED
FOR CONSTRUCTION	
DATE	SIGNED

CONSULTANT: PELORON, Beca, GHD, Stantec

CONSULTANT PROJECT REF.: 3385027 / 0600

CONSULTANT FILE REF.: C5809

PROJECT TITLE: MCR - SOUTH EXPRESS SECTION 5 BUCHANANS RD \ HEI HEI RD TO EPSOM RD \ PAPARUA RESERVE

This Drawing must not be used for Construction unless signed as Approved

DRAWING TITLE: SIGNAGE AND LINEMARKING PLAN SHEET 9

CONTRACT NUMBER: -

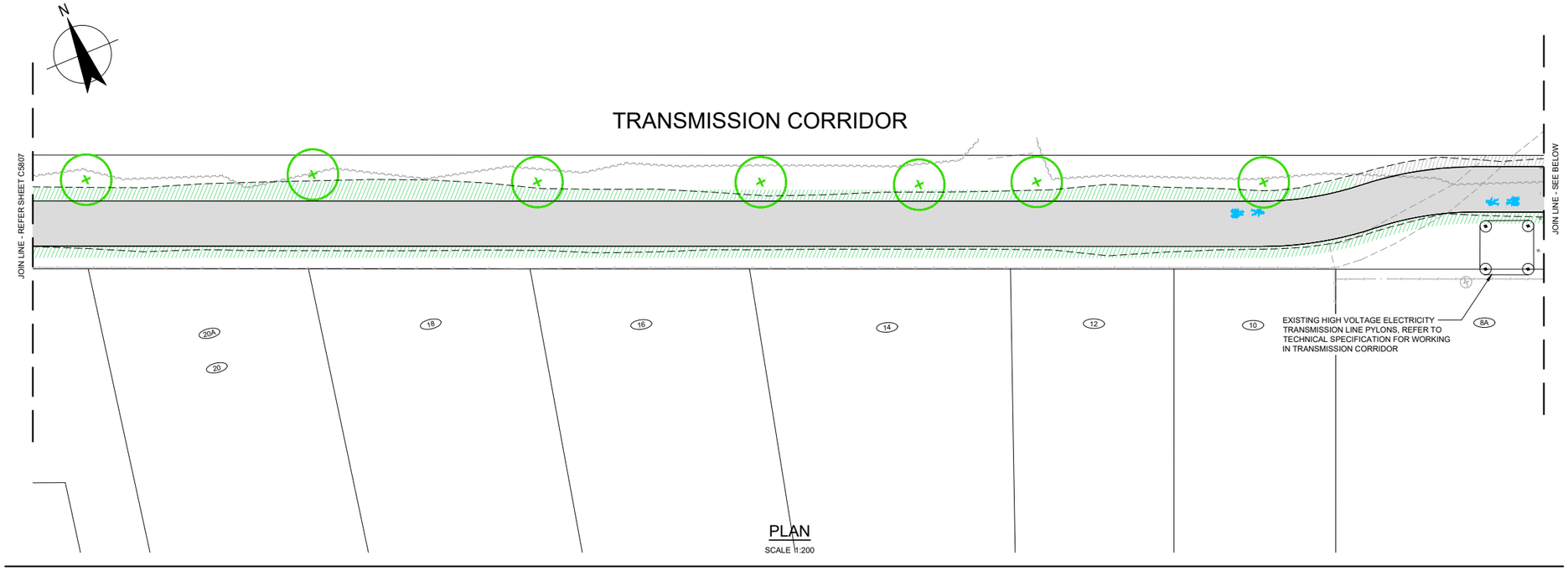
ORIGINAL SHEET SIZE: A1

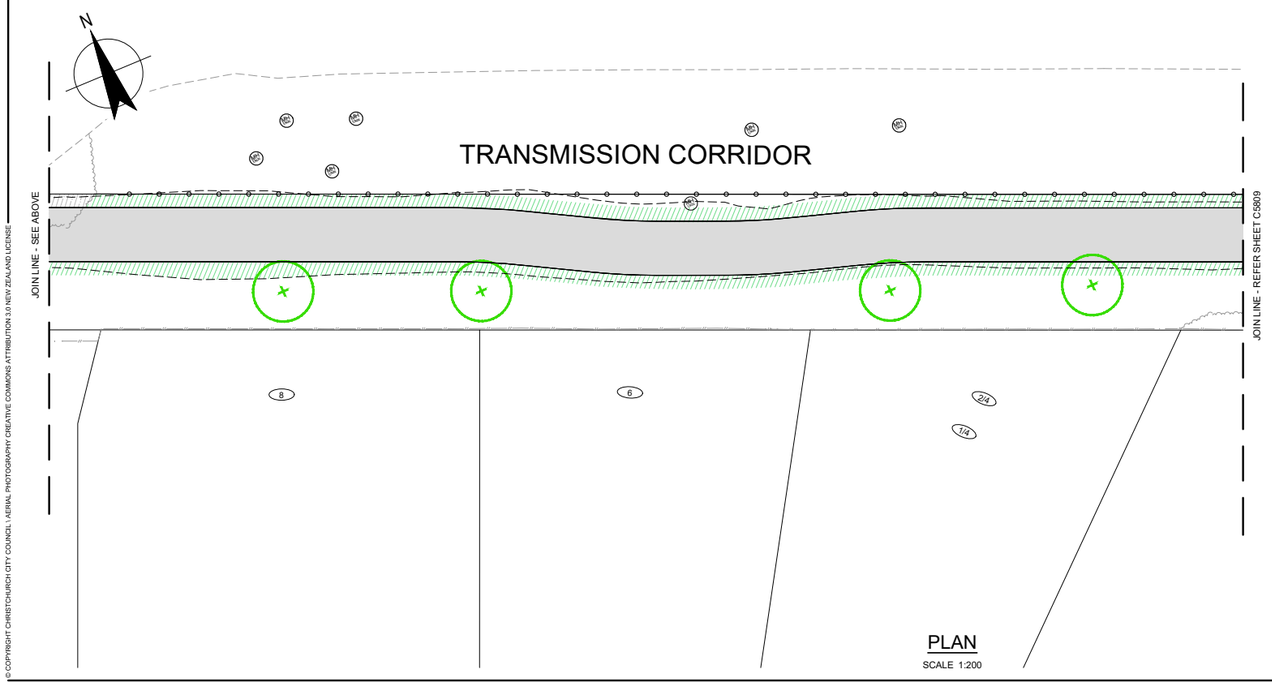
CAD DRAWING FILE REF.: RD366501

SCALES: 1:200 **DO NOT SCALE**

CPG PROJECT FILE NUMBER: CP502846

SHEET: R60 - 68





NOTES:

1. FOR FULL LEGEND AND NOTES REFER TO DRAWING C1003.
2. ALL NEW SIGNS ARE TO BE INSTALLED ON NEW SOCKET FOUNDATIONS AND POSTS UNLESS OTHERWISE SPECIFIED.
3. ALL NEW AND RELOCATED SIGNS TO HAVE 400mm CLEARANCE FROM EDGE OF SIGN TO FACE OF KERB.
4. ALL EXISTING STREET NAME BLADES TO BE RELOCATED AS ADVISED BY THE ENGINEER.
5. ALL DIMENSIONS IN m UNLESS OTHERWISE SPECIFIED.
6. KTM's TO BE INSTALLED ON PEDESTRIAN REFUGE ISLANDS AS PER SD635 CSS.
7. ALL NEW LINES MARKING TO TIE INTO EXISTING.
8. APPROACH SIGNAGE. INSTALL W16-7 SIGN 50 - 60m PRIOR TO INTERSECTION LIMIT LINE. LOCATION TO BE CONFIRMED WITH ENGINEER.

ROADMARKING KEY

ROAD MARKINGS:

- PROPOSED
- EXISTING TO BE REMOVED
- EXISTING TO REMAIN
- CYCLE SYMBOL TO SD661
- PEDESTRIAN LOGO TO SD661
- GREEN SURFACE
- NO STOPPING (NOTE: TO BE REFLECTORISED)
- NO OVERTAKING
- 100mm WHITE LINE
- 300mm LIMIT LINE
- STOP LIMIT LINE
- CONTINUITY LINE. 1m STRIPE, 3m GAP
- DRIVEWAY CONTINUITY LINE. 1m STRIPE, 2m GAP
- LANE LINE. 3m STRIPE, 7m GAP
- 100mm GREEN CYCLE CROSSING LINES. 1m STRIPE, 1m GAP
- PARKING TICKS
- GIVE WAY TRIANGLE
- CYCLEWAY ARROW TO SD663
- CYCLEWAY GIVE WAY TO SD663
- ONE WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY SHARED PATH AT ACCESSWAYS TO MCR-SD006A
- CYCLEWAY SHARROW TO MCR-SD006C

RRPMs:

- WHITE MONO
- RED MONO
- WHITE BI DIECTIONAL
- WHITE/YELLOW BI DIRECTIONAL
- YELLOW BI DIRECTIONAL

SIGNS \ SIGNALS

- CANTILEVER STYLE SIGN/POST
- STANDARD SIGN/POST
- TRAFFIC SIGNAL POLE

PRELIMINARY
NOT FOR CONSTRUCTION

ISSUE	AMENDMENTS	SIGNED	DATE
B	100% DESIGN	MS	16.10.2020
A	85% DESIGN	MS	11.09.2020

Christchurch City Council
TECHNICAL SERVICES & DESIGN

			NAME	SIGNED	DATE
DATUM	CDD JAN 2014				
BENCH MK.	BM EHDO	DESIGNED	N. Mackie	NM	
RL	26.331m	DES. REVIEW	O. Brown	OB	
SURVEY	CCC	DRAWN	N. Mackie	NM	
SURVEY LB	GNSS/ROBOTIC	DRW. CHECK	B. Timblick	BT	
	MT PLEASANT 2000	FILE LOCATION	0600 South Express\CAD		
DRAIN. REF.		3385027-600-C5801 To C5810.dwg			
SAP WBS		PRINTED ON 16/10/2020 3:30 pm Kyle Liu			

Note: * indicates signatures on original issue of drawing or last revision of drawing

