

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Henry **Last name:** Seed

Preferred method of contact Email

Postal address: 11 Patrick Street

Suburb: Mairehau

City: Christchurch

Country: New Zealand

Postcode: 8013

Email: the.seedh@gmail.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 51.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:
Original Point:

Points: 51.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 51.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 51.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

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Submitter Details

Submission Date: 10/05/2023

First name: David **Last name:** Moore

Preferred method of contact Email

Postal address: 33A Sugden Street

Suburb: Spreydon

City: Christchurch

Country: New Zealand

Postcode: 8024

Email: dmoore20@gmail.com

Daytime Phone:

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Would you like to present your submission in person at a hearing?

Yes

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Consultation Document Submissions

Original Submitter:

Original Point:

Points: 52.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

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My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:
Original Point:

Points: 52.2

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- Oppose
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My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

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Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Josh **Last name:** Flores

Preferred method of contact Email

Postal address: 8 Castlevue Lane

Suburb: Heathcote Valley

City: Christchurch

Country: New Zealand

Postcode: 8022

Email: joshcflores@gmail.com

Daytime Phone:

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Submitter Details

Submission Date: 10/05/2023

First name: Fraser **Last name:** Beckwith

Preferred method of contact Email

Postal address: 13 Glengael Drive

Suburb: Halswell

City: Christchurch

Country: New Zealand

Postcode: 8025

Email: fraser.beckwith@hotmail.co.nz

Daytime Phone:

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Points: 54.1

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- Seek Amendment

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Original Point:

Points: 54.4

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No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: James **Last name:** Cunniffe

Preferred method of contact Email

Postal address: 766 Main North Road

Suburb: Belfast

City: Christchurch

Country: New Zealand

Postcode: 8051

Email: jcunniffe1998@gmail.com

Daytime Phone:

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Would you like to present your submission in person at a hearing?

Yes

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Consultation Document Submissions

Original Submitter:

Original Point:

Points: 55.1

- Support
- Oppose
- Seek Amendment

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Original Submitter:

Original Point:

Points: 55.2

- Support
- Oppose
- Seek Amendment

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Original Submitter:

Original Point:

Points: 55.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

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Original Submitter:

Original Point:

Points: 55.4

- Support
- Oppose
- Seek Amendment

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Attached Documents

File

No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Clare **Last name:** Dale

Preferred method of contact Email

Postal address: PO Box 365

Suburb:

City: Christchurch

Country: New Zealand

Postcode: 8140

Email: clare@novogroup.co.nz

Daytime Phone: 021 997 623

I could not
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Would you like to present your submission in person at a hearing?

- Yes
- I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Additional requirements for hearing:

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 56.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

Please see attached submission document.

My submission is that

Please see attached submission document.

Attached Documents

File
541002 Winton Land Limited Submisison PC 14 10 May



10 May 2023

Christchurch City Council

Lodged Via: Have Your Say Webpage

Novo Group Limited
 Level 1, 279 Montreal Street
 PO Box 365, Christchurch 8140
 0 - 03 365 5570
 info@novogroup.co.nz

To Christchurch City Council,

FORM 5 - WINTON LAND LIMITED
SUBMISSION ON PLAN CHANGE 14 TO THE CHRISTCHURCH DISTRICT PLAN –
UNDER CLAUSE 6 OF SCHEDULE 1, RESOURCE MANAGEMENT ACT 1991

1. The following submission on Plan Change 14 ('**PC14**') is lodged on behalf of Winton Land Limited ('**Winton**') in relation to the Residential High Density Zone and 'residential intensification' precinct within 1.2km of the City Centre zone.
2. Winton seeks the following decision from Christchurch City Council:
 - 2.1 The relief as set out in **Annexure A**.
 - 2.2 Any other similar relief that would address the relief sought by Winton.
 - 2.3 All necessary consequential amendments.
3. The following summaries Winton's primary submission points:
 - As notified, PC14 compromises the the extent to which planning provisions enable development and does not reduce regulatory constraints and increase housing supply as required through the Resource Management (Enabling Housing Supply and Other Matters) Amendment Act 2021 ('**Amendment Act**') and the National Policy Statement on Urban Development 2020 ('**NPS-UD**').
 - PC 14 requires the inclusion of clear objectives and policies 'enabling' building height in the Residential High Density Zone (HRZ) within 1.2km of the City Centre zone that are consistent with and clearly implement the full extent of the directives in Policy 3 of the NPS-UD.
 - In the HRZ Zone (where within 1.2km of City Centre Zone) allow a maximum building height of 23m as a permitted activity and 23m – 32m as a restricted discretionary activity.
4. Winton could not gain an advantage in trade competition through this submission.
5. Winton wishes to be heard in support of their submission. If others make a similar submission, Winton would be willing to consider presenting a joint case with them at a hearing.



6. Signed for and on behalf of Winton by their authorised agents Novo Group.

Yours sincerely,

Novo Group Limited

Clare Dale

Senior Planner

M: 021 997 623 | **O:** 03 365 5570

E: clare@novogroup.co.nz | **W:** www.novogroup.co.nz

541002

Address for service of submitter:

Winton Land Limited

c/- Clare Dale

Novo Group

Level 1, 279 Montreal Street

PO Box 365

Christchurch 8140

Email address: clare@novogroup.co.nz



ANNEXURE 1

Winton seek the relief as set out below or drafting with materially similar effect, be adopted by the Council. Consequential amendment may also be necessary to other parts of the proposed provisions. Any proposed or amended text is shown as **red italics underlined**, and any deleted text as **~~strikethrough~~**.

No.	Provision	Position	Submission/ Reasons	Relief Sought
1.	Definition – Height	Oppose	Winton submit that within Flood Management Areas ('FMA'), height should be measured from the specified minimum Finished Floor Level ('FFL').	That the definition of height be amended as follows: Within the Medium Density Residential zone and High Density Residential zone only, means the vertical distance between a specified reference point and the highest part of any feature, structure or building above that point. <u>In Flood Management Areas, height shall be measured from the FFL recorded in a minimum finished floor level certificate.</u>
2.	Strategic Directions – Objective 3.3.7	Oppose	Winton submit that only the wording that must be included from Schedule 3A, Part 1, Section 6, Objective 1 of the Housing Supply Act be included in the District Plan. The additional text compromises the the extent to which planning provisions enable development and does not reduce regulatory constraints and increase housing	That objective 3.3.7 be amended as follows: 3.3.7 Objective – Well-functioning urban environment a. A well-functioning urban environment that enables all people and communities to provide for their social, economic, and cultural wellbeing, and for their health and safety, now and into the future; <u>including by recognising and providing for:</u> i. Within commercial and residential zones, a distinctive, legible urban form and strong sense of place, expressed through:



No.	Provision	Position	Submission/ Reasons	Relief Sought
			<p>supply as required through the Amendment Act and the NPS-UD.</p>	<p><i>A. Contrasting building clusters within the cityscape and the wider perspective of the Te Poho-o-Tamatea/the Port Hills and Canterbury plains; and</i></p> <p><i>B. Appropriate scale, form and location of buildings when viewed in context of the city's natural environment and significant open spaces, providing for:</i></p> <p><i>I. Larger scale development where it can be visually absorbed within the environment; and</i></p> <p><i>II. Lower heights and design controls for development located in more sensitive environments;</i></p> <p><i>C. The pre-eminence of the city centre built form, supported by enabling the highest buildings;</i></p> <p><i>D. The clustering, scale and massing of development in and around commercial centres, commensurate with the role of the centre and the extent of commercial and community services provided;</i></p> <p><i>E. The largest scale and density of development, outside of the city centre, provided within and around town centres, and lessening scale for centres lower in the hierarchy;</i></p> <p><i>ii. Development and change over time, including amenity values, in response to the diverse and changing needs of people, communities and future generations;</i></p> <p><i>iii. The cultural traditions and norms of Ngāi Tahu manawhenua; and</i></p> <p><i>iv. The benefits of urban environments that support reductions in greenhouse gas emissions; and are resilient to the current and future effects of climate change.</i></p>



No.	Provision	Position	Submission/ Reasons	Relief Sought
3.	Residential Objectives and Policies Policy 14.2.3.6	Oppose	Winton seek the inclusion of clear objectives and policies 'enabling' building height in the HDR Zone that is consistent with and clearly implement the full extent of the directives in Policy 3 of the NPS-UD and seek that the policy specifically references six stories in the HRZ Zone where within 1.2km of the City Centre Zone.	Amend the policy as follows: 14.2.3.6 Framework for building heights in medium and high density areas: a. Enable building heights in accordance with the planned urban built character for medium and high density areas, whilst also enabling increased building heights under specific conditions. <u>This includes building heights of at least three stories in the Medium Density Residential Zone and of at least six stories in the High Density Residential Zone where the site is located within a walkable catchment of: existing and planned rapid transit; the edge of the City Centre Zone; or the edge of the Metropolitan Centre Zone</u>
4.	Residential Objectives and Policies Policy 14.2.3.7	Oppose	Winton seek the inclusion of clear objectives and policies 'enabling' building height in HRZ that is consistent with and clearly implement the full extent of the directives in Policy 3 of the NPS-UD and seek that the policy specifically references six stories in the HDR Zone where within 1.2km of the City Centre Zone.	Amend the policy as follows: 14.2.3.7 Management of increased building heights: a. Within medium and high density zoned areas, only provide for increased building heights beyond those enabled in the zone, <u>being three and six stories respectively</u> or precinct where the following is achieved:



No.	Provision	Position	Submission/ Reasons	Relief Sought
				<p>i. the development provides for a greater variety of housing types, price points, and sizes, when compared to what is provided in the surrounding area;</p> <p>ii. the development is consistent with the built form outcomes anticipated by the underlying zone or precinct <u>being three stories in the medium density and six stories in the high density zone.</u></p> <p>iii. the site is located within walking distance of public or active transport corridors; community facilities or commercial activities; and public open space;</p> <p>iv. building design features are used to reduce:</p> <p>A. significant shading, dominance and privacy effects caused by increased height <u>above three (MDR) or six (HDR) stories</u> on adjacent residential properties and public spaces; and</p> <p>B. the effects of dominance and shading on historic heritage, significant trees, or character areas;</p> <p>v. When considering height increases within 1.2km from the city centre, the economic impacts on the city centre from an increase in height.</p>
5.	Residential Objectives and Policies 14.2.5.5	Oppose	Winton seek the inclusion of clear objectives and policies 'enabling' building height in HRZ that is consistent with and clearly implement the full extent of the directives in Policy 3 of the NPS-UD and seek that the policy specifically references six stories in the HDR Zone where within 1.2km of the City Centre Zone. Any	Amend the policy as follows: 14.2.5.5 Policy – Assessment of wind effects a. Maintain the comfort and safety of public and private space users by assessing and appropriately managing



No.	Provision	Position	Submission/ Reasons	Relief Sought
			wind assessment should only be required for buildings exceeding six stories in the HRZ Zone.	the adverse wind effects of tall buildings exceeding six stories in the High Density Residential Zone to ensure: <ul style="list-style-type: none"> i. there is a low risk of harm to people; ii. the building and site design incorporates effective measures to reduce wind speeds; and iii. the comfort of private outdoor living spaces and public spaces is prioritised.
7.	Residential Objectives and Policies 14.2.7.3	Support	Winton support providing for buildings of up to ten stories in the HRZ Zone around the city centre.	Retain as notified: 14.2.7.3 Policy – Heights in areas surrounding the central city a. Provide for 10-storey residential buildings consolidated around the City Centre zone to stimulate and support the city centre.
8.	Residential Objectives and Policies	Support in part	Winton support enabling six storey residential development of all forms in the high density residential precinct.	Amend the policy as follows: 14.2.7.5 Policy – High Density Residential Precinct a. Enable the development of 6-story multi-storey flats and apartments in residential buildings and apartments in residential buildings , and restrict development to solely within, the High Density Residential Precinct to manage intensification around the City Centre zone.



No.	Provision	Position	Submission/ Reasons	Relief Sought
9.	Rules High Density Residential Zone 14.6.1.3 RD5	Support	Winton support the retention of the existing matters of discretion for RD5.	<p>Retain as notified.</p> <p>The Councils discretion shall be limited to the following matters:</p> <p>a. Retirement villages – Rule 14.15.910</p> <p>And as relevant to the built form standard that is not met:</p> <p>b. Building height in the High Density Residential zone within the Central City – Rule 14.15.2730</p> <p>c. Daylight recession planes High Density Residential zone within the Central City – Rule 14.15.2831</p> <p>d. Street scene and access ways in the High Density Residential zone within the Central City – Rule 14.15.2932.</p> <p>e. Minimum building setbacks from internal boundaries in the High Density Residential Zone within the Central City – Rule 14.15.303.</p> <p>f. Water supply for firefighting – Rule 14.15.78</p>
10.	Rules High Density Residential Zone 14.6.1.3 RD7	Oppose	Winton seek the inclusion of rules that 'enable' (ie: permit or allow) building height in the HDR Zone that is consistent with and clearly implement the full extent of the directives in Policy 3 of the NPS-UD and seek that the rule specifically references six stories and up to 23m in the HRZ Zone where within 1.2km of the City Centre Zone.	<p>Amend the rule as follows:</p> <p>a. Any building between 14-20 metres in height above ground level, when the following standards are met:</p> <p>i. A ground level communal outdoor living space shall be provided at a ratio of 50m² per 10 residential units. The number of units shall be rounded to the nearest 10, in accordance with the Swedish rounding system. This ratio shall be calculated on the number of residential units on the 4th floor of the building and</p>



No.	Provision	Position	Submission/ Reasons	Relief Sought
			<p>Winton does not consider restricted discretionary ('RD') activity status for six storey buildings is enabling. Enable means to permit or allow and RD status would allow an application to be declined. The rule compromises the the extent to which planning provisions enable development and does not reduce regulatory constraints and increase housing supply as required through the Amendment Act and the NPS-UD.</p> <p>Advice from Winton's architect is that 23m is required for a six storey building in order to ensure a high-quality internal living environment.</p> <p>Winton seek a non-notification clause to ensure the rule is enabling.</p>	<p>any subsequent floors above, with the maximum required area being 20% of the site area. Any communal outdoor living space shall have a minimum dimension of no less than 8 metres.</p> <p><u>a.</u> Any building exceeding <u>six stories or 20.3m</u> metres in height up to 32 metres in height above ground level (except within the High Density Residential Precinct, Large Local Centre Intensification Precinct, or Town Centre Intensification Precinct), where the following standards are met:</p> <p>i. The standards in RD7.a.i.;</p> <p>ii. The building is set back at least 6 metres from all internal boundaries; and</p> <p>iii. The building is set back at least 3 metres from any road boundary.</p> <p><u>b. Any application arising from this rule, shall not be publicly or limited notified.</u></p>
11.	<p>Rules High Density Residential Zone</p> <p>14.6.1.3 RD8</p>	Oppose	<p>Winton seek the inclusion of rules that 'enable' building height in HRZ Zone that is consistent with and clearly implement the full extent of the directives in Policy 3 of the NPS-UD.</p> <p>Winton does not consider RD activity status for six storey buildings in the residential intensification precinct is enabling. Enable means to permit or allow and RD status would allow an application to be declined. The rule compromises the the extent to which planning provisions enable development and does not reduce</p>	<p>Amend the rule as follows:</p> <p>a. Any building over 32 metres in height above ground level.</p> <p>b. Any building over 20 metres in height above ground level within the High Density Residential Precinct, Large Local Centre Intensification Precinct, or Town Centre Intensification Precinct.</p>



No.	Provision	Position	Submission/ Reasons	Relief Sought
			regulatory constraints and increase housing supply as required through the Amendment Act and the NPS-UD.	
12.	Rules High Density Residential Zone 14.6.1.3 RD17	Oppose	Winton seek that assessment of wind effects only apply to buildings over 23m or six stories in height that are not enabled by Policy 3 of the NPS-UD.	Amend the rule as follows: a. New buildings, structures or additions greater than 20 3 metres in height from ground level that do not result in wind conditions that exceed the following cumulative standards (Gust Equivalent Mean) more than 5% annually at ground level, within 100 metres of the site based on modelling: i. 4m/s at the any boundary of any site, if that boundary adjoins public open spaces, private outdoor living spaces, and footpath; or ii. 6m/s within any carriageway or car parking areas provided within or outside the site. b. New buildings, structures or additions greater than 20 3 metres in height that do not result in wind speeds exceeding 15 MUZ wind speeds more than 0.3% annually at ground level. c. The requirement of a. and b. shall be demonstrated by a suitably qualified professional.
13.	Rules High Density Residential Zone	Oppose	Winton seek the inclusion of rules that 'enable' (ie: permit or allow) building height in the HRZ that is consistent with and clearly implement the full extent NPS-UD directives in Policy 3 and seek that the rule specifically references six stories and up to 23m in the	Amend the rule as follows: 14.6.2.1 Building height a. Buildings must not exceed 14 23 metres in height above ground level. The maximum height of any buildings

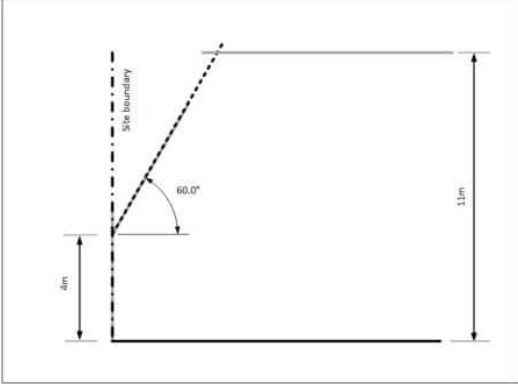


No.	Provision	Position	Submission/ Reasons	Relief Sought
	14.6.2.1 Building Height		<p>HRZ where within 1.2km of the City Centre zone. The rule compromises the the extent to which planning provisions enable development and does not reduce regulatory constraints and increase housing supply as required through both the Housing Supply Amendment Act and the NPS-UD.</p> <p>Advice from Winton's Architects is that 23m is required for a six storey building in order to ensure a high-quality internal living environment.</p>	<p>shall be as shown on the Central City Maximum Building Height planning map, except that the Central City Maximum Building Height planning map does not apply to the following land where a maximum building height of 20 metres shall apply to buildings for a retirement village:</p> <p>i. Lot 1 DP 77997 CT CB46D/74;</p> <p>ii. Town Section 118 DP 3780; and</p> <p>iii. Town Section 119 DP 3780.</p> <p>b. Residential units shall not be less than 7 metres in height above ground level.</p> <p>c. Buildings for a residential activity within the Industrial Interface Qualifying Matter Area must not exceed 7 metres in height above ground level or two storey, whichever is the lesser.</p>
14.	14.6.2.2 Height in relation to boundary And Appendix 14.16.2 Diagram D Recession	Oppose	<p>Winton oppose the height in relation to boundary QM and submit that only the angles and heights that must be included from Schedule 3A, Part 2, Density Standards (12) Height in Relation to Boundary of the Housing Supply Act be included in the District Plan.</p> <p>The QM/ appendix compromises the the extent to which planning provisions enable development and does not reduce regulatory constraints and increase housing</p>	<p>Amend the rule and appendices as follows:</p> <p>a. No part of any building below a height of 12m shall project beyond a 60° building envelope constructed by recession planes shown in Appendix 14.16.2 Diagram D measured from points 34m vertically above ground level along all boundaries. Where the boundary forms part of a legal right of way, entrance strip, access site, or pedestrian access way, the height in relation to boundary applies</p>



No.	Provision	Position	Submission/ Reasons	Relief Sought
	Planes (Qualifying Matter)		supply as required through the Amendment Act and the NPS-UD.	<p>from the farthest boundary of that legal right of way, entrance strip, access site, or pedestrian access way.</p> <p>b. For any part of a building above 12m in height, the recession plane under a. shall apply, unless that part of the building above 12m in height is set back from the relevant boundary of a development site as set out below:</p> <ul style="list-style-type: none"> i. northern boundary: 6 metres; ii. southern boundary: 8 metres; and iii. eastern and western boundaries: 7 metres <p>where the boundary orientation is as identified in Appendix 14.16.2 Diagram D, in which case there shall be no recession plane requirement for that part of the building above 12m in height.</p> <p>c. This standard does not apply to—</p> <ul style="list-style-type: none"> i. a boundary with a road: existing or proposed internal boundaries within a site; iii. site boundaries where there is an existing common wall between 2 buildings on adjacent sites or where a common wall is proposed. iv. the construction of three or more residential units of a maximum of 14 23 metres in height from ground level, to any part of a building: <ul style="list-style-type: none"> A. along the first 20 metres of a side boundary measured from the road boundary; or B. within 60% of the site depth, measured from the road boundary, whichever is lesser. For corner sites, depth is measured from the internal boundaries, that are perpendicular to the road boundary. See Figure 1, below.



No.	Provision	Position	Submission/ Reasons	Relief Sought
				Insert new diagram: 
15.	Rules High Density Residential Zone 14.6.2.12 Building Coverage	Oppose	Winton submits that 50% site coverage is not appropriate in the HRZ Zone given that there are currently no building coverage limitations in the Residential Central City Zone. This rule is more restrictive than the current operative provisions. There should be no site coverage limit in the HRZ. The rule compromises the the extent to which planning provisions enable development and does not reduce	Delete the rule in its entirety.



No.	Provision	Position	Submission/ Reasons	Relief Sought
			regulatory constraints and increase housing supply as required through the Amendment Act and the NPS-UD.	
16.	Matters of control and discretion 14.15.3	Oppose	<p>Winton consider that the matters of discretion in Clause 14.15.3 need simplifying and amending to ensure that they are appropriate for addressing the rules to which they relate. The title of the matters is 'impacts on neighbouring properties' yet many of the matters do not relate to effects on adjoining or adjacent properties. The long list of matters is not in line with the enabling provisions of the NPS-UD.</p> <p>The extent of the matters of discretion compromise the the extent to which planning provisions enable development and does not reduce regulatory constraints and increase housing supply as required through the Amendment Act and the NPS-UD.</p>	<p>Delete the existing rule and amend as follows:</p> <p>14.15.3 Impacts on neighbouring property</p> <p>a. Whether the increased height, or reduced setbacks, or recession plane intrusion would result in buildings that do not compromise the amenity of adjacent properties planned urban built character, taking into account The following matters of discretion apply:</p> <p>i. Building bulk and dominance effects on surrounding neighbours;</p> <p>ii. Privacy and shading effects on surrounding neighbours, including on habitable rooms or outdoor living spaces;</p> <p>iii. The extent to which an increased height is necessary to enable more efficient, cost effective and/or practical use of the site, or the long term protection of significant trees or natural features on the site;</p> <p>iv. Modulation or design features of the roof form to reduce its visual impact;</p> <p>v. Whether the majority of the ground floor area is occupied by habitable rooms and/or</p>



No.	Provision	Position	Submission/ Reasons	Relief Sought
				<p>indoor communal living space (this area may include pedestrian access to lifts, stairs and foyers);</p> <p>vi. Impacts on the heritage values of adjoining properties; and</p> <p>vii. For height breaches only:</p> <p>A. the location of the building in relation to existing or planned public transport corridors, community facilities, or commercial activities and the connectivity of the building to these facilities;</p> <p>B. The extent to which an increased height is necessary to enable more efficient, cost effective and/or practical use of the site, or the long term protection of significant trees or natural features on the site;</p> <p>i. overshadowing of adjoining sites resulting in reduced sunlight and daylight admission to internal living spaces and external living spaces beyond that anticipated by the recession plane, and where applicable the horizontal containment requirements for the zone;</p> <p>ii. any loss of privacy through being overlooked from neighbouring buildings;</p>



No.	Provision	Position	Submission/ Reasons	Relief Sought
				<p>iii. whether development on the adjoining site, such as large building setbacks, location of outdoor living spaces, or separation by land used for vehicle access, reduces the need for protection of adjoining sites from overshadowing;</p> <p>iv. the ability to mitigate any adverse effects of increased height or recession plane breaches through increased separation distances between the building and adjoining sites, the provision of screening or any other methods; and</p> <p>v. within a Flood Management Area, whether the recession plane infringement is the minimum necessary in order to achieve the required minimum floor level.</p> <p>b. Where the site is within the Akaroa Heritage Area, the matters set out in Rule 9.3.6.3</p> <p>c. Within the Medium Density Residential zone, for buildings exceeding 14 metres in height, and within the High Density Residential zone, for buildings exceeding 32 metres in height, the matters of discretion are as follows:</p> <p>i. The degree of alignment of the building with the planned urban character of the zone or applicable precinct;</p> <p>ii. Building bulk and dominance effects on surrounding neighbours, particularly the</p>



No.	Provision	Position	Submission/ Reasons	Relief Sought
				<p><u>effect on the relationship between buildings, public spaces, and views;</u></p> <p><u>iii. The degree of privacy effects on surrounding neighbours, including on habitable rooms or outdoor living spaces;</u></p> <p><u>iv. The degree of shading effects on surrounding neighbours, including the extent of impact on any habitable rooms or outdoor living spaces;</u></p> <p><u>v. The extent to which the increased height is necessary to enable more efficient, cost effective and/or practical use of the site, or the long term protection of significant trees or natural features on the site;</u></p> <p><u>vi. Any modulation or design features of the roof form and façade to reduce its visual impact;</u></p> <p><u>vii. Whether a minimum of 30% of the ground floor area is occupied by habitable rooms and/or indoor communal living space (including any shared pedestrian access to lifts, stairs and foyers);</u></p> <p><u>viii. The extent to which the development provides for greater housing choice, by typology or price point compared to existing or consented development within the surrounding area;</u></p>



No.	Provision	Position	Submission/ Reasons	Relief Sought
				<p>ix. Whether the building is for the purposes of papakāinga / kāinga housing;</p> <p>x. The location of the development relative to current and planned public transport corridors, community facilities, or commercial activities and the connectivity of the development to these facilities;</p> <p>xi. How the proposal contributes to or provides for a sense of local identity or place making;</p> <p>xii. Residential Design Principles listed under 14.15.1.c (site layout and context) and 14.15.1.f (residential environment);</p> <p>xiii. For any building greater than 20 metres in height, where any part of the building above 20 metres does not meet the standards below, the effect of not complying with the standard(s) below. The standards are:</p> <p>A. At least 6 metres setback from all side and rear boundaries;</p> <p>B. At least 3 metres setback from any front boundary;</p> <p>C. A ground level communal outdoor living space shall be provided at a ratio of 50m² per 10 residential units. The number of units shall be rounded to the nearest 10, in accordance with</p>



No.	Provision	Position	Submission/ Reasons	Relief Sought
				<p>the Swedish rounding system. This ratio shall be calculated on the number of residential units on the 4th floor of the building and any subsequent floors above, with the maximum required area being 20% of the site area. Any communal outdoor living space shall have a minimum dimension of no less than 8 metres.</p> <p>xiv. Whether the development detracts from the economic opportunities within the city centre and its primacy.</p> <p><i><u>a. Whether the increased height or reduced setbacks would result in buildings that do not compromise the planned urban built character taking into account:</u></i></p> <p><i><u>(i) building bulk and dominance effects on surrounding neighbours;</u></i></p> <p><i><u>(ii) privacy and shading effects on surrounding neighbours, including on habitable rooms or outdoor living spaces;</u></i></p> <p><i><u>(iii) modulation or design features of the building facade and roof-form to reduce its visual impact;</u></i></p> <p><i><u>(iv) the extent to which an increased height is necessary to enable more efficient, cost effective</u></i></p>



No.	Provision	Position	Submission/ Reasons	Relief Sought
				<p><u>and/or practical use of the site, or the long term protection of significant trees or natural features on the site;</u></p> <p><u>(v) whether development on the adjoining site, such as large building setbacks, location of outdoor living spaces, or separation by land used for vehicle access, reduces the need for protection of adjoining sites from overshadowing; and</u></p> <p><u>(vi) the ability to mitigate any adverse effects of increased height breaches through increased separation distances between the building and adjoining sites, the provision of screening or any other methods.</u></p>

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Peter **Last name:** Beswick

Preferred method of contact Email

Postal address: 265 Eastern Terrace

Suburb: Sydenham

City: Christchurch

Country: New Zealand

Postcode: 8023

Email: pebeswick@gmail.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 57.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:
Original Point:

Points: 57.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 57.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 57.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Jan-Yves **Last name:** Ruzicka

Preferred method of contact Email

Postal address: 77 Kedleston Drive

Suburb: Avonhead

City: Christchurch

Country: New Zealand

Postcode: 8042

Email: jan@1klb.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
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b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

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Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 58.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:
Original Point:

Points: 58.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 58.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Mitchell **Last name:** Tobin

Preferred method of contact Email

Postal address: 399 Wairakei Road

Suburb: Burnside

City: Christchurch

Country: New Zealand

Postcode: 8053

Email: mitchell.tobin8.3@gmail.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 59.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:

Original Point:

Points: 59.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:

Original Point:

Points: 59.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:

Original Point:

Points: 59.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Reece **Last name:** Pomeroy

Preferred method of contact Email

Postal address: 14 Severn Street

Suburb: St Albans

City: Christchurch

Country: New Zealand

Postcode: 8014

Email: reece.pomeroy@gmail.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 60.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:
Original Point:

Points: 60.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 60.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 60.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Deidre **Last name:** Rance

Preferred method of contact Email

Postal address:

Suburb:

City:

Country: New Zealand

Postcode:

Email: rancefamily@gmail.com

Daytime Phone: +64211772673

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 61.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

Strowan to remain the same as far as the rules surrounding density of living. No medium or high density

My submission is that

I wish to oppose the changes to MRZ and HRZ in the strowan area. it is an area that is already congested with cars due to a high school within the area. Medium and high density living will put a further strain on parking and general amenities. It will significantly affect the sun many propertied currently get and will change the character of the area. Theres a reason we are called the garden city

and we want to preserve this. Strowan is a well maintained area. Perhaps high density living should be concentrated on those run down areas of the city that need developed and could replace cold run down homes. This is no strowan.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Rob **Last name:** McNeur

Preferred method of contact Email

Postal address: 14 Griffiths Avenue

Suburb: Linwood

City: Christchurch

Country: New Zealand

Postcode: 8062

Email: robmcneur@gmail.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 62.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:

Original Point:**Points:** 62.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council*If seeking to make changes to a specific site or sites, please provide the address or identify the area***My submission is that**

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:**Original Point:****Points:** 62.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council*If seeking to make changes to a specific site or sites, please provide the address or identify the area***My submission is that**

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:**Original Point:****Points:** 62.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council*If seeking to make changes to a specific site or sites, please provide the address or identify the area***My submission is that**

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File

No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Peter **Last name:** Cross

Preferred method of contact Email

Postal address: 25 Santa Rosa Avenue

Suburb: Halswell

City: Christchurch

Country: New Zealand

Postcode: 8025

Email: pac87@live.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

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Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 63.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:
Original Point:

Points: 63.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 63.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 63.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Rachel **Last name:** Hu

Preferred method of contact Email

Postal address: Flat 14, 24 Mansfield Avenue

Suburb: St Albans

City: Christchurch

Country: New Zealand

Postcode: 8014

Email: rachel_huqi@hotmail.com

Daytime Phone: 02108404606

I could not
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Consultation Document Submissions

Original Submitter:

Original Point:

Points: 64.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I would like to raise my frustrations with the district plan process so far. This process has taken a very long period; while the Council has been going through the process of bringing it into reality, there have been

developers like myself suffering as we have been losing jobs and increasing development waiting time. All of this has been detrimental to our goal: to develop the areas around Christchurch and tackle the housing problem in New Zealand.

I am also confused by your mapping tool; I don't understand how there can be a High-Density Residential Zone (HDRZ), and then a street over, there can be a Medium-Density Residential Zone (MDRZ). These wildly changing zones mean there will be an inconsistency in housing development as there could be a 3-storey building built on one street and then a 6-storey building built a street over. I think these zones need to be more standardised: e.g., choose for developers to have a clear guideline for 3-storeys or 6-storeys. Or at least make it more standard per suburb than every street block.

6.1A, 14.5, 14.6

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Angela **Last name:** Nathan

Preferred method of contact Email

Postal address: 24 Patten Street

Suburb: Avonside

City: Christchurch

Country: New Zealand

Postcode: 8061

Email: angie_nz@yahoo.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

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Consultation Document Submissions

Original Submitter:

Original Point:

Points: 65.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:

Original Point:

Points: 65.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:

Original Point:

Points: 65.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:

Original Point:

Points: 65.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File

No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Bruce **Last name:** Chen

Preferred method of contact Email

Postal address: 3 Matisse Place

Suburb: Burnside

City: Christchurch

Country: New Zealand

Postcode: 8053

Email: bruceccccc@gmail.com

Daytime Phone:

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Gain an advantage in trade competition through this submission

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Original Submitter:

Original Point:

Points: 66.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

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Original Submitter:
Original Point:

Points: 66.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

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My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 66.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

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I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 & 14)

Submitter Details

Submission Date: 10/05/2023

First name: Mark **Last name:** Mayo

Preferred method of contact Email

Postal address: 7 Kinsella Crescent

Suburb: Aidanfield

City: Christchurch

Country: New Zealand

Postcode: 8025

Email: mark@there.co.nz

Daytime Phone:

I could not
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Consultation Document Submissions

Original Submitter:

Original Point:

Points: 67.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

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My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:
Original Point:

Points: 67.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 67.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 67.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Hazel **Last name:** Shanks

Preferred method of contact Email

Postal address: 34 Toorak Avenue

Suburb: Avonhead

City: Christchurch

Country: New Zealand

Postcode: 8042

Email: hazelannashanks@gmail.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

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Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 68.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:
Original Point:

Points: 68.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 68.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 68.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 & 14)

Submitter Details

Submission Date: 10/05/2023

First name: Hazel **Last name:** Shanks

Preferred method of contact Email

Postal address: 34 Toorak Avenue

Suburb: Avonhead

City: Christchurch

Country: New Zealand

Postcode: 8042

Email: hazelannashanks@gmail.com

Daytime Phone:

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Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 68.5

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:
Original Point:

Points: 68.6

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 68.7

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 68.8

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

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Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Marcus **Last name:** Devine

Preferred method of contact Email

Postal address: 1 Fiona Place

Suburb: Hei Hei

City: Christchurch

Country: New Zealand

Postcode: 8042

Email: m.devine@live.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

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Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 69.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:

Original Point:

Points: 69.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Marcus **Last name:** Devine

Preferred method of contact

Postal address: 1 Fiona Place

Suburb: Hei Hei

City: Christchurch

Country: New Zealand

Postcode: 8042

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

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Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 69.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:

Original Point:

Points: 69.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

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File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Christine **Last name:** Albertson

Preferred method of contact Email

Postal address: 17 Penruddock Rise

Suburb: Westmorland

City: Christchurch

Country: New Zealand

Postcode: 8025

Email: xchristine.albertsonx@gmail.com

Daytime Phone:

I could not
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Consultation Document Submissions

Original Submitter:

Original Point:

Points: 70.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:
Original Point:

Points: 70.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 70.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 70.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Christine **Last name:** Albertson

Preferred method of contact Email

Postal address: 17 Penruddock Rise

Suburb: Westmorland

City: Christchurch

Country: New Zealand

Postcode: 8025

Email: xchristine.albertsonx@gmail.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 70.5

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:
Original Point:

Points: 70.6

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 70.7

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 70.8

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: James **Last name:** Harwood

Preferred method of contact Email

Postal address: 31 Wayside Avenue

Suburb: Burnside

City: Christchurch

Country: New Zealand

Postcode: 8053

Email: paigetthegroundhog@gmail.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 71.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:**Original Point:****Points:** 71.2

- Support
 Oppose
 Seek Amendment

I seek the following decision from the Council*If seeking to make changes to a specific site or sites, please provide the address or identify the area***My submission is that**

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:**Original Point:****Points:** 71.3

- Support
 Oppose
 Seek Amendment

I seek the following decision from the Council*If seeking to make changes to a specific site or sites, please provide the address or identify the area***My submission is that**

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:**Original Point:****Points:** 71.4

- Support
 Oppose
 Seek Amendment

I seek the following decision from the Council*If seeking to make changes to a specific site or sites, please provide the address or identify the area***My submission is that**

support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: James **Last name:** Harwood

Preferred method of contact Email

Postal address: 31 Wayside Avenue

Suburb: Burnside

City: Christchurch

Country: New Zealand

Postcode: 8053

Email: paigetthegroundhog@gmail.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 71.5

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:
Original Point:

Points: 71.6

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 71.7

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 71.8

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Yu Kai **Last name:** Lim

Preferred method of contact Email

Postal address: 64B Searells Road

Suburb: Strowan

City: Christchurch

Country: New Zealand

Postcode: 8052

Email: limyukai@outlook.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 72.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:

Original Point:

Points: 72.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:

Original Point:

Points: 72.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:

Original Point:

Points: 72.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Yu Kai **Last name:** Lim

Preferred method of contact

Postal address: 64B Searells Road

Suburb: Strowan

City: Christchurch

Country: New Zealand

Postcode: 8052

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
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b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

- Yes
- I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 72.5

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:

Original Point:

Points: 72.6

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:

Original Point:

Points: 72.7

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:

Original Point:

Points: 72.8

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: JEFF **Last name:** LOUTTIT

Preferred method of contact Email

Postal address: 196B Gayhurst Road

Suburb: Dallington

City: Christchurch

Country: New Zealand

Postcode: 8061

Email: jefflouttit@gmail.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 73.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:
Original Point:

Points: 73.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 73.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 73.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Henry **Last name:** Bersani

Preferred method of contact Email

Postal address: 1 Dorset Street

Suburb: Christchurch Central

City: Christchurch

Country: New Zealand

Postcode: 8013

Email: henry.bersani@gmail.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 74.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:
Original Point:

Points: 74.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 74.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 74.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Henry **Last name:** Bersani

Preferred method of contact Email

Postal address: 1 Dorset Street

Suburb: Christchurch Central

City: Christchurch

Country: New Zealand

Postcode: 8013

Email: henry.bersani@gmail.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

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Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 74.5

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:

Original Point:

Points: 74.6

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:

Original Point:

Points: 74.7

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:

Original Point:

Points: 74.8

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Jeremy **Last name:** Ditzel

Preferred method of contact Email

Postal address: Unit 6, 2 Albemarle Street

Suburb: Sydenham

City: Christchurch

Country: New Zealand

Postcode: 8023

Email: jeremyditzel@gmail.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 75.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:

Original Point:

Points: 75.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:

Original Point:

Points: 75.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:

Original Point:

Points: 75.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

Please be bold and think of the future. You're rapidly losing the support of younger generations when you propose short-sighted savings and decisions.

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File

No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Juliette **Last name:** Sargeant

Preferred method of contact Email

Postal address: Flat 8, 234 Milton Street

Suburb: Sydenham

City: Christchurch

Country: New Zealand

Postcode: 8023

Email: juliette.sargeant@gmail.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 76.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:
Original Point:

Points: 76.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 76.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 76.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: James **Last name:** Robinson

Preferred method of contact Email

Postal address: 41 Muir Avenue

Suburb: Halswell

City: Christchurch

Country: New Zealand

Postcode: 8025

Email: jmzrbnsn@gmail.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

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Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 77.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:
Original Point:

Points: 77.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 77.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 77.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: James **Last name:** Robinson

Preferred method of contact Email

Postal address: 41 Muir Avenue

Suburb: Halswell

City: Christchurch

Country: New Zealand

Postcode: 8025

Email: jmzrbnsn@gmail.com

Daytime Phone:

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Gain an advantage in trade competition through this submission

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Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 77.5

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:
Original Point:

Points: 77.6

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 77.7

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 77.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Jamie **Last name:** Dawson

Preferred method of contact Email

Postal address: 5 Aranoni Track

Suburb: Clifton

City: Christchurch

Country: New Zealand

Postcode: 8081

Email: jamiedawson88@hotmail.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

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directly affected by an effect of the subject matter of the submission that :
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Note to person making submission:

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Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 78.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:
Original Point:

Points: 78.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 78.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 78.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Gareth **Last name:** Bailey

Preferred method of contact Email

Postal address: 32 Warren Crescent

Suburb: Hillmorton

City: Christchurch

Country: New Zealand

Postcode: 8025

Email: Gareth.bailey@outlook.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

I am
directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 79.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

Exclude properties within waterway setbacks from MDRZ classification.

My submission is that

I appreciate that Council is required to enact the MRDS and has presented PC14 as a compromise between central government legislation and the shape of Christchurch's future residential landscape. I am supportive of

the recession plane qualifying matter.

However, I am not supportive of the proposed level of intensification adjacent to the city's waterways. Whilst I appreciate that waterway setbacks will go some way to protecting waterbodies from the adverse effects of residential development, I do not believe setbacks will entirely prevent encroachment or additional pressure on waterways. I believe that zoning properties adjacent to waterways as MDRZ is out of step with Council's other design guides, initiatives and general direction.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 & 14)

Submitter Details

Submission Date: 10/05/2023

First name: Darin **Last name:** Cusack

Preferred method of contact Email

Postal address:

Suburb:

City:

Country: New Zealand

Postcode:

Email: darin@cusack.nz

Daytime Phone: 021326692

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 80.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area as noted above

My submission is that

1. Not assessing social impact- I submit that the plan change should be reviewed once a proper and in-depth social impact assessment has been completed.

2. Sunlight preservation- I submit the Sunlight Qualifying Matter should be more conservative than proposed.
3. Areas subject to surface flooding- I submit further densification in areas where flooding is frequent and serious(and there is no immediate plan to mitigate) should be prevented by making those areas a qualifying matter.
4. Matai Street West- I submit that both sides of Matai Street West (including Nikau Place) from Straven Road east to the railway line, including the area north to the north Avon, should be a qualifying matter restricting further residential intensification.
5. On trees- Protections for trees, and incentives for planting more trees, should be part of the changes propped in PC 14. Additionally more green space must be provided if there are any changes in additional housing density.

Attached Documents

File
Submission Plan Change 14

Submission-

Proposed Plan Change 14- Housing and Business Choice and Proposed Plan Change 13-Heritage.

I wish to submit the following detail on the Christchurch City Councils (CCC) approval and note CCCs notification of proposed District Plan changes 13 and 14.

1. Not one size fits all

Firstly, not one size fits all, the changes from central government are very clearly about issues in other regions of the country and it does not justify that Christchurch be included in a blanket response to differing issues around housing in other parts of the country, there is no lack of affordable housing and supply in Christchurch as outlined by various reports and commentary from leading economists.

There is a perceived problem of housing in Christchurch, but the facts show there is not, there is no formal data outlining housing supply now and the foreseeable future being an issue for this region, there continues to be supply, to meet the needs of the population growth of the city and surrounds for years to come. One of the constructive things from the CHC earthquakes was the improvements to housing stock.

2. Infrastructure Issues

There are currently above ground and three water infrastructure issues across the city, and this is experienced in the street where I live, with constant flooding of the stormwater system being unable to cope which in turn impacts on the sewer system with stormwater inundating the sewer causing backflow of toilets, showers and waste traps. Residents of the street have continually reported this fault with no action taken by Council over the years. With housing intensification this will create more problems with stormwater and wastewater unable to cope now and the future.

It has been interesting to read a variety of council reports which relate directly to this matter with reports outlining infrastructure issues where the city council admitted it cannot fix the surface flooding issues on those Christchurch streets which are most frequently flooded in rain (and we are seeing climate impacts of heavier rainfall in shorter periods of time). It can only mitigate flooding and, in some case, the costs of doing that will be prohibitive as the council says. What is more, the council has no plan (currently) to assess or prioritise this work, nor does it have money in the budget to do this work. As noted earlier our street floods continually and the residents continue to report this and no action takes place. The article is attached below.

<https://www.stuff.co.nz/the-press/news/131711551/flooding-in-christchurch-impossible-to-fix-report-warns>

In the article a report was referred to (taken from the CCC meeting agenda of 5 April) and you will note from the recommendation 2.2 that the council is yet to investigate or prioritise work. With the proposed plan this will continue to worsen and create ongoing issues for the residents as there are no plans to correct these issues!

There are also continuing lessons and examples of the Auckland floods, where housing intensification and the removal permeable surfaces, no additional green spaces and poorly maintained infrastructure does not cope with climate change we now experience constantly.

3. Parking/Roading Issues

Intensifications will also see increased issues around street parking, continued growth in car ownership, so parking off road is critical, the Riccarton area currently has major parking issues with pressure from local schools/ hostels with student and staff parking. With more parking restrictions continuing to grow around retail/business hubs, the problems are being pushed further onto the residents, with all day parking, cycle ways, schools and congested roads see residential areas overwhelmed with vehicles, this will only worsen and unsustainable under the new proposed changes.

There are currently major safety issues with local streets being used as throughfares due to congestion on the likes of Straven / Riccarton Roads, Kilmarnock Street with speeding issues and non-adherence to the likes of stop signs that will result in the continued rise of road safety issues, with parking growing due to proposed intensification.

The roading is also further complicated by large/heavy trucks using the connecting roads to bypass the gridlock on the main roads, also the current waste management kerbside collection having issues on collection days due to the narrowness of the streets which will be compounded further with on street parking caused by housing intensification.

There also is a wider issue around the quality, type and frequency of public transport which continues not to be addressed for the city which will see continued reliance of private vehicles.

4. Process

Under section 32 of the Resource Management Act 1991 the city council is required to provide an evaluation of the effects of the changes proposed in Plan Change 14, including assessing the social effects.

I recently read a council report relating to Plan Change 14 Section 32 Evaluation that states that no analysis of the social effects of Plan Change 14 had been done, this had been requested by a Councillor in September 2022 when the council voted **NO** to the first iteration of the plan.

So this raises the question regarding the process from this point onwards. If the social impact report is coming, when will it be delivered and how can it usefully inform a submissions process which will probably have finished by then?

If it is not being done, then how do we know what social impacts the proposed intensification changes will have and how does the IHP adequately consider or test these impacts, without any public consultation?

Interestingly the assessment does highlight the fact many of the aims of the Government will not be achieved by the plan change and it exposes many of the myths that some put forward that it will help get us a more compact urban form and make housing more affordable.

After the CHC earthquakes planning rules were significantly relaxed to enable more capacity than was actually required, also the planning rules being lifted also sought to allow commercial development outside of the urban areas thus seeing the focus of housing. Any more relaxation of zoning rules is therefore superfluous and will have negligible impact on affordability and urban sprawl. Instead it is likely to lead to ad hoc and damaging social impacts on local neighbourhoods and communities (e.g. privacy/trees/sunlight/outdoor space). Of course we don't know just how serious those social impacts might be because the council hasn't done an assessment, so any findings haven't been reviewed or tested.

Did councillors actually read this report before voting to notify the plan change?

Returning from overseas we valued having a quality of life based on living conditions where there was space to enjoy the warm days, sunlight in the winter to warm the bones, a space for kids and pets to grow and experience an outdoor lifestyle. The proposed changes which the Council have supported, do not support this and are not supported by ratepayers, the changes will impact the quality of life of those now and the future, we are not creating a city for the future and or are we understanding social impacts of this change.

Housing will have no character, crammed in on already congested streets, these new buildings will deteriorate quicker, arguments will pursue around maintenance, increases in costs with body corporates, insurance and rates. It is likely to see a rise in conflicts around noise, living standards and cost of living in these dwellings.

The buildings will be difficult to repair due to size and scale with accessibility difficult to undertake work like re-cladding, painting roof maintenance etc. The cost of this will not be sustainable for many, decreasing the ambience and life style of those living in these intensified areas.

In Summary

In closing as a ratepayer, I do not support the intensification of housing across the city, the message has been loud and clear from resident associations, ratepayers and previous submissions that this is not a good thing for the city, the people and the future generations.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Joanne **Last name:** Nikolaou

Preferred method of contact Email

Postal address: 50 Fairview Street

Suburb: Somerfield

City: Christchurch

Country: New Zealand

Postcode: 8024

Email: nikolaou2@xtra.co.nz

Daytime Phone: 0274045981

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
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b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

- Yes
- I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Additional requirements for hearing:

power point presentation if possible

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 81.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

That council agrees the Cashmere View Somerfield Area is designated a Suburban Character Area.

This submission proposes the 'Cashmere View Somerfield Area' (CSA) is zoned with a character overlay to ensure the retention of qualities that make it distinctive and appealing resulting in an attractive and memorable area in Christchurch City. The report attached as evidence will illustrate the CSA has significant special qualities to the area which parallel two nearby current Character Areas Tainui Street and Beckenham Loop. This is particularly timely in light of the proposed medium density housing planning changes which would eradicate the neighbourhood heritage value of this area.

This report seeks to identify the neighbourhood of CSA as containing these qualities and confirm the area as worthy of protection. Cashmere View Somerfield Area has city-wide significance as an **intact residential neighbourhood with a strong sense of place and identity**;

Nearly 90% of the properties as at April 2023 retain their original bungalow features.

The key elements that contribute to the character of CSA are:

1. A high proportion of original houses from early to mid 20th century primarily consisting of single storey villas and bungalows, some wooden bungalows, some brick bungalows and some excellent examples of Art Deco houses.
2. An original suburban reserve (Cashmere View Park) set aside for recreational activities to support the 1925 subdivision and development of the area.
3. Houses in the area contribute to a sense of neighbourliness with low boundary fencing and unobstructed views to and from the houses and the street;
4. Architectural detailing contributes to a richness in house design and consistency is established through the location, scale and proportion of windows and entrances;
5. A memorable geography with a regular street grid finishing at the meandering Heathcote River edge;
6. Attractive streets with established front and side gardens that are richly planted and contain lawns, shrubs and trees, generous street widths, mature street trees and grass berms;
7. The size, form and scale of houses, location of houses on sections are generally consistent along streets;
8. Houses in the area contribute to a sense of neighbourliness with low boundary fencing and unobstructed views to and from the houses and the street;
9. Architectural detailing contributes to a richness in house design. Consistency is established through the location, scale and proportion of windows and entrances;
10. Mature trees within properties provide landscape amenity to the area. High levels of street amenity with established front gardens, generous street widths, mature street trees and grassed berms;

This submission seeks to illustrate the high percentage of heritage value properties that still exist in the CSA area.

- A. 89% of Properties Classic Examples of Bungalow Architecture 1925 – 1945.
- B. Only 5% (or 4 Properties) contemporary homes without any heritage value.
- C. 1 extraordinary example of Art Deco Architecture.
- D. 5% or 4 New builds with Bungalow type classical features fitting in with the neighbourhood.

My submission is that

This submission proposes the 'Cashmere View Somerfield Area' (CSA) is zoned with a character overlay to ensure the retention of qualities that make it distinctive and appealing resulting in an attractive and memorable area in Christchurch City. The report attached as evidence will illustrate the CSA has significant special qualities to the area which parallel two nearby current Character Areas Tainui Street and Beckenham Loop. This in

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This report seeks to identify the neighbourhood of CSA as containing these qualities and confirm the area as worthy of protection. Cashmere View Somerfield Area has city-wide significance as an **intact residential neighbourhood with a strong sense of place and identity**;

Nearly 90% of the properties as at April 2023 retain their original bungalow features.

The key elements that contribute to the character of CSA are:

1. A high proportion of original houses from early to mid 20th century primarily consisting of of single storey villas and bungalows, some wooden bungalows, some brick bungalows and some excellent examples of Art Deco houses.
2. An original suburban reserve (Cashmere View Park) set aside for recreational activities to support the 1925 subdivision and development of the area.
3. Houses in the area contribute to a sense of neighbourliness with low boundary fencing and unobstructed views to and from the houses and the street;
4. Architectural detailing contributes to a richness in house design and consistency is established through the location, scale and proportion of windows and entrances;
5. A memorable geography with a regular street grid finishing at the meandering Heathcote River edge;
6. Attractive streets with established front and side gardens that are richly planted and contain lawns, shrubs and trees, generous street widths, mature street trees and grass berms;
7. The size, form and scale of houses, location of houses on sections are generally consistent along streets;
8. Houses in the area contribute to a sense of neighbourliness with low boundary fencing and unobstructed views to and from the houses and the street;
9. Architectural detailing contributes to a richness in house design. Consistency is established through the location, scale and proportion of windows and entrances;
10. Mature trees within properties provide landscape amenity to the area. High levels of street amenity with established front gardens, generous street widths, mature street trees and grassed berms;

This submission seeks to illustrate the high percentage of heritage value properties that still exist in the CSA area.

- A. 89% of Properties Classic Examples of Bungalow Architecture 1925 – 1945.
- B. Only 5% (or 4 Properties) contemporary homes without any heritage value.
- C. 1 extraordinary example of Art Deco Architecture.
- D. 5% or 4 New builds with Bungalow type classical features fitting in with the neighbourhood.

Attached Documents

File
Cashmere View Somerfield Character Area Report

Cashmere View Somerfield Area 'CSA'

Heritage and Character Assessment

Report April 2023

Ashgrove Terrace

Fairview Street

Cashmere View Street

Rose Street



Contents

1. Executive Summary
2. Historical summary
3. Character Areas and Historical Value
4. Desktop Analysis
5. Character Elements
6. On Site Assessments
7. Cashmere View Somerfield Area Character
8. CSA Character Areas Examples
9. CSA Property Categorisation
10. Map and Archive Information

Author

Joanne Nikolaou

Bachelor of Architectural Studies University of Auckland

Bachelor of Architecture University of Auckland

This report has not been peer reviewed

April 2023

List of abbreviations

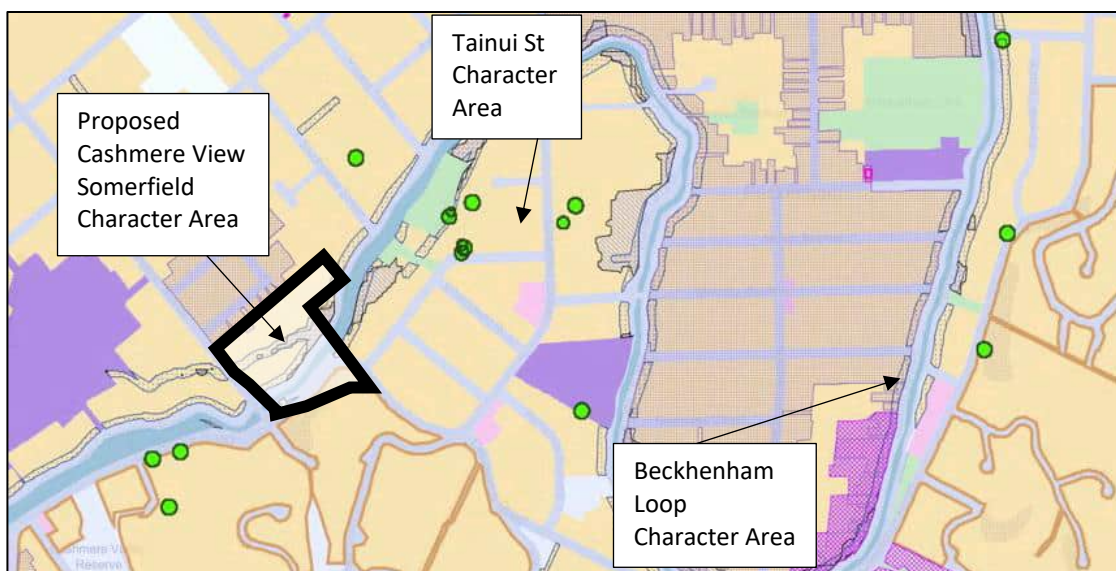
Cashmere View Somerfield Area: CSA

Christchurch City Council: CCC

Executive Summary

This report sets out an analysis of 'Cashmere View Somerfield Area' (CSA) as a neighbourhood with historic value and suburban character in Christchurch. The report uses the methodology and definitions set out by the Resource Management Act, Historic Places Trust, and the Methodology and guidance for evaluating Auckland's historic heritage as well as others listed in the sources.

The report proposes the 'Cashmere View Somerfield Area' is zoned with a character overlay to ensure the retention of qualities that make it distinctive and appealing resulting in an attractive and memorable area in Christchurch City. The report will illustrate the CSA has significant special qualities to the area which parallel two nearby current Character Areas Tainui Street and Beckenham Loop. This is particularly timely in light of the proposed Plan Change 13 and 14 which would irretrievably undermine the character value of the neighbourhood.



In the 2015 report prepared by BECA Consultants for Christchurch City Council they note;

“Character Areas are generally located in more established areas of the city – containing all or a combination of landscape and built qualities including: dwellings of a certain style or era; dwellings with strong relationships to the surrounding environment; dwellings with high quality landscape features; and landscapes, streetscapes and topography of a unique character or high amenity.”