APPROVED

FOR TENDER	
DATE	SIGNED

FOR CONSTRUCTION	
DATE	SIGNED

CONSULTANT: PELORON, Beca, GHD, Stantec

CONSULTANT PROJECT REF.: 3385027 / 0600

CONSULTANT FILE REF.: C5808

PROJECT TITLE: MCR - SOUTH EXPRESS SECTION 5
BUCHANANS RD \ HEI HEI RD
TO EPSOM RD \ PAPARUA RESERVE

This Drawing must not be used for Construction unless signed as Approved

DRAWING TITLE: SIGNAGE AND LINEMARKING PLAN SHEET 8

CONTRACT NUMBER: -

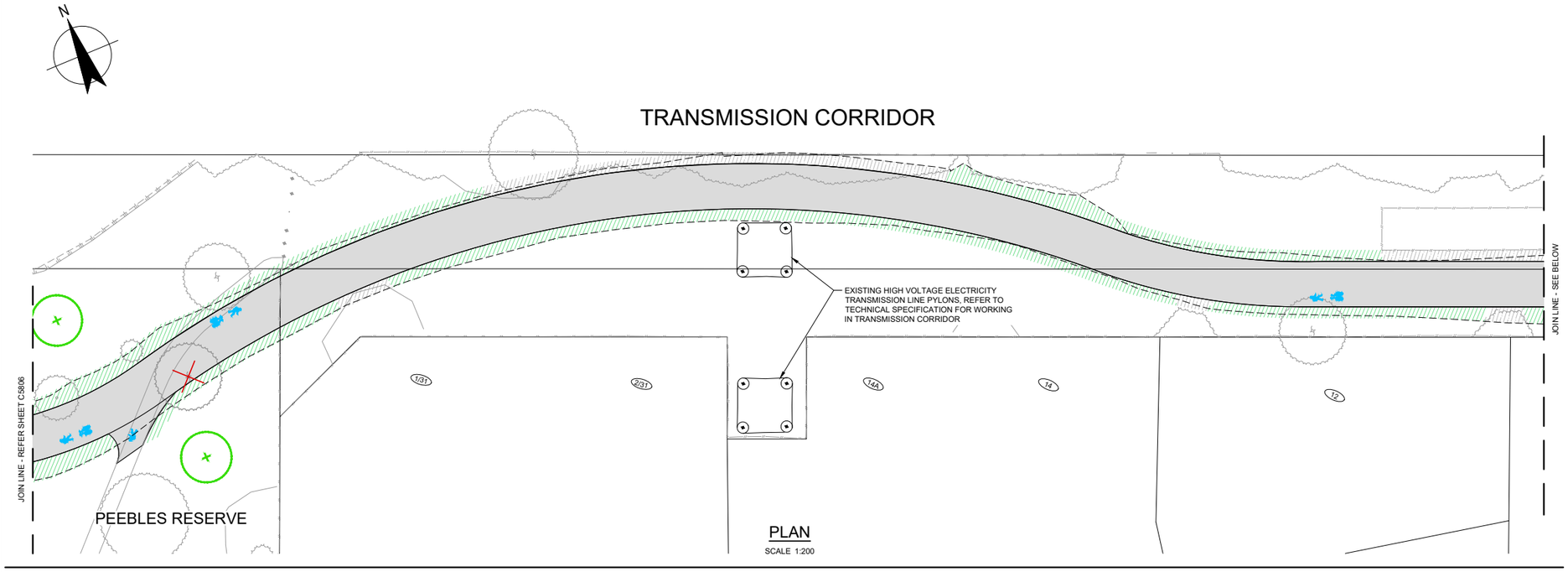
CAD DRAWING FILE REF.: RD366501

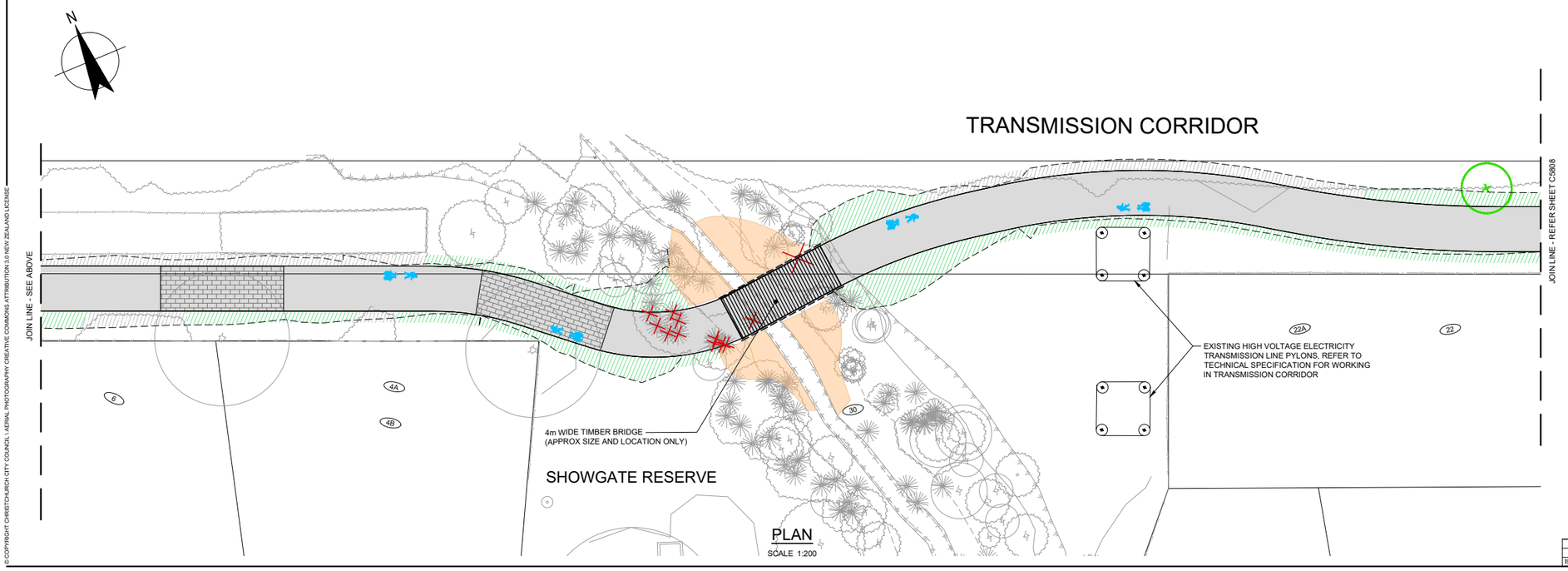
ORIGINAL SHEET SIZE: A1

SCALES: 1:200 **DO NOT SCALE**

CPG PROJECT FILE NUMBER: CP502846

SHEET: R59 of 68





NOTES:

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8. APPROACH SIGNAGE. INSTALL W16-7 SIGN 50 - 60m PRIOR TO INTERSECTION LIMIT LINE. LOCATION TO BE CONFIRMED WITH ENGINEER.

ROADMARKING KEY

ROAD MARKINGS:

- PROPOSED
- EXISTING TO BE REMOVED
- EXISTING TO REMAIN
- CYCLE SYMBOL TO SD661
- PEDESTRIAN LOGO TO SD661
- GREEN SURFACE
- NO STOPPING (NOTE: TO BE REFLECTORISED)
- NO OVERTAKING
- 100mm WHITE LINE
- 300mm LIMIT LINE
- STOP LIMIT LINE
- CONTINUITY LINE. 1m STRIPE, 3m GAP
- DRIVEWAY CONTINUITY LINE. 1m STRIPE, 2m GAP
- LANE LINE. 3m STRIPE, 7m GAP
- 100mm GREEN CYCLE CROSSING LINES. 1m STRIPE, 1m GAP
- PARKING TICKS
- GIVE WAY TRIANGLE
- CYCLEWAY ARROW TO SD663
- CYCLEWAY GIVE WAY TO SD663
- ONE WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY SHARED PATH AT ACCESSWAYS TO MCR-SD006A
- CYCLEWAY SHARROW TO MCR-SD006C

RRPMs:

- WHITE MONO
- RED MONO
- WHITE BI DIECTIONAL
- WHITE/YELLOW BI DIRECTIONAL
- YELLOW BI DIRECTIONAL

SIGNS \ SIGNALS

- CANTILEVER STYLE SIGN/POST
- STANDARD SIGN/POST
- TRAFFIC SIGNAL POLE

PRELIMINARY
NOT FOR CONSTRUCTION

ISSUE	AMENDMENTS	SIGNED	DATE
B	100% DESIGN	MS	16.10.2020
A	85% DESIGN	MS	11.09.2020

Christchurch City Council
TECHNICAL SERVICES & DESIGN

			NAME	SIGNED	DATE
DATUM	CDD JAN 2014				
BENCH MK.	BM EHDO	DESIGNED	N. Mackie	NM	
RL	26.331m	DES. REVIEW	O. Brown	OB	
SURVEY	CCC	DRAWN	N. Mackie	NM	
SURVEY LB	GNSS/ROBOTIC	DRW. CHECK	B. Timblick	BT	
	MT PLEASANT 2000	FILE LOCATION	0600 South Express\CAD		
DRAIN. REF.			3385027-600-C5801 To C5810.dwg		
SAP WBS		PRINTED ON 16/10/2020 3:30 pm	Kyle Liu		

Note: * indicates signatures on original issue of drawing or last revision of drawing

APPROVED

FOR TENDER	
DATE	SIGNED
FOR CONSTRUCTION	
DATE	SIGNED

CONSULTANT: PELOTON, Beca, GHD, Stantec

CONSULTANT PROJECT REF.: 3385027 / 0600

CONSULTANT FILE REF.: C5807

PROJECT TITLE: MCR - SOUTH EXPRESS SECTION 5 BUCHANANS RD \ HEI HEI RD TO EPSOM RD \ PAPARUA RESERVE

This Drawing must not be used for Construction unless signed as Approved

DRAWING TITLE: SIGNAGE AND LINEMARKING PLAN SHEET 7

CONTRACT NUMBER: -

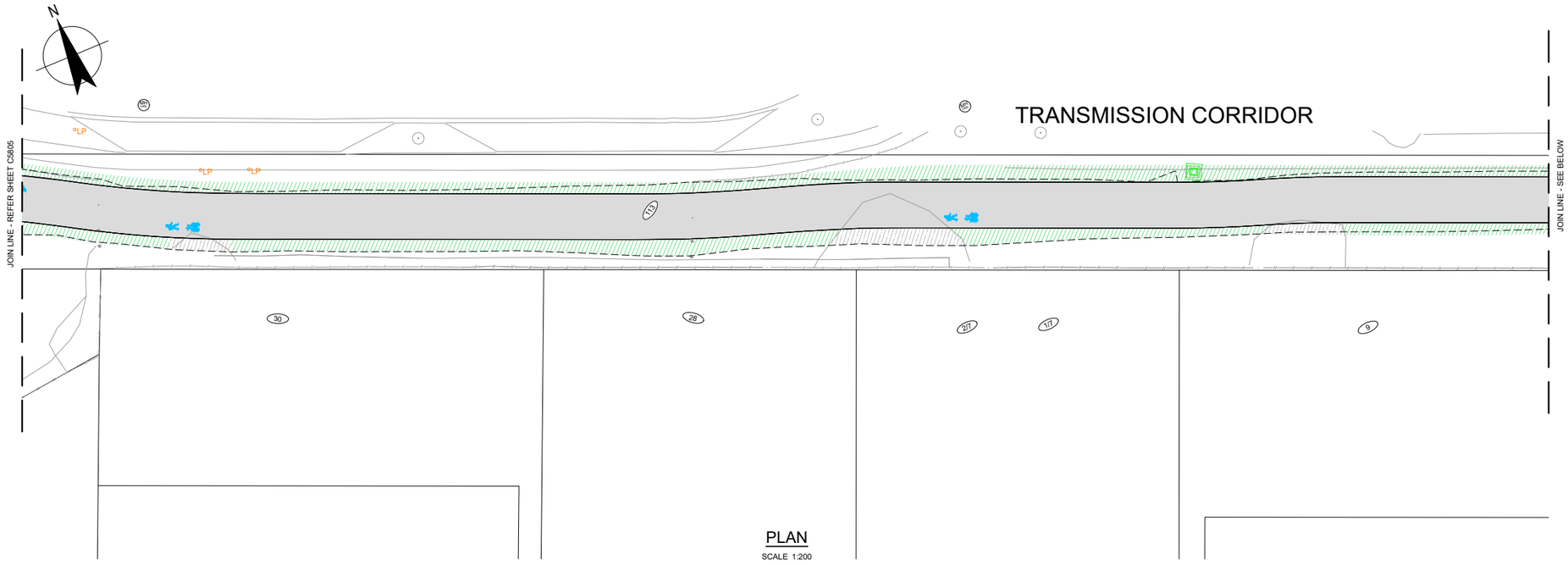
CAD DRAWING FILE REF.: RD366501

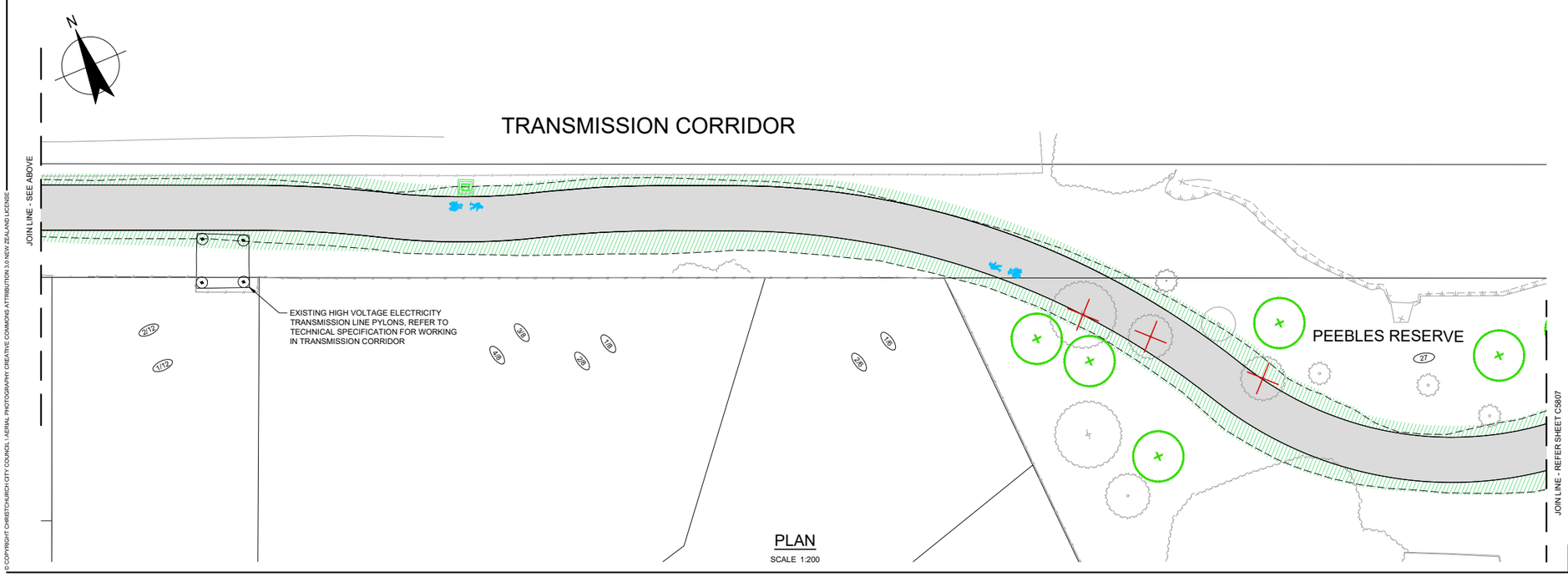
ORIGINAL SHEET SIZE: A1

SCALES: 1:200 **DO NOT SCALE**

CPG PROJECT FILE NUMBER: CP502846

SHEET: R58 ◦ 68





NOTES:

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ROADMARKING KEY

ROAD MARKINGS:

- PROPOSED
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- EXISTING TO REMAIN
- CYCLE SYMBOL TO SD661
- PEDESTRIAN LOGO TO SD661
- GREEN SURFACE
- NO STOPPING (NOTE: TO BE REFLECTORISED)
- NO OVERTAKING
- 100mm WHITE LINE
- 300mm LIMIT LINE
- STOP LIMIT LINE
- CONTINUITY LINE. 1m STRIPE, 3m GAP
- DRIVEWAY CONTINUITY LINE. 1m STRIPE, 2m GAP
- LANE LINE. 3m STRIPE, 7m GAP
- 100mm GREEN CYCLE CROSSING LINES. 1m STRIPE, 1m GAP
- PARKING TICKS
- GIVE WAY TRIANGLE
- CYCLEWAY ARROW TO SD663
- CYCLEWAY GIVE WAY TO SD663
- ONE WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY SHARED PATH AT ACCESSWAYS TO MCR-SD006A
- CYCLEWAY SHARROW TO MCR-SD006C