This report seeks to identify the neighbourhood of CSA as containing these qualities and confirm the area as worthy of protection. Cashmere View Somerfield Area has city-wide significance as an **intact residential neighbourhood with a strong sense of place and identity**. The key elements that contribute to the character of CSA are:

- 1) A high proportion of original houses from early to mid 20th century primarily consisting of single storey villas and bungalows, some wooden bungalows, some brick bungalows and some excellent examples of Art Deco houses.
- 2) An original suburban reserve (Cashmere View Park) set aside for recreational activities to support the 1925 subdivision and development of the area.
- 3) Houses in the area contribute to a sense of neighbourliness with low boundary fencing and unobstructed views to and from the houses and the street.
- 4) Architectural detailing contributes to a richness in house design and consistency is established through the location, scale and proportion of windows and entrances.
- 5) A memorable geography with a regular street grid finishing at the meandering Heathcote River edge.
- 6) Attractive streets with established front and side gardens that are richly planted and contain lawns, shrubs and trees, generous street widths, mature street trees and grass berms.
- 7) The size, form and scale of houses, location of houses on sections are generally consistent along streets.
- 8) Houses in the area contribute to a sense of neighbourliness with low boundary fencing and unobstructed views to and from the houses and the street.
- 9) Architectural detailing contributes to a richness in house design. Consistency is established through the location, scale and proportion of windows and entrances.
- 10) Mature trees within properties provide landscape amenity to the area. High levels of street amenity with established front gardens, generous street widths, mature street trees and grassed berms.

What is historic heritage?

The Resource Management Act 1991 define historic heritage as the natural and physical resources that contribute to an understanding and appreciation of New Zealand's history and cultures, deriving from any of the following qualities:

- Archaeological
- Architectural
- Cultural
- Historic
- Scientific
- Technological

Importantly a lack of understanding of historic heritage values often leads to loss of New Zealand heritage. In the case of the Cashmere View Somerfield Area the value is in the strong recognisable architectural history of the houses in the area.

Character Areas and Historic values

Character Area provisions do not seek to control demolition or removal of character buildings, however they do have modified, or additional, rules and provisions to the standard living rules in the District Plan that recognise their special characteristics. The intention of the Character Areas is to Recognise individual elements and resulting character of each area and allow for management of the area as a whole. ⁽¹⁾

- Manage the collection of features, buildings and places to avoid the incremental loss of character values
- Provide the ability to manage redevelopment of properties and elements within a Character Area which do not currently contribute to the character values
- Recognise the importance of the setting, surroundings and context of distinctive residential environments. ⁽¹⁾

An assessment of historic and character heritage values should include a well-documented review of the properties which together create the special character of a neighbourhood. History includes not just the construction of a single place, but the context of many homes and how these combine to create an overall street scape. Primary sources, such as maps or government records, are more reliable than secondary sources, like newspaper articles so in this case Maps have been used as the main source to date the properties.

¹ As outlined by Christchurch City Council in their briefing document (Christchurch City Council-District Plan Review-Character Areas Draft Brief 2014-11-10)

Desktop Analysis

Using the Christchurch City Council's GIS Maps on Canterbury Maps, a detailed desktop analysis was undertaken for each of the proposed Character Areas, to establish an initial understanding of the consistency and cohesiveness of the underlying character and to identify:

- Buildings approximate age (based on historic maps of the area)
- Buildings which are contemporary and not historically valuable or Post Character Area dating from 1980s (including the modification to existing buildings, construction of new dwellings or construction of ancillary buildings)
- The location of any heritage listed buildings

Character Elements

The assessment of the Character Area included a review of both the elements located within private property, and the public space elements of the streetscape. While streetscape character contributes to the overall character of an area, the character elements of private property were the primary focus of the character assessment. The elements have been reviewed in line with the Tainui Street and Beckenham Loop Character Areas which are already in place. **These two areas provide a good example of neighbourhoods with similarly consistent heritage elements to the proposed Cashmere View Somerfield Character Area (CSA).**

On-Site Assessment

Assessments of the CSA were undertaken in April 2023, using the following methodology:

- Architect carried out site visit in order to assess individual properties, the streetscape and record data within the proposed boundary area.
- A walk through of the Character Area was then undertaken and the site record sheet completed (including individual property classifications and streetscape assessments)
- Representative photographs of each Character Area were taken to illustrate the general streetscape character, examples of dwellings / properties that were primary, contributory, neutral and intrusive in classification.
- Site notes were recorded, including a general summary of each home

Cashmere View Somerfield Area Description

Streetscape

The proposed Cashmere View Somerfield Character Area is located at the base of the Cashmere Hill in the south west of the city and is bounded by the Heathcote River. It consists of all the properties visible along Fairview Street, Cashmere View Street and parts of Rose Street and Ashgrove Terrace directly across from the river.

The neighbourhood is proposed as a Character Area because of the strong relationship between the buildings and the street, the general consistency in scale, form, and style of the buildings (generally single storey bungalow weatherboard or brick houses which are mostly constructed between 1925 and 1945) and the abundance of mature soft landscaping both within and at the boundaries to the properties.

The streets are generally on a grid pattern with extended berms with slight road angle changes to reinforce the slow pedestrianised street scape. The subdivision was developed around 1925 and the first homes are clearly seen finished and occupied in the 1929 maps.

The street pattern has resulted in some triangular and irregularly shaped lots adjacent to the river fronting properties, with lot and house orientation varying accordingly. Lots also vary from street to street both in depth and width.

The streets are unified by their setting – the striking backdrop of the Cashmere Hills – with differing spatial qualities, due to their different widths and the variety in lot size. The area retains a quality of ‘river edge’ with the street scape meandering down to the Heathcote river and associated mature trees and landscaping.



Setback from Street

Homes located within the area have a range of building setbacks from 4 – 20m apprx. Those on Cashmere View and Ashgrove Terrace have wider setbacks the setbacks seem to increase the closer to the Heathcote River the property is. Properties containing older housing stock average approximately 5 - 8m apprx. There is consistency along the streets.

Boundary Treatment – Planting / Fencing

The fences on the street side are generally low or allow for significant visual connection between the house and the street. The majority (over 50%) of properties have established gardens which assist in forming the boundary between the pedestrian pathways and the property. A small proportion (less than 20%) of houses have garages located at the front of properties. This is often a feature of newer housing typologies and forms a visual barrier between the street and the dwelling. A few properties have high vegetation along the boundary which is used as visual screen blocking houses from the street.

Landscape Characteristics

75% of properties contain mature vegetation and have generous side setbacks giving overall established garden setting to much of the area. Even contemporary buildings have setbacks however there are one or two examples where the homes have been designed to maximise site cover this character has been eroded.

Built Form Elements Dwelling Style / Era

The proposed area is an excellent example of a neighbourhood which retains a significant proportion of example of the New Zealand Bungalow Style. This house design style celebrates the practicality of the arts and crafts movement. The majority of houses were constructed between 1925 and 1945. Common architectural elements include gabled or hipped roofs bay windows and side entry porches. Ornamentation is simple Bungalow Style with the use of dentils, bay window detailing and elements set around the entry porches. There is also a particular special example of an Art Deco home. The original building materials in the proposed Character Area were corrugated metal roofs, brick chimneys, timber windows and painted horizontal timber weatherboards. Many of the dwellings retaining these materials and highlight architectural features in darker colours that contrast with the paler weatherboards. A significant amount of recent renovations have been undertaken to maintain and highlight the Bungalow features of the homes by the residents.

Relationship to Street / Visual Connectivity

Many of the properties have low boundary walls to match the building or medium-height timber fences, with significant visual connectivity. The front doors and windows to habitable rooms are mostly at the front, enabling a visual connection between the house and the street. This connection remains strong for much of the Character Area, except where high solid fences and/or very dense mature vegetation screens the property from view.

CSA Visual Inspection Heritage Examples



113 Ashgrove Terrace

- Wide Berms and set back
- Established Landscaping and Treescapes
- Excellent Art Deco Example
- Art Deco Detailing Retained and Renovated
- Heathcote Rivers Edge
- Home Architecturally Responds to Corner Site with set back and scale



10 Fairview Street

- Wide Berms
- Established Landscaping
- Historical Complimentary Renovation
- Low Boundary Fences Unobstructed Views to and from House to Street
- Bungalow Architectural Detailing



7 Fairview Street

- Wide Berms
- Historical Complimentary Renovation
- Low Boundary Fences Unobstructed Views to and from House to Street
- Bungalow Architectural Detailing
- Scale and Proportion of Bungalow Windows and Entrances leads to consistency along the street



15 Fairview Street

- Original Low Volcanic Stone Boundary Fence
- Renovated Early 20th Century Bungalow
- Size form and scale of these Bungalow homes adds to the richness in neighborhood character.
- Wide grassed berm area



Fairview Street Scape

- Mature Trees planted during original sub division 1925 - 1935
- Wide grassed berm areas
- Majority Single Story Bungalows with weatherboard cladding



37 Fairview Street

- Alternative Layout Bungalow Later 1930s
- Established Landscaping and Treescapes
- Single Story Bungalow Detailing
- Unobstructed views to street and low boundary fence



112 Rose Street

- Alternative Layout Bungalow Later 1930s Distinctive Detailing
- 2nd Story Renovation Likely Mid Century
- Bungalow Detailing
- Established Garden



Cashmere View Street Scape

- Mature Trees planted during original sub division
- Wide Street and grassed berm areas
- Majority Single Story Bungalows
- Low fences for high visibility and street connection
- Established Gardens



Cashmere View Street Bungalows

- Original Houses Renovated to retain architectural character
- Wide Street and grassed berm areas
- Low fences for high visibility and street connection
- Established Gardens



14 Cashmere View Street

- Original Houses Renovated to retain architectural character
- Wide Street and grassed berm areas
- Low fences for high visibility and street connection
- Established Gardens



20 Cashmere View Street

- Original Bungalow Renovated to retain architectural character
- Wide Street and grassed berm areas
- Established Garden
- Significant Bungalow Architectural Detailing retained

CSA Categorisation of Properties



Map Legend Mapped as at April 2023

Dates are estimations based historical maps and architectural features

Street Scape Quality High

1925 - 1930 Bungalow (30%)

1930 - 1945 Bungalow (59%)

1950s + Art Deco (1%)

New Build Bungalow Features (5%)

New Build Contemporary (5%)

This map seeks to illustrate the high percentage of heritage value properties that still exist in the CSA area.

- A. 89% of Properties Classic Examples of Bungalow Architecture 1925 – 1945.
- B. Only 5% (or 4 Properties) contemporary homes without any heritage value.
- C. 1 extraordinary example of Art Deco Architecture.
- D. 5% or 4 New builds with Bungalow type classical features fitting in with the neighbourhood.

Map and Archive Information

This report seeks to evaluate the Cashmere View Somerfield Area as a historic heritage place for potential inclusion in the historic heritage area in Christchurch. The information from historic Maps has provided a basis for analysis of the properties. Fairview Street was named in 1927 by Tomas Sydney Dacre. Somerfield was previously part of a mid 19th century farm owned by brother Edward Bishop and Frederick Bishop who were born in Somerfield England.

Press Issue 19104 13 September 1927

NAMES OF STREETS.

CITY COUNCIL DISCUSSION.

There was a brief discussion at last night's meeting of the City Council concerning a proposal to name the new street through land which is being subdivided in Spreydon "Fairview street."

In recommending that such a name should be adopted the By-laws Committee reported:—There is already a street in the City named "Fairfield avenue," but it is not considered that these two names will lead to confusion.

The Mayor said that a certain land agent had gone to the expense of printing a number of circulars advertising the locality and had stated that if the name were altered it would involve him in a loss. He objected to the proposal of the Council being used for commercial purposes. The Council should be consulted first in such cases.

Cr. J. W. Roberts thought that confusion was likely to be caused if such names were duplicated or names very much alike were allowed to be used. He mentioned Bealey avenue and Bealey street.

The Mayor: It was done to oblige one man.

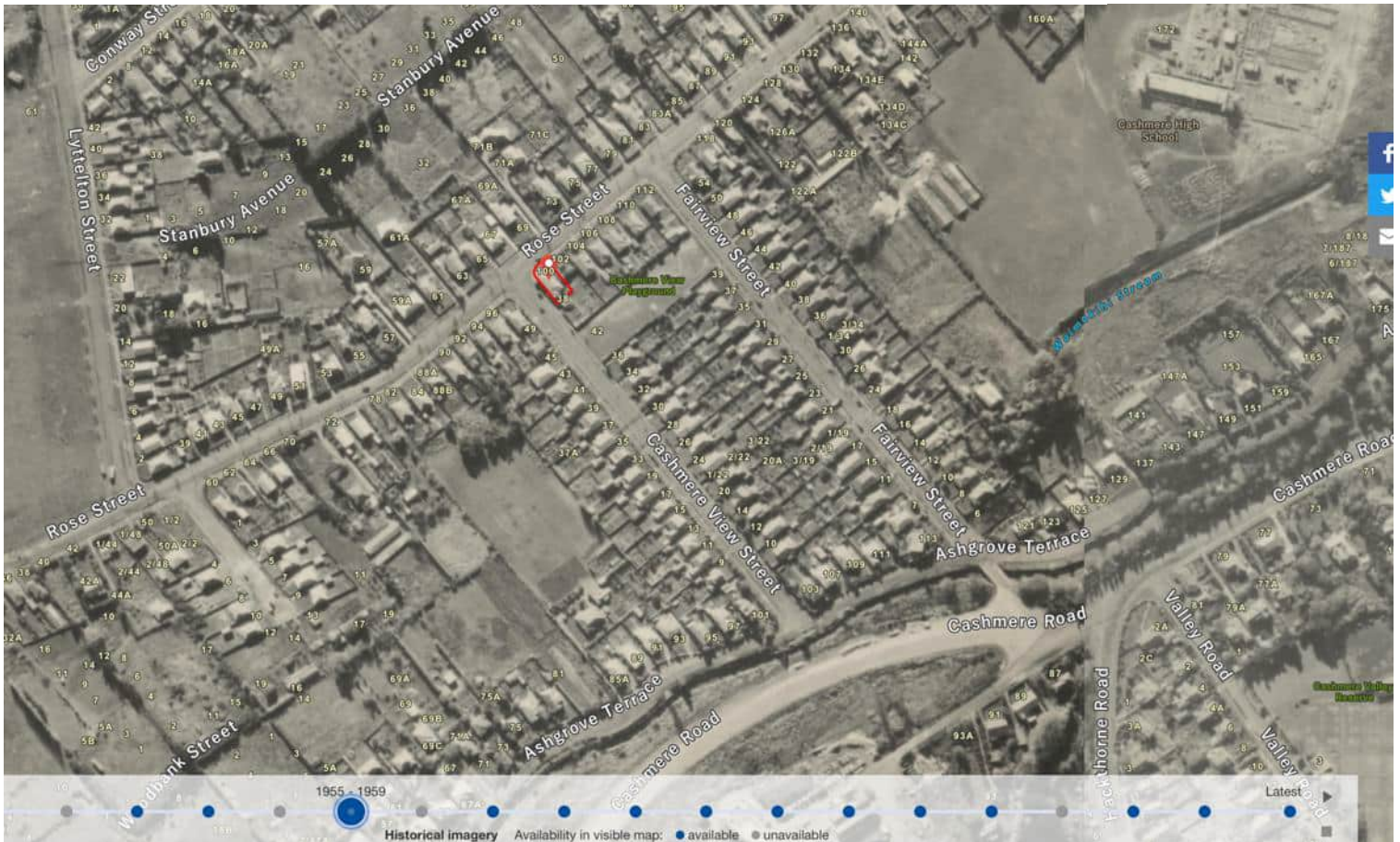
Cr. D. G. Sullivan: I have no objection to taking back the clause.

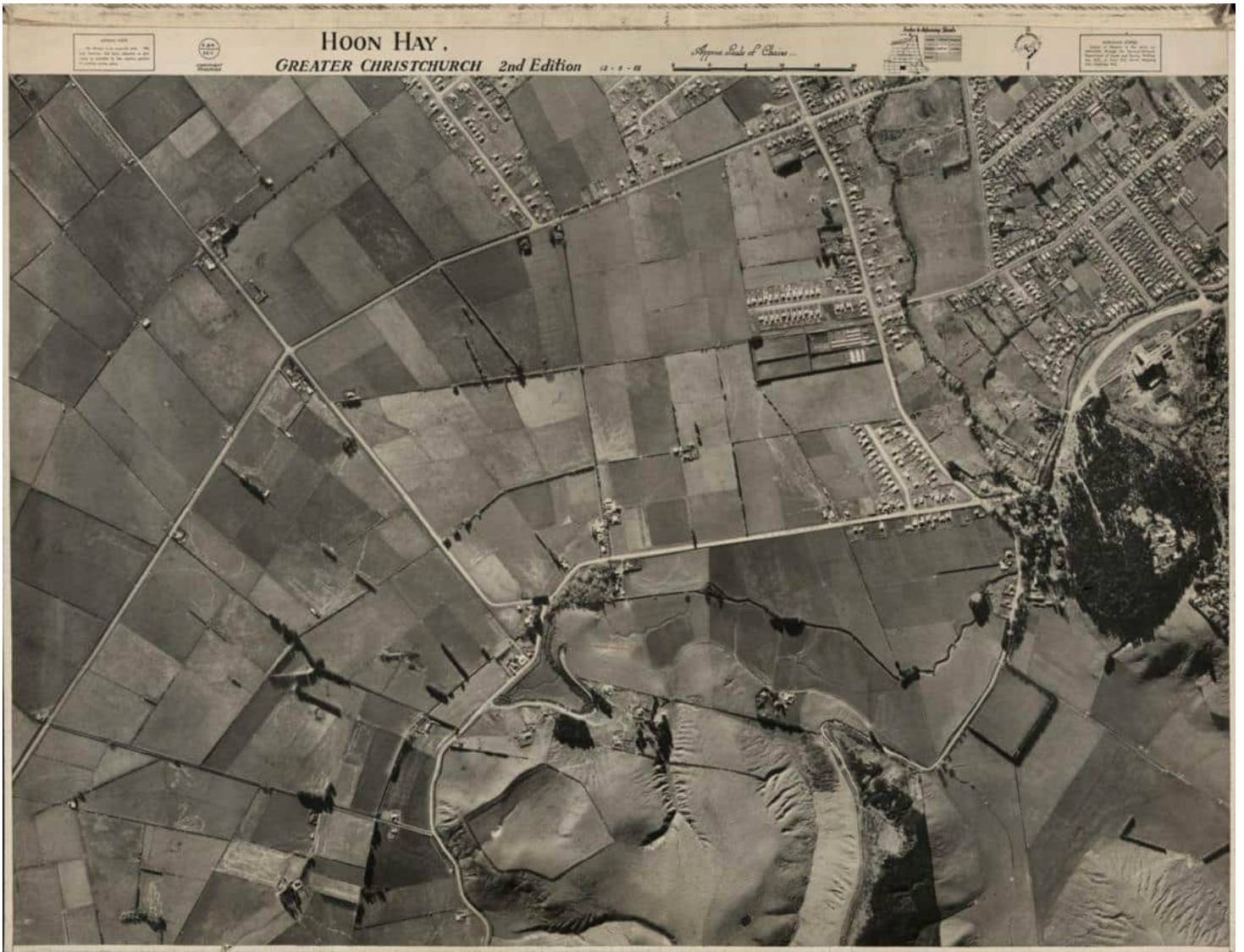
This course was agreed to.



Aerial Photograph 1927
Canterbury Maps April 2023

Aerial Photograph 1955
Canterbury Maps April 2023





Aerial Photograph 1958
Canterbury Maps April 2023

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Andrew **Last name:** Hill

Preferred method of contact Email

Postal address: Unit 2, 44 Peterborough

Street

Suburb: Christchurch Central

City: Christchurch

Country: New Zealand

Postcode: 8013

Email: iamtiger+ccc@gmail.com

Daytime Phone: 021660819

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

- Yes
- I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 82.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

Currently it is hard to develop mixed housing in CCMU south frame zone. There has not been enough

development in this area. It has not been good at getting good value for housing or offices. I have found this zoning restrictive which has forced me to move out of the area.

I propose some changes to the zoning.

- 32m high limit in CCMU South Frame, 20m step back.
 - Greater flexibility with how the buildings are leased/used. Ie different forms of retail/office.
 - Allow for larger much larger office tenancy sizes than the current 450sqm Max, allow for one company to lease many tenancies. Ie a co working space company that might want to lease a 800sqm floor. A easier rule would be max open plan areas of 450sqm.
 - Allow for up to 70% of building to be commercial activities/services, if residential units are included in the development.
 - Allow for greater retail size.
 - For apartments above ground level, allow for only shared outdoor areas, or areas not attached to unit. Ie rooftop garden.
 - Restrict/reduce balcony sizes for non-ground units.
 - If building is a mixed development including apartments, not be restricted by setback rules till 20m.
 - For living area, 3 by 6 meter is far easier to achieve than 4 by 4 meter living area outlined in the changes. Alternatively a min width on the entire residential units of 4meter could also achieve similar results.
- The street facing area is very narrow in Christchurch, making many sites very hard to develop, while meeting fire requirements, enough daylight area and be able to offer reasonable priced housing.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Jaimita **Last name:** de Jongh

Preferred method of contact Email

Postal address: 63 Eastern Terrace

Suburb: Beckenham

City: Christchurch

Country: New Zealand

Postcode: 8023

Email: jaimita.dejongh@gmail.com

Daytime Phone: +64210592328

I could not
Gain an advantage in trade competition through this submission

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directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

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If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

- Yes
- I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Additional requirements for hearing:

As I am also studying and working and I am submitting in a private capacity, it would be helpful if there was some communication and options when to present my submission.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 83.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

See supporting document for my submission, several point regarding several chapters.

My submission is that

See supporting document for my submission, several point regarding several chapters.

Original Submitter:

Original Point:

Points: 83.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

See attached document for several comments regarding several chapters. And yes would like to be heard. I can't see where it asks whether I want to be heard or not.

My submission is that

See attached document for several comments regarding several chapters. And yes would like to be heard. I can't see where it asks whether I want to be heard or not.

Attached Documents

File
2023 05 Submission Plan change 13 and 14

Submission: Plan change 13 and 14

This plan change is a lot better than its predecessor:

Beckenham Character Area

Beckenham Character Area (BCA) has been restored (mostly) to what it is now. Beckenham is a well-defined area in a loop of the Heathcote Ōpāwaho River. Even though the southern tip may have less complete character than the northern end, taking it out of the BCA would have further eroded this area and divided the area in a Beckenham North with character homes and Beckenham South which would see gradual deterioration. With the restoration of most of the BCA boundaries, the whole of the area will only improve. This creates a complete loop that is attractive to bike and walk along instead of going in and out of the BCA.

Natural areas

BCA is not just characterised by character homes but also by its greenness through a minimum property size which provides a refuge for birds from the hills suburbs. With that, it provides a place where people can live who appreciate natural features over 'having stuff' (Beckenham has a relatively large population that bikes to work and who vote 'Green'). Without such a place, such people will simply go out of town with consequences for transport emissions. A city needs to cater for a variety of people. That includes people who are not keen on gardening and happy with apartment living but also includes nature lovers and those who need a bit more space. Beckenham is home to Piwakawakas, Kererū, bellbirds, silvereyes and we have also spotted although less frequent tui, harrier, wren. Birds need not just one garden but a collection of properties with sufficient (native) plants and sufficient darkness (hence the requirement for larger properties) to thrive so this means people who find this important in their life either need to move out of town on a lifestyle block or a city area that accommodates this.

Undermining (community) trust

Recalling part of the BCA after it had been in place only a few years, sent a wrong message: That protection does not mean much and could be recalled suddenly for convenience reasons at any time. It undermines trust in the Council. It undermines community spirit: Why invest in a community that could change character at a moment's notice?

Density and PT use

International scientific research shows that increased density can help to increase PT use but only where there is (light) rail. Christchurch has no light rail and thus increasing density at this stage is pointless. Some increase in PT may be achieved with bus lanes and increasing densities in a concentrated way along these arterial routes. However, increasing densities in a haphazard way scattered across the city was never going to work and any transport planner who has studied the latest scientific research could/should have told you that. Increasing cycling has a better chance of succeeding with much lower costs (which would be largely offset by reduced health costs) However increasing densities without (light) rail, increases car traffic and makes the city less safe for cycling so you get the worst of both worlds where PT doesn't increase, and cycling becomes less attractive and thus declines. Increasing densities along arterial routes and around commercial hubs is the right decision that scientifically makes sense.

Other things have not yet been addressed:

Flooding: areas draining into mid Heathcote Ōpāwaho

Allowing increasing densities in the areas that drain into the mid-Heathcote Ōpāwaho is a mistake. Retention basins in the upper-Heathcote Ōpāwaho (around Halswell) have no effects on the mid-section as most of the flooding in the mid-section happens due to run-off from the hills e.g. Bowenvale but also all the areas on the city side of the river. There are no flood mitigation options other than widening the banks which has already been done. Despite this widening work, the Heathcote Ōpāwaho River flooded an unprecedented three times in winter 2022. With climate change this can be expected to get much worse. To avoid scenes as we have seen in Auckland recently, intensification that increases the amount of hard surfaces (which most infill housing does) in this area should stop as soon as legally possible. The CCC has already had to buy a number of houses along the Heathcote that were too flood prone. If further intensification is not halted, the CCC may have to buy more houses along the Heathcote Ōpāwaho River at the expense of all ratepayers or create problems for homeowners along the Heathcote. To allow (town)houses to be built that in the future would rob other homeowners of their house is unethical. And due to this submission, you now know this is a real risk so you cannot say at some stage in the future that you did not realise.

Flooding: apartments blocks instead of infill housing

Intensification should only be in the form of large and high apartment blocks along earlier mentioned arterial routes. This will provide the most houses with the least hard surfaces. As this will impact heavily on existing residents, this may involve buying up large areas along these arterial routes.

Flexibility of housing for an older demographic

Town houses now cater for a younger demographic. However, our population is getting older, and we will need houses that can cater for the need of an older population so we need houses that can cater for younger people now but can be turned into older people's housing. As we will have more older people and less young people in the decades to come we will not enough worker to care for older people so we need houses where older people can stay home for longer. Older people need one level apartments not three storey townhouses with narrow staircases without lifts and where lifts cannot be easily fitted. They need generous bathrooms and hallways. Any intensification needs to include these sorts of design requirements to be future proof.

Flexibility of housing for a declining population

This plan does not look ahead far enough. It impacts on housing and with houses lasting 50 years at least (they legally need to last at least 50 years according to the minimum requirements in the Building Code), the plan needs to last at least as long. This means houses built today will be there in 2073, twenty years after the NZ population is expected to decline and can only be maintained through migration (which, as the population declines worldwide, may not be so easy in the decades to come). I am not sure what the implications are, but it needs a think now. I know overseas some older and small attached houses have had separating walls taken out to make the house bigger for modern living. Housing that would easily allow this would prevent mass scale empty houses (as is currently happening in Japan). If some areas are intensified and others not, this would more easily accommodate abandoning the non-intensified areas and demolishing those houses and turning them back into a natural or recreational or cultural area. Scattered infill housing cannot accommodate that.

Fairview and Cashmere View Streets

These streets have nearly 100% character homes but have not been protected as such and are under threat which would be a total waste. Already the odd house has been bought up and replaced with infill housing which is out of character. As a regular cyclist (cycling as a means of transportation not recreation) I often choose my route along those streets simply because of the pleasure of riding along them. An attractive environment (which can be natural or cultural as in this case) makes it so much easier to promote cycling as a means of transport.

Systems approach

In general, this plan has a too narrow focus and needs to take a whole systems approach. Without that you will have other problems cropping up in the near or a bit further away future due to the solutions of the current problems we are trying to solve (unintended consequences).

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 11/05/2023

First name: Claudia M **Last name:** Staudt

Preferred method of contact Email

Postal address: 21 Helmores Lane

Suburb: Merivale

City: Christchurch

Country: New Zealand

Postcode: 8014

Email: Chris@Chriswilson.kiwi

Daytime Phone: 0274322727

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

- Yes
- I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Additional requirements for hearing:

If others make a similar submission we will consider presenting a joint case with them at the hearing.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 84.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

Please see the detailed submission attached.

1)Zoning of our property as High Density Residential.

2) The absence of any recognition in PC14 for the character of the area as historically acknowledge and set out in Special Amenity Area 8 of the Previous City Plan.

Attached Documents

File
Claudia M Staudt

SUBMISSION ON CHRISTCHURCH DISTRICT PLAN

PLAN CHANGE NO 14

SUBMITTER DETAILS:

FULL NAME(S): CLAUDIA M STAUDT
21 HELMORES LANE
EMAIL: CHRIS@CHRISWILSON.KIWI
PHONE: +64 0274 322 727

Trade Competition:

I could not gain an advantage in trade competition through this submission.

The specific proposals that my submission relates to are:

- (i) Zoning of our property as High Density Residential
- (ii) The absence of any recognition in PC 14 for the Character of the area as historically acknowledged and set out in Special Amenity Area 8 of the Previous City Plan.

Our submission is that:

1. We are extremely concerned by the impact of the proposed rezoning to High Density Residential, on the character and coherence of our neighbourhood at Helmores Lane, specifically the area consisting of Helmores Lane, Desmond Street and Rhodes Street (to Rossall Street) (**the Area**). Owners and occupiers of these properties, ourselves included, have come to this Area to enjoy the amenity that the neighbourhood offers and have invested heavily in securing their properties. These property owners highly value the existing environment and the benefits it provides in terms of pleasantness and lifestyle. Previously, that character had been acknowledged by the identification of the area as a special amenity area (SAM8).

2. It is accepted that the Area has been subject to some residential re-development over the years, especially since the Canterbury earthquakes, nevertheless it has retained a sense of character and coherence that, we consider, is somewhat unique. It has a relationship to the Avon River and to the parklands beyond, which are part of, and provide a link to the rest of, Hagley Park. It has remained an enclave of relatively spacious residential dwellings that has also enabled the retention of many trees (including significant specimen trees) both within the streetscape and within private properties. The special character comes from;
- Hagley Park,
 - Millbrook Reserve and walkways,
 - The trees on Harper Avenue,
 - The Avon River,
 - The street character and trees,
 - The elements of heritage still remaining post-earthquake including the two identified dwellings,
 - the now pedestrian bridge on Helmores Lane, and
 - the predominance and retention of larger dwellings on substantial sites reflecting the historical character of this area of Christchurch.

This was an area where the lower residential site density was identified as a fundamental part of the character area (SAM8) and this has been reflected in the redevelopment and rebuild of the area. To quote the SAM 8 Descriptor;

“The most noteworthy elements of the area that help create the high level of amenity are the mature trees, well-vegetated front boundaries and large sections. These elements create an area that gives a sense of spaciousness, which is heightened by the glimpses of housing through the vegetation and behind fencing.”

The special qualities of this area that the submitter seeks to be retained were also set out in SAM 8 being:

- **“Road Setback**
Road setback is the distance that a building must be set back from the front boundary.
- **Residential Site Density**
SAM 8 has a Residential Site Density of 500m², 50m² greater than the standard Living 1 zone. The purpose of the decreased density is to retain the feeling of spaciousness and the level of vegetation coverage in the area.
- **Outdoor Living Area**
The outdoor living requirements is 100m², as opposed to 90m² which is the standard for the Living 1 zone. The purpose of the higher requirement is to preserve larger amounts of open space surrounding the houses, that is traditional in this area.”

3. Within the framework that the Council has chosen to give effect to the new Medium Density Residential standards and the National Policy Statement on Urban Development, we consider that there is the ability to protect what is special about this area by:

- Rezoning the area Medium Density, and identifying the Area as a Residential Character Overlay Area, with applicable rules (as attached): or
- Rezoning the area Medium Density and imposing a further change to the qualifying matter allowing access to sunlight by making the recession plane 45°, rather than 50°, from 3m at southern boundaries: and/or
- Providing that southern boundary neighbours can be notified if resource consents for height or access to sunlight non-compliances.

There may be other ways to reduce the impacts on the character from the intensification changes which will become apparent and which we would like considered, but the key is that we think there is a need to protect the existing character and density. Having it identified as a Residential Character Area appears the best way, but if that is not possible, reducing the extent of any permitted intensification should be explored. At the very least, this area should not be zoned high density.

We seek the following decision from the Council:

- That Helmores Lane, Desmond Street and Rhodes Street (to Rossall Street) be identified in the Christchurch District Plan as a Medium Density Residential zone and a Residential Character Overlay Area and be made subject to the rules that apply to Residential Character areas: or,
- If Helmores Lane, Desmond Street and Rhodes Street (to Rossall Street) are not included as a Residential Character Area, that the Area be zoned Medium Density Residential: and,
- That sunlight access be better protected by further amending the medium/high density southern boundary recession plane to 45° from 3m at the boundary: and,
- That neighbours along the southern boundaries of any proposed developments that involve non-compliances with height or access to sunlight rules *can* be notified of the required resource consents and to make submissions.
- Any further or other decisions that achieve the outcomes sought by this submission, or are required as a consequence of the relief we seek.

I/We wish to speak in support of our submission.

If others make a similar submission we will consider presenting a joint case with them at the hearing.

Dated: 8 May 2023

Signed:



Kim McCracken (as agent)

ATTACHMENT: PC14 – RESIDENTIAL CHARACTER OVERLAY RULES (PROPOSED)

PC14 – RESIDENTIAL CHARACTER OVERLAY RULES (PROPOSED)

CCC Summary of Proposed Changes

In recognition of the status of a Qualifying Matter, we propose introducing a resource consent requirement as a restricted discretionary activity, to help us better protect Character Areas. While some infill development will be allowed, we will have more ability to decline a resource consent where the design of a new house, or changes to an existing house, aren't in keeping with the Character Area.

Subdivision will also be more restrictive, depending on the zone and area. For example, within a certain Character Area an additional house may be allowed on an existing site, or to the rear on a new site, but it may be limited to between five and eight metres (one or two storeys, depending on building design). It may require a larger garden and existing trees to be retained, with the house or houses set further back from the street and other boundaries than would be allowed for in a general suburban area.

Rules for the Character Areas will differ depending on the character values of each area, as well as the District Plan zone in which the character area is located. The character values that are already being used to assess any development designs submitted to us are proposed to remain the same.

Proposed Rules (Medium Density Residential Zone)

Activity Status	Activity within a Character Area Overlay	Activity if not in a Character Area Overlay
Permitted	Within any Character Area Overlay, the interior conversion of an existing residential unit into two residential units.	No equivalent rule – no density limit
Controlled	In a Character Area Overlay, a. The erection of new residential unit to the rear of an existing residential unit on the same site, where it is: i. less than 5 metres in height; and ii. meets the built form standards applicable to the Character Area Overlay within which it is located. b. Any application arising from this rule shall not be limited or publicly notified.	
Restricted Discretionary	Residential units in the Character Area Overlay that do not meet Rule 14.5.3.2.7 –Number of residential units per site – maximum of 2 residential units per site.	No density limit.

Restricted Discretionary	<p>Within a Character Area Overlay:</p> <p>a. The demolition or removal of a building greater than 30m² on the site, relocation of a building onto the site, erection of new buildings and alterations or additions to existing buildings, accessory buildings, fences and walls associated with that development.</p> <p>b. This rule does not apply:</p> <p>i. where 14.5.3.1.2 C1 applies.</p> <p>ii. to fences that meet the applicable built form standard 14.5.3.2.12 for that Character Area;</p> <p>iii. to accessory buildings that are less than 30m² and located to the rear of the main residential unit on the site and are less than 5 metres in height;</p> <p>iv. to fences that are located on a side or rear boundary of the site, except where that boundary is adjacent to a public space.</p> <p>c. Activities that do not meet Built Form standard 14.5.3.2.6.</p> <p>d. Any application arising from this rule shall not be limited or publicly notified.</p>	
	Building height controls (dependent on the area, but the current Character Areas have 7m and 5.5 height limits proposed)	In most places, 11 metres
	<p>Character Areas have a range of other special limits on built form, dependent on the values of that particular Character Area, including:</p> <ul style="list-style-type: none"> - the width of building frontages - landscaping - setbacks (larger than typical) - building coverage - outdoor living space requirements - minimum glazing facing the street - fencing - garaging and car ports - building separation <p>Generally the built form requirements are stricter than the underlying zoning would otherwise allow.</p> <p>If these rules are not met, resource consent is needed (restricted discretionary activity status).</p>	

Proposed Subdivision Rules

	Activity within a Character Area Overlay	Activity if not in a Character Area Overlay
	<p>Minimum net site area for subdivision varies between Character Areas in the Medium Density Zone, but is generally larger than the underlying Zone requirement.</p> <p>In High Density Zone – 400m².</p>	<p>400m² proposed for the Medium Density Residential Zone or</p> <p>300m² proposed for the High Density Residential Zone</p>

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 11/05/2023

First name: Nick **Last name:** Brown

Preferred method of contact Email

Postal address: 33 Watford Street

Suburb: Strowan

City: Christchurch

Country: New Zealand

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Email: nick@browns.co.nz

Daytime Phone: +6421533848

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 85.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

HRZ in Strowan area to be changed to MRZ

My submission is that

At a general level, the removal of the requirements for new residential housing developments to provide for any on-site parking, will have a significant and disproportionate impact on a number of vulnerable groups in our community. These

groups include

- people with disabilities;
- elderly residents; and
- families with children.

This impact will be significant on both

- existing residents and
- residents living in new developments

as increasingly they and their visitors will not be able to expect and/or rely on their ability to park close to their place of residence. This will be exacerbated significantly in the Strowan area where the current on-street carparking supply does not meet demand and this is a further reason why the proposed HRZ must not be implemented. I have been unable to find any specific references in PC 14 as to how the transitional change (clearly over many years) will impact on the needs of these vulnerable groups in our community and how it will be mitigated. If this is the case it is disappointing that PC 14 is so lacking in provision.

Section 7.2.1.2 Policy – High trip generating activities

ix provide for the transport needs of people whose mobility is restricted

Section 7.2.1.5 Policy – Design of Carparking areas and loading areas

iii be accessible for people whose mobility is restricted

Original Submitter:

Original Point:

Points: 85.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

HRZ in Strowan area to be changed to MRZ

My submission is that

1. INFRASTRUCTURE

Relevant PC14 clause references and extracts are given in RED italics following

Section 14.2.8.5 Policy – Infrastructure servicing for developments

a Ensure that developments are serviced with all required infrastructure in an effective and efficient manner

Section 14.2.8.6 Policy – Integration and connectivity

c Avoid significant adverse effects and remedy or mitigate other adverse effects on existing businesses, rural activities or infrastructure

I suggest that it is universally accepted that 'infrastructure' includes adequate carparking and a safe and effective transport network which does not contribute to traffic congestion. and a functioning and effective stormwater and wastewater network.

My specific concerns in relation to the impact of the proposed changes on this infrastructure in particular in my community of Strowan are as follows:

- the supply of on-street carparking spaces currently cannot keep-up with the demand for carparking, resulting in the very recent expansion of time-based (two hour maximum) parking restrictions on most surrounding streets. The presence of St Andrews' College, which defines the southeast limit of Strowan, a Year 1-13 school and preschool, is the most significant contributor. The school has a roll of 1700 students and around 250 teachers and staff with only minimal on-site parking provided. Day students who hold a drivers licence drive from all parts of greater Christchurch to attend the College. St Andrews' College, established in 1917, has effectively become a 'destination, independent school of choice' as it is the only co-educational, preschool, primary and secondary school in the South Island. The school is growing with a large waiting list for entry. Any increase in housing density in the Strowan community (that is either MRZ or HRZ) will magnify this existing, significant on-street carparking problem as new housing developments are no longer required to provide

any on-site carparking. Of particular concern is that the PC14 proposes to enable HRZ along Papanui Road and one block either side of Papanui Road which is obviously at a higher level of intensification than even MRZ. As there is little on-street carparking permitted on Papanui Road (none for five hours on weekdays due to the presence of priority bus lanes), and no on-site carparking required for new residential developments, carparking associated with ALL of this intensification will further exacerbate the carparking issues in the Strowan community;

- the existing traffic management issues associated with St Andrews' College also pose a significant health and safety issue – from morning and afternoon congestion in Normans Road and surrounding streets at school drop-off and pick-up times, drivers double parking and parking over broken yellow lines and 'rat running' around the Strowan streets to seek to avoid congestion, causing delays and congestion at intersections linking with surrounding primary roads including Papanui Road and Strowan Road. All of these issues will be exacerbated by the proposed intensification of residential development in the community but especially by the proposed HRZ over many blocks,

Relevant PC14 clause references and extracts are given in RED italics following

Section 14.6.2 Built form standards

a The following built form standards shall be met by all permitted activities and restricted discretionary activities RD2, unless otherwise stated.

Advice note:

1. There is no spare, or limited, wastewater, storm water, or water supply infrastructure capacity in some areas of Christchurch City which may create difficulties in granting a building consent for some developments. Alternative means of providing for those services may be limited or not available. Compliance with the District Plan does not guarantee that connection to the Council's reticulated infrastructure is available or will be approved. Connection to the Council's reticulated infrastructure requires separate formal approval from the Council. There is a possibility that approval to connect will be declined, or development may trigger the need for infrastructure upgrades or alternative servicing at the developer's cost.

I am referring to this Clause as it is not obvious where else this issue is covered.

My specific concerns in relation to the impact of the proposed changes on the stormwater and wastewater networks in our local community of Strowan are as follows:

- there are already pockets of flooding in rainfall events in Strowan – with Brenchley Avenue being one example where both the stormwater and wastewater networks do not cope in these events. HRZ intensification of the extent proposed in PC14

will exacerbate this across the neighbourhood. This is a known consequence of urban intensification in Christchurch (and elsewhere) as a greater density of ‘hard’ surfaces (eg roof, yard, path and paved areas) is created and a consequential reduction in ‘soft’ surfaces (eg grass, landscape areas) which unquestionably increases the flow rates of stormwater discharge to the side channel and gives rise to infiltration of this uncontrolled stormwater into the wastewater system giving rise to overflows and resulting sewage contamination of waterways, streams and surface water. (The serious flooding in many parts of Auckland over the period 27 February-2 February 2023 highlighted this impact of urban intensification dramatically). All of these issues will be exacerbated by the proposed intensification of residential development in the community but especially by the proposed HRZ over many blocks, immediately adjacent to the current problem areas.

2. AMENITY/CHARACTER

Relevant PC14 clause references and extracts are given in RED italics following

Section 14.2.4.2 Policy – High quality, medium density residential development

a Encourage innovative approaches to comprehensively designed, high quality, medium density residential development, which is attractive to residents, responsive to housing demands and reflects the planned urban built character of an area

I suggest that the proposed HRZ which is shown to be almost continuous down Papanui Road and for at least one block either side of Papanui Road is not consistent with the stated intent of this Section/Policy above and it certainly does not support ‘...medium density residential development, which is attractive to residents, responsive to housing demands and reflects the planned urban built character of an area’

My specific concerns in relation to the impact of the proposed changes on the amenity/character in particular in my community of Strowan are as follows:

- the Strowan neighbourhood has an amenity character and fabric and a sense of community which is very attractive to residents, which is highly valued and worthy of retention. This is comprised of a number of elements including:
 - o there is still a significant proportion of older, quality homes;
 - o the homes are typically on larger than average sections so a sense of open space is still present;
 - o there are a number of prominent trees and landscaping on properties which reinforces both the perception and reality of quality open space ‘around’ buildings (and which clearly supports the Council’s Urban Forest Plan 2023 initiative);
 - o the small number of new homes which have been built are typically two storey, with the scale, density and quality largely in keeping with the existing character and built form elsewhere in the Strowan community.

4. CHANGE FROM HRZ TO MRZ IN STROWAN – SO AS TO BE CONSISTENT WITH STATED INTENTION

Relevant PC14 clause references and extracts are given in RED italics following

Section 14.2.7 Objective – High Density Residential Zone

a High density residential development near larger commercial centres, commensurate with the expected demand for housing in these areas and the nature and scale of commercial activities, community facilities, and multimodal transport networks planned or provided in the commercial centres

Section 14.2.7.2 Policy – High density location

a Enable high density residential development within walking catchments of the:

- i. City centre zone;

ii. Town Centre zones of Riccarton, Papanui, and Hornby; and

iii. Other larger commercial centres zoned as Town Centres and Local Centres; to a degree that responds to the planned scale and nature of each centre group and the range of activities planned or provided there.

Clearly the part of Strowan proposed as HRZ does not meet these criteria as it is not located near or adjacent to a commercial centre.

In requesting a change in PC14 as proposed, I would highlight the following anomaly. I have studied 'The proposed zones' (on page 9 of the Consultation document) and my analysis has been confirmed by relevant Council staff, that the specific intention is to have a proposed 'Larger Town Centre' zone in the vicinity of the Merivale commercial centre with an associated HRZ stretching as far north as Heaton Street/Innes Road. In a similar manner, it is clear that a proposed 'Larger Town Centre' zone be created in the vicinity of the Papanui commercial centre with an associated HRZ stretching as far south as Blighs Road. But the planning maps contradict this and show these HRZ areas as joined or continuous along the spine of Papanui Road.

I suggest therefore that the significant infrastructure pressure and other issues which I have highlighted in this submission, which are already impacting the Strowan community particularly in the vicinity of St Andrews' College, could be mitigated by Council following the approach which they themselves have outlined in the Consultation document. That is, by limiting the HRZ as detailed (north from the Merivale commercial centre to Heaton Street/Innes Road and south from the Papanui commercial centre to Blighs Road) and not extending the HRZ along this stretch of Papanui Road through the Strowan community.

Conclusion/Recommendation

I urge Council to identify the area of Strowan, particularly those blocks in the vicinity of St Andrews College, as worthy of definition as an area which warrants zoning as MRZ not HRZ as proposed in PC14, as the impact on infrastructure demand and amenity values under HRZ is significantly greater than under MRZ.

I seek that this change be made by way of 'Area limited by Qualifying Matters' or other appropriate means for the following reasons:

- the area has existing significant infrastructure issues (including carparking, vehicle congestion, flooding issues which impact both stormwater and wastewater systems);
- the presence of St Andrews' College is important. Whilst the College undoubtedly enhances and reinforces the character of the neighbourhood, the impact of its attraction to families across the city as providing education of a 'special character', means that the College's current and future growth places pressure on the local community (in terms of carparking, traffic congestion)
- the amenity value of the neighbourhood would be negatively impacted. There is a character of older quality housing on larger than average sections which reinforces the reality of open space, and recent low rise (typically two storey), new housing developments of a consistent appropriate quality suitable for families, where many existing trees have been retained with on-site carparking provided;
- the sense of community which is present and increasing would be undermined by the scale of intensification which is proposed under HRZ;
- there are a number of prominent trees remaining in the neighbourhood which reinforces the quality of open space and clearly supports the Council's Urban Forest Plan 2023 initiative; but which would inevitably be threatened with the high level of intensification under HRZ as proposed in Plan Change 14.

Noting that the following extract is taken from Council's PC14 documentation

Areas limited by Qualifying Matters

Not all parts of our city are suitable for the level of increased development. Some areas have qualities, known as Qualifying Matters, which mean rules enabling increased development will be modified to maintain and protect those qualities or manage their effects.

This may include keeping a lower level of residential density and building heights, or managing development through specified matters and resource consent conditions

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 & 14)

Submitter Details

Submission Date: 11/05/2023

First name: Joe **Last name:** Clowes

Preferred method of contact Email

Postal address: 116 Domain Terrace

Suburb: Spreydon

City: Christchurch

Country: New Zealand

Postcode: 8024

Email: joe@vision360.co.nz

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 86.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

My submission is that

The council will require 20% of new residential developments to be covered by trees, or otherwise pay a financial contribution to help the council plant more trees on public land. Christchurch has an appallingly low tree canopy cover rate of 13% compared to Auckland (18%) and Wellington (30%). Trees have a wide range of environmental, health, social and economic benefits and are important for the future of our city.

Original Submitter:**Original Point:****Points:** 86.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

My submission is that

The council is required by law to allow residential buildings of at least 6 storeys within a 1.2km radius of commercial centres such as malls and the city centre. The council plan to enable this, while also allowing up to 10 storeys for residential buildings closer to the city centre. This would enable a wider range of dense housing development options. It would also allow more people to live close to services and amenities.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 11/05/2023

First name: Ciaran **Last name:** Mee

Preferred method of contact Email

Postal address: 36 Hereford Street

Suburb: Christchurch Central

City: Christchurch

Country: New Zealand

Postcode: 8013

Email: ciaranmee77@gmail.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

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Yes

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Consultation Document Submissions

Original Submitter:

Original Point:

Points: 87.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

My submission is that

The council will require 20% of new residential developments to be covered by trees, or otherwise pay a financial contribution to help the council plant more trees on public land. Christchurch has an appallingly low tree canopy cover rate of 13% compared to Auckland (18%) and Wellington (30%). Trees have a wide range of environmental, health, social and economic benefits and are important for the future of our city.

Original Submitter:

Original Point:

Points: 87.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

My submission is that

The council plans to restrict housing in some areas of the city because they are poorly serviced by the lack of current high frequency public transport routes. Some areas solely designated with this qualifying matter such as in Casebrook and Styx are close to rail corridors, existing commercial areas and are serviced by low frequency routes. In the future, these areas could see a boost in service by more buses on current routes or introduction of a commuter rail service.

Original Submitter:

Original Point:

Points: 87.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

My submission is that

There are many cities in the world that have high density and are further from the equator than Christchurch. Cities such as Vienna, Copenhagen, Toronto, Geneva, and Calgary are consistently ranked some of the most livable cities in the world. This qualifying matter would reduce the maximum height and size of medium residential buildings below what is legally required. This qualifying matter has been developed with the expressed purpose of protecting and increasing property values rather than increasing the amount of affordable housing for people.

Original Submitter:

Original Point:

Points: 87.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I

seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

My submission is that

The council is required by law to allow residential buildings of at least 6 storeys within a 1.2km radius of commercial centres such as malls and the city centre. The council plan to enable this, while also allowing up to 10 storeys for residential buildings closer to the city centre. This would enable a wider range of dense housing development options. It would also allow more people to live close to services and amenities.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 11/05/2023

First name: David **Last name:** Lee

Preferred method of contact Email

Postal address: 58A Charles Street

Suburb: Waltham

City: Christchurch

Country: New Zealand

Postcode: 8011

Email: david@partly.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

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Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 88.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

My submission is that

The council plans to restrict housing in some areas of the city because they are poorly serviced by the lack of current high frequency public transport routes. Some areas solely designated with this qualifying matter such as in Casebrook and Styx are close to rail corridors, existing commercial areas and are serviced by low frequency routes. In the future, these areas could see a boost in service by more buses on current routes or introduction of a commuter rail service.

Original Submitter:

Original Point:

Points: 88.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

My submission is that

The council will require 20% of new residential developments to be covered by trees, or otherwise pay a financial contribution to help the council plant more trees on public land. Christchurch has an appallingly low tree canopy cover rate of 13% compared to Auckland (18%) and Wellington (30%). Trees have a wide range of environmental, health, social and economic benefits and are important for the future of our city.

Original Submitter:

Original Point:

Points: 88.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

My submission is that

There are many cities in the world that have high density and are further from the equator than Christchurch. Cities such as Vienna, Copenhagen, Toronto, Geneva, and Calgary are consistently ranked some of the most livable cities in the world. This qualifying matter would reduce the maximum height and size of medium residential buildings below what is legally required. This qualifying matter has been developed with the expressed purpose of protecting and increasing property values rather than increasing the amount of affordable housing for people.

Original Submitter:

Original Point:

Points: 88.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I

seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

My submission is that

The council is required by law to allow residential buildings of at least 6 storeys within a 1.2km radius of commercial centres such as malls and the city centre. The council plan to enable this, while also allowing up to 10 storeys for residential buildings closer to the city centre. This would enable a wider range of dense housing development options. It would also allow more people to live close to services and amenities.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 11/05/2023

First name: Krystal **Last name:** Boland

Preferred method of contact Email

Postal address: 8A Kipax Place

Suburb: Riccarton

City: Christchurch

Country: New Zealand

Postcode: 8011

Email: krissybee92@gmail.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 89.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

My submission is that

The council will require 20% of new residential developments to be covered by trees, or otherwise pay a financial contribution to help the council plant more trees on public land. Christchurch has an appallingly low tree canopy cover rate of 13% compared to Auckland (18%) and Wellington (30%). Trees have a wide range of environmental, health, social and economic benefits and are important for the future of our city.

Original Submitter:

Original Point:

Points: 89.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

My submission is that

The council plans to restrict housing in some areas of the city because they are poorly serviced by the lack of current high frequency public transport routes. Some areas solely designated with this qualifying matter such as in Casebrook and Styx are close to rail corridors, existing commercial areas and are serviced by low frequency routes. In the future, these areas could see a boost in service by more buses on current routes or introduction of a commuter rail service.

Original Submitter:

Original Point:

Points: 89.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

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Original Submitter:

Original Point:

Points: 89.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I

seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

My submission is that

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Attached Documents

File
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Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 11/05/2023

First name: Todd **Last name:** Hartshorn

Preferred method of contact Email

Postal address: 10 Tudor Avenue

Suburb: Ilam

City: Christchurch

Country: New Zealand

Postcode: 8041

Email: toddmhartshorn@gmail.com

Daytime Phone:

I could not
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Consultation Document Submissions

Original Submitter:

Original Point:

Points: 90.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

My submission is that

The council will require 20% of new residential developments to be covered by trees, or otherwise pay a financial contribution to help the council plant more trees on public land. Christchurch has an appallingly low tree canopy cover rate of 13% compared to Auckland (18%) and Wellington (30%). Trees have a wide range of environmental, health, social and economic benefits and are important for the future of our city.

Original Submitter:

Original Point:

Points: 90.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

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Original Submitter:

Original Point:

Points: 90.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

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I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

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Original Submitter:

Original Point:

Points: 90.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I

seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

My submission is that

The council is required by law to allow residential buildings of at least 6 storeys within a 1.2km radius of commercial centres such as malls and the city centre. The council plan to enable this, while also allowing up to 10 storeys for residential buildings closer to the city centre. This would enable a wider range of dense housing development options. It would also allow more people to live close to services and amenities

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 10/05/2023

First name: Helen **Last name:** Jacka

Preferred method of contact

Postal address:

Suburb:

City:

Country: New Zealand

Postcode:

Daytime Phone:

I could not
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Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 91.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:

Original Point:

Points: 91.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:

Original Point:

Points: 91.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:

Original Point:

Points: 91.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 11/05/2023

First name: Clive **Last name:** Smith

Preferred method of contact Email

Postal address:

Suburb:

City:

Country: New Zealand

Postcode:

Email: clive_anthony_smith@hotmail.com

Daytime Phone: 0212258125

I could not
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Would you like to present your submission in person at a hearing?

- Yes
- I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Additional requirements for hearing:

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 92.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

To not proceed with the rezoning of part of Northwood subdivision.

My submission is that

NRA strongly opposes the planned rezoning of a significant part of Northwood from Residential Suburban (RS) to Medium Density Residential Zone (MRZ).

Attached Documents

File
NRA Submission to Christchurch City Council regarding City Plan 13 and 14



Submission to Christchurch City Council regarding City Plan 13 and 14

This submission is made by Northwood Residents' Association on behalf of the residents of Northwood.

Northwood Residents' Association (NRA) is well known to the Fendalton-Waimairi-Harewood Community Board. Our area exists in the Harewood Ward. NRA has been in existence since 2005 and has been a strong voice on issues affecting our community. NRA has also had a strong track record for working with the Council. We thank Christchurch City Council for the opportunity of responding to this plan change.

Summary of Submission:

NRA strongly opposes the planned rezoning of a significant part of Northwood from Residential Suburban (RS) to Medium Density Residential Zone (MRZ).

Reasons for Opposition:

We understand that the proposed change is arising from a change in legislation and are aware of the housing challenges that New Zealand is facing, including the need for more housing. However, we believe that Northwood is not suited for the proposed rezoning, and we have serious concerns about the negative impacts potentially resulting from it. In this submission, we have included our main concerns. In particular, the proposed rezoning raises concerns regarding its impact on the existing plan and the liveability of the subdivision, the environment, and the accrued risks of stormwater management issues:

1. The Northwood subdivision was designed in its entirety with a view to accommodate a community within it that would have a mixture of housing density and land areas. These areas were well defined and co-exist well with each other within the subdivision. Northwood already contains significant areas of medium and high-density housing under its current plan. Northwood is an area of excellent town planning and, arguably, of great liveability, as demonstrated by the pride of its residents and the well looked-after subdivision.

The plan introduces MRZ in a single contiguous block incorporating all sections within a certain distance to the Main North Road. While the proposed change may allow more sections to become available for intensification, it completely ignores the merits of the existing plan. NRA strongly opposes the use of unplanned rezoning in Northwood. The proposed MRZ swathe includes amongst other things, Northwood Villas, an over 55's entity with its own covenants. One of the features that defines the character of Northwood, is the layout of the current buildings on their sections. In general, the owners of the sections facing the road frontage have maintained the original guidelines of space and openness in keeping with the

original covenants applied by the subdivision developer, RD Hughes. We argue that Northwood's current plan supports the ambience of our place.

2. Christchurch City Council recently opened a consultation process on its proposed Urban Forest Plan. As outlined in the proposed plan, Northwood stands out with its higher canopy cover (15%) than all bordering areas. The NRA believes that the Northwood canopy cover should be protected. In addition to being a significant loss to the environment and the character of the area, the proposed change will be an impediment to CCC achieving its goals of growing its urban forest canopy (Goal 1) and of protecting urban trees by looking after them as "critical infrastructure (Goal 3).
3. Furthermore, the NRA raised concerns in the past about ongoing flooding issues in the Northwood subdivision. Part of the Northwood subdivision is predicted to be within the extent of a 1 in 50-year flood event. The NRA doesn't support the rezoning as we believe it would only accentuate the issue and will potentially pose a health and safety risk to the Northwood residents.
4. Lastly, we would like to highlight that significant developments are already happening in the area, with a large development across the Main North Road. We believe that it would be inappropriate to proceed with the proposed rezoning until the impacts of this major development on horizontal infrastructure, road usage and traffic are well understood.