RRPMs:

- WHITE MONO
- RED MONO
- WHITE BI DIECTIONAL
- WHITE/YELLOW BI DIRECTIONAL
- YELLOW BI DIRECTIONAL

SIGNS \ SIGNALS

- CANTILEVER STYLE SIGN/POST
- STANDARD SIGN/POST
- TRAFFIC SIGNAL POLE

PRELIMINARY
NOT FOR CONSTRUCTION

ISSUE	AMENDMENTS	SIGNED	DATE
B	100% DESIGN	MS	16.10.2020
A	85% DESIGN	MS	11.09.2020

Christchurch City Council
TECHNICAL SERVICES & DESIGN

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DATUM	CDD JAN 2014				
BENCH MK.	BM EHDO	DESIGNED	N. Mackie	NM	
RL	26.331m	DES. REVIEW	O. Brown	OB	
SURVEY	CCC	DRAWN	N. Mackie	NM	
SURVEY LB	GNSSROBOTIC	DRW. CHECK	B. Timblick	BT	
	MT PLEASANT 2000	FILE LOCATION	0600 South Express\CAD		
DRAIN. REF.		3385027-600-C5801 To C5810.dwg			
SAP WBS		PRINTED ON 16/10/2020 3:30 pm Kyle Liu			

Note: * indicates signatures on original issue of drawing or last revision of drawing

APPROVED

FOR TENDER	
DATE	SIGNED
FOR CONSTRUCTION	
DATE	SIGNED

CONSULTANT: PELOTON, Beca, GHD, Stantec

CONSULTANT PROJECT REF.: 3385027 / 0600

CONSULTANT FILE REF.: C5806

PROJECT TITLE: MCR - SOUTH EXPRESS SECTION 5 BUCHANANS RD \ HEI HEI RD TO EPSOM RD \ PAPARUA RESERVE

This Drawing must not be used for Construction unless signed as Approved

DRAWING TITLE: SIGNAGE AND LINEMARKING PLAN SHEET 6

CONTRACT NUMBER: -

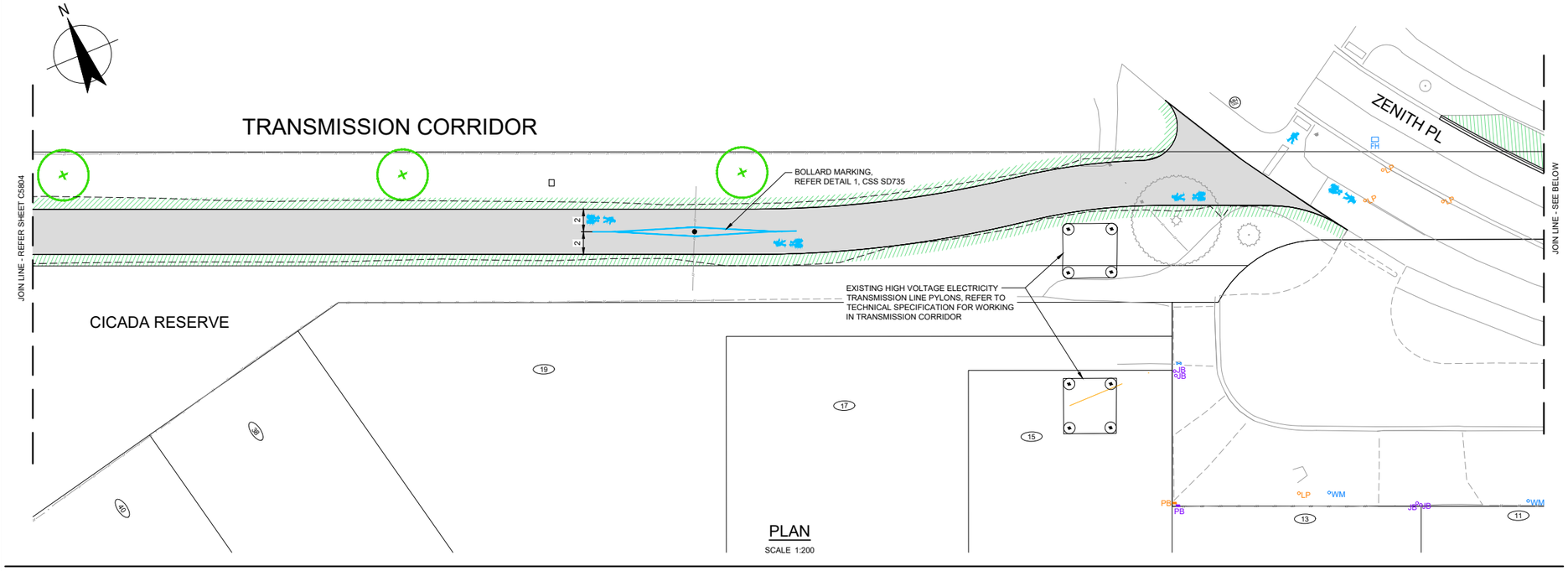
CAD DRAWING FILE REF.: RD366501

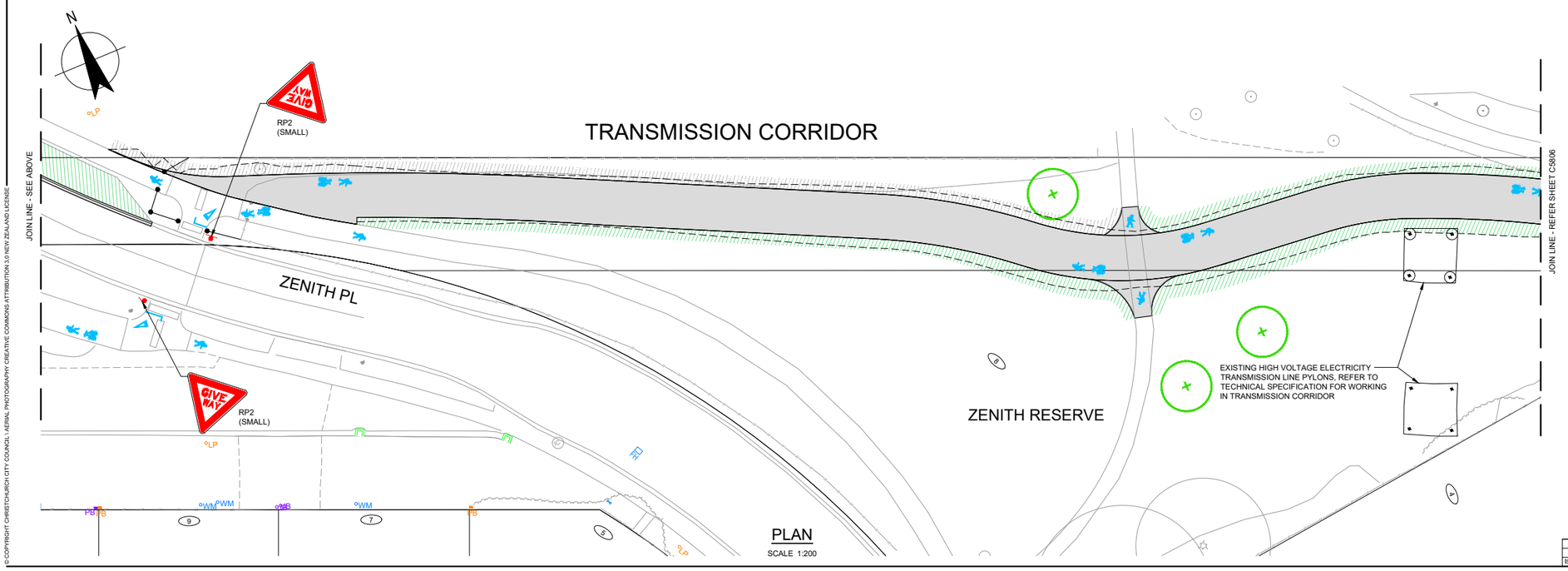
ORIGINAL SHEET SIZE: A1

SCALES: 1:200 **DO NOT SCALE**

CPG PROJECT FILE NUMBER: CP502846

SHEET: R57 of 68





NOTES:

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ROADMARKING KEY

ROAD MARKINGS:

- PROPOSED
- EXISTING TO BE REMOVED
- EXISTING TO REMAIN
- CYCLE SYMBOL TO SD661
- PEDESTRIAN LOGO TO SD661
- GREEN SURFACE
- NO STOPPING (NOTE: TO BE REFLECTORISED)
- NO OVERTAKING
- 100mm WHITE LINE
- 300mm LIMIT LINE
- STOP LIMIT LINE
- CONTINUITY LINE. 1m STRIPE, 3m GAP
- DRIVEWAY CONTINUITY LINE. 1m STRIPE, 2m GAP
- LANE LINE. 3m STRIPE, 7m GAP
- 100mm GREEN CYCLE CROSSING LINES. 1m STRIPE, 1m GAP
- PARKING TICKS
- GIVE WAY TRIANGLE
- CYCLEWAY ARROW TO SD663
- CYCLEWAY GIVE WAY TO SD663
- ONE WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY SHARED PATH AT ACCESSWAYS TO MCR-SD006A
- CYCLEWAY SHARROW TO MCR-SD006C

RRPMs:

- WHITE MONO
- RED MONO
- WHITE BI DIECTIONAL
- WHITE/YELLOW BI DIRECTIONAL
- YELLOW BI DIRECTIONAL

SIGNS \ SIGNALS

- CANTILEVER STYLE SIGN/POST
- STANDARD SIGN/POST
- TRAFFIC SIGNAL POLE

PRELIMINARY
NOT FOR CONSTRUCTION

ISSUE	AMENDMENTS	SIGNED	DATE
B	100% DESIGN	MS	16.10.2020
A	85% DESIGN	MS	11.09.2020

Christchurch City Council
TECHNICAL SERVICES & DESIGN

DATUM	CDD JAN 2014		NAME	SIGNED	DATE
BENCH MK.	BM EHDO	DESIGNED	N. Mackie	NM	
RL	26.331m	DES. REVIEW	O. Brown	OB	
SURVEY	CCC	DRAWN	N. Mackie	NM	
SURVEY LB	GNSSROBOTIC	DRW. CHECK	B. Timblick	BT	
	MT PLEASANT 2000	FILE LOCATION	0600 South Express\CAD		
DRAIN. REF.		3385027-600-C5801 To C5810.dwg			
SAP WBS		PRINTED ON 16/10/2020 3:30 pm Kyle Liu			

Note: * indicates signatures on original issue of drawing or last revision of drawing

APPROVED		
FOR TENDER		
DATE	SIGNED	
FOR CONSTRUCTION		
DATE	SIGNED	

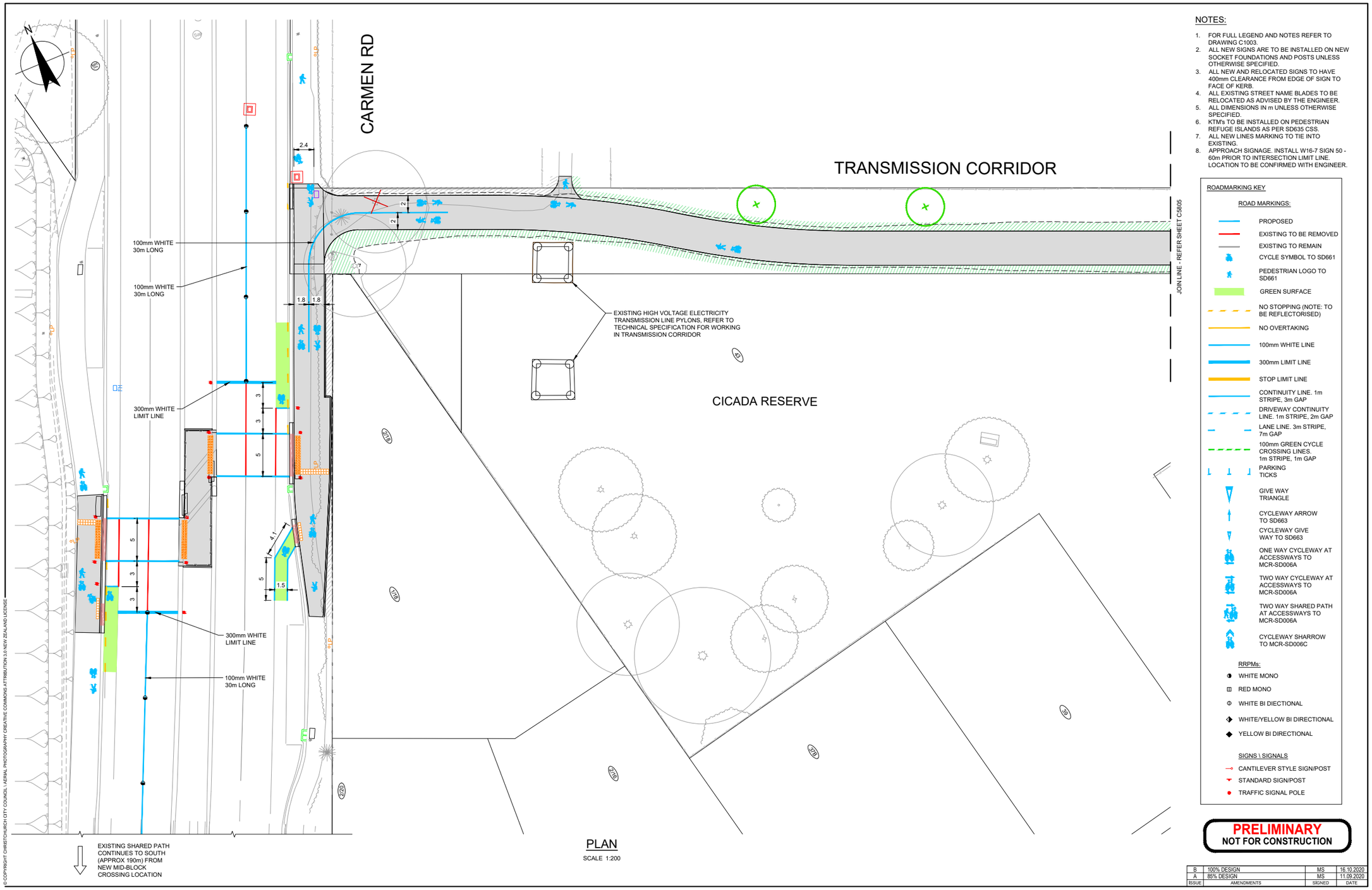
CONSULTANT: PELOTON, Beca, GHD, Stantec
CONSULTANT PROJECT REF.: 3385027 / 0600
CONSULTANT FILE REF.: C5805