We urge the Council to work collaboratively with the Northwood Residents' Association to ensure that any proposed changes are in the best interests of the Northwood residents and the broader Christchurch community.

We hope that you will consider our concerns and take appropriate action to protect the unique character and environment of Northwood and to protect its residents.

Sincerely,

Clive Smith

Chair of Northwood Resident Association

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 04/05/2023

First name: Cashmere Park Ltd, Hartward Investment Trust and Robert Brown **Last name:** N/A

Preferred method of contact Email

Postal address: 20 Troup Drive

Suburb: Addington

City: Christchurch

Country: New Zealand

Postcode: 8011

Email: holly.luzak@eliotsinclair.co.nz

Daytime Phone: 033794014

I could not
Gain an advantage in trade competition through this submission

I am not
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Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 93.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

Refer to attached submission report


My submission is that

Refer to attached submission report

Attached Documents

File

511270_Section 32AA Planning Assessment_20230504_Final

A white topographic map with contour lines is overlaid on a solid red background. The map shows a complex, mountainous terrain with many closely spaced contour lines, indicating steep slopes. The map is positioned in the upper two-thirds of the page.

Section 32AA Planning Assessment

**eliot
sinclair**

**Cashmere/Hendersons, Christchurch –
Rezoning Submission**

Prepared for Cashmere Park Ltd, Hartward
Investment Trust and Robert Brown

511270

Section 32AA Planning Assessment

Cashmere/Hendersons, Christchurch – Rezoning
Submission


Quality Control Certificate

Prepared for Cashmere Park Ltd, Hartward
Investment Trust and Robert Brown

Eliot Sinclair & Partners Limited

511270

eliotsinclair.co.nz

Action	Name	Signature	Date
Prepared by:	Holly Luzak Resource Management Planner BSc (Geography) holly.luzak@eliotsinclair.co.nz		30 April 2023
Reviewed by:	Bryan McGillan Resource Management Planner BAppSc, MNZPI & RMLA		04 May 2023
Directed and approved for release by:	Claire McKeever Resource Management Planner Associate BSurv(Hons) MS+SNZ MNZPI		04 May 2023
Status:	Final		
Release date:	04 May 2023		
Distributed to:	Cashmere Park Ltd, Hartward Investment Trust and Robert Brown Christchurch City Council		

Version History

Status	Description	Author	Release Date
Final	Cashmere/Hendersons, Christchurch – Rezoning submission		04 May 2023

Planning Assessment for Submission

To Christchurch City Council
Plan Change 14
PO Box 73014
Christchurch 8154

From Cashmere Park Ltd, Hartward
Investment Trust and Robert Brown

Address for service of applicant:

Eliot Sinclair & Partners Ltd
PO Box 9339
Christchurch 8149
Phone: 03 379 4014
Attn: Cashmere/Hendersons Private Plan Change
Email: holly.luzak@eliot Sinclair.co.nz

Cashmere Park Ltd, Hartward Investment Trust and Robert Brown ('the Submitters') make this submission to the Christchurch District Plan (CDP) and PC14. The Submission is to request the rezoning of the site located within the Henderson's and Cashmere catchments which include the following addresses:

- 126 Sparks Road (Lot 1 DP 412488)
- 17 Northaw Street (Lot 2 DP 412488)
- 36 Leistrella Road (Lot 3 DP 412488)
- 240 Cashmere Road (Lot 23 DP 3217)
- 236 Cashmere Road (RS 41613)
- 200 Cashmere Road (Lot 1 DP 547021)

The current zoning of the sites under the CDP are Rural Urban Fringe (RuUF) and Residential New Neighbourhood (RNN) and we are requesting this under PC14 to be rezoned Medium Density Residential (MDR) for the whole submission site.

This report provides the detailed technical information and Section 32AA assessment that is required to support the Rezoning Submission Request.

The relief sought is to re-zone the site at the Henderson's and Cashmere Catchments located within Christchurch.



Signature of Cashmere Park Ltd, Hartward
Investment Trust and Robert Brown (or
person authorised to sign on behalf of the
applicant)

04/05/2023

Date

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Appendices

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Appendix B. Legal Scope
Appendix C. Record of Title
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Appendix E. Integrated Transport Assessment
Appendix F. Urban Design Report
Appendix G. Infrastructure Servicing Report
Appendix H. Economic Impact Assessment Report
Appendix I. National Policy Statement Urban Development 2020 Assessment
Appendix J. National Policy Statement Highly Productive Land (2022) Assessment Infrastructure Servicing Report
Appendix K. Preliminary Site Investigation Report
Appendix L. Canterbury Regional Policy Statement (2013) Assessment
Appendix M. Water Supply Report
Appendix N. Geotechnical Report
Appendix O. Mahaanui Kurataiao Response
Appendix P. Christchurch District Plan Assessment

1. Introduction

1. Cashmere Park Ltd, Hartward Investment Trust and Robert Brown ('the Submitters') are making a submission as part of the PC14 process to rezone their sites located at addresses,
 - 126 Sparks Road (Lot 1 DP 412488)
 - 17 Northaw Street (Lot 2 DP 412488)
 - 36 Leistrella Road (Lot 3 DP 412488)
 - 240 Cashmere Road (Lot 23 DP 3217)
 - 236 Cashmere Road (RS 41613)
 - 200 Cashmere Road (Lot 1 DP 547021)
2. This submission requests that Council as part of the PC14 submission and hearing process rezone the site from a combination of RuUF and Future Urban Zone (FUZ) to MDR. Outline Development Plan (ODP) identifies the areas proposed for rezoning with stormwater detention areas, greenways and associated areas not intended for residential development. This submission will provide for additional housing supply in a higher density capacity within the Greater Christchurch area which will contribute to additional land available for residential housing where the availability is low.
3. The submission is made on the grounds that there is a current shortfall of residential zoned land which can be used for residential development. There is a significant housing demand in Christchurch and the Greater Christchurch area, and the proposal will be able to provide a well-connected residential development that would provide affordable housing choices.
4. The submission site is well suited to provide this with its proximity to Christchurch City and its close connection to public and active transport networks. The ODP which shows the design of the proposed development is attached as Appendix A. The applicants are not opposed to considering a FUZ (zoning) if this was considered more acceptable in respect of a greenfield development.
5. Under the notified version of PC14 the sites would retain the existing RuUF and the existing RNN zoning would change to FUZ. The sites adjoin proposed Low Public Transport Accessibility Areas (LPTA) overlay area which only apply to the northwest and south of the submission site.
6. The proposal seeks to apply the MDR zoning to the whole site under PC14. This will ensure that more land is provided for urban development and would prevent fragmentation. Including the currently RuUF zoned land within this proposal is considered a logical approach avoiding fragmentation and inconsistency with the residential zoned land within and around the applicants' site. It will also create a cohesiveness with the proposed MDR zoning proposed to the east of the submission site.
7. Consideration of the submission has been given in respect of the scope of an Intensification Planning Instrument (IPI) and PC14 and a legal opinion was sought which is in Appendix B. The legal opinion focused in particular on section 80E, noting the ability to amend related provisions including zones.
8. This submission supports the application of Medium Density Residential Standards (MDRS) to the entire site which is shown within the supporting specialist reports will be a well-functioning urban environment.

9. The submission to the CDP and PC14 has been assessed against the relevant higher level planning documents such as the Resource Management Act 1991 (RMA), National Policy Statements, National Environmental Standards, the Canterbury Regional Policy Statement, and the CDP.
10. As part of the submission an ODP has been prepared to provide a high level of certainty that the re-zoning and future residential development of the site will better achieve the objectives of the statutory planning framework.
11. The proposed ODP has considered future servicing for water, wastewater, telecommunications, electricity, and stormwater provisions to confirm existing capacity and feasibility for servicing of the site. Telecommunications and electricity will be provided to existing adjacent networks.
12. As such, it is requested that the submitters proposed ODP be incorporated within the provisions of PC14 including the change of zoning in the planning maps, to provide for high amenity and integrated development to occur.
13. No changes are proposed in PC14 other than where specifically noted.
14. The following appendices are attached in support of, and form part of, the full submission:
 - Appendix A: Outline Development Plan (ODP)
 - Appendix B: Legal Scope
 - Appendix C: Record of Title
 - Appendix D: Flood Risk Assessment - Cashmere Park Assessment Modelling
 - Appendix E: Integrated Transport Assessment
 - Appendix F: Urban Design Report
 - Appendix G: Infrastructure Servicing Report
 - Appendix H: Economic Impact Assessment Report
 - Appendix I: National Policy Statement Urban Development 2020 Assessment
 - Appendix J: National Policy Statement Highly Productive Land (2022) Assessment Infrastructure Servicing Report
 - Appendix K: Preliminary Site Investigation Report
 - Appendix L: Canterbury Regional Policy Statement (2013) Assessment
 - Appendix M: Water Supply Report
 - Appendix N: Geotechnical Report
 - Appendix O: Mahaanui Kurataiao Response
 - Appendix P: Christchurch District Plan Assessment

2. Site Description

15. The submission site is located at the following addresses with the corresponding legal descriptions. 126 Sparks Road (Lot 1 DP 412488), 17 Northaw Street (Lot 2 DP 412488), 36 Leistrella Road (Lot 3 DP 412488), 240 Cashmere Road (Lot 23 DP 3217), 236 Cashmere Road (RS 41613) and 200 Cashmere Road (Lot 1 DP 547021).
16. The sites are all held in their own Record of Titles which are attached as Appendix C. Lots 1-3 DP 412488 are 4ha in area. Lot 23 DP 3217 is 8ha in area. RS 41613 is 2ha in area and Lot 1 DP 547021 is 0.8ha in area which gives an approximate total area across all sites of 22.8ha. Figures 1 and 2 below illustrate an overview of the site location.



Figure 1: Close up of site (outlined in red) location (Source: Canterbury Maps Viewer)

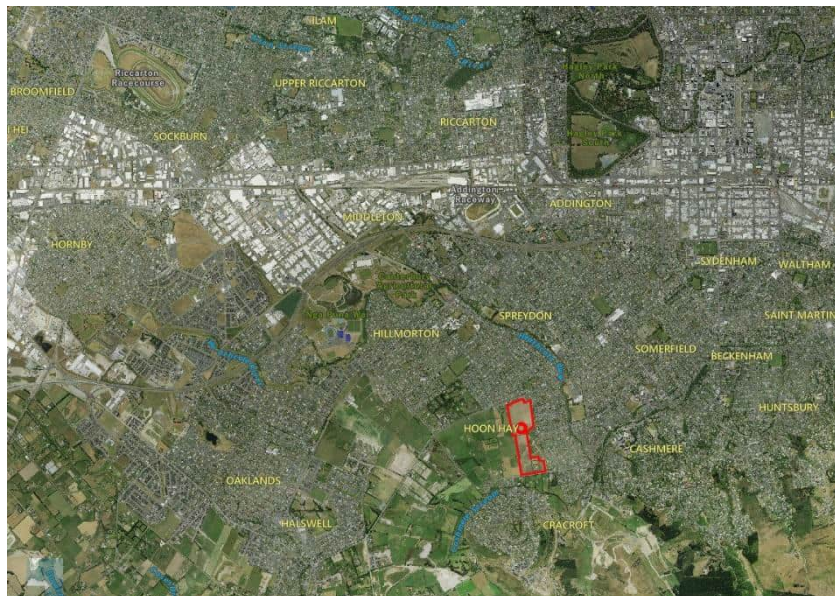


Figure 2: Wider shot of site (outlined in red) location (Source: Canterbury Maps Viewer)

17. The site has established residential zoned and developed land to the east which consists of the Hoon Hay suburb. Hoon Hay school is located to the north of the site which borders Sparks Road.

Hoon Hay Park is also located northwest of the site. Kaiwara Reserve is located to the east between Leistrella and Kaiwara Streets in the zoned and developed part of the site.

18. Established rural land and zoning is to the west of the site which runs out towards the south of the Halswell suburb.
19. Towards the south of the site is the Westmorland suburb an established residential area, as well as the Westmorland East Valley Reserve.
20. Cashmere stream which is a spring-fed headwater tributary of the Opawaho Heathcote River is towards the southwest of the site and runs towards the suburb of Halswell.
21. The site is located within the Christchurch City District (CCD) and under the CDP is within a mixture of RuUF and RNN zoning as shown in figure 3.
22. The application site has natural hazard overlays that apply under the current CDP. These were mapped when the current CDP was established and made operative. As part of the submission an external flood risk assessment was sought which is expanded on within section 9 of this report. The assessment has determined that these overlays are not applicable.
23. Figure 3 below shows the current zoning of the sites and Figure 4 shows the current flood hazard overlays under the current CDP.



Figure 3: Showing current zoning for site (outlined in red) under the CDP (Source: CCC property search)

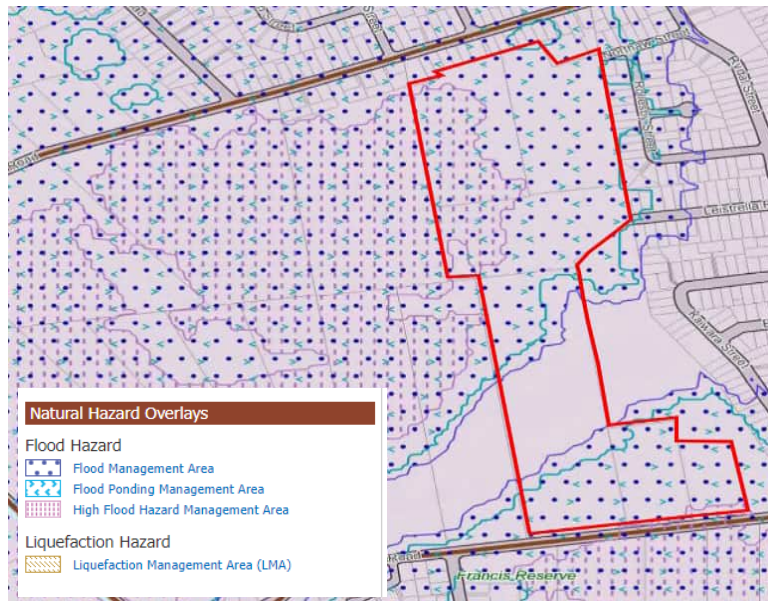


Figure 4: Showing natural hazard overlays for site (outlined in red) under the CDP (Source: CCC property Search)

3. Strategic Context

24. In December 2022, Parliament passed the Resource Management Enabling Housing Supply and Other Matters Amendment Act 2022 (EHA). Amongst other matters, the EHA seeks to increase housing supply through directing Tier 1 Councils to update their District Plans to provide for medium density housing across all urban environments, unless 'qualifying matters' such as natural hazards or heritage are in play.
25. Councils were required to apply the relevant MDRS standards to their District Plans. CCC however decided that a bespoke change to the CDP was a better approach to apply the MDRS standards. Currently this revised version for intensification change for Christchurch is known as PC14, which has been notified for public submissions.
26. Through PC14 and this bespoke approach to reviewing the CDP the council has determined that the application site will have a combination of RuUF as well as a new proposed zoning of Future Urban Zone (FUZ) which will replace the current RNN zone. The submitters request instead that the MDR zoning apply to the whole submission site to align with the objectives of the EHA. Figure 5 below shows the current proposed zoning under PC14.
27. It appears that the RuUF zoned land has been excluded from intensification based solely on outdated flood modelling analysis which has now been superseded. Current flood modelling shows that any future flood risk to the site and surrounding residential properties is now minimal. This is detailed in the Flood Risk Assessment – Cashmere Park Assessment Modelling within Appendix D.

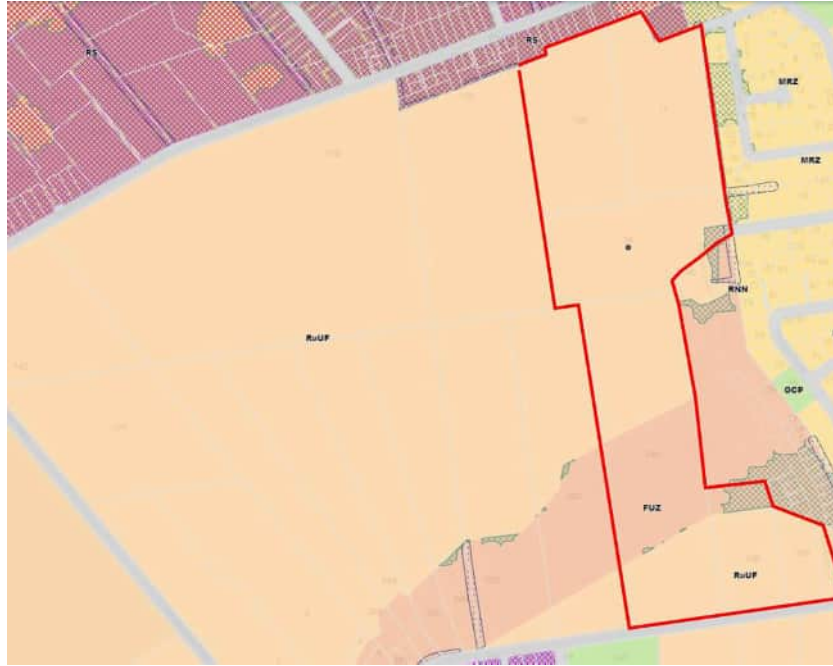
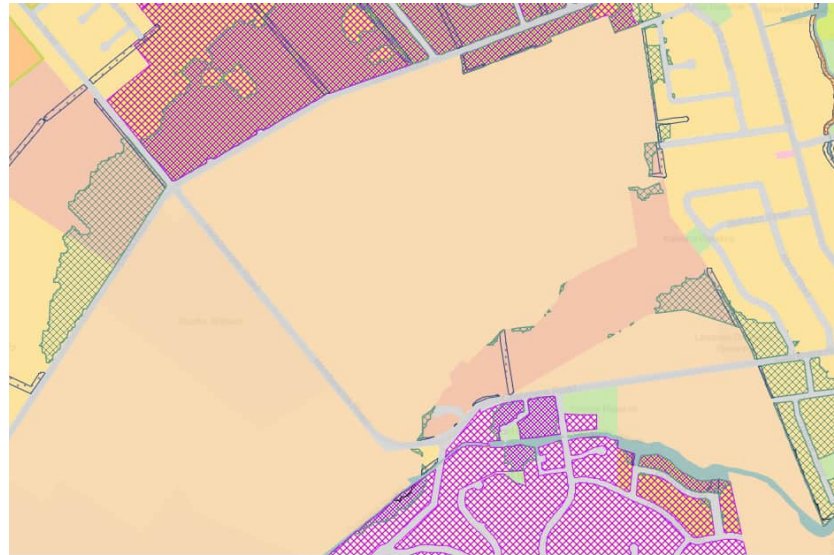


Figure 5: Zoning proposed under PC14 (Source: Christchurch City ArcGIS maps)

28. The LPTA overlay is currently proposed to apply to land adjoining the north and south of the submission site and it is submitted that the site has current active transport links to Sparks Road and to the Quarryman's Trail, a major cycleway which also needs consideration rather than exclusively public transport.
29. As identified in the Integrated Transport Assessment which is attached as Appendix E, *"The southern portion of additional residential land is very well located for public transport uptake, being within a short distance of Cashmere Road where there is the existing Westmorland / Shirley bus service. This service provides accessibility to key destinations including the City Centre as well as Barrington Mall and Sydenham."* (Section 8.2 Appendix: H)
30. It is noted that the proposed development is within a 10-minute walkable route to bus stops within the surrounding suburbs, and these have direct links to Christchurch City. This 10-minute timeframe for walkable routes will cover the whole development. The LPTA as well as the flood ponding overlay are shown hatched in Figure 6.



: Image shows LPTA overlay  and flood ponding management area overlay 

Figure 6: LPTA and Flood Ponding Overlays (Source: Christchurch City ArcGIS Maps)

4. Proposed Rezoning

31. This submission requests that Council as part of the PC14 submission and hearing process rezone the site from a combination of RuUF and FUZ to MDR within the CDP. This rezoning will provide for additional housing supply in a higher density capacity within accessible proximity to Christchurch City Central.
32. The proposed rezoning from RuUF and FUZ (existing RNN) is considered a rational and logical approach to consolidation of the site that is supported by the extensive detailed reports in respect of infrastructure, servicing connectivity and amenity. This submission provides specialist assessments that support this assertion.
33. The proposed rezoning is considered consistent with the NPS UD and the EHA. The Urban Design Statement which is attached as Appendix F provides consideration of all relevant aspects in respect of a well-functioning urban environment. This submission proposes the inclusion of all of the applicants' site and that it will achieve that well-functioning urban environment.
34. The proposed rezoning will provide for medium density residential development options in accordance with the anticipated standards for MDR zoning. The proposed MDR does not have a minimum net site area requirement but does have a maximum permitted site coverage of 50%.
35. The proposed ODP and the inclusion of the site within the MDR zoning does create a tension between the two elements. The scope provided by the MDR zoning will sit within the proposed ODP and will provide options that align with the two elements being the MDRS and the ODP.
36. Below in Figure 7 is the proposed ODP that the submitters request be implemented as part of this application.

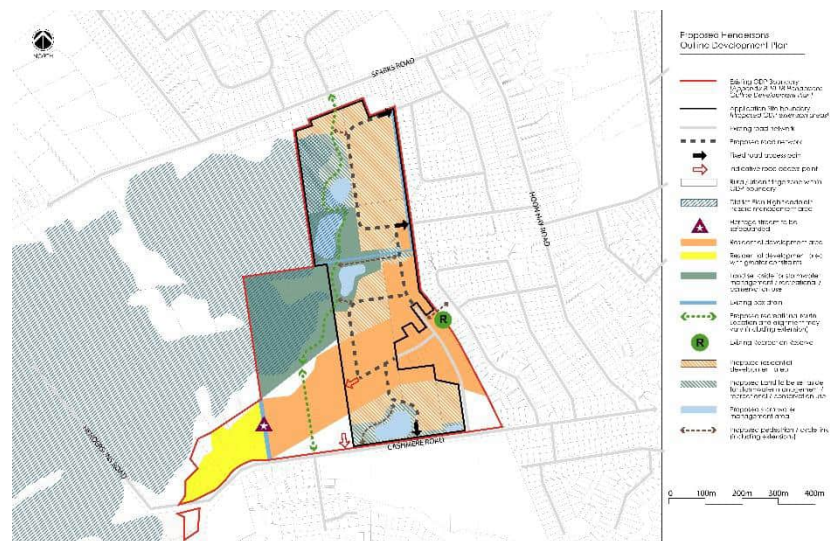


Figure 7: Proposed new ODP

37. The proposed re-zoning has considered future servicing for water, wastewater, telecommunications, electricity, and stormwater provisions by undertaking a preliminary engineering site design to confirm existing capacity and feasibility for servicing of the site. Telecommunications and electricity will be provided to existing adjacent networks. Further details are provided in the Infrastructure Servicing Report contained in Appendix G.
38. Although the rezoning to MDR is requested this submission does not support the inclusion of the 20% tree canopy rule standards. In addition to this we do consider that the proposed rule is consistent with the NPS for Urban Development (NPS-UD) and the EHA as it hinders development and complicates future subdivision which will be complex to enforce over time.
39. The proposed changes to the CDP and PC14 are summarised below:
 - Amend the planning maps to rezone the site from RuUF and RNN/FUZ to MDR.
 - Include the proposed ODP in the planning maps
 - Removal of LPTA overlay
 - Tree canopy rule removed
 - Flood overlay amended

5. Reasons and Purpose

40. PC14 was notified on 17th March 2023. The proposed plan change to the CDP is seeking to rezone part of the application site to FUZ with the balance retaining the existing RuUF zoning. The submitter's proposal is to apply the MDR zoning to the whole site rather than create fragmentation within the site through the combination of two different zones that have opposing requirements.
41. The purpose of this submission is to enable residential development and density through the proposed zoning change to MDR. This allows for a better transition between the existing residential and rural zoning in a way that considers the landscape, servicing, topography, social and economic impacts to be addressed and catered for.

42. The Economic Assessment Report as attached in Appendix H concludes:

"that without the requested rezoning of the Site there is expected to be a shortfall of residential development capacity within the locality of the Site within the next ten years, and therefore additional capacity would be required to ensure that Council is able to provide at least sufficient development capacity in line with its obligations under the NPS-UD."

6. Consultation

43. As part of the preparation of our submission consultation was sought from the following people at CCC.
- Kirk Lightbody CCC Policy Planner and Sarah Oliver CCC Principal Planning Advisor were consulted regarding the planning and policy aspects that need to be addressed within the submission. This also included meetings with Kirk in discussing PC14.
 - Brian Norton CCC Senior Stormwater Planning Engineer was consulted regarding flood modelling of the site as well as stormwater design as part of the proposed development and ODP.
 - Chen Weng-Kei CCC Asset Policy Engineer was consulted on the requirements for the transport and roading design for the proposed development.
44. Mahaanui Kurataiao were contacted, and this proposed request for rezoning was discussed with Fraser Doake (Mahaanui Environmental Advisor). Fraser contacted the Kaitiaki of Te Ngāi Tūāhuriri and Te Taumutu Rūnanga who were advised of the proposal and viewed the relevant plans. Kaitiaki from both Rūnanga confirmed they are not opposed to plan to change the zoning to enable the sites development.

7. Statutory Assessment

7.1. Resource Management Act 1991

45. In December 2022, Parliament passed the Enabling Act which (amongst other things) seeks to increase housing supply through directing Tier 1 Councils to update their District Plans to provide for medium density housing across all urban environments, unless 'qualifying matters' such as natural hazards or heritage are in play.
46. In the Enabling Act, intensification planning instrument or IPI means a change to a district plan or a variation to a proposed district plan— (a) that must— (i) incorporate the MDRS; and (ii) give effect to,—
- 25 (A) in the case of a tier 1 territorial authority, policies 3 and 4 of the NPS-UD; or*
- (B) in the case of a tier 2 territorial authority to which regulations made under section 80E(1) apply, policy 5 of the NPS-UD; or 30*
- (C) in the case of a tier 3 territorial authority to which regulations made under section 80FB(1) apply, policy 5 of the NPS-UD; and (b) that may also amend or include the following provisions.*
47. The Enabling Act introduces the Intensification Streamlined Planning Process (ISPP) which enables intensification outcomes under the NPS-UD to be achieved earlier than using the Schedule 1 process.
48. The Council is required to use an Intensification Streamlined Planning Process for PC14 to introduce the MDRS and amend the objectives, policies and rules within the District Plan.

49. The policy intent of section 80E is that the IPI provides for a comprehensive change to the relevant district plan. This plan change should sufficiently provide for the implementation of the MDRS and policies 3, 4 or 5 of the NPS-UD, without requiring additional supporting plan changes.
50. Section 74 of the Act sets out the matters to be considered by territorial authorities in the decision making of changes to the District Plan.

74 Matters to be considered by territorial authority

(1) A territorial authority must prepare and change its district plan in accordance with-

- (a) Its functions under section 31; and*
- (b) The provisions on Part 2; and*
- (c) A direction given under section 25A(2); and*
- (d) Its obligation (if any) to prepare an evaluation report in accordance with section 32; and*
- (e) Its obligation to have particular regard to an evaluation report prepared in accordance with section 32; and*
- (ea) a national policy statement, a New Zealand coastal policy statement, and a national planning standard; and*
- (f) Any regulations.*

(2) In addition to the requirements of section 75(3) and (4), when preparing or changing a district plan, a territorial authority shall have regard to –

- (a) Any –*
 - (i) Proposed regional policy statement or*
 - (ii) Proposed regional plan of its region in regard to any matter of regional significant or for which the regional council has primary responsibility under Part 2; and*
- (b) Any –*
 - (i) Management plans and strategies prepared under other Acts and*
 - (ii) [repealed]*
 - (iia) relevant entry on the New Zealand Heritage List / Rarangi Korero required by the Heritage New Zealand Pouhere Taonga Act 2014; and*
 - (iii) Regulations relating to ensuring sustainability, or the conservation, management, or sustainability of fisheries resources (including regulations or bylaws relating to taiapure, mahinga mataitai, or other non-commercial Maori customary fishing); and*
 - (iv) Relevant project area and project objectives (as those terms are defined in section 9 of the Urban Development Act 2020), if section 98 of that Act applies, - to the extent that their content has a bearing on resource management issues of the district; and*

(c) The extent to which the district plan needs to be consistent with the plans or proposed plans of adjacent territorial authorities.