PROJECT TITLE: MCR - SOUTH EXPRESS SECTION 5 BUCHANANS RD \ HEI HEI RD TO EPSOM RD \ PAPARUA RESERVE

This Drawing must not be used for Construction unless signed as Approved

DRAWING TITLE: SIGNAGE AND LINEMARKING PLAN SHEET 5

CONTRACT NUMBER	-
CAD DRAWING FILE REF.	RD366501
CPG PROJECT FILE NUMBER	CP502846
ORIGINAL SHEET SIZE	A1
SCALES	1:200 **DO NOT SCALE**
SHEET	R56 of 68



PLAN
SCALE 1:200

PRELIMINARY
NOT FOR CONSTRUCTION

ISSUE	AMENDMENTS	SIGNED	DATE
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A	85% DESIGN	MS	11.09.2020

Christchurch City Council
TECHNICAL SERVICES & DESIGN

			NAME	SIGNED	DATE
DATUM	CDD JAN 2014				
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SURVEY	CCC	DRAWN	N. Mackie	NM	
SURVEY LB	GNSS/ROBOTIC	DRW. CHECK	B. Timblick	BT	
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SAP WBS		PRINTED ON 16/10/2020 3:30 pm	Kyle Liu		

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APPROVED	
FOR TENDER	
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FOR CONSTRUCTION	
DATE	SIGNED

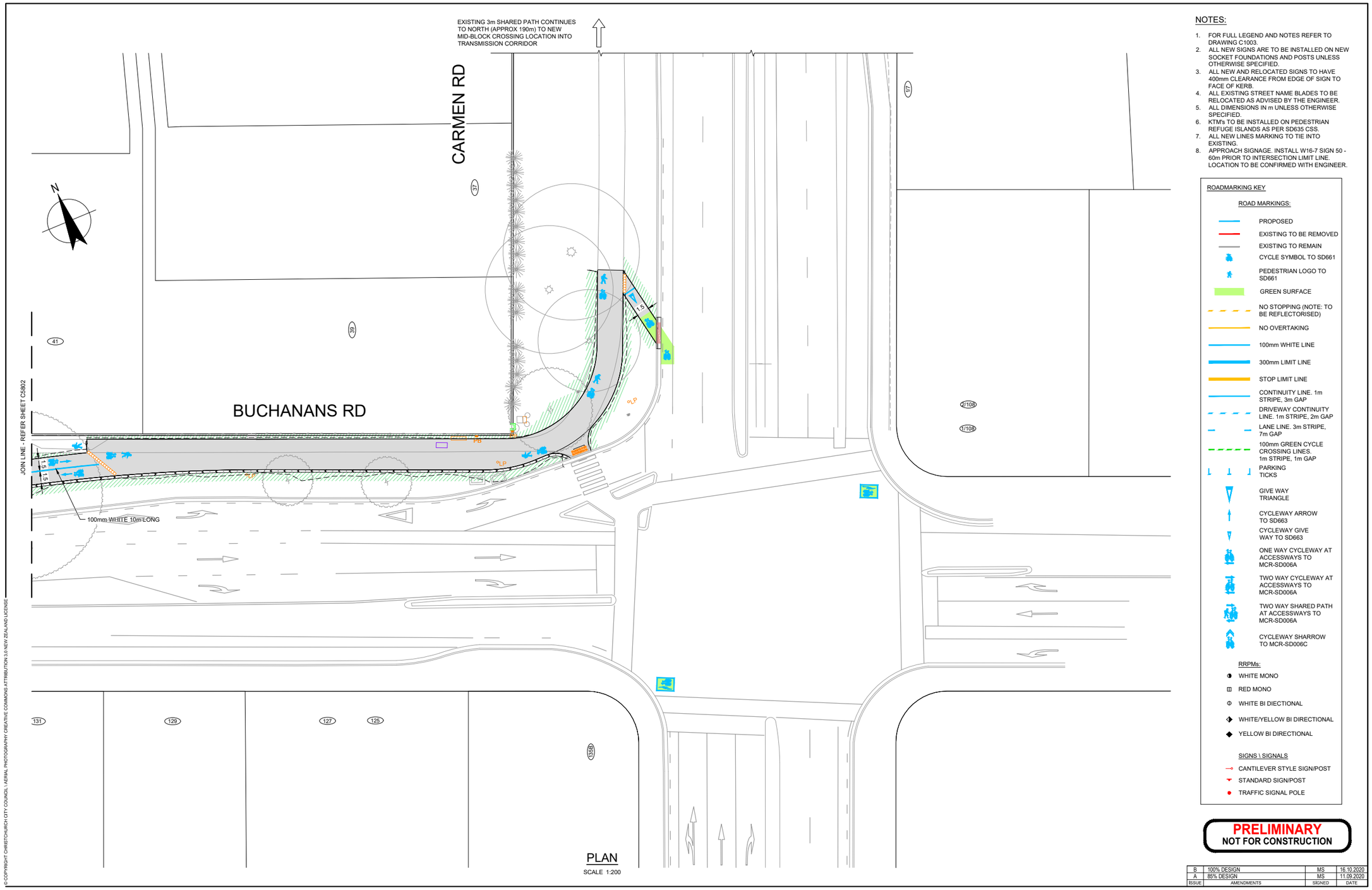
CONSULTANT: PELORON, Beca, GHD, Stantec
CONSULTANT PROJECT REF.: 3385027 / 0600
CONSULTANT FILE REF.: C5804

PROJECT TITLE: MCR - SOUTH EXPRESS SECTION 5 BUCHANANS RD \ HEI HEI RD TO EPSOM RD \ PAPARUA RESERVE

This Drawing must not be used for Construction unless signed as Approved

DRAWING TITLE: SIGNAGE AND LINEMARKING PLAN SHEET 4

CONTRACT NUMBER	-
ORIGINAL SHEET SIZE	A1
CAD DRAWING FILE REF.	RD366501
CPG PROJECT FILE NUMBER	CP502846
SCALES	1:200 DO NOT SCALE
SHEET	R55 \ 68



NOTES:

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ROADMARKING KEY

ROAD MARKINGS:

- PROPOSED
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- EXISTING TO REMAIN
- CYCLE SYMBOL TO SD661
- PEDESTRIAN LOGO TO SD661
- GREEN SURFACE
- NO STOPPING (NOTE: TO BE REFLECTORISED)
- NO OVERTAKING
- 100mm WHITE LINE
- 300mm LIMIT LINE
- STOP LIMIT LINE
- CONTINUITY LINE. 1m STRIPE, 3m GAP
- DRIVEWAY CONTINUITY LINE. 1m STRIPE, 2m GAP
- LANE LINE. 3m STRIPE, 7m GAP
- 100mm GREEN CYCLE CROSSING LINES. 1m STRIPE, 1m GAP
- PARKING TICKS
- GIVE WAY TRIANGLE
- CYCLEWAY ARROW TO SD663
- CYCLEWAY GIVE WAY TO SD663
- ONE WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY SHARED PATH AT ACCESSWAYS TO MCR-SD006A
- CYCLEWAY SHARROW TO MCR-SD006C

RRPMs:

- WHITE MONO
- RED MONO
- WHITE BI DIECTIONAL
- WHITE/YELLOW BI DIRECTIONAL
- YELLOW BI DIRECTIONAL

SIGNS \ SIGNALS

- CANTILEVER STYLE SIGN/POST
- STANDARD SIGN/POST
- TRAFFIC SIGNAL POLE

PLAN
SCALE 1:200

PRELIMINARY
NOT FOR CONSTRUCTION

ISSUE	AMENDMENTS	SIGNED	DATE
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Christchurch City Council
TECHNICAL SERVICES & DESIGN

			NAME	SIGNED	DATE
DATUM	CDD JAN 2014				
BENCH MK.	BM EHDO	DESIGNED	N. Mackie	NM	
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SURVEY LB	GNSS/ROBOTIC	DRW. CHECK	B. Timblick	BT	
	MT PLEASANT 2000	FILE LOCATION	0600 South Express\CAD		
DRAIN. REF.			3385027-600-C5801 To C5810.dwg		
SAP WBS		PRINTED ON	16/10/2020 3:30 pm Kyle Liu		

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APPROVED

FOR TENDER	
DATE	SIGNED

FOR CONSTRUCTION	
DATE	SIGNED

CONSULTANT: PELOTON, Beca, Stantec

CONSULTANT PROJECT REF.: 3385027 / 0600

CONSULTANT FILE REF.: C5803

PROJECT TITLE: MCR - SOUTH EXPRESS SECTION 5
BUCHANANS RD \ HEI HEI RD
TO EPSOM RD \ PAPARUA RESERVE

This Drawing must not be used for Construction unless signed as Approved

DRAWING TITLE: SIGNAGE AND LINEMARKING PLAN SHEET 3

CONTRACT NUMBER: -

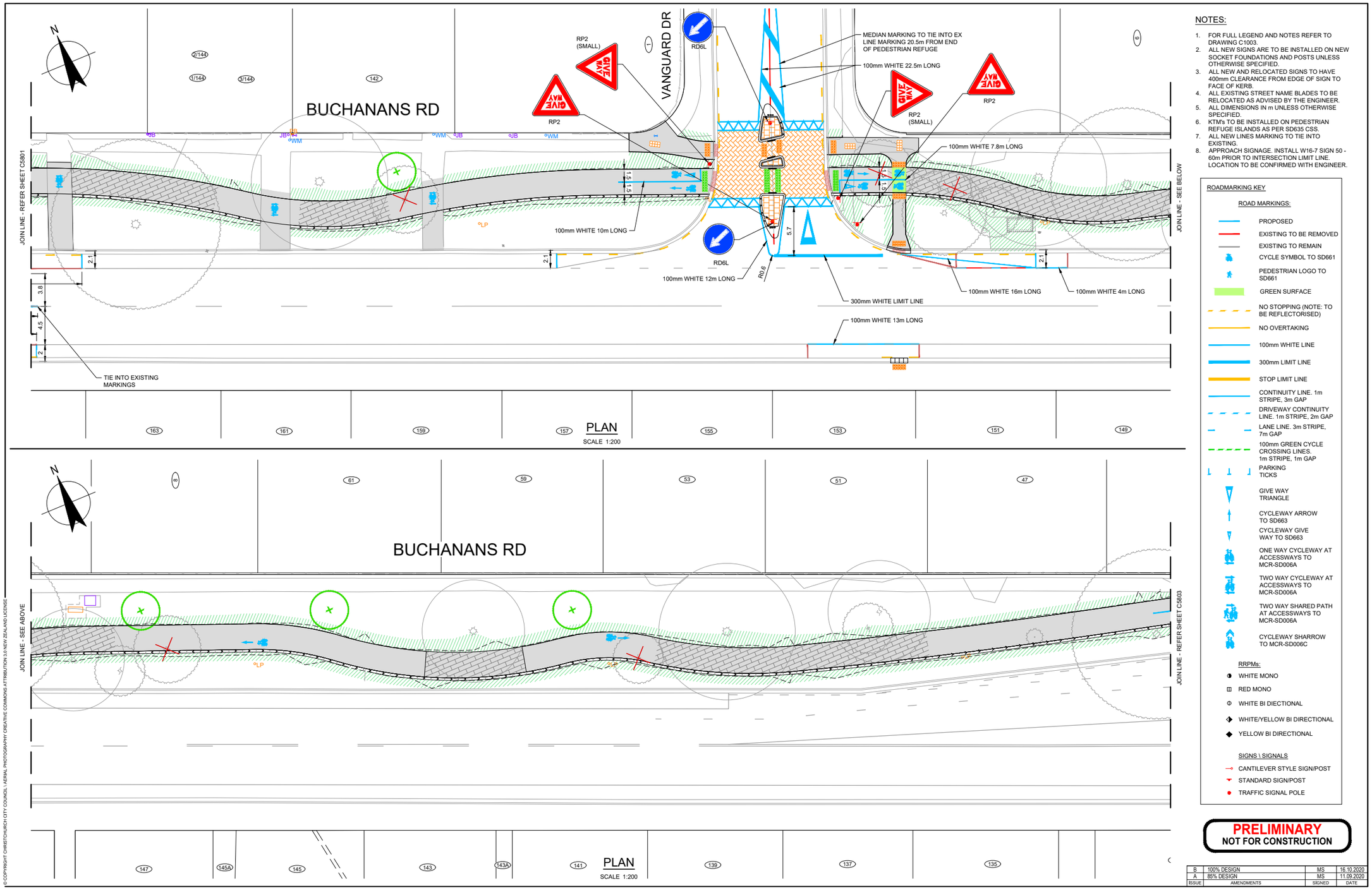
CAD DRAWING FILE REF.: RD366501

ORIGINAL SHEET SIZE: A1

SCALES: 1:200 DO NOT SCALE

CPG PROJECT FILE NUMBER: CP502846

SHEET: R54 ◦ 68



NOTES:

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ROADMARKING KEY

ROAD MARKINGS:

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- GREEN SURFACE
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- NO OVERTAKING
- 100mm WHITE LINE
- 300mm LIMIT LINE
- STOP LIMIT LINE
- CONTINUITY LINE. 1m STRIPE, 3m GAP
- DRIVEWAY CONTINUITY LINE. 1m STRIPE, 2m GAP
- LANE LINE. 3m STRIPE, 7m GAP
- 100mm GREEN CYCLE CROSSING LINES. 1m STRIPE, 1m GAP
- PARKING TICKS
- GIVE WAY TRIANGLE
- CYCLEWAY ARROW TO SD663
- CYCLEWAY GIVE WAY TO SD663
- ONE WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY SHARED PATH AT ACCESSWAYS TO MCR-SD006A
- CYCLEWAY SHARROW TO MCR-SD006C

RRPMs:

- WHITE MONO
- RED MONO
- WHITE BI DIECTIONAL
- WHITE/YELLOW BI DIRECTIONAL
- YELLOW BI DIRECTIONAL

SIGNS \ SIGNALS

- CANTILEVER STYLE SIGN/POST
- STANDARD SIGN/POST
- TRAFFIC SIGNAL POLE

PRELIMINARY
NOT FOR CONSTRUCTION

ISSUE	AMENDMENTS	SIGNED	DATE
B	100% DESIGN	MS	16.10.2020
A	85% DESIGN	MS	11.09.2020

Christchurch City Council
TECHNICAL SERVICES & DESIGN

DATUM	CDD JAN 2014		NAME	SIGNED	DATE
BENCH MK.	BM EHDO	DESIGNED	N. Mackie	NM	
RL	26.331m	DES. REVIEW	O. Brown	OB	
SURVEY	CCC	DRAWN	N. Mackie	NM	
SURVEY LB	GNSS/ROBOTIC	DRW. CHECK	B. Timblick	BT	
	MT PLEASANT 2000	FILE LOCATION	0600 South Express\CAD		
DRAIN. REF.		3385027-600-C5801 To C5810.dwg			
SAP WBS		PRINTED ON 16/10/2020 3:30 pm Kyle Liu			

Note: * indicates signatures on original issue of drawing or last revision of drawing

APPROVED	
FOR TENDER	
DATE	SIGNED
FOR CONSTRUCTION	
DATE	SIGNED

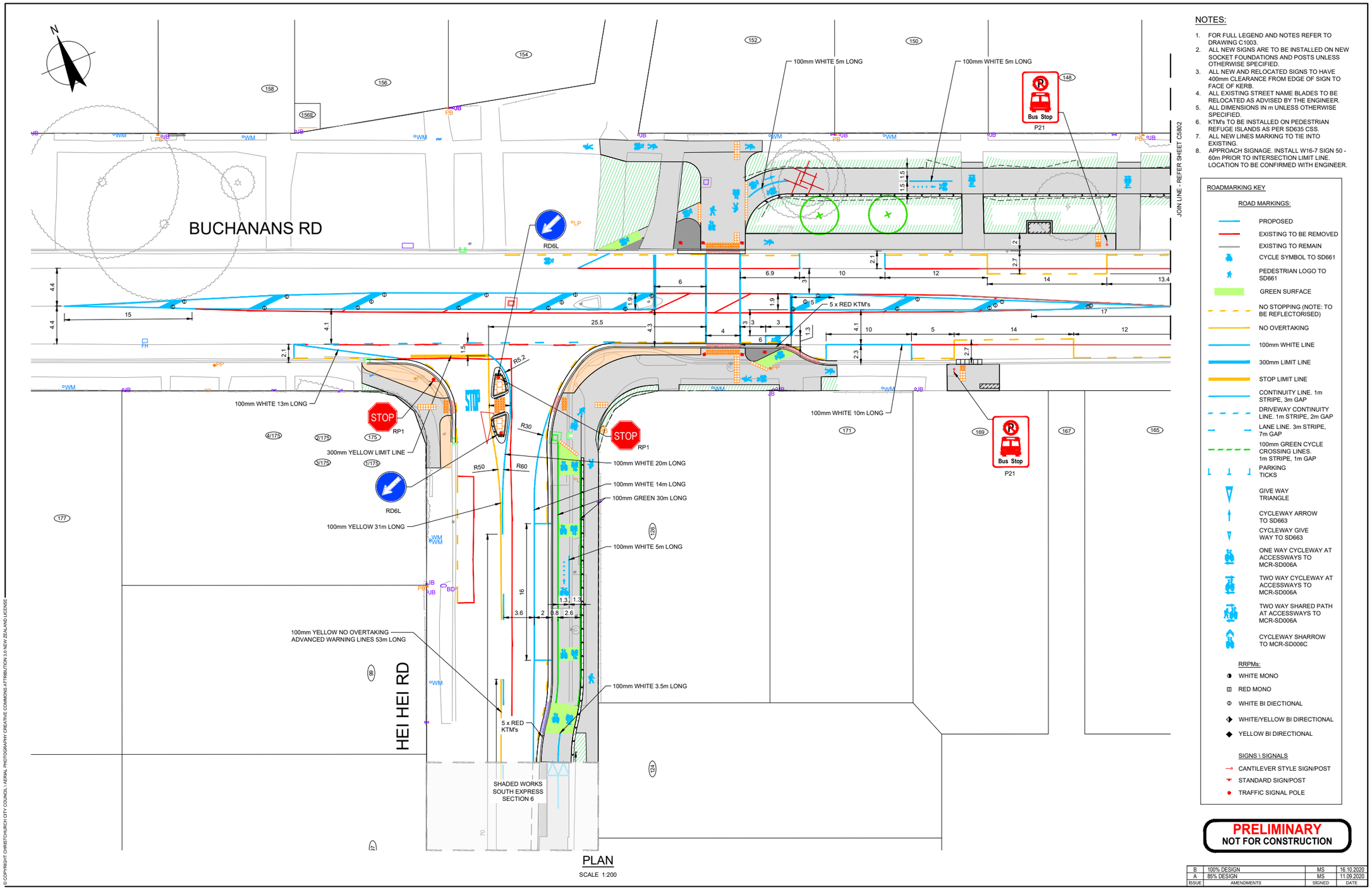
CONSULTANT: PELOTON, Beca, GHD, Stantec
CONSULTANT PROJECT REF.: 3385027 / 0600
CONSULTANT FILE REF.: C5802

PROJECT TITLE: MCR - SOUTH EXPRESS SECTION 5 BUCHANANS RD \ HEI HEI RD TO EPSOM RD \ PAPARUA RESERVE

This Drawing must not be used for Construction unless signed as Approved

DRAWING TITLE: SIGNAGE AND LINEMARKING PLAN SHEET 2

CONTRACT NUMBER	-
CAD DRAWING FILE REF.	RD366501
CPG PROJECT FILE NUMBER	CP502846
ORIGINAL SHEET SIZE	A1
SCALES	1:200 **DO NOT SCALE**
SHEET	R53 ◦ 68



PLAN

SCALE 1:200

NOTES:

1. FOR FULL LEGEND AND NOTES REFER TO DRAWING C1003.
2. ALL NEW SIGNS ARE TO BE INSTALLED ON NEW SOCKET FOUNDATIONS AND POSTS UNLESS OTHERWISE SPECIFIED.
3. ALL NEW AND RELOCATED SIGNS TO HAVE 400mm CLEARANCE FROM EDGE OF SIGN TO FACE OF KERB.
4. ALL EXISTING STREET NAME BLADES TO BE RELOCATED AS ADVISED BY THE ENGINEER.
5. ALL DIMENSIONS IN m UNLESS OTHERWISE SPECIFIED.
6. KTM's TO BE INSTALLED ON PEDESTRIAN REFUGE ISLANDS AS PER SD635 CSS.
7. ALL NEW LINES MARKING TO TIE INTO EXISTING.
8. APPROACH SIGNAGE. INSTALL W16-7 SIGN 50 - 60m PRIOR TO INTERSECTION LIMIT LINE. LOCATION TO BE CONFIRMED WITH ENGINEER.

ROADMARKING KEY

ROAD MARKINGS:

- PROPOSED
- EXISTING TO BE REMOVED
- EXISTING TO REMAIN
- CYCLE SYMBOL TO SD661
- PEDESTRIAN LOGO TO SD661
- GREEN SURFACE
- NO STOPPING (NOTE: TO BE REFLECTORISED)
- NO OVERTAKING
- 100mm WHITE LINE
- 300mm LIMIT LINE
- STOP LIMIT LINE
- CONTINUITY LINE. 1m STRIPE, 3m GAP
- DRIVEWAY CONTINUITY LINE. 1m STRIPE, 2m GAP
- LANE LINE. 3m STRIPE, 7m GAP
- 100mm GREEN CYCLE CROSSING LINES. 1m STRIPE, 1m GAP
- PARKING TICKS
- GIVE WAY TRIANGLE
- CYCLEWAY ARROW TO SD663
- CYCLEWAY GIVE WAY TO SD663
- ONE WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY SHARED PATH AT ACCESSWAYS TO MCR-SD006A
- CYCLEWAY SHARROW TO MCR-SD006C

RRPMs:

- WHITE MONO
- RED MONO
- WHITE BI DIECTIONAL
- WHITE/YELLOW BI DIRECTIONAL
- YELLOW BI DIRECTIONAL

SIGNS \ SIGNALS

- CANTILEVER STYLE SIGN/POST
- STANDARD SIGN/POST
- TRAFFIC SIGNAL POLE

PRELIMINARY
NOT FOR CONSTRUCTION

ISSUE	AMENDMENTS	SIGNED	DATE
B	100% DESIGN	MS	16.10.2020
A	85% DESIGN	MS	11.09.2020

Christchurch City Council
TECHNICAL SERVICES & DESIGN

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BENCH MK.	BM EHDO	DESIGNED	N. Mackie	NM	
RL	26.331m	DES. REVIEW	O. Brown	OB	
SURVEY	CCC	DRAWN	N. Mackie	NM	
SURVEY LB	GNSS/ROBOTIC	DRW. CHECK	B. Timblick	BT	
	MT PLEASANT 2000	FILE LOCATION	0600 South Express\CAD		
DRAIN. REF.		3385027-600-C5801 To CS810.dwg			
SAP WBS		PRINTED ON 16/10/2020 3:29 pm Kyle Liu			

Note: * indicates signatures on original issue of drawing or last revision of drawing

APPROVED

FOR TENDER	
DATE	SIGNED

FOR CONSTRUCTION	
DATE	SIGNED

CONSULTANT: PELORON, Beca, Stantec

CONSULTANT PROJECT REF.: 3385027 / 0600

CONSULTANT FILE REF.: C5801

PROJECT TITLE: MCR - SOUTH EXPRESS SECTION 5
BUCHANANS RD \ HEI HEI RD
TO EPSOM RD \ PAPARUA RESERVE

This Drawing must not be used for Construction unless signed as Approved

DRAWING TITLE: SIGNAGE AND LINEMARKING PLAN SHEET 1

CONTRACT NUMBER: -

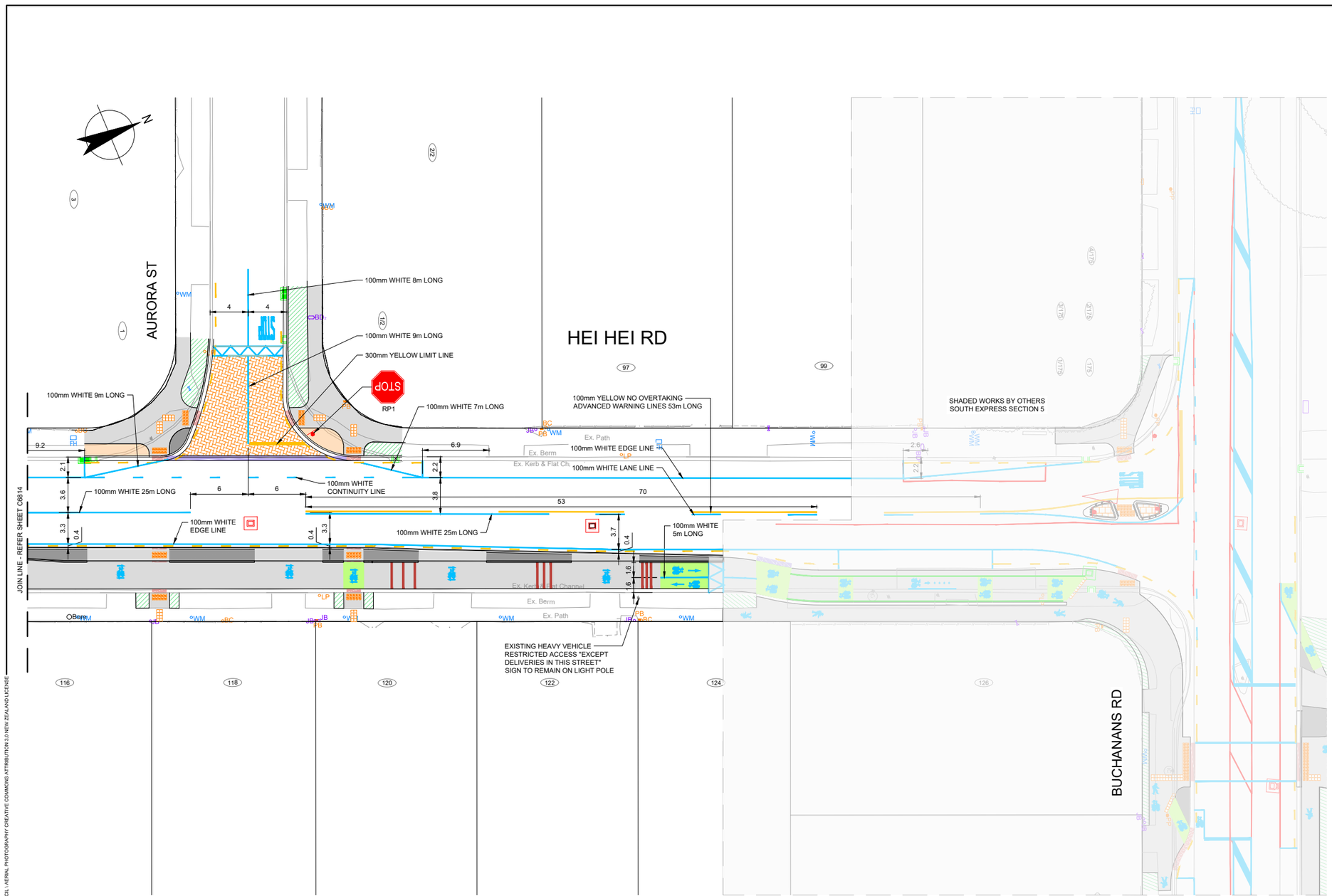
CAD DRAWING FILE REF.: RD366501

ORIGINAL SHEET SIZE: A1

SCALES: 1:200 DO NOT SCALE

CPG PROJECT FILE NUMBER: CP502846

SHEET: R52-68



PLAN
SCALE 1:200

NOTES:

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7. ALL NEW LINES MARKING TO TIE INTO EXISTING.
8. APPROACH SIGNAGE. INSTALL W16-7 SIGN 25 - 30m PRIOR TO INTERSECTION LIMIT LINE. LOCATION TO BE CONFIRMED WITH ENGINEER.

ROADMARKING KEY

ROAD MARKINGS:

- PROPOSED
- EXISTING TO BE REMOVED
- EXISTING TO REMAIN
- CYCLE SYMBOL TO SD661
- PEDESTRIAN LOGO TO SD661
- GREEN SURFACE
- NO STOPPING (NOTE: TO BE REFLECTORISED)
- NO OVERTAKING
- 100mm WHITE LINE
- 300mm LIMIT LINE
- STOP LIMIT LINE
- CONTINUITY LINE. 1m STRIPE, 3m GAP
- DRIVEWAY CONTINUITY LINE. 1m STRIPE, 2m GAP
- LANE LINE. 3m STRIPE, 7m GAP
- 100mm GREEN CYCLE CROSSING LINES. 1m STRIPE, 1m GAP
- PARKING TICKS
- GIVE WAY TRIANGLE
- CYCLEWAY ARROW TO SD663
- CYCLEWAY GIVE WAY TO SD663
- ONE WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY SHARED PATH AT ACCESSWAYS TO MCR-SD006A
- CYCLEWAY SHARROW TO MCR-SD006C

RRPMs:

- WHITE MONO
- RED MONO
- WHITE BI DIECTIONAL
- WHITE/YELLOW BI DIRECTIONAL
- YELLOW BI DIRECTIONAL

SIGNS \ SIGNALS

- CANTILEVER STYLE SIGN/POST
- STANDARD SIGN/POST
- TRAFFIC SIGNAL POLE

PRELIMINARY
NOT FOR CONSTRUCTION

ISSUE	AMENDMENTS	SIGNED	DATE
B	100% DESIGN	MS	19.02.2021
A	85% DESIGN	MS	27.11.2020

Christchurch City Council
TECHNICAL SERVICES & DESIGN

			NAME	SIGNED	DATE
DATUM	CDD JUL 2019				
BENCH MK.	BM 380	DESIGNED	B. Dodgshun	BD	25.08.2020
RL	42.188m	DES. REVIEW	O. Brown		
SURVEY	F10927	DRAWN	N. Mackie	NM	25.08.2020
SURVEY LB	1803	DRW. CHECK	B. Timblick		
	MT PLEASANT 2000	FILE LOCATION	0600 South Express\CAD		
DRAIN. REF.			3385027-600-C6811 To C6815.dwg		
SAP WBS		PRINTED ON 19/02/2021 1:06 PM		Blair	

Note: * indicates signatures on original issue of drawing or last revision of drawing

APPROVED		
FOR TENDER		
DATE	SIGNED	
FOR CONSTRUCTION		
DATE	SIGNED	

CONSULTANT: PELICON, Beca, GHD, Stantec
CONSULTANT PROJECT REF.: 3385027 / 0600
CONSULTANT FILE REF.: C6815

PROJECT TITLE: MCR - SOUTH EXPRESS
SECTION 6H - WATERLOO RD \
HEI HEI RD TO HEI HEI RD \ BUCHANANS RD

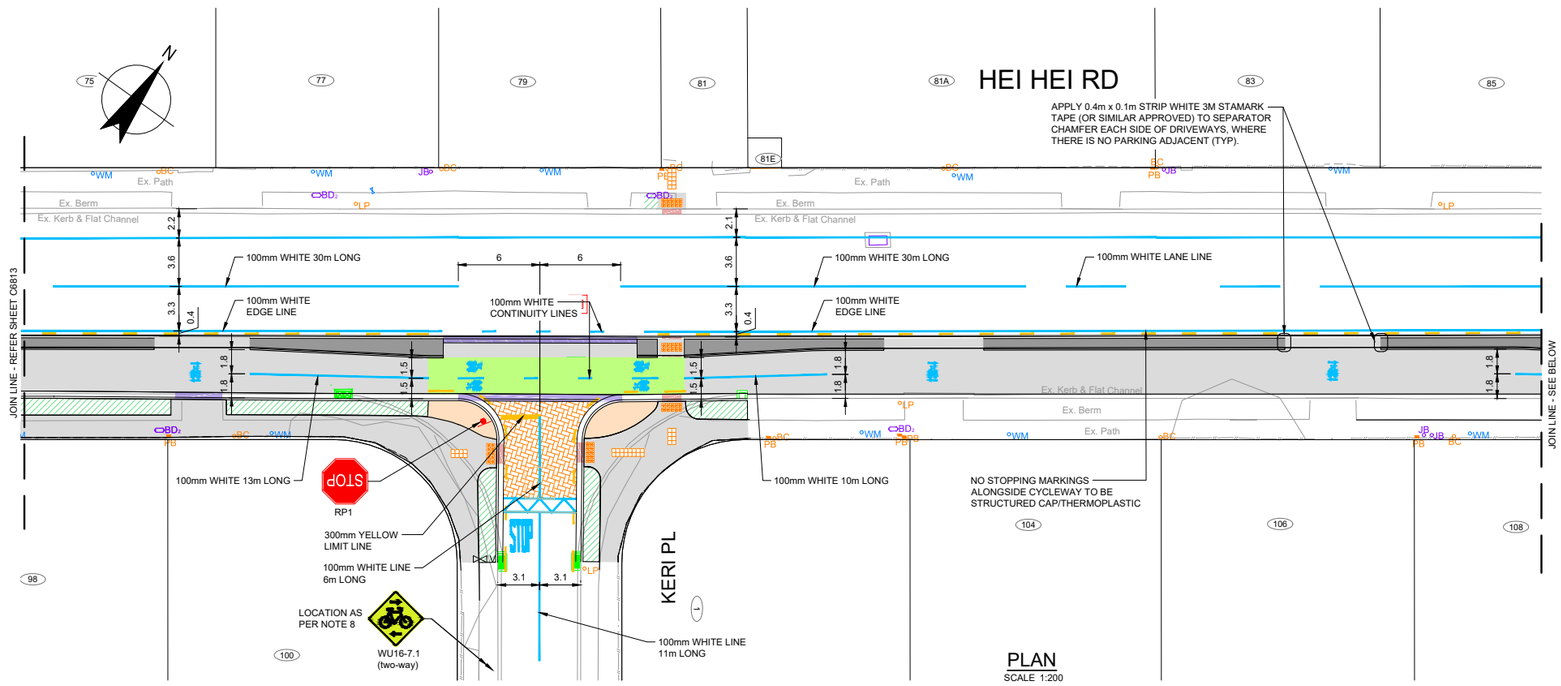
This Drawing must not be used for Construction unless signed as Approved

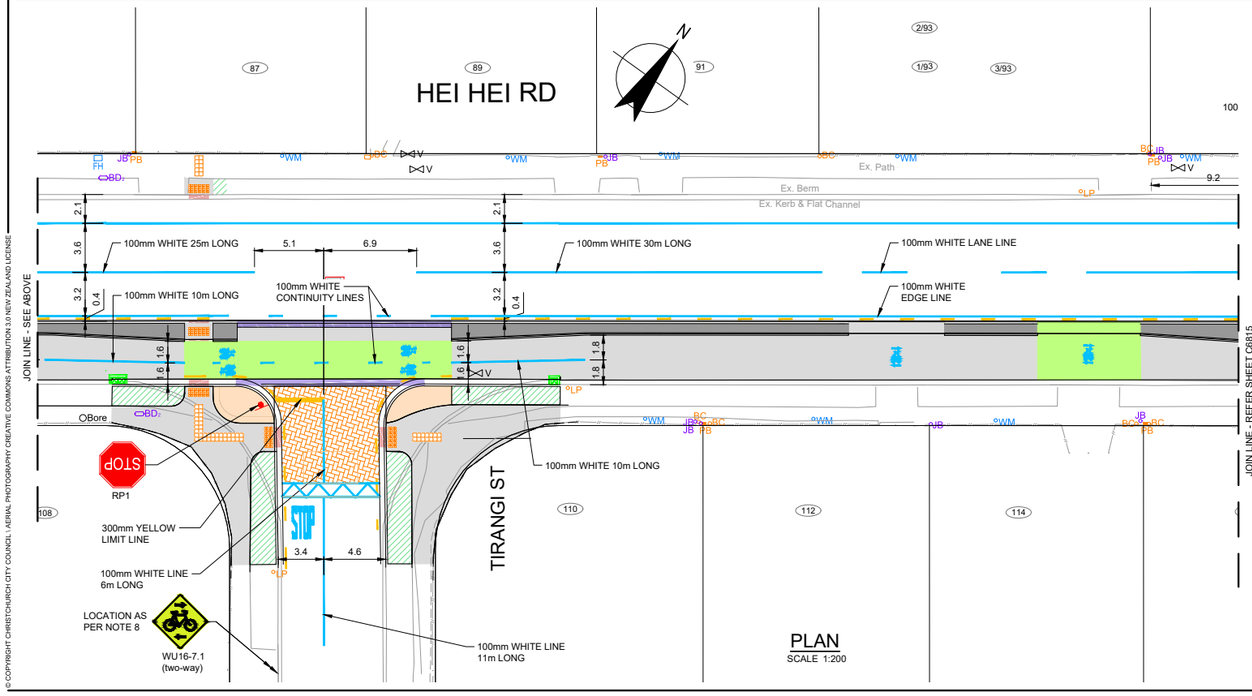
DRAWING TITLE: SIGNAGE AND LINEMARKING PLAN SHEET 5

CONTRACT NUMBER	ORIGINAL SHEET SIZE	SCALES
-	A1	1:200
CAD DRAWING FILE REF. RD366501		DO NOT SCALE
CPG PROJECT FILE NUMBER CP502846		SHEET R39 - 44

Item 9

Attachment B





NOTES:

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7. ALL NEW LINES MARKING TO TIE INTO EXISTING.
8. APPROACH SIGNAGE. INSTALL W16-7 SIGN 25 - 30m PRIOR TO INTERSECTION LIMIT LINE. LOCATION TO BE CONFIRMED WITH ENGINEER.