(2A) A territorial authority, when preparing or changing a district plan, must take into account any relevant planning document recognised by an iwi authority and lodged with the

territorial authority, to the extent that its content has a bearing on the resource management issues of the district.

- (3) *In preparing or change any district plan, a territorial authority must not have regard to trade competition or the effects of trade competition.*
51. Section 31 of the RMA outlines the Council functions for giving effect to the Resource Management Act and the Submission has been prepared in accordance with the relevant requirements.
52. Section 32 establishes a procedure to evaluate the appropriateness of the proposed provisions, including objectives, policies, rules and other methods. Noting that Council has provided its own S.32 assessments which do not propose the rezoning of this for any other sites, this report is a further evaluation under S.32AA. A detailed Section 32AA assessment is provided in Section 7 of this report.
53. This submission is to request the rezoning of the sites at the below addresses:
- 126 Sparks Road (Lot 1 DP 412488)
 - 17 Northaw Street (Lot 2 DP 412488)
 - 36 Leistrella Road (Lot 3 DP 412488)
 - 240 Cashmere Road (Lot 23 DP 3217)
 - 236 Cashmere Road (RS 41613)
 - 200 Cashmere Road (Lot 1 DP 547021)
54. The proposal is to request the changing of proposed zoning from RuUF and FUZ to MDR which addresses the relevant matters of the RMA, including:
- The purpose and reason for the request.
 - The requirement to have regard to the Canterbury Regional Policy Statement.
 - Any management plans and strategies prepared under other Acts.
 - The requirement to take into account any relevant planning document recognised by Te Runanga o Ngāi Tahu lodged with the Council.
 - Provisions of the CDP.
 - Assessment of Environmental Effects (AEE).
 - Related Planning Documents
55. The submission to rezone the site has been prepared in accordance with the relevant provisions of the Resource Management Act, as described above.

7.2. National Policy Statements

56. There are six National Policy Statements (NPS) which are currently operative. These are:
- (a) New Zealand Coastal Policy Statement
 - (b) Electricity Transmission
 - (c) Renewable Electricity Generation
 - (d) Freshwater Management
 - (e) Urban Development
 - (f) Highly Productive Land
57. There is currently one proposed National Policy Statements:
- (a) Indigenous Biodiversity

58. The relevant National Policy Statements are NPS for Urban Development (NPS-UD), and the NPS for Highly Productive Land (NPS-HPL) as the site is not located on the Coast and is not in a location subject to transmission lines.

7.2.1. National Policy Statement on Urban Development 2020

59. The National Policy Statement on Urban Development 2020 (NPS-UD 2020) applies to all local authorities that have all or part of an urban environment within their district or region. Urban areas are classified into tier 1, 2, and 3. Christchurch is classified as a tier 1 urban environment and includes Canterbury Regional Council, Christchurch City Council, Selwyn District Council and Waimakariri District Council as Tier 1 local authorities. As such, the Submission site is considered to be a Tier 1 urban environment for the purpose of the NPS-UD 2020. A full assessment of the NPS-UD 2020 is provided in Appendix I.

60. It is important to note that despite not being required in order to deliver capacity, council still need to be open to development proposals and rezoning requests in areas that are not anticipated for urban development. Guidance for council on this is found within Policy 8 of the NPS-UD. Subpart 2 – Responsive Planning, 3.8 "Unanticipated or out of sequence developments" sets out the below:

(2) Every local authority must have particular regard to the development capacity provided by the plan change if that development capacity:

a) would contribute to a well-functioning urban environment; and

b) is well-connected along transport corridors; and

c) meets the criteria set under subclause (3); and

(3) Every regional council must include criteria in its regional policy statement for determining what plan changes will be treated, for the purpose of implementing Policy 8, as adding significantly to development capacity.

61. In terms of (3) above, no such criteria have yet been included in the CRPS. Therefore, if there are no criteria then it is only the first two matters listed in (2)(a) and (b) that are relevant to this submission. It is however submitted that the proposed increase is "significant" and also meets criteria (2) (a) and (b).

62. In terms of what is classed as 'significant' this has been considered in a number of private plan change requests and S42A reports in the Selwyn District and other Tier 1 Districts. Regarding this submission it is determined that the respective estimated yields for the development of the 16.8ha site for residential development and zoning at 20 dwellings per hectare would give a total of 336 dwellings and at 25 dwellings per hectare this would give a total of 420 dwellings.

63. As detailed on page 16 of the Economic Assessment Report (Appendix: H):

"...the proposed development of the Site would be significant at:

❖ 10% of demand for new dwellings in the locality in the next decade

❖ Around 10% of existing feasible capacity

❖ Close to 20%, or possibly up to 40% of capacity that is reasonably expected to be realised in the locality."

64. The proposed rezoning is also consistent with the objectives of the NPS-UD through being able to achieve a well-functioning urban environment for people and communities to provide for their

needs and is adjacent to the existing suburb of Hoon Hay with being in close proximity to Christchurch.

65. The development would enable a supply of residential land for residential development, thus improving housing capacity and contributing to the housing market and improving housing affordability and supply.
66. It would also create an integrated and strategic residential development that will provide for medium to long term growth and support the reduction in greenhouse gas emissions and climate change. Due its proximity public and active transport.
67. The ODP demonstrates a well-designed cohesive urban environment that is integrated with the surrounding urban environment and is sympathetic to the existing rural character as well as the existing residential character of Hoon Hay.
68. The proposed rezoning is a natural and logical development to provide residential capacity to Christchurch and is large enough to support housing capacity but a reasonable size so as not to have significant adverse effects on the existing rural character and amenity to the west of the site. It is important to also acknowledge that there is no direction within the NPS-HPL that would prevent or discourage the provision of adequate capacity, provided that the additional growth is located appropriately and will be adequately serviced.
69. An economic assessment has been completed by Formative Ltd which has concluded that without the expected rezoning of the submission site there will be an expected shortfall of residential development capacity within the vicinity of the site over the next 10 years. This would therefore then require additional capacity that CCC would need to provide to for sufficient development capacity in line with the requirements set out within the NPS-UD. The site is located within an existing urban environment that is well serviced with social, commercial and community facilities as well as employment options. Development of the site would contribute towards a well-functioning urban environment and would give effect to the objective of the NPS-UD to provide sufficient development capacity.

7.2.2. National Policy Statement on Highly Productive Land

70. The National Policy Statement on Highly Productive Land (NPS-HPL) was made operative on the 17th of October 2022.
71. The NPS-HPL requires councils to consider the availability of highly productive land for primary production now and in the future. Of relevance to this Submission, a purpose of the NPS-HPL is to protect highly productive land from inappropriate subdivision, use and development as urban expansion and change of land-use in rural areas is creating a loss of productive land. An assessment against the NPS-HPL is attached as Appendix J.
72. The NPS-HPL provides a specific direction as to how highly productive land is to be managed in a very directive way. The policy framework consists of the below criteria.
 - A single objective that seeks that highly productive land "is protected for use in land-based primary production, both now and for future generations".
 - Policy 4 which seeks "the use of highly productive land for land-based primary production is prioritised and supported".
 - Policy 5 which seeks that "the urban rezoning of highly productive land is avoided, except as provided in the National Policy Statement".
 - Clause 3.6 which in its title seeks to restrict urban zoning of highly productive land.

- Clause 6.6(1) which states tier 1 and 2 territorial authorities may allow urban rezoning of highly productive land only if the criteria set out in the balance of the clause are made out.
73. The definition of highly productive land is defined by the below.
- (7) Until a regional policy statement containing maps of highly productive land in the region is operative, each relevant territorial authority and consent authority must apply this National Policy Statement as if references to highly productive land were references to land that, at the commencement date:*
- (a) is*
- (i) zoned general rural or rural production; and*
 - (ii) LUC 1, 2, or 3 land; but*
- (b) is not:*
- (i) identified for future urban development; or*
 - (ii) subject to a Council initiated, or an adopted, notified plan change to rezone it from general rural or rural production to urban or rural lifestyle.*
74. The site is identified as a combination of Land Use Class (LUC) Class 2 and 3 (Canterbury Maps) which is bisected by the RNN/FUZ zoned land which is excluded from the definition of highly productive land. The portion of the site that is currently zoned RuUF is not anticipated for future urban development in PC14 whereas the portion that is currently zoned RNN/FUZ under PC14 is anticipated for urban development. The areas of the site classified as highly productive land is shown in Figure 8 below.



Figure 8: Aerial shot showing the LUC classes on the submission site (Source: Canterbury Maps Viewer)

75. Sections 3.4 and 3.5 set out the required process and criteria which highly productive land is to be mapped in which regional councils have up to 3 years to map those soils. District councils then have a further 6 months to incorporate those into the regional maps into their district plans.

76. As the RuUF zoned areas of the site are potentially classed as highly productive land, proposals to rezone it are subject to Clause 3.6. It is noted that the **use of the** site is in reality a mix of residential and rural lifestyle.

77. It's important to acknowledge that the NPS descriptions refer to "areas used" which requires an assessment against activities taking place in the zone, rather than what the planning framework provides for. The evidence provided demonstrates the area is not used predominantly for primary production activities. This would indicate the site might not actually meet the definition of "highly productive." This clause provides direction to the assessment on this submission and is therefore set out below, and consideration has been given to this due to the degree of uncertainty.

3.6 (1) Tier 1 and 2 territorial authorities may allow urban rezoning of highly productive land only if:

(a) The urban rezoning is required to provide sufficient development capacity to meet demand for housing or business land to give effect to the National Policy Statement on Urban Development 2020; and

(b) There are no other reasonably practicable and feasible options for providing at least sufficient development capacity within the same locality and market while achieving a well-functioning urban environment; and

(c) The environmental, social, cultural and economic benefits of rezoning outweigh the long-term environmental, social, cultural and economic costs associated with the loss of highly productive land for land-based primary production, taking into account both tangible and intangible values.

(2) In order to meet the requirements of subclause (1)(b) the territorial authority must consider a range of reasonably practicable options for providing the required development capacity, including

(a) Greater intensification in existing urban areas; and

(b) Rezoning of land that is not highly productive land as urban; and

(c) Rezoning different highly productive land that has a relatively lower productive capacity.

(3) In subclause (1)(b), development capacity is within the same locality and market if it:

(a) In or close to a location where a demand for additional development capacity has been identified through a Housing and Business Assessment (or some equivalent document) in accordance with the National Policy Statement on Urban Development 2020; and

(b) Is for a market for the types of dwelling or business land that is in demand (as determined by a Housing and Business Assessment in accordance with the National Policy Statement on Urban Development 2020).

(4) ...(not applicable)

(5) Territorial authorities must take measures to ensure that the spatial extent of any urban zone covering highly productive land is the minimum necessary to provide the required development capacity while achieving a well-functioning urban environment

78. Sections a, b & c under 3.6(1) allow the rezoning of highly productive land where all 3 points are able to be met. Sub-section 'a' states that the rezoning must be required in order to "provide

sufficient development capacity to meet demand for housing or business land to give effect to the National Policy Statement on Urban Development 2020".

79. It is considered that this proposed rezoning provides residential demand in an area identified as having a shortage of development capacity. The proposed rezoning will also give effect to the objectives of the NPS-UD because it will achieve a well-functioning urban environment for people and communities to provide for their needs and is adjacent to the existing suburb of Hoon Hay and is in close proximity to Christchurch.
80. It will enable a supply of residential land for residential development, thus improving housing capacity and contributing to the housing market and improving housing affordability and supply. It will also create an integrated and strategic residential development that will provide for medium to long term growth and support the reduction in greenhouse gas emissions and climate change.
81. The economic assessment confirms the above and goes further to outline that the demand for housing within the vicinity of the submission site will increase at around 380-400 lots a year for the next 30 years. There is also feasible dwelling capacity in the same area for over 4,300 additional dwellings. The economic assessment concluded that the rezoning of the site is required to provide sufficient development capacity in order to give effect to the NPS-UD. Because of this the proposed rezoning sought by this submission is therefore consistent with 3.6(1)(a).
82. Section 'b' of 3.6(1) states that rezoning of highly productive land is allowed providing that *"there are no other reasonably practicable and feasible options for providing at least sufficient development capacity within the same locality and market while achieving a well-functioning urban environment"*.
83. The site achieves a well-functioning urban environment for people and communities to provide for their current and future needs. The economic assessment has also concluded that the site is well located to accommodate urban growth and development which is supported by a partial area of the site being identified as 'Greenfield Priority Area (GPA)' as well as its proximity to Christchurch City. Within the surrounding area of the site there are no other reasonable and practicable options for providing sufficient development capacity whilst being able to achieve a well-functioning urban environment. Because of this it is therefore consistent with 3.6(1)(b).
84. Section 'c' of 3.6(1) states that rezoning of highly productive land is allowed providing that *"the environmental, social, cultural and economic benefits of rezoning outweigh the long-term environmental, social, cultural and economic costs associated with the loss of highly productive land for land-based primary production, taking into account both tangible and intangible values"*.
85. The rezoning of the site to MDR would not create an isolated pocket of residential land which currently occurs in the way that a part of the site is zoned RNN under the CDP and FUZ under PC14, and therefore the submission proposes a better outcome that will not fragment rural land. This, over a longer period, if kept as it is, could create further potential problems around urban development when district plans are reviewed every 10 years. The site's context has been carefully considered, and the proposed ODP has been designed in a way that best manages reverse sensitivity effects on adjacent rural land as well as any additional effects on the existing environment. The proposed ODP has proposed stormwater management areas and reserves, and specific interface treatment to manage the effects of reverse sensitivity.
86. The benefits of the proposed land use far outweigh the benefits of the use for primary production, and alternative options for the proposed use on the land. As stated in the Section 32 assessment in Section 8 of this report the benefits of the proposed rezoning outweigh the cost of a loss of

productive land. It has also been considered that the submission site is the best site for residential development given its proximity to the existing suburb of Hoon Hay and the ability to be serviced, and therefore there are no better alternative sites for the proposed rezoning.

87. The economic assessment has concluded that the site is very much constrained in its ability to provide for productive rural uses which therefore the economic benefits of the existing rural activities on the site are small. Development of the site for between 336-430 dwellings would support over 1000 FTE years of employment. The development would also support local businesses and contribute to the functioning of nearby centres and business areas. The addition of residential activity would increase local employment and would improve the amenity of surrounding centres which can also help contribute to a well-functioning urban environment. Therefore, the economic benefits of the rezoning outweigh the economic costs associated with the loss of the sites highly productive land for land-based primary production. Because of this it is therefore consistent with 3.6(1)(c).

7.2.3. Conclusion

88. It is considered that while the site has a combination of LUC 2 & 3 productive soils, that the proposed change in use of the site to residential is considered to not be inappropriate and is not an uncoordinated urban expansion. The site can achieve a well-functioning urban environment for people and communities to provide for their needs as it is adjacent to the existing suburb of Hoon Hay to the east and is in close proximity to Christchurch.

7.3. National Environmental Standards

89. The following National Environmental Standards (NES) are currently operative:

- (a) Air Quality
- (b) Sources of Drinking Water
- (c) Telecommunication Facilities
- (d) Electricity Transmission Activities
- (e) Assessing and Managing Contaminants in Soil to Protect Human Health
- (f) Plantation Forestry
- (g) Freshwater
- (h) Marine Aquaculture
- (i) Storing Tyres Outdoors

90. The NES for Assessing and Managing Contaminants is considered relevant to this submission.

National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health

91. Due to the nature and location of the proposed Submission the only National Environmental Standard considered relevant is the NES for Assessing and Managing Contaminants in Soil to Protect Human Health. It is noted that the NES for Air Quality is provided for under existing District and Regional Plans and will not apply to this rezoning.
92. The NES for Assessing and Managing Contaminants in Soil to Protect Human Health has been addressed through the Preliminary Site investigation (PSI) contained in Appendix K and discussed in the Assessment of Environmental Effects in Section 9 of this report. The report concludes that the site is suitable for future residential development, and that no Detailed Site Investigation is required no further assessment of the NESCS is required for the rezoning (change of use) at this stage.

7.4. Canterbury Regional Policy Statement

93. The Canterbury Regional Policy Statement (CRPS) sets out objectives, policies, and methods to resolve resource management issues in Canterbury. An assessment of the CRPS full provisions is provided in Appendix L and a summary provided below. Chapter 5 (Land Use and Infrastructure) is the most relevant to this Submission.
94. *Chapter 5 – Land Use and Infrastructure, addresses resource management issues associated with urban and rural-residential development across the entire Canterbury region.* Within Chapter 5, the objectives and policies that include Greater Christchurch are annotated as 'Entire Region' and those which are not relevant to Greater Christchurch are noted as 'Wider Region'. *Chapter 6- Recovery and Rebuilding of Greater Christchurch* focuses on metropolitan areas of Greater Christchurch. The objectives, policies and methods in Chapter 6 take precedence within the Greater Christchurch area.
95. Chapter 6 of the CRPS had a review undertaken as part of the Our Space 2018-2048: Greater Christchurch Urban Settlement Pattern Update. Proposed change 1 was approved by The Minister for the Environment under a streamlined planning process and was made operative on 28th July 2021. The main proposed change to Chapter 6 is the introduction of Future Development Areas which are undeveloped areas within the existing infrastructure boundaries of Rolleston, Kaiapoi and Rangiora. The proposed changes within Change 1 to Chapter 6 do not include the submission site.
96. Objective 5.2.1 relates to the Greater Christchurch area so can be applied specifically to the submission site. The proposed rezoning is consistent with Objective 5.2.1 because it will allow for residential development of the site. This would create a well-designed and sustainable residential growth adjacent to Hoon Hay as well as having direct transport links to Christchurch City. The proposal has a housing supply yield with 20 dwellings per ha at 336 dwellings and 25 dwellings per ha at 420 dwellings. The rezoning and future subdivision will minimise energy use by maintaining a consolidated urban form with the option to extend existing public transport links to reduce car use.
97. Chapter 6 of the CRPS has the purpose of providing a resource management framework for the recovery and rebuilding of Greater Christchurch following the Canterbury Earthquake Sequence. It is now considered that the recovery and rebuilding following the earthquakes has mostly been completed, and now the residential demand is stemming from population growth, rather than specifically related to earthquake recovery.
98. Objective 6.2.2 relates to the urban form and settlement pattern within the Greater Christchurch area and that it is managed through providing sufficient land for rebuilding and recovery needs that would set the foundation of urban growth. The proposed rezoning is consistent with this objective as it would supply a housing yield of between 336-420 dwellings which would contribute towards urban growth of the Greater Christchurch area.
99. Objective 6.2.3 relates to sustainability and that recovery/rebuilding is undertaken within the Greater Christchurch area which for one is able to provide a quality of living and incorporates good urban design. The proposed rezoning is consistent with Objective 6.2.3 because it will allow for residential development of the site. This would create a well-designed and sustainable residential growth adjacent to Hoon Hay as well as having direct transport links to Christchurch City.
100. It is acknowledged that the site is not located within an identified Greenfield Priority Area for development within Greater Christchurch and is not located within the projected infrastructure boundary for Christchurch as detailed in Map A. It is noted that Chapter 6 and Map A have been

reviewed by ECan, however no changes were proposed for the submission site and surrounding suburbs which is somewhat inconsistent with the provision of housing choice required by objective 5.2.1 (2b) for the 'entire region' when provided elsewhere. It is therefore noted that any residential growth at the submission site will not be fully consistent with Objective 6.3.1 and any relevant policies where they relate to Map A due to the limiting nature of the projected infrastructure boundary in Map A which was set at the time of the Christchurch earthquakes. However, a portion of the submission site has been allocated as Greenfield Priority Area and is designated for residential zoning. It would therefore be a logical expansion for the whole submission site to be included.

101. The proposed rezoning will enable land to be bought forward for residential development in close proximity to Christchurch City to meet demand and enable the efficient use of the infrastructure network. The proposal will also encourage sustainable growth by providing a residential development to contribute to alleviating demand, but that is also consolidated and adjoining the existing residential development. The proposed rezoning, ODP, and any future subdivision will give effect to the principles of good urban design.
102. In conclusion, the proposed rezoning is mostly consistent with the objectives and policies in Chapter 6 of the CRPS. It is acknowledged that the site is not located within an identified development area or within the projected infrastructure boundary in Map A, however, is a logical site for rezoning in respect of a portion of the site being within a projected infrastructure boundary within Map A and all other relevant CRPS objectives and policies.

8. Section 32AA Assessment

103. The Section 32AA evaluation provided below is in response to CDP Residential Zones Section 32 Report. A Section 32AA assessment has been undertaken as an amendment to the chapter is sought by the proposed rezoning of the site to MDR as per PC14.
104. Section 32AA (1)(b) states that a further evaluation required under this Act must be undertaken in accordance with Section 32(1) to (4).
105. A Section 32 report requires the submitter (and the Council) to evaluate, at a level of detail corresponding to the scale and significance of the anticipated environmental, economic, social and cultural effects.
 - The extent to which the objectives of the proposal are the most appropriate to achieve the purpose of the RMA.
 - Whether the provisions (rules) are the most appropriate way for achieving the objective (purpose), by including consideration of any other reasonably practicable options, the efficiency and effectiveness of the provisions in achieving the purpose, and reasons for deciding on the provisions.
106. This submission is not proposing any new objectives or rules to be added to the District Plan; therefore, the objective of the proposal is the purpose of the rezoning. The purpose of the proposal is to rezone the site from RuUF and RNN/FUZ to proposed MDR as outlined under PC14 to allow for residential intensification.
107. Two options have been assessed below; retain the current proposed rural zoning or provide for a rezoning to proposed MDR.
108. The Quality Planning Guidance note on Section 32 analysis states that the most appropriate option means "suitable, but not necessarily superior". The most appropriate option does not need

to be the most optimal or best option but must demonstrate that it will meet objectives in an efficient and effective way.

8.1. Option 1: Retain RuUF and Proposed FUZ Zoning (status quo)

	Benefit	Cost
Environmental	<ul style="list-style-type: none"> • Maintains the rural character of the site. • No residential expansion of Hoon Hay. • No additional capacity for stormwater/wastewater required. • Retains rural productive use, though with low productivity capability for grazing. • Does not offend CRPS. 	<ul style="list-style-type: none"> • A missed opportunity for providing additional residential capacity in Hoon Hay and Christchurch • Likely additional reverse sensitivity issues with the development of vacant RNN zoned land on the site given its shape surrounded by rural zoning, • No buffer on existing rural/urban interface with no change or improvement to existing reverse sensitivity effects.
Economic	<ul style="list-style-type: none"> • No cost to the owner or Council to retain the existing zoning. • No change to National Grid considerations or use of land in corridor. 	<ul style="list-style-type: none"> • Does not contribute to housing demand/supply. • No additional development contributions or increased rateable income for Council.
Social	<ul style="list-style-type: none"> • No social benefit recognised. 	<ul style="list-style-type: none"> • Does not contribute to Christchurch housing stock or contribute to providing for projected increase in population.
Cultural	<ul style="list-style-type: none"> • Retains on-site effluent and stormwater discharges to ground. 	<ul style="list-style-type: none"> • Does not reduce potential effects on water quality.

109. Option 1, retaining the land as RuUF and proposed FUZ, i.e., do nothing, has relatively even benefits and costs. The benefit of this option would be that the rural character of the site that is zoned RuUF and the outlook for existing residential properties in Hoon Hay would not change, and this option would not contribute to housing and living options in the area.

110. The costs of doing nothing and retaining the existing and proposed zoning mean that there will be no residential development capacity provided on this site, and therefore there will be no wider benefit to Christchurch as well as the surrounding suburbs. This would be a missed opportunity for the Council to demonstrate additional residential housing capacity in the short, medium, and long term as required by the NPS-UD.

111. The costs outweigh the benefits, and Option 1 is the least preferred option.

8.2. Option 2: Rezone to proposed MDR under PC14

	Benefit	Cost
Environmental	<ul style="list-style-type: none"> • Reticulated water and wastewater services. 	<ul style="list-style-type: none"> • Loss of rural land.

	Benefit	Cost
	<ul style="list-style-type: none"> • Additional stormwater treatment/ reserve area provided. • SW reserve area provides a buffer between new and existing residential land and adjacent rural land uses. 	<ul style="list-style-type: none"> • Loss of rural outlook / character.
Economic	<ul style="list-style-type: none"> • Provides the most housing capacity and potential for variety in housing choice. • Provides income from the greatest number of development contributions and rateable sections for Council. • Potential for affordable housing, with a greater number of dwellings available to the market, the less likelihood of significant price increases in the market. • Good transport links to existing employment hubs of Christchurch City and Rolleston. • Gives effects to NPS-UD 2020 as it contributes to development capacity. • Efficiencies in infrastructure cost to develop the site for the greatest number of dwellings. • The respective estimated yields for the development are 16.8ha of the total site for residential development and zoning. At 20 dwellings per ha this would give a total of 336 dwellings. At 25 dwellings per ha this would give a total of 420 dwellings. • Short-medium term employment opportunities during construction. 	<ul style="list-style-type: none"> • Economic cost for development of urban infrastructure (services and roading) for landowner. • Loss of rural land. • Decrease residential intensity momentum in other areas.
Social	<ul style="list-style-type: none"> • An integrated neighbourhood with connections to adjoining residential subdivisions. • Adjoining existing residential development and in close proximity to Hoon Hay Park and Kaiwara & Rydal Reserves for recreation. 	<ul style="list-style-type: none"> • Increase in traffic along Hoon Hay Road, Sparks Road, Cashmere Road, Northaw Street, Leistrella Road and commuter traffic to Christchurch. • Perceptions of Hoon Hay suburb may change due to expansion of the township.
Cultural	<ul style="list-style-type: none"> • Integration of services and treatment resulting in improved water quality in accordance with Mahaanui Iwi Management Plan. 	<ul style="list-style-type: none"> • It is considered that there are no cultural costs.

112. Option 2 is the preferred option as identified in this submission. Rezoning the site will significantly contribute to the residential housing demand that Christchurch City and the Greater Christchurch region are experiencing. This is confirmed by the economic assessment and therefore the rezoning of the site will meet the objectives of the NPS-UD and NPS-HPL. Option 2 will also allow Council to demonstrate their provision for the housing capacity in the short, medium, and long term as required by the NPS-UD which is not able to be achieved by Option 1 considered above.
113. The current activity on site is grazing for a low number of stocks periodically throughout the year combined with residential and lifestyle living activity. This does not contribute economically or socially to the wider productive capacity of the district. Given the sites current use and size, it is

considered unlikely in the future that it would be used for more productive land-based production and therefore would not require protection of rural zoning to be able to do so.

114. The rural character of the existing site will change to residential character; however, the development design can be sensitive to the natural environment of the surrounding area by maintaining the sense of open space and rural outlook through the openness of the stormwater, utility and recreation areas between the residential which are shown within the proposed ODP. It is noted that a degree of residential change is already expected for the portion of the site currently zoned RNN/FUZ. Given this, there is opportunity to integrate additional residential housing with a sensitive and cohesive design for the site.
115. The proposed rezoning to MDR and the proposed ODP best meets the objectives of the proposed MDR chapter as currently proposed. The benefits of rezoning the site are greater than the costs, and therefore Option 2 has been determined as the most appropriate option.

8.3. Efficiency

116. Option 2, rezoning the site to proposed MDR has been assessed as the most efficient use of the land and is the most appropriate option when the costs and benefits and all the options are compared. The benefits of Option 2 outweigh the costs meaning that it is the most efficient option, and therefore the most suitable use of land.

8.4. Effectiveness

117. Option 2 has been assessed above as the most efficient option; however, it is also assessed as the most effective option in giving effect to the National Policy Statement on Urban Development and the Enabling Housing Act.
118. The NPS-UD has objectives and policies relating to having well-functioning urban environments that are sustainable, contribute to peoples social, economic and cultural wellbeing and health and safety whilst providing sufficient development capacity in the short, medium and long term.
119. Option 2, rezoning to proposed MDR, is the most effective at achieving the relevant objectives and policies of the NPS-UD. The proposal will provide a well-functioning urban environment that improves the supply of residential housing and housing capacity in the short, medium and long term. The proposed rezoning and ODP will provide consolidated residential growth and will have sufficient infrastructure servicing and accessibility.
120. The proposed rezoning is consistent with Objective 5.2.1 of the Canterbury Regional Policy Statement because it will achieve a consolidated and sustainable extension to Hoon Hay as well as Christchurch which will enable people to provide for their social, economic and cultural wellbeing and health and safety now and in the future.
121. The proposed rezoning will enable land to be bought forward for residential development in close proximity to Christchurch City to meet demand and enable the efficient use of the infrastructure network. The proposal will also encourage sustainable growth by providing a residential development to contribute to alleviating demand, but that is also consolidated and adjoining the existing residential development. The proposed rezoning, ODP, and any future subdivision will give effect to the principles of good urban design.
122. Council's Section 32 assessment states that the proposed Plan "promotes the consolidation of urban growth within and around existing townships". The assessment states that urban growth areas should be defined and have a development plan to maintain the urban/rural interface, and support infrastructure efficiencies, accessibility, wellbeing and to retain rural outlooks and

minimise the loss of productive farmland. It is considered that the proposed rezoning will provide additional residential capacity within Christchurch and adjacent to the Hoon Hay suburb. The ODP also provides for a development that is integrated with existing infrastructure, public spaces and is easily accessible by various modes of transportation, while creating a healthy living environment that contributes to people's wellbeing and sustainability.

8.5. Risk of Acting or not Acting

123. This submission to the PC14 process has provided technical reports to confirm the suitability of the site for the proposed rezoning to MDR as well as confirming infrastructure servicing being available to service the residential development. The information has been provided in as much detail as possible, though final engineering and servicing design is not known at this stage. This would pose a small risk, but any risks will be addressed and dealt with at subdivision consent with a detailed engineering design and approval.
124. There is a risk that acting will, in the short term, the proposed rezoning will be inconsistent with current provisions of the CRPS for Greater Christchurch under Chapter 6. This can be managed in conjunction with all other similar sites at the time of the CRPS review under the NPS-UD. The risk is that if Map A does not change and prevents all flexibility, this would not be consistent with the NPS-UD provisions.
125. There is also a risk of not acting, as detailed in Option 1 costs, in that it has been identified that there is insufficient residential capacity in Christchurch and that by not acting, residential demand will continue to increase with a risk of insufficient residential supply of land for housing. The risk of not acting, also is that Council will not meet their requirements under the RMA to meet the needs of future generations and does not meet their requirements of the NPS-UD for providing sufficient residential capacity.

9. Assessment of Actual and Potential Effects on the Environment

126. The assessment of actual and potential effects on the environment (AEE) has been prepared in accordance with the Fourth Schedule of the RMA. The First Schedule, clause 22(2) of the RMA requires *'Where environmental effects are anticipated, the request shall describe those effects, taking into account the provisions of Schedule 4, in such detail as corresponds with the scale and significance of the actual or potential environmental effects anticipated from the implementation of the change, policy statement, or plan'*.
127. The following actual and potential effects have been considered as part of the Submission to rezone the application site from RuUF and RNN to MDR. Effects on:
 - Urban Form and Landscape Amenity
 - Economic
 - Transport
 - Infrastructure and Servicing
 - Natural Hazards
 - Health of Land
 - Tāngata Whenua and Cultural
 - Reverse Sensitivity
 - Positive Effects

9.1. Effects on Urban Form and Landscape Amenity

128. The proposed rezoning and residential intensification will alter the existing site where the majority of the zoning is rural. It will also alter the rural outlook to the adjoining rural land to the west and the residential area to the east. The effects on urban form and landscape amenity values are discussed below.
129. Given that the site adjoins existing residential areas which are part of the Hoon Hay suburb to the east and rural areas to the west, the boundary interfaces have been carefully considered to mitigate and minimise and adverse effects.
130. The proposed ODP proposes that the residential intensification areas of the developed site will be located to the east of the site and along the boundary where the existing residential areas and the suburb of Hoon Hay is located. Between the boundary where the existing rural land is located and the proposed residential areas is land to be set aside for stormwater management, recreational and conservation use. Overall, this mitigation will provide open space and a visual buffer to the majority of the site located to the west where the existing rural land is located.
131. There is only one interface that directly abuts the adjoining rural land use, however an appropriate interface treatment at the boundary can be achieved to mitigate the effects on residential and rural amenity and potential reverse sensitivity effects.
132. It is noted that a degree of residential change is already expected for the portion of the site currently zoned RNN/FUZ. Given this, there is opportunity to integrate additional residential housing with a sensitive and cohesive design for the site.
133. In conclusion, the proposed rezoning will not adversely affect outstanding natural features or landscapes. The rezoning will maintain the character and amenity of rural areas and will maintain rural outlooks of the existing rural land.
134. Overall, any potential adverse effects on urban form and visual amenity can be appropriately mitigated. Therefore, the potential adverse effects of the proposed rezoning and residential development will be minor.

9.2. Economic Effects

135. An Economic Assessment has been prepared by Formative Ltd which has concluded that because of the site being constrained in its ability to accommodate productive rural uses, the economic benefits of the existing rural activities are very small. Comparing this to the economic benefits of rezoning the zone which would consist of positively impacting local businesses and contributing to the functioning of nearby centres and business areas. Residential activity could also increase local employment in centres and improve the level of amenity as well.
136. The site is also in an efficient location which means that the associated costs with necessary infrastructure will be comparatively lower, and that the site minimises transport effects by being in close proximity to Hoon Hay, Westmorland, and with good transport links to Christchurch City.
137. In conclusion, the economic effects of the residential rezoning are predominantly positive and outweigh any negative economic effect. The economic effects from this proposed rezoning are considered to be positive.

9.3. Effects on Transport

138. The potential transportation effects of the residential development have been assessed in the traffic report attached in Appendix E. The effects on the wider transport network are discussed below.

139. The site is effectively bounded by three minor arterial roads being Sparks Road, Hoon Hay Road and Cashmere Road. The Integrated Transport Assessment (ITA) details the sites connectivity to the network based on the proposed ODP.
140. Assessment of the suitability of the local road network Leistrella, Rydal and Northaw Roads has also been considered. Subject to some minor traffic management recommendations within the ITA the proposal will be able to accommodate the additional traffic generated by development of the site.
141. The integration of the site within the transport system for Christchurch District has been considered as has public and active transport modes. There are three bus routes area which all connect to Barrington Mall and beyond. Allowing for the connection from Cashmere Road and the Quarryman's Trail cycleway will be a good outcome enabled by the proposed ODP.
142. The ITA concludes that:
- "It is concluded that the additional residential development areas that will be enabled by the proposed rezoning will be logical, well-connected, accessible extensions of the existing / zoned residential areas and the proposed rezoning can be supported from a transport perspective."*

9.4. Effects on Infrastructure and Servicing

143. The infrastructure servicing report is attached in Appendix G with summary of effects detailed below.
144. The report has confirmed that the submission site can be serviced for wastewater, stormwater and potable water. Telecommunications and power capacity have not been confirmed yet by Enable and Orion. It is however envisaged that utility services can be provided even if network upgrades might be needed as is standard practice.
145. Water supply report is attached as Appendix M which shows and confirms that through hydraulic modelling that water supply is available for the submission site and proposal and that it can be serviced by the Council's existing water supply network.

9.5. Effects on Natural Hazards

146. The site has been assessed to determine whether the land is subject to any natural hazards that could pose a risk to either the land or future residential development. The site has been determined that under the CDP it is within the flood management, flood ponding management, high flood hazard management and liquefaction management area overlays.
147. A flood modelling assessment which is attached as Appendix D has been undertaken by DHI which has determined that the model results show that the proposed residential development has a minimal impact on surrounding flood levels. Aside from local runoff, floodwaters will enter into the north wetland via Henderson's Basin from the west. In the south, water can cross Cashmere Road and enter the larger basin via a culvert. Allowing this essentially means no change in the south floodplain.
148. The minimum finished floor level for future dwellings will need to be confirmed by CCC at development stage, however the calculated risk of flooding is considered acceptable. The DHI report states that the impact of the development on surrounding levels is less than +5mm in almost all areas of the site. There are small areas with more than 100mm in depth increase, but this can be addressed at engineering detailed design stage.
149. In conclusion it is determined that the effects of natural hazards on the residential development and vice versa are considered to be acceptable.

9.6. Effects on Health of Land

150. A Preliminary Site Investigation (PSI) has been prepared by Eliot Sinclair, and is attached in Appendix K. The PSI is based on a review of Council records, Environment Canterbury records, historical aerial images, and an Eliot Sinclair site walkover.
151. Based on the PSI report it has been confirmed that HAIL activities have historically and currently been undertaken on site. However, it has been determined that the land is suitable for re-zoning on the basis that all HAIL areas are investigated further prior to the subdivision and earthworks taking place as required by the NES. A recommendation has been made to carry out further DSI reports to establish guidelines regarding the nature, degree and extent of the contamination. A further assessment against the National Environmental Standards (NES) can be conducted to determine the effect on human health once the contaminated areas are investigated further and a suitable remedial action plan developed if required.
152. A geotechnical assessment has been conducted by Geotech Consulting Ltd which is attached as Appendix N. Based on the report it has been determined that the land is geotechnically suitable for rezoning for a residential development and the construction of future housing. It is noted that further ground investigations will be required at subdivision consent stage as well as building consent stage.
153. In conclusion through the PSI and Geotechnical reports the land is suitable for re-zoning and future residential development provided that further investigations regarding contamination and ground suitability are completed prior to subdivision and earthworks being undertaken.

9.7. Effects on Tāngata Whenua and Cultural

154. The site is not identified in any cultural overlays or areas of cultural significance in the CDP or PC14. The site is not located in any archaeological sites, silent files or any other protection overlays.
155. MKT were consulted as part of this submission and an assessment on the proposal by them is attached as Appendix O. The Runanga response of the Kaitiaki of Te Ngai Tuahuriri and Te Taumutu is that through viewing the plans and proposal at the submission location they have determined that they do not oppose the plan change request for a residential development. Their stance will only extend to the proposed site and not any wider changes to the District Plan zoning.
156. As part of this submission, an assessment of the Mahaanui Iwi Management Plan 2013 (IMP) has been undertaken to assess the potential effects on tāngata whenua values. The full assessment is in Section 10.1 of this report.
157. The proposed change of zoning from RuUF and RNN to proposed MDR is considered to be consistent with the provisions of the Mahaanui Iwi Management Plan 2013 and is therefore consistent with Tāngata Whenua values. Therefore, the proposed rezoning will have less than minor adverse effects on the natural and cultural environment.

9.8. Effects on Reverse Sensitivity

158. The potential for reverse sensitivity effects occurs when a change in land use is incompatible with, and causes new conflicts with, existing activities nearby. Typical rural reverse sensitivity effects are typically noise, odour, and dust. The change to residential use as a result of the rezoning request needs to consider the reverse sensitivity effects related to the site's proximity to existing rural activities.

159. The proposed stormwater management, recreation and conservation areas provide a natural buffer between the proposed residential activity and existing adjoining rural land use to the west of the site.
160. It is also noted that there are no existing intensive farming activities (pig or poultry farming) in the vicinity that currently occur that would be of concern in respect of reverse sensitivity effects adjacent to a proposed residential area.
161. The proposal provides a positive effect in that it will remove the potential for reverse sensitivity effects to occur from the current rural site to the adjacent existing residential neighbourhood to the east once rezoning and development occurs. Such effects would be considered temporary in the interim.
162. Overall, it is considered that any new reverse sensitivity effects would be less than minor.

9.9. Positive Effects

163. The proposed rezoning would allow for a potential yield where if it was 20 dwellings per ha this would give a total of 336 dwellings. At 25 dwellings per ha this would give a total of 420 dwellings. This would contribute towards the housing supply issue within Christchurch and the wider context of Greater Christchurch.
164. In the case of this site, the rezoning of the land to residential would allow for a residential development in close proximity to the Hoon Hay suburb as well as having excellent transport links to Central Christchurch. The efficient location of the site has good transport links to existing employment hubs of surrounding suburbs which includes Hoon Hay, Hillmorton, Cashmere, Halswell as well as bigger hubs of Prebbleton and Christchurch.
165. The proposed residential growth will be managed through the proposed ODP which ensures that there is adequate vehicle and pedestrian access throughout the site and development. The ODP area adjoins existing residential area to the east which will allow the expansion of the Hoon Hay suburb.
166. The site is considered suitable for residential rezoning and future development, for the reasons outlined in Section 5, Section 8 and the Assessment of Environmental Effects in Section 9 above.

10. Consistency with other Relevant Planning Documents

167. In accordance with 74(2) the proposed rezoning has been considered in regard of other management plans and strategies. As such the proposal has been assessed against the following relevant planning documents:
 - Mahaanui Iwi Management Plan
 - Greater Christchurch Urban Development Strategy
 - Our Space Strategy
 - Land and Water Regional Plan & Canterbury Air Regional Plan

10.1. Mahaanui Iwi Management Plan

168. The Mahaanui Iwi Management Plan (IMP) was lodged with the relevant Councils on the 1st March 2013, including the Selwyn District Council. The Resource Management Act contains a number of provisions in regard to Māori interests, including the principles of the Treaty of Waitangi, and gives statutory recognition to Iwi Management Plans.

169. The Mahaanui Iwi Management Plan 2013 is a written document, it is an expression of kaitiakitanga which is fundamental to the relationship between Ngai Tahu and the environment. The IMP sets out how to achieve the 'protection of natural and physical resources according to Ngai Tahu values, knowledge, and practices' (IMP section 5.1). It identifies a number of issues and associated policies, including subdivision and development guidelines. This promotes early engagement at various levels of the planning process to ensure certain outcomes are achieved within the development.
170. The Mahaanui IMP 2013 has been prepared by the six Papatipu Rūnanga of the takiwā:
- Ngāi Tūāhuriri Rūnanga
 - Te Hapū o Ngāti Wheke (Rāpaki) Rūnanga
 - Te Rūnanga o Koukourārata
 - Ōnuku Rūnanga
 - Wairewa Rūnanga
 - Te Taumutu Rūnanga
171. The site is located within the area covered by the Mahaanui Iwi Management Plan 2013(IMP) and as such it is considered appropriate to assess the application under the IMP, as required under Section 74(2A) of the RMA, to assess any potential effects on Tāngata Whenua vales.
172. The relevant sections and policies to the applications are addressed as follows;

Section 5.1 Kaitiakitanga

173. The objectives of this section of the IMP acknowledge that the Mahaanui IMP 2013 is a manawhenua planning document for the six Papatipu Rūnanga in the region. It is acknowledged that there is a relationship that the Rūnanga have with the land and water, kaitiakitanga and Treaty of Waitangi. This section of the IMP provides an overarching policy statement on kaitiakitanga and is relevant to all other sections of the IMP.

Section 5.2 Ranginui

174. This section of the IMP addresses objectives and policies for air and provides guidance to the protection and use of air in a manner that respects the life supporting capacity and ensures that it is passed onto the next generation in a healthy state.
175. Air discharges will be changed from rural to residential in nature. This is considered to provide a possible benefit in that residential discharges have less potential to contaminate the air.
176. The IMP identifies that celestial darkness should be protected. The rezoning from rural to residential will increase light sources, such as street lighting. However, given the existing residential use to the east of the site, it is considered that the additional street lighting will not significantly change the light sources and celestial darkness currently in the area.
177. The IMP also identifies the need to support reduction of emissions for climate change mitigation. The proposal allows for walking and cycling transport connections through the site which are accessible to public transport routes. This will encourage future residents to reduce the use of private cars and use more sustainable methods of transportation, therefore contributing less to emissions.

Section 5.3 Wai Maori

178. Section 5.3 addresses objectives and policies for fresh water and provides guidance to freshwater management in a manner consistent with Ngai Tahu cultural values and interests. It is recognised that Ngai Tahu and Rūnanga have interests and a relationship with freshwater resources.
179. The site will obtain water supply from the Council reticulated network.
180. A stormwater management area will be developed as part of the subdivision which will provide treatment to stormwater runoff of the future development. This will improve the current stormwater management system on site (straight to ground).
181. It is considered that the application is consistent with the Wai Maori section of the IMP.

Section 5.4 Papatūānuku

182. This section of the IMP addresses objectives and policies of issues of significance in regard to the land. It recognises the relationships and connections between land, water biodiversity and the sea.
183. The site is not in any known site or place of importance to tāngata whenua, there are no protected places on the site, no archaeological sites or any other protection, as identified on the Christchurch City Planning Maps, the New Zealand Archaeological Association website, the New Zealand Historic Places Trust list or in the IMP.
184. The assessment of environmental effects concluded that there will be less than minor adverse effects of the proposed rezoning of the land.

Section 6.5 Ihutai

185. This section of the IMP addresses objectives and policies of particular significance to the lands and water of the Ihutai catchment and provides objectives for the area. The submission site is located in Christchurch District and issues around water quality and quantity and the potential effects of subdivision and development are relevant considerations as part of this submission. The objectives focus on relationships between land use, groundwater, surface water and Ihutai is recognised and provided for. The rezoning of the submission site and any future subdivision development will minimise any potential effects on the groundwater and surface water, reducing any potential effects on the take and safeguarding the environmental and cultural values of the wider area.
186. Consideration has been taken into account with regard to the following:
- Te Whakatau Kaupapa (1990)
 - Te Rūnanga o Ngai Tahu Freshwater Policy (2001)
 - Te Taumutu Rūnanga Natural Resource Management Plan (2003)
 - Cultural Report on the Southwest Area Plan (2003)
 - Te Ahuatanga o Te Ihutai – Cultural Health Assessment of the Avon Heathcote Estuary and its Catchment (2007)
187. However, the primary reliance has been through consideration of the IMP and consultation with Mana whenua through Mahaanui Kurataiao which is shown within the MKT report attached as Appendix O.

Summary

188. The proposed change of zoning from RuUF and RNN/FUZ to proposed MDR is considered to have less than minor adverse effects on the natural and cultural environment and is considered to be

consistent with the provisions of the Mahaanui Iwi Management Plan 2013 and is therefore consistent with Tāngata Whenua values.

10.2. Greater Christchurch Urban Development Strategy

189. The Greater Christchurch Urban Development Strategy 2007(UDS) provides a vision for the Greater Christchurch areas where by 2041 there will be a "vibrant inner city and suburban centres surrounded by thriving rural communities and towns, connected by efficient and sustainable infrastructure". The UDS was updated in 2016 to reflect the following principles which provide context for this strategy.

- Leadership – Haututanga
- Partnership – Kotahitanga
- Resilience – Maiaatanga
- Innovation – Auahatanga
- Integration – Kotuitanga
- Regeneration – Haumanutanga
- Equity – Tokeketanga

190. The goal of the UDS is to provide a broad settlement pattern over the next 35 years for the Greater Christchurch area. This includes identifying areas where a variety of future homes are best located. Providing an environment that promotes healthy communities. Ensuring that residents have easy transport links to commercial centres for shopping, health, education etc. Providing a variety of transport choices such as public, cycling and walking.

191. The proposed submission is considered to be consistent with the UDS as it will provide a residential development which will include a variety of lots which will enable differing homes in the future. It will also provide easy transport links to the Christchurch City and surrounding suburbs through existing public transport links, cycleways and pedestrian walkways.

10.3. Our Space Strategy 2018-2048

192. Our Space 2018-2048: Greater Christchurch Settlement Pattern Update Whakahāngai O Te Hōrapa Nohoanga (Our Space Update) has been prepared by the Greater Christchurch Partnership. The partnership includes;

- Christchurch City Council
- Environment Canterbury
- Selwyn District Council
- Waimakariri District Council
- Iwi – Te Rūnanga o Ngāi Tahu
- Waka Kotahi New Zealand Transport Agency
- Canterbury District Health Board
- Greater Christchurch Group – the Department of Prime Minister and Cabinet

193. The Our Space Update has been prepared to respond to the changes needed to growth and development of the region and complements the Urban Development Strategy (UDS) with addressing the National Policy Statement Urban Development Capacity 2016. As part of the process the report identifies key strategic issues across a number of planning documents. It

provides the high-level guidance about future changes needed to accommodate future growth and development in a sustainable and integrated manner.

194. The Our Space strategy identifies the housing development, targets and sufficiency of capacity for Christchurch, Selwyn and Waimakariri. A shortage of housing capacity was identified in Selwyn, Waimakariri, and Greater Christchurch.
195. The strategy identified addressing the projected shortfall of residential housing, redevelopment in the central city, providing a range of housing, integrated land use and transport, and supporting investments as the key priority areas for the update.
196. The strategy identified that 36% of housing demand should be met through development of existing greenfield areas in Christchurch, Selwyn and Waimakariri and 19% of demand met through new greenfield development in Selwyn and Waimakariri. This proposed rezoning will contribute to the 19% of demand achieved through new greenfield development.

10.4. Land and Water Regional Plan & Canterbury Air Regional Plan

197. The operative Land and Water Regional Plan broadly seeks to manage land and water within the Canterbury Region, by setting water allocation limits and limits on the type and number of discharges permitted. The objectives and policies of the Canterbury Air Regional Plan broadly seek (in relation to those activities emitting discharges to air) best practicable options to minimise the effects of discharges, , manage discharges of odour and dust from solid or liquid waste, and addressing localised effects of discharges including relative to sensitive receptors.
198. The rezoning submission is neutral in relation to these Regional Plans because future development will require Regional consents to be obtained under the Regional Plan rules at the appropriate time.

11. Part 2 of the Resource Management Act 1991

199. Section 74 of the Act requires the Plan Change Request to be assessed under the provisions of Part 2 of the Act. Part 2 sets out the purpose and principles of the Act.
200. Section 5 of the RMA outlines that the purpose of the RMA is the promotion of sustainable management of natural and physical resources. Sustainable management is defined as the management of:

(2) [...] the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while –

(a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and

(b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and

(c) avoiding, remedying, or mitigating any adverse effects of activities on the environment.

201. The proposed rezoning will provide for people and communities social, economic and cultural wellbeing by providing a well-designed and sustainable residential development with transportation, infrastructure and servicing connections. The site has been assessed as an appropriate area for MDR to promote the sustainable management of natural and physical resources. It is considered that any adverse effects can be avoided, remedied or mitigated therefore resulting in no more than minor adverse effects on the environment.

202. Section 6 identifies matters of national importance to be recognised and provided for. It is considered that none of these matters are relevant to the proposed rezoning.
203. Section 7 relates to 'other matters' which persons must have particular regard to. This submission for rezoning has given particular regard to (a) Kaitiakitanga, (b) the efficient use and development of natural and physical resources, (c) the maintenance and enhancement of amenity values and (f) maintenance and enhancement of the quality of the environment. The submission to rezone the site has had regard to these matters through the consolidation and connectedness of the proposed residential development, the creation of well-designed and high amenity living environments is consistent with the matters in Section 7. The stormwater management areas and reserves will enhance the amenity values and the quality of the environment of the existing site.
204. Section 8 requires persons to take into account the principles of the Treaty of Waitangi. An assessment of the Mahaanui Iwi Management Plan has been undertaken in Section 11 of this report. It is considered that the proposed rezoning is consistent with the principles of the Treaty of Waitangi.
205. Overall, the submission to rezone the site is considered to achieve the principle and purpose of Part 2 of the RMA.

12. Conclusion

206. The submitters are requesting the site be rezoned in the CDP as part of the PC14 process. The requested zoning change is from RuUF and RNN/FUZ to the proposed MDR under PC14. The proposed rezoning and ODP will enable a potential yield of 336-420 residential lots depending on the minimum average of dwellings per ha.
207. The purpose of this submission is to provide housing options to meet the increasing housing supply shortage within Christchurch and the Greater Christchurch areas and to enable a consolidated, well-designed development that meets the objectives and policies of the CDP.
208. No changes are proposed to the objectives, policies in the CDP and PC14. A new development area and ODP that include the site is proposed and rules are requested to be amended accordingly where necessary.
209. The Section 32 assessment in Section 8 of this report demonstrates that the rezoning of the land to MDR under PC14 is the most effective and efficient option for this site when considering the costs and benefits of the other option being the status quo.
210. Whilst rezoning to FUZ has not been specifically considered in the Section 32 assessment the applicants are willing to consider this as an option if this was considered more acceptable in respect of a greenfield development.
211. The assessment of environmental effects in Section 9 of this report identifies that adverse effects from the proposed rezoning and future residential development can be mitigated through detailed design at the time of subdivision consent as well as the design of the overall development through the establishment of the proposed ODP. The assessment also identifies that there are positive effects as a result of the proposed rezoning request.
212. An assessment of the NPS-UD, NPS-HPL, CRPS, CDP and other statutory and non-statutory documents has been undertaken in accordance with Section 74 of the RMA which demonstrates that the proposal gives effect to all provisions, except where limited to Map A of the CRPS. In all other respects, the proposal provides for the consolidated, logical, integrated provision of growth for the Greater Christchurch area, and provides housing choice which gives effect to the urban

growth objectives of the CDP and PC14 that enables the council to use the site to contribute towards housing capacity under the NPS-UD.

213. In conclusion, for the reasons detailed throughout this report, the relief sought is to include this submission as part of PC14 and the hearing process to rezone the site from a combination of RuUF and proposed FUZ to MDR within the CDP.

13. Disclaimer

This report has been prepared by Eliot Sinclair & Partners Limited ("Eliot Sinclair") only for the intended purpose as a submission in respect of the CDP and proposed PC14.

The report is based on:

- Desktop Review
- Site Investigations (Undertaken by ES)
- Specialist Reports (Undertaken by External Consultants)
- Canterbury Maps Viewer
- Christchurch City ArcGIS Maps
- CCC Property Search
- Christchurch District Plan (CDP)
- Environment Canterbury (ECan)
- Canterbury Regional Policy Statement
- Greater Christchurch Strategy
- Mahaanui Iwi Management Plan
- Our Space Strategy
- CCC PC14 S.32 reports

Where data supplied by Cashmere Park Ltd, Hartward Investment Trust and Robert Brown or other external sources, including previous site investigation reports, have been relied upon, it has been assumed that the information is correct unless otherwise stated. No responsibility is accepted by Eliot Sinclair for incomplete or inaccurate data supplied by other parties.

Whilst every care has been taken during our investigation and interpretation of available data to ensure that the conclusions drawn, and the opinions and recommendations expressed are correct at the time of reporting, Eliot Sinclair has not performed an assessment of all possible conditions or circumstances that may exist at the site. Eliot Sinclair does not provide any warranty, either express or implied, that all conditions will conform exactly to the assessments contained in this report.

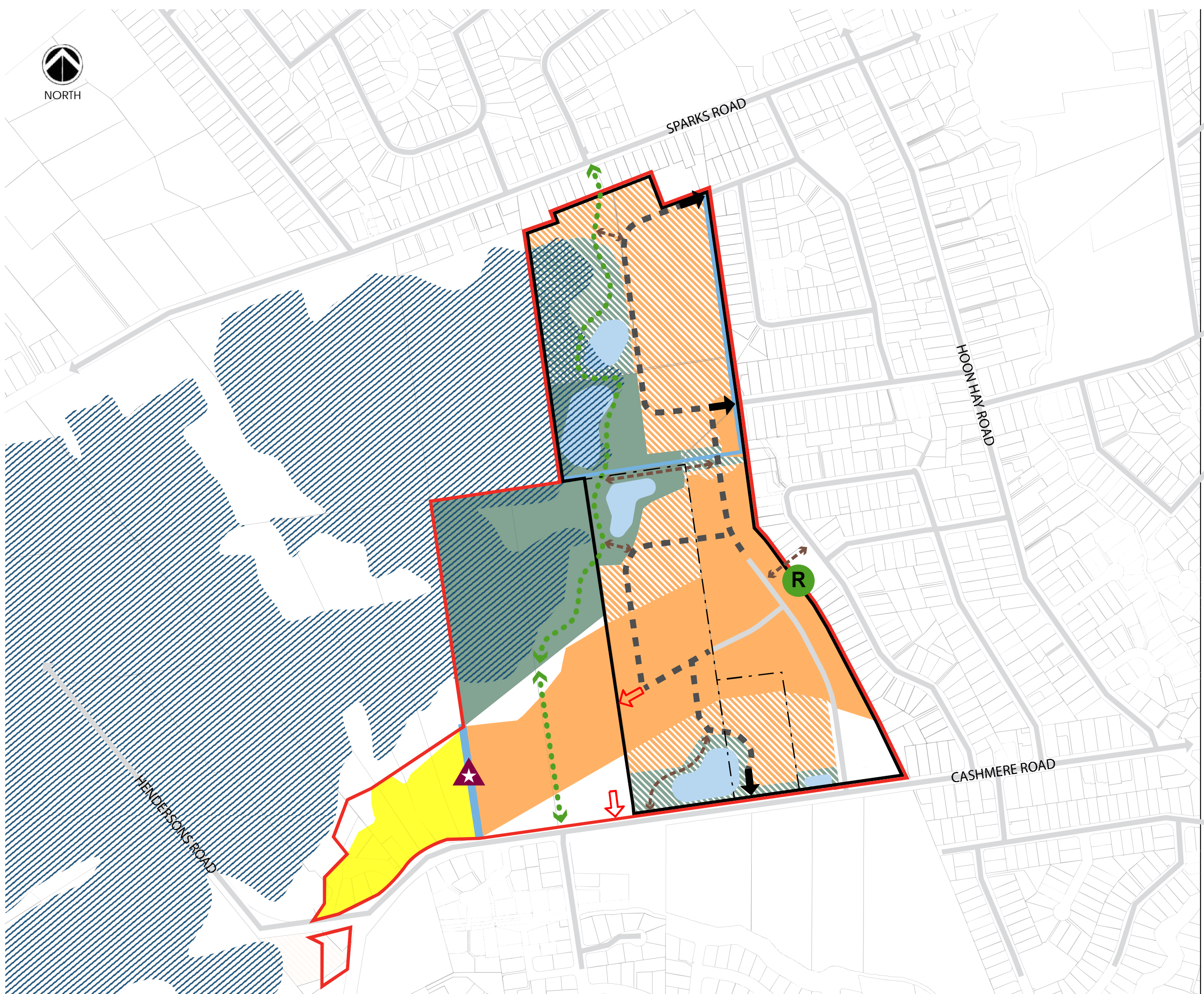
The exposure of conditions or materials that vary from those described in this report may require a review of our recommendations. Eliot Sinclair should be contacted to confirm the validity of this report should any of these occur.