ROADMARKING KEY

ROAD MARKINGS:

- PROPOSED
- EXISTING TO BE REMOVED
- EXISTING TO REMAIN
- CYCLE SYMBOL TO SD661
- PEDESTRIAN LOGO TO SD661
- GREEN SURFACE
- NO STOPPING (NOTE: TO BE REFLECTORISED)
- NO OVERTAKING
- 100mm WHITE LINE
- 300mm LIMIT LINE
- STOP LIMIT LINE
- CONTINUITY LINE. 1m STRIPE, 3m GAP
- DRIVEWAY CONTINUITY LINE. 1m STRIPE, 2m GAP
- LANE LINE. 3m STRIPE, 7m GAP
- 100mm GREEN CYCLE CROSSING LINES. 1m STRIPE, 1m GAP
- PARKING TICKS
- GIVE WAY TRIANGLE
- CYCLEWAY ARROW TO SD663
- CYCLEWAY GIVE WAY TO SD663
- ONE WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY SHARED PATH AT ACCESSWAYS TO MCR-SD006A
- CYCLEWAY SHARROW TO MCR-SD006C

RRPMs:

- WHITE MONO
- RED MONO
- WHITE BI DIECTIONAL
- WHITE/YELLOW BI DIRECTIONAL
- YELLOW BI DIRECTIONAL

SIGNS \ SIGNALS

- CANTILEVER STYLE SIGN/POST
- STANDARD SIGN/POST
- TRAFFIC SIGNAL POLE

PRELIMINARY
NOT FOR CONSTRUCTION

ISSUE	AMENDMENTS	SIGNED	DATE
B	100% DESIGN	MS	19.02.2021
A	85% DESIGN	MS	27.11.2020

Christchurch City Council
TECHNICAL SERVICES & DESIGN

DATUM	CCD JUL 2019		NAME	SIGNED	DATE
BENCH MK.	BM 380	DESIGNED	B. Dodgshun	BD	25.08.2020
RL	42.188m	DES. REVIEW	O. Brown		
SURVEY	P10927	DRAWN	N. Mackie	NM	25.08.2020
SURVEY LB	1803	DRW. CHECK	B. Timblick		
	MT PLEASANT 2000	FILE LOCATION	3600 South Express\C4D		
DRAIN. REF.			3385027-600-C6811 To C6815.dwg		
SAP WBS		PRINTED ON 19/02/2021 1:06 PM Blair			

Note: * indicates signatures on original issue of drawing or last revision of drawing

APPROVED	
FOR TENDER	
DATE	SIGNED
FOR CONSTRUCTION	
DATE	SIGNED

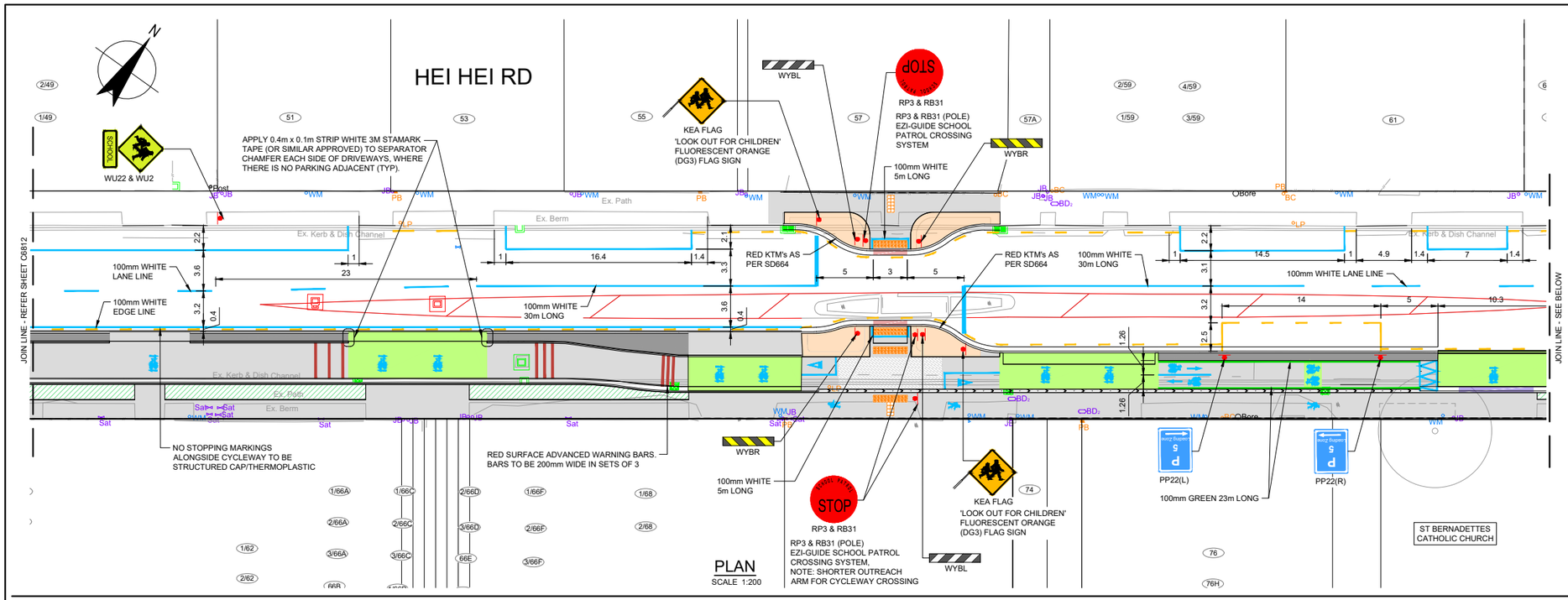
CONSULTANT: PELORON, Beca, GHD, Stantec
CONSULTANT PROJECT REF.: 3385027 / 0600
CONSULTANT FILE REF.: C6814

PROJECT TITLE: MCR - SOUTH EXPRESS
SECTION 6H - WATERLOO RD \ HEI HEI RD TO HEI HEI RD \ BUCHANANS RD

This Drawing must not be used for Construction unless signed as Approved

DRAWING TITLE: SIGNAGE AND LINEMARKING PLAN SHEET 4

CONTRACT NUMBER	-	ORIGINAL SHEET SIZE	A1
CAD DRAWING FILE REF.	RD366501	SCALES	1:200 DO NOT SCALE
CPG PROJECT FILE NUMBER	CP502846	SHEET	R38 - 44



NOTES:

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7. ALL NEW LINES MARKING TO TIE INTO EXISTING.
8. APPROACH SIGNAGE. INSTALL W16-7 SIGN 25 - 30m PRIOR TO INTERSECTION LIMIT LINE. LOCATION TO BE CONFIRMED WITH ENGINEER.

ROADMARKING KEY

ROAD MARKINGS:

- PROPOSED
- EXISTING TO BE REMOVED
- EXISTING TO REMAIN
- CYCLE SYMBOL TO SD661
- PEDESTRIAN LOGO TO SD661
- GREEN SURFACE
- NO STOPPING (NOTE: TO BE REFLECTORISED)
- NO OVERTAKING
- 100mm WHITE LINE
- 300mm LIMIT LINE
- STOP LIMIT LINE
- CONTINUITY LINE. 1m STRIPE, 3m GAP
- DRIVEWAY CONTINUITY LINE. 1m STRIPE, 2m GAP
- LANE LINE. 3m STRIPE, 7m GAP
- 100mm GREEN CYCLE CROSSING LINES. 1m STRIPE, 1m GAP
- PARKING TICKS
- GIVE WAY TRIANGLE
- CYCLEWAY ARROW TO SD663
- CYCLEWAY GIVE WAY TO SD663
- ONE WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY SHARED PATH AT ACCESSWAYS TO MCR-SD006A
- CYCLEWAY SHARROW TO MCR-SD006C

RRPMs:

- WHITE MONO
- RED MONO
- WHITE BI DIECTIONAL
- WHITE/YELLOW BI DIRECTIONAL
- YELLOW BI DIRECTIONAL

SIGNS \ SIGNALS

- CANTILEVER STYLE SIGN/POST
- STANDARD SIGN/POST
- TRAFFIC SIGNAL POLE

PRELIMINARY
NOT FOR CONSTRUCTION

ISSUE	AMENDMENTS	SIGNED	DATE
B	100% DESIGN	MS	19.02.2021
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Christchurch City Council
TECHNICAL SERVICES & DESIGN

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SURVEY	P10927	DRAWN	N. Mackie	NM	25.08.2020
SURVEY LB	1803	DRW. CHECK	B. Timblick		
	MT PLEASANT 2000	FILE LOCATION	0600 South Express\C4D		
			3385027-600-C6811 To C6815.dwg		
DRAIN. REF.					
SAP WBS		PRINTED ON 19/02/2021 1:05 PM	Blair		

Note: * indicates signatures on original issue of drawing or last revision of drawing

APPROVED
FOR TENDER: DATE | SIGNED
FOR CONSTRUCTION: DATE | SIGNED

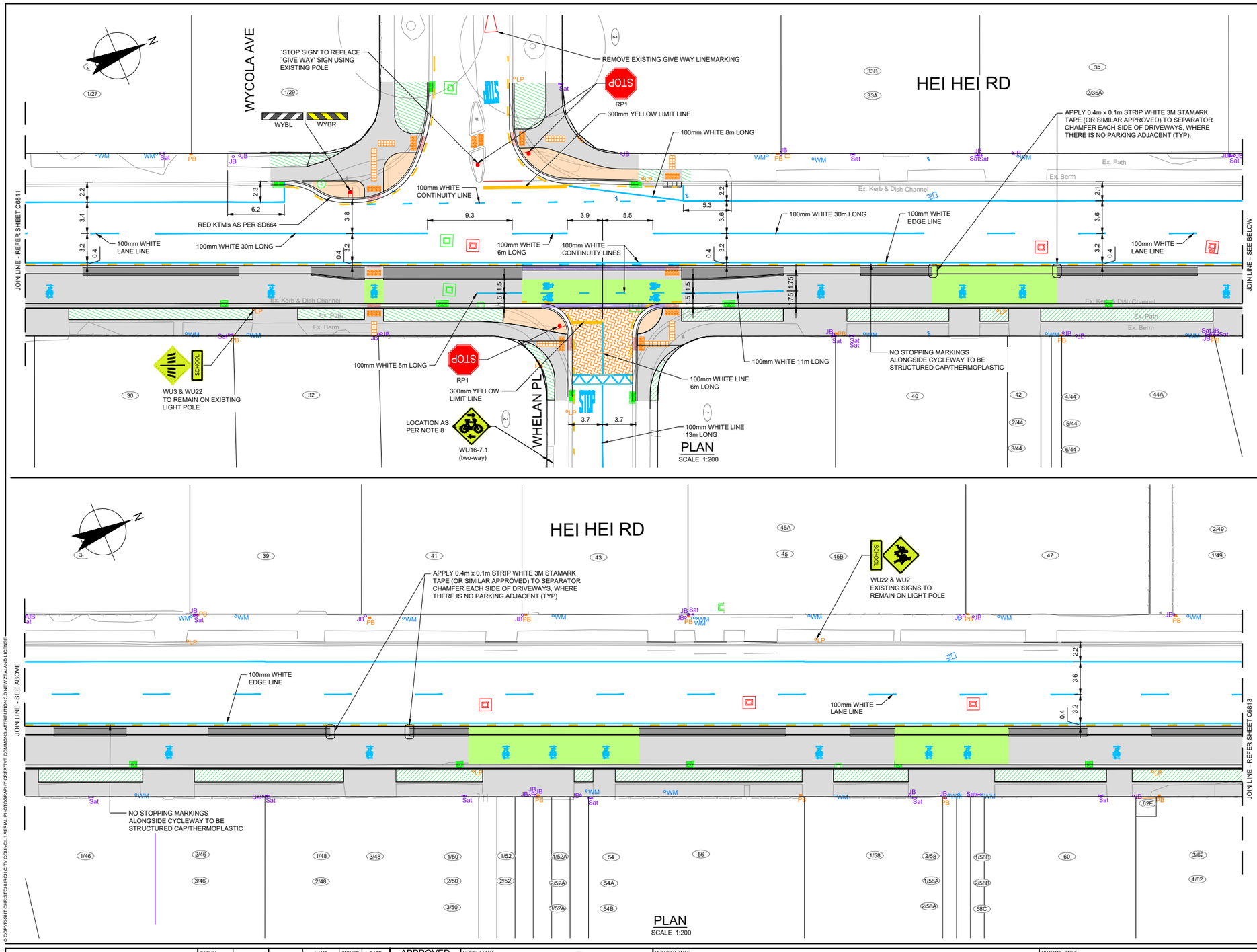
CONSULTANT: PELOTON, Beca, GHD, Stantec
CONSULTANT PROJECT REF.: 3385027 / 0600
CONSULTANT FILE REF.: C6813

PROJECT TITLE: MCR - SOUTH EXPRESS
SECTION 6H - WATERLOO RD \ HEI HEI RD TO HEI HEI RD \ BUCHANANS RD

This Drawing must not be used for Construction unless signed as Approved

DRAWING TITLE: SIGNAGE AND LINEMARKING PLAN SHEET 3

CONTRACT NUMBER	-
CAD DRAWING FILE REF.	RD366501
ORIGINAL SHEET SIZE	A1
SCALES	1:200
	DO NOT SCALE
CPG PROJECT FILE NUMBER	CP502846
SHEET	R37 ◦ 44



NOTES:

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ROADMARKING KEY

ROAD MARKINGS:

- PROPOSED
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- EXISTING TO REMAIN
- CYCLE SYMBOL TO SD661
- PEDESTRIAN LOGO TO SD661
- GREEN SURFACE
- NO STOPPING (NOTE: TO BE REFLECTORISED)
- NO OVERTAKING
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- 300mm LIMIT LINE
- STOP LIMIT LINE
- CONTINUITY LINE. 1m STRIPE, 3m GAP
- DRIVEWAY CONTINUITY LINE. 1m STRIPE, 2m GAP
- LANE LINE. 3m STRIPE, 7m GAP
- 100mm GREEN CYCLE CROSSING LINES. 1m STRIPE, 1m GAP
- PARKING TICKS
- GIVE WAY TRIANGLE
- CYCLEWAY ARROW TO SD663
- CYCLEWAY GIVE WAY TO SD663
- ONE WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY SHARED PATH AT ACCESSWAYS TO MCR-SD006A
- CYCLEWAY SHARROW TO MCR-SD006C

RRPMs:

- WHITE MONO
- RED MONO
- WHITE BI DIECTIONAL
- WHITE/YELLOW BI DIRECTIONAL
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SIGNS \ SIGNALS

- CANTILEVER STYLE SIGN/POST
- STANDARD SIGN/POST
- TRAFFIC SIGNAL POLE

PRELIMINARY
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Christchurch City Council
TECHNICAL SERVICES & DESIGN

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	MT PLEASANT 2000	FILE LOCATION	0600 South Express\CAD		
DRAIN. REF.			3385027-600-C6811 To C6815.dwg		
SAP WBS		PRINTED ON 19/02/2021 1:05 PM Blair			

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APPROVED
FOR TENDER: DATE | SIGNED
FOR CONSTRUCTION: DATE | SIGNED

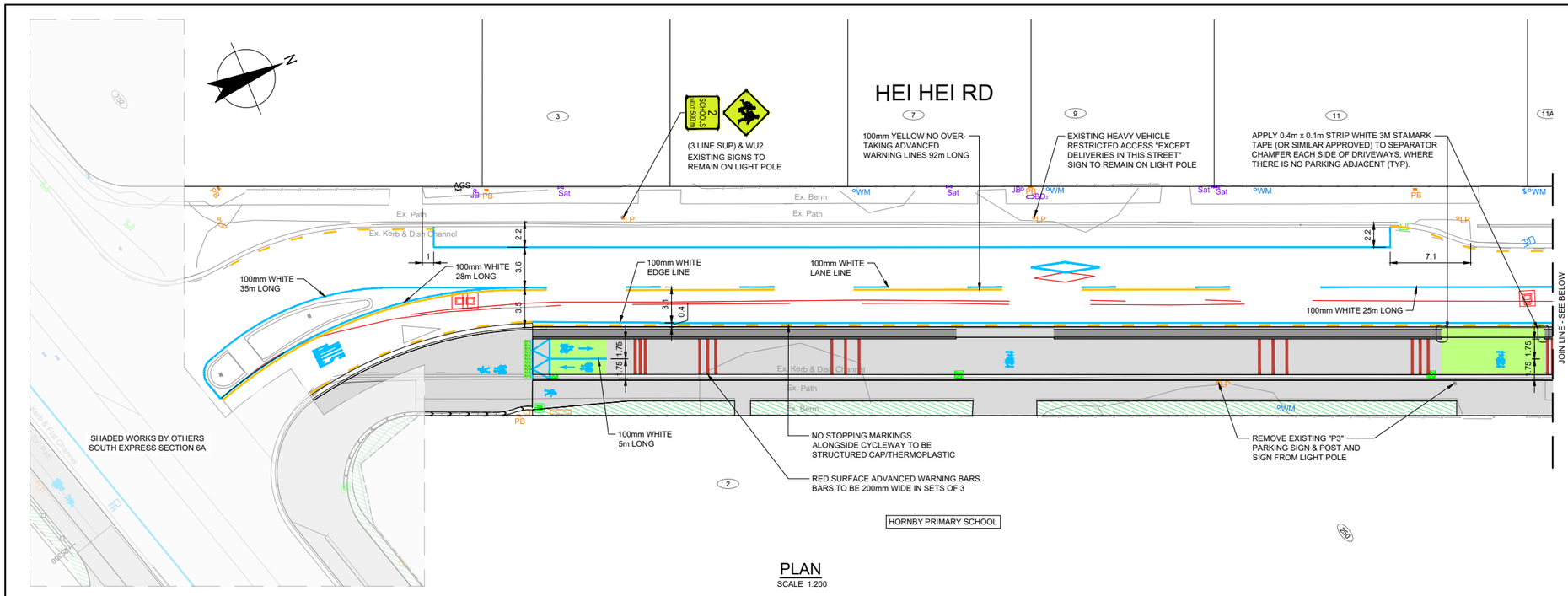
CONSULTANT: PELOTON, Beca, GHD, Stantec
CONSULTANT PROJECT REF.: 3385027 / 0600
CONSULTANT FILE REF.: C6812

PROJECT TITLE: MCR - SOUTH EXPRESS
SECTION 6H - WATERLOO RD \ HEI HEI RD TO HEI HEI RD \ BUCHANANS RD

This Drawing must not be used for Construction unless signed as Approved

DRAWING TITLE: SIGNAGE AND LINEMARKING PLAN SHEET 2

CONTRACT NUMBER	-
CAD DRAWING FILE REF.	RD366501
ORIGINAL SHEET SIZE	A1
SCALES	1:200
	DO NOT SCALE
CPG PROJECT FILE NUMBER	CP502846
SHEET	R36 - 44



NOTES:

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ROADMARKING KEY

ROAD MARKINGS:

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- CYCLE SYMBOL TO SD661
- PEDESTRIAN LOGO TO SD661
- GREEN SURFACE
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- LANE LINE. 3m STRIPE, 7m GAP
- 100mm GREEN CYCLE CROSSING LINES. 1m STRIPE, 1m GAP
- PARKING TICKS
- GIVE WAY TRIANGLE
- CYCLEWAY ARROW TO SD663
- CYCLEWAY GIVE WAY TO SD663
- ONE WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY SHARED PATH AT ACCESSWAYS TO MCR-SD006A
- CYCLEWAY SHARROW TO MCR-SD006C

RRPMs:

- WHITE MONO
- RED MONO
- WHITE BI DIECTIONAL
- WHITE/YELLOW BI DIRECTIONAL
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SIGNS \ SIGNALS

- CANTILEVER STYLE SIGN/POST
- STANDARD SIGN/POST
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BENCH MK.	BM 380	DESIGNED	B. Dodgshun	BD	25.08.2020
RL	42.188m	DES. REVIEW	O. Brown		
SURVEY	P10927	DRAWN	N. Mackie	NM	25.08.2020
SURVEY LB	1803	DRW. CHECK	B. Timblick		
	MT PLEASANT 2000	FILE LOCATION	0600 South Express\CAD		
DRAIN. REF.			3385027-600-C6811 To C6815.dwg		
SAP WBS		PRINTED ON 19/02/2021 1:04 PM	Blair		

Note: * indicates signatures on original issue of drawing or last revision of drawing

APPROVED	
FOR TENDER	
DATE	SIGNED
FOR CONSTRUCTION	
DATE	SIGNED

CONSULTANT: PELOTON, Beca, Stantec
CONSULTANT PROJECT REF.: 3385027 / 0600
CONSULTANT FILE REF.: C6811

PROJECT TITLE: MCR - SOUTH EXPRESS
SECTION 6H - WATERLOO RD \ HEI HEI RD TO HEI HEI RD \ BUCHANANS RD

This Drawing must not be used for Construction unless signed as Approved

DRAWING TITLE: SIGNAGE AND LINEMARKING PLAN SHEET 1

CONTRACT NUMBER	-
CAD DRAWING FILE REF.	RD366501
CPG PROJECT FILE NUMBER	CP502846
ORIGINAL SHEET SIZE	A1
SCALES	1:200
	DO NOT SCALE
SHEET	R35 - 44

SIGN LEGEND:

750mm
STOP
RP1

150mm 150mm
900mm
WYBL WYBR

300mm
360mm
P 3 8:15am-9:15am 2:30pm-3:30pm School Days
P22

N

HEI HEI RD

REMOVE EXISTING GIVEWAY SIGN AND STOCKPILE FOR REUSE ON SOUTH EXPRESS CYCLEWAY. INSTALL NEW STOP SIGN ON EXISTING POST

STOP RP1

100mm YELLOW 4m LONG

100mm WHITE CONTINUITY LINE 21m LONG

100mm WHITE 12m LONG

100mm WHITE 15m LONG

100mm WHITE 27m LONG

RD6L

STOP RP1

300mm YELLOW LIMIT LINE

WYBL

HORNBY PRIMARY SCHOOL

EXISTING SCHOOL ZONE SPEED LIMIT SIGN (RS6V) TO BE RELOCATED TO BACK OF PATH.

RED KTM's TO CSS, SD664

P 3 8:15am-9:15am 2:30pm-3:30pm School Days P22 (R)

P 3 8:15am-9:15am 2:30pm-3:30pm School Days P22 (L)

100mm WHITE 8m LONG

100mm WHITE 12.5m LONG

2-100mm WHITE 54m LONG AND 14m LONG

REMARK FLUSH MEDIAN LINEWORK WITHIN RESEAL AREA AS MOTSAM 2.09

2-100mm WHITE 54m LONG AND 4m LONG

REMARK FLUSH MEDIAN LINEWORK WITHIN RESEAL AREA AS MOTSAM 2.09

100mm WHITE 5m LONG

100mm WHITE 15m LONG

EXISTING SCHOOL ZONE "50" SIGN TO BE RELOCATED, LOCATION IN DISCUSSION WITH CCC

RED KTM's TO CSS, SD664

WATERLOO RD

Ex. Berm
Ex. Path
Ex. Berm
Ex. Kerb & Dish Channel
Ex. Kerb & Flat Channel
Ex. Path

JOIN LINE - REFER BELOW

LINE MARKING AT BOLLARD TO CSS, SD735

KYLE PARK

EX.WATER FOUNTAIN

EX. TOILET

PLAN
SCALE 1:200

NOTES:

1. FOR FULL LEGEND AND NOTES REFER TO DRAWING C1003.
2. ALL NEW SIGNS ARE TO BE INSTALLED ON NEW SOOKET FOUNDATIONS AND POSTS UNLESS OTHERWISE SPECIFIED.
3. ALL NEW AND RELOCATED SIGNS TO HAVE 400mm CLEARANCE FROM EDGE OF SIGN TO FACE OF KERB.
4. ALL EXISTING STREET NAME BLADES TO BE RELOCATED AS ADVISED BY THE ENGINEER.
5. ALL DIMENSIONS IN m UNLESS OTHERWISE SPECIFIED.
6. KTM's TO BE INSTALLED ON PEDESTRIAN REFUGE ISLANDS AS PER SD635 CSS.
7. ALL NEW LINES MARKING TO TIE INTO EXISTING.
8. APPROACH SIGNAGE. INSTALL W16-7 SIGN 50 - 60m PRIOR TO INTERSECTION LIMIT LINE. LOCATION TO BE CONFIRMED WITH ENGINEER.

ROADMARKING KEY

ROAD MARKINGS:

- PROPOSED
- EXISTING TO BE REMOVED
- EXISTING TO REMAIN
- CYCLE SYMBOL TO SD661
- PEDESTRIAN LOGO TO SD661
- GREEN SURFACE
- NO STOPPING (NOTE: TO BE REFLECTORISED)
- NO OVERTAKING
- 100mm WHITE LINE
- 300mm LIMIT LINE
- STOP LIMIT LINE
- CONTINUITY LINE. 1m STRIPE, 3m GAP
- DRIVEWAY CONTINUITY LINE. 1m STRIPE, 2m GAP
- LANE LINE. 3m STRIPE, 7m GAP
- 100mm GREEN CYCLE CROSSING LINES. 1m STRIPE, 1m GAP
- PARKING TICKS
- GIVE WAY TRIANGLE
- CYCLEWAY ARROW TO SD663
- CYCLEWAY GIVE WAY TO SD663
- ONE WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY CYCLEWAY AT ACCESSWAYS TO MCR-SD006A
- TWO WAY SHARED PATH AT ACCESSWAYS TO MCR-SD006A
- CYCLEWAY SHARROW TO MCR-SD006C

RRPMs:

- WHITE MONO
- RED MONO
- WHITE BI DIECTIONAL
- WHITE/YELLOW BI DIRECTIONAL
- YELLOW BI DIRECTIONAL

SIGNS \ SIGNALS

- CANTILEVER STYLE SIGN/POST
- STANDARD SIGN/POST
- TRAFFIC SIGNAL POLE

HORNBY PRIMARY SCHOOL

EXTENT OF NO STOPPING LINES TO BE CONFIRMED ON SITE WALK OVER

P 3 8:15am-9:15am 2:30pm-3:30pm School Days P22 (R)

EXTENT OF NO STOPPING LINES TO BE CONFIRMED ON SITE WALK OVER

P 3 8:15am-9:15am 2:30pm-3:30pm School Days P22 (L)

HORNBY PRIMARY SCHOOL

EXTENT OF NO STOPPING LINES TO BE CONFIRMED ON SITE WALK OVER

WATERLOO RD

JOIN LINE - REFER ABOVE

KYLE PARK

PLAN
SCALE 1:200

PRELIMINARY
NOT FOR CONSTRUCTION

ISSUE	AMENDMENTS	SIGNED	DATE
B	100% DESIGN	MS	02.09.2020
A	85% DESIGN	MS	29.06.2020

Christchurch City Council
TECHNICAL SERVICES & DESIGN

			NAME	SIGNED	DATE
DATUM	CDD JUL 2019				
BENCH MK.	BM 380	DESIGNED	B. Dodgshun	BD	
RL	42.188m	DES. REVIEW	O. Brown	OB	
SURVEY	F10927	DRAWN	K. Liu	KL	
SURVEY LB	1803	DRW. CHECK	B. Timblick	BT	
	MT PLEASANT 2000	FILE LOCATION	0600 South Express\CAD		
DRAIN. REF.			3385027-600-C6881.dwg		
SAP WBS		PRINTED ON	02/09/2020 1:04 PM Blair		

Note: * indicates signatures on original issue of drawing or last revision of drawing

APPROVED

FOR TENDER	
DATE	SIGNED

FOR CONSTRUCTION	
DATE	SIGNED

CONSULTANT: PELICAN BECA Stantec

CONSULTANT PROJECT REF.: 3385027 / 0600

CONSULTANT FILE REF.: C6881

PROJECT TITLE: MCR - SOUTH EXPRESS SECTION 6A HEI HEI RD \ WATERLOO RD

This Drawing must not be used for Construction unless signed as Approved

DRAWING TITLE: SIGNAGE AND LINEMARKING PLAN SHEET 1

CONTRACT NUMBER: -

CAD DRAWING FILE REF.: RD366501

ORIGINAL SHEET SIZE: A1

SCALES: 1:200 DO NOT SCALE

CPG PROJECT FILE NUMBER: CP502846

SHEET: R10 - 10