This report has been prepared for the benefit of Cashmere Park Ltd, Hartward Investment Trust and Robert Brown and CCC for the purposes as stated above. No liability is accepted by Eliot Sinclair or any of their employees with respect to the use of this report, in whole or in part, for any other purpose or by any other party.

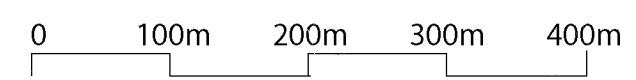
Appendix A. Outline Development Plan (ODP)



Proposed Hendersons Outline Development Plan



-  Existing ODP Boundary
[Appendix 8.10.18 Hendersons Outline Development Plan]
-  Application Site boundary
[Proposed alternate ODP]
-  Internal landowner boundaries
-  Existing road network
-  Proposed road network
-  Fixed road access point
-  Indicative road access point
[aligned with neighbouring subdivision plans recieved]
-  Rural/Urban fringe zone within ODP boundary
-  District Plan High floodplain hazard management area
-  Heritage stream to be safeguarded
-  Residential development area
-  Residential development area with greater constraints
-  Land set aside for stormwater management / recreational / conservation use
-  Existing box drain
-  Proposed recreational route
Location and alignment may vary (including extension)
-  Existing Recreation Reserve
-  Proposed residential development area
-  Proposed Land to be set aside for stormwater management / recreational / conservation use
-  Proposed stormwater management area
-  Proposed pedestrian / cycle link (including extensions)



Appendix B. Legal Scope

Memorandum

Date 3 May 2023
Matter no. 2400273
To Cashmere Fields rezoning group
Copy Bryan McGillan, Eliot Sinclair
From Sarah Eveleigh
Subject PC14 scope for rezoning

Background and summary of advice

- 1 We have been asked to consider whether a submission seeking rezoning of your land at Cashmere would be within scope of Christchurch City Council's (CCC) Plan Change 14 (PC14).
- 2 PC14 has been introduced by CCC to meet the requirements of the recent amendments¹ to the Resource Management Act (RMA). PC14 is known as an Intensification Planning Instrument (IPI) and follows the Intensification Planning Process (IPP) contained in the RMA.
- 3 The Cashmere Fields land is generally located between Cashmere Road and Sparks Road, and accessed via Leistrealla Road and Northaw Street. It is currently zoned Residential New Neighbourhood (RNN) and Rural Urban Fringe (RuUF). Under PC14, the zoning of the land would not be substantively changed, although the name of the RNN zone has been amended to Future Urban (FUZ). We understand that you are seeking a residential zoning across the Cashmere Fields land.
- 4 There are well established principles to determine the scope of plan changes prepared and considered under section 73 and Schedule 1 RMA. However, the recently introduced RMA provisions for IPIs contain particular direction about the scope of these instruments.
- 5 We consider that:
 - (a) It is within the scope of PC14 to seek rezoning of the area currently zoned FUZ to MDR, on the basis that this provides for application of the medium density residential standards to a residential zone; and
 - (b) It would be within the scope of PC14 to seek to extend the area of MDR to include all of the land sought for rezoning, where it is established that this is a related provision under s80E. Grounds for considering this rezoning as a related provision would include that it supports the application of the MDRS to the area previously zoned FUZ, and achieves the MDRS objective for a well-functioning urban environment.

Scope of plan changes

- 6 The RMA requires that a submission must be "on" (that is, within the ambit of) a plan change. Case law has established a number of principles:
 - (a) Whether a submission is "on" a variation will be a question of scale and degree in the particular circumstances;²

¹ Resource Management (Enabling Housing Supply and Other Matters) Amendment Act 2021

² *Option 5 Inc v Marlborough District Council* (2009) 16 ELRNZ 1 (HC).

Memorandum

- (b) The general test relates to procedural fairness, and requires consideration of:³
 - (i) whether the submission addresses the change to the status quo advanced by the variation; and
 - (ii) whether there is a real risk that persons potentially affected by the submission would be denied an effective opportunity to respond in the variation process.
- (c) Where a plan change proposes changes to zoning of specific areas of land, incidental or consequential extensions of zoning changes proposed in a plan change are permissible (as a consequential change under clause 10(2), Schedule 1 RMA), provided that no substantial further s32 analysis is required.⁴

Scope of an IPI

- 7 The required content of an IPI is contained in RMA sections 77E – 77T, and Schedules 3A and 3B; while the process for an IPI is contained in sections 80D – 80N.
- 8 Of particular relevance:
 - (a) Section 80E provides that an IPI means a change to a district plan:
 - (i) That must:⁵
 - (A) incorporate the Medium Density Residential Standards (**MDRS**); and
 - (B) give effect to policies 3 and 4 of the National Policy Statement for Urban Development (**NPS-UD**); and
 - (ii) That may⁶ also include, relevantly, related provisions including objectives, policies, rules, standards and zones [our emphasis] that support or are consequential on the MDRS and policies 3 and 4 of the NPS-UD.
 - (b) "Related provisions"⁷ also includes provisions that relate to any of the following, without limitation: district-wide matters; earthworks; fencing; infrastructure; qualifying matters; stormwater management; subdivision of land.
 - (c) Section 80G provides that a council must not use the IPI for any purpose other than the uses specified in section 80E.
- 9 In terms of the referenced policies of the NPS-UD:
 - (a) Policy 3 relates to enabling building heights and density of urban form in and around centres to achieve prescribed intensification, capacity and urban form outcomes; and

³ *Clearwater Resort Ltd v Christchurch City Council*, High Court Christchurch AP34/02 (14 March 2003); *Palmerston North City Council v Motor Machinists Ltd* [2013] NZHC 1290;

⁴ *Westfield (NZ) Ltd v Hamilton City Council*, [2004] NZRM 556, at [81]

⁵ Section 80E(1)(a)

⁶ Section 80E(1)(b)

⁷ Section 80E(2)

Memorandum

- (b) Policy 4 relates to modification of the Policy 3 requirements only to the extent necessary to accommodate a qualifying matter (eg flood risk).

10 Section 80E therefore includes scope for related provisions including rezoning of land where this supports or is consequential on the MDRS and policies 3 and 4 of the NPS-UD. We note that the MDRS requires inclusion of a number of objectives and policies relating to a well-functioning urban environment.

Scope of PC14

11 PC14:

- (a) introduces a new objectives and policies relating to a well-functioning urban environment;
- (b) incorporates the MDRS in most existing residential zones;
- (c) gives effect to policies 3 and 4 of the NPS-UD, by amending building heights and density provisions in and around identified centres;
- (d) introduces and applies qualifying matters, which restrict the application of the MDRS in a number of locations;
- (e) changes the zoning or applies an overlay for some industrial areas close to the central city and large centres, to enable redevelopment for housing and mixed-use activities.

12 Within the section 32 report, CCC defines the scope of PC14 as follows:

- (a) In Scope: All urban residential zones, including associated potential qualifying matters;
- (b) Out of Scope: Any changes to Rural Zones, including the rezoning of new additional greenfield areas.

13 The RNN zone has generally been rezoned as FUZ, rather than MDR. The s 32 report identifies that the RNN zone contains a variety of land, including land where residential land is largely complete; land ready for development; land suitable for development but where there are significant constraints on the scale or timing of development; and land that may be suitable for development but where further work is required to confirm this. CCC has identified some areas of the RNN zone which it considers can be rezoned to MDR now (including land in North Halswell). It otherwise considers that rezoning to MDR would reduce the weight that could be afforded to ODPs and recognition of site-specific constraints, and so proposes zoning to FUZ to enable the effective and efficient development of large greenfield areas.

14 We note that although CCC considers rezoning of rural areas to be out of scope of PC14, it has rezoned some industrial areas to a mixed use zoning. It must therefore accept that rezoning, in itself, is a matter that can be within the scope of an IPI where it meets the requirements of s80E.

Rezoning of the Cashmere Fields land through PC14

15 We consider that it would be within the scope of PC14 to seek rezoning of the area identified as FUZ to MDR, on the basis that this provides for the application of the medium density residential standards to a residential zone. CCC have identified that all urban residential zones are within the scope of PC14, and this rezoning is consistent with rezoning from RNN to MDR applied in other locations.

Memorandum

- 16 We also consider that a submission to extend the MDR zone to include adjacent land is possible within the scope of PC14, where it is established that this zoning is a related provision under s80E. Grounds for considering this rezoning as a related provision would include that it supports the application of the MDRS to the area previously zoned FUZ, and achieves the MDRS objective⁸ for a well-functioning urban environment.

⁸ As directed for inclusion through RMA Schedule 3A, clause 6(1)(a), and proposed as Christchurch District Plan Objective 3.3.7



Appendix C. Record of Title



**RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD**

**Guaranteed Search Copy issued under Section 60 of the Land
Transfer Act 2017**




R.W. Muir
Registrar-General
of Land

Identifier **446326**
Land Registration District **Canterbury**
Date Issued 02 February 2009

Prior References
CB24A/1212

Estate Fee Simple
Area 4.0001 hectares more or less
Legal Description Lot 1 Deposited Plan 412488

Registered Owners

Warren Richard Lewis, Marianne Ruth Lewis and Landsborough Trustee Services No 30 Limited

Interests

Subject to rights to drain water over part marked M on DP 412488 created by Transfer 98771 - 5.6.1913 at 12.05 pm (surrendered as appurtenant to CT CB842/14 see Transfer 561911)

Appurtenant hereto are rights to drain water created by Transfer 98771 - 5.6.1913 at 12.05 pm

Appurtenant hereto are rights to drain water created Transfer 100237 - 5.6.1913 at 12.05 pm

Appurtenant hereto are rights to drain water created by Transfer 102271 - 31.3.1914 at 12.04 pm

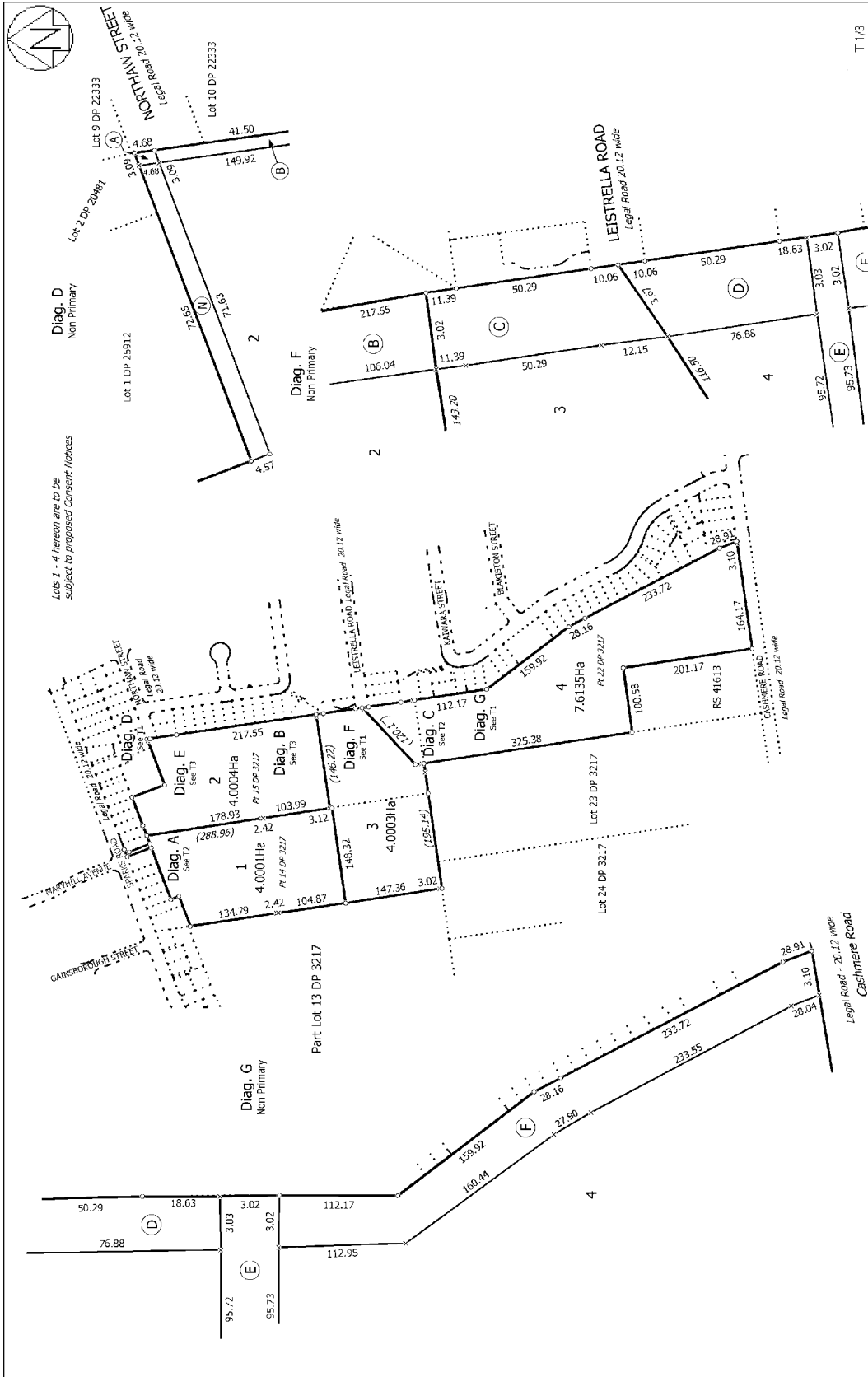
8053128.2 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 2.2.2009 at 11:16 am

Appurtenant hereto is a right to drain water created by Easement Instrument 8053128.4 - 2.2.2009 at 11:16 am

Subject to a right to drain water over part marked M on DP 412488 created by Easement Instrument 8053128.4 - 2.2.2009 at 11:16 am

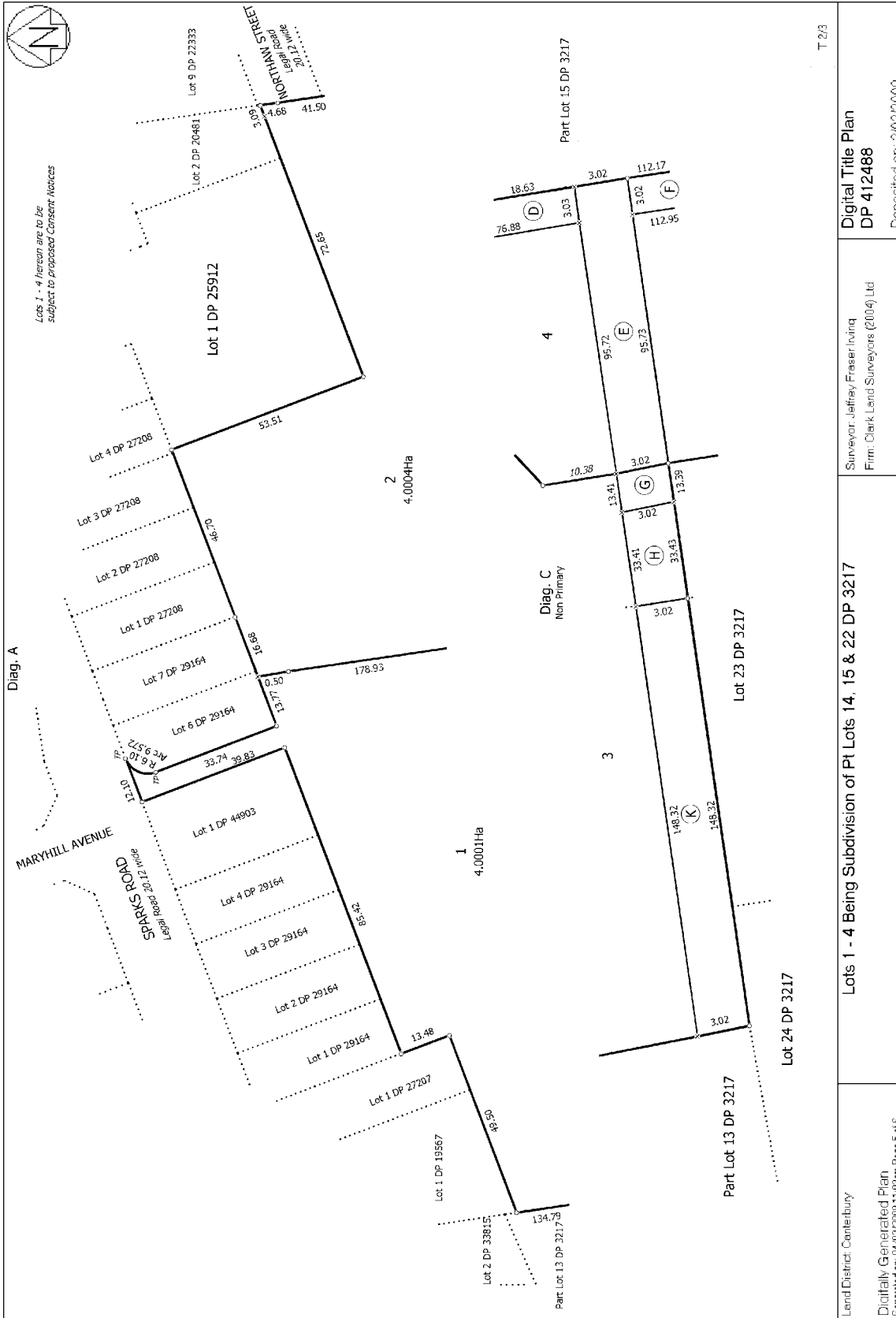
The easements created by Easement Instrument 8053128.4 are subject to Section 243 (a) Resource Management Act 1991

12051074.1 Surrender of the right to drain water as to part marked FA, M, Q, V, W, X, Y and Z on DP 547021 as appurtenant hereto created by Easement Instrument 8053128.4 - 8.4.2021 at 1:35 pm

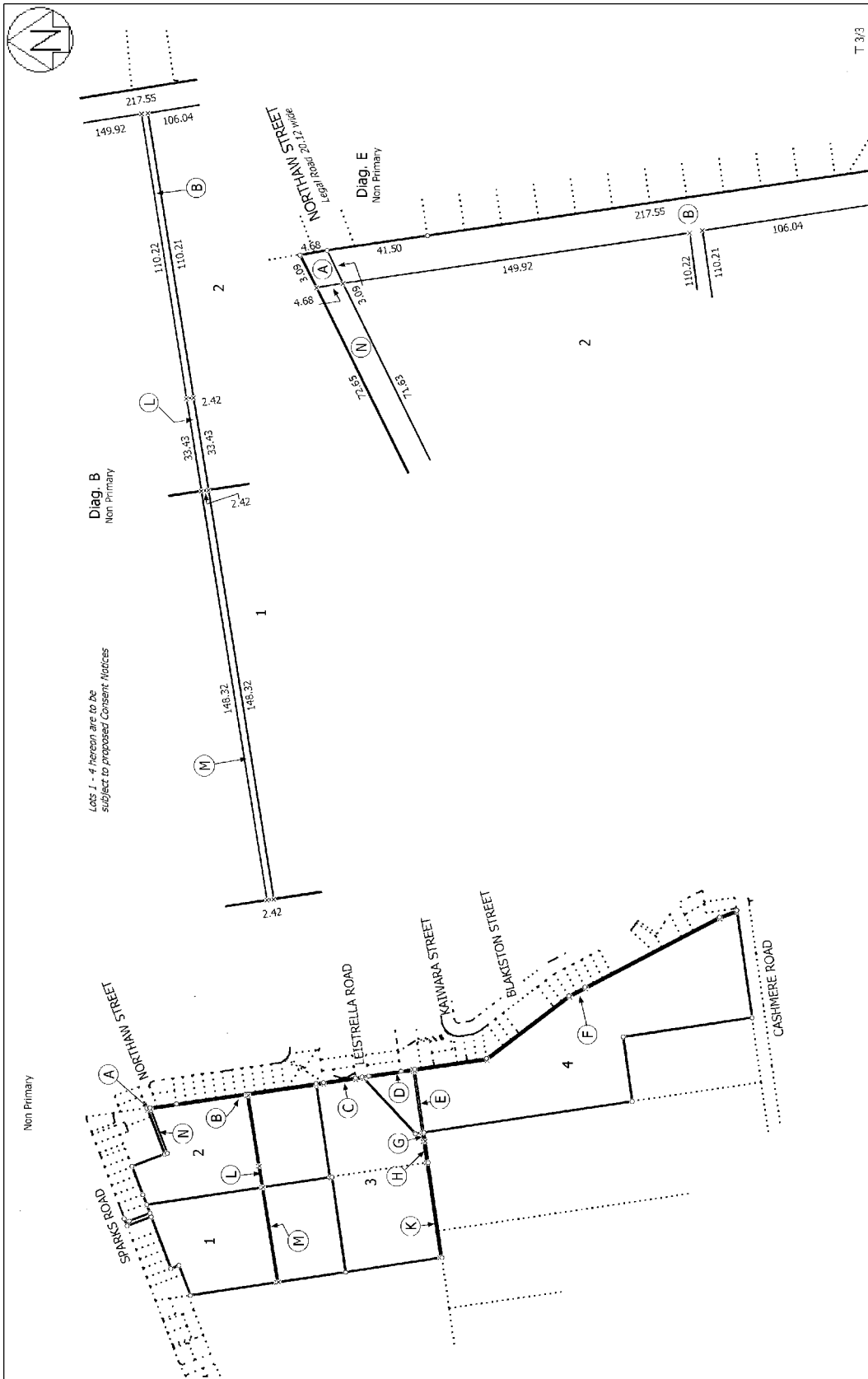


Lots 1 - 4 herein are to be subject to proposed Consent Notices

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Digitally Generated Plan Generated on: 14/02/2019 11:03am Page 4 of 6	Surveyor: Jeffrey Fraser Living Firm: Clark Lenn Surveyors (2010) Ltd	Deposited on: 20/02/2019



Land District: Canterbury	Surveys: Jeffrey Fraser Living Firm: Clark, Lenn, Surveyors (2004) Ltd	Digital Title Plan DP 412488	T 2/3
Digitally Generated Plan Generated on: 14/02/2019 11:05am Page 5 of 6	Lots 1 - 4 Being Subdivision of Pt Lots 14, 15 & 22 DP 3217		
Deposited on: 20/02/2009			



Lot 1 - 4 hereon are to be subject to proposed Consent Notices

Diag. B
Non Primary

Diag. E
Non Primary

Non Primary

Scale: 1:313

Digital Title Plan
DP 412488

Surveyor: Jeffrey Fraser Living
Firm: Clark, Lenn, Surveyors (2004) Ltd

Lots 1 - 4 Being Subdivision of Pt Lots 14, 15 & 22 DP 3217

Land District: Canterbury
Digitally Generated Plan
Generated on: 04/02/2009 11:00am Page 6 of 6

Deposited on: 2/02/2009



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of Land

Identifier **446327**
Land Registration District **Canterbury**
Date Issued 02 February 2009

Prior References
CB24A/1212

Estate Fee Simple
Area 4.0004 hectares more or less
Legal Description Lot 2 Deposited Plan 412488

Registered Owners

Warren Richard Lewis, Marianne Ruth Lewis and Landsborough Trustee Services No 30 Limited

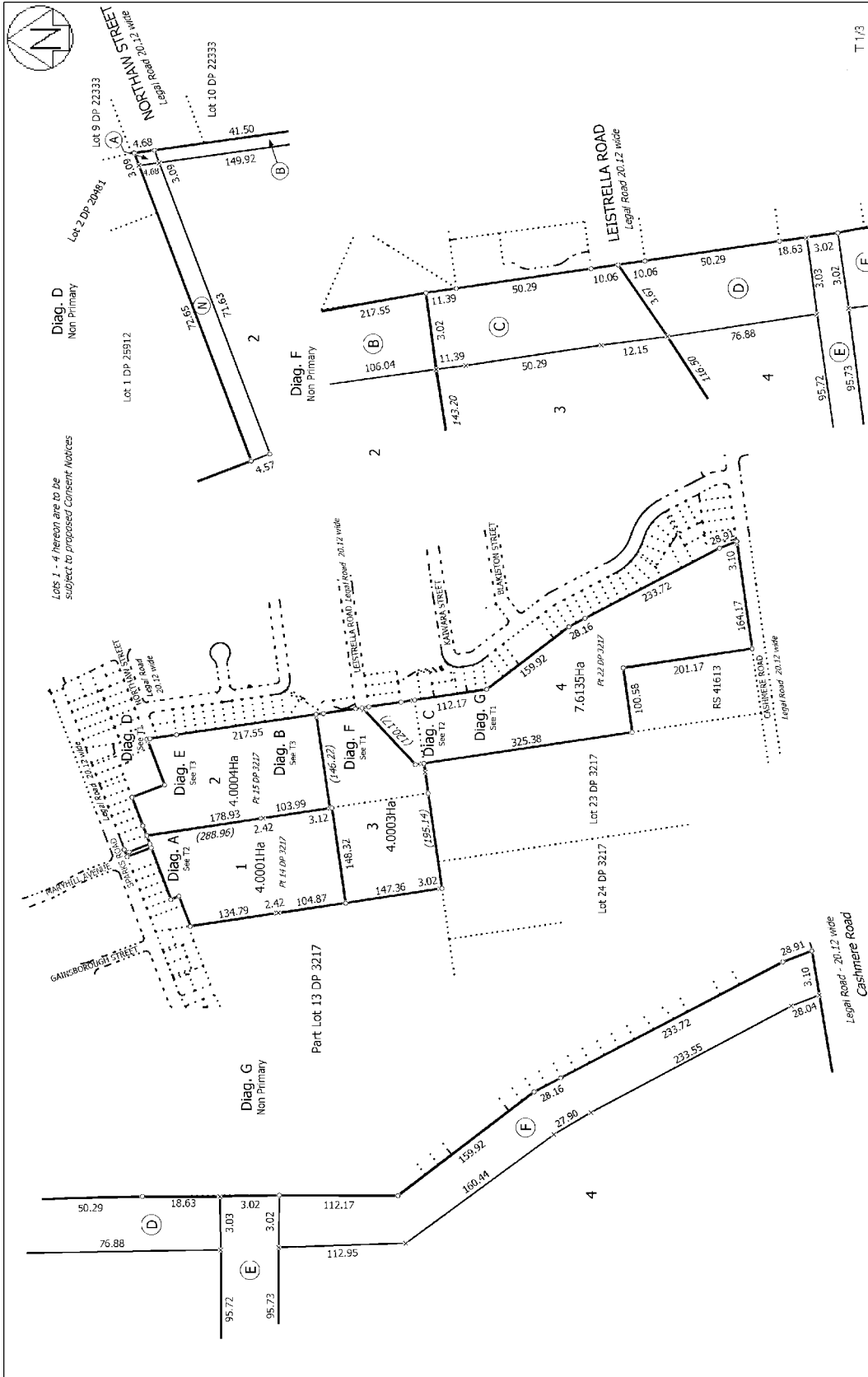
Interests

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Subject to rights to drain water over parts marked A & B on DP 412488 created by Transfer 100237 - 5.6.1913 at 12.05 pm
(surrendered as appurtenant to CT CB842/14 see Transfer 561911)

Appurtenant hereto are rights to drain water created Transfer 100237 - 5.6.1913 at 12.05 pm
Subject to rights to drain water over part marked L on DP 412488 created by Transfer 102271 - 31.3.1914 at 12.04 pm
(surrendered as appurtenant to CT CB842/14 see Transfer 561911)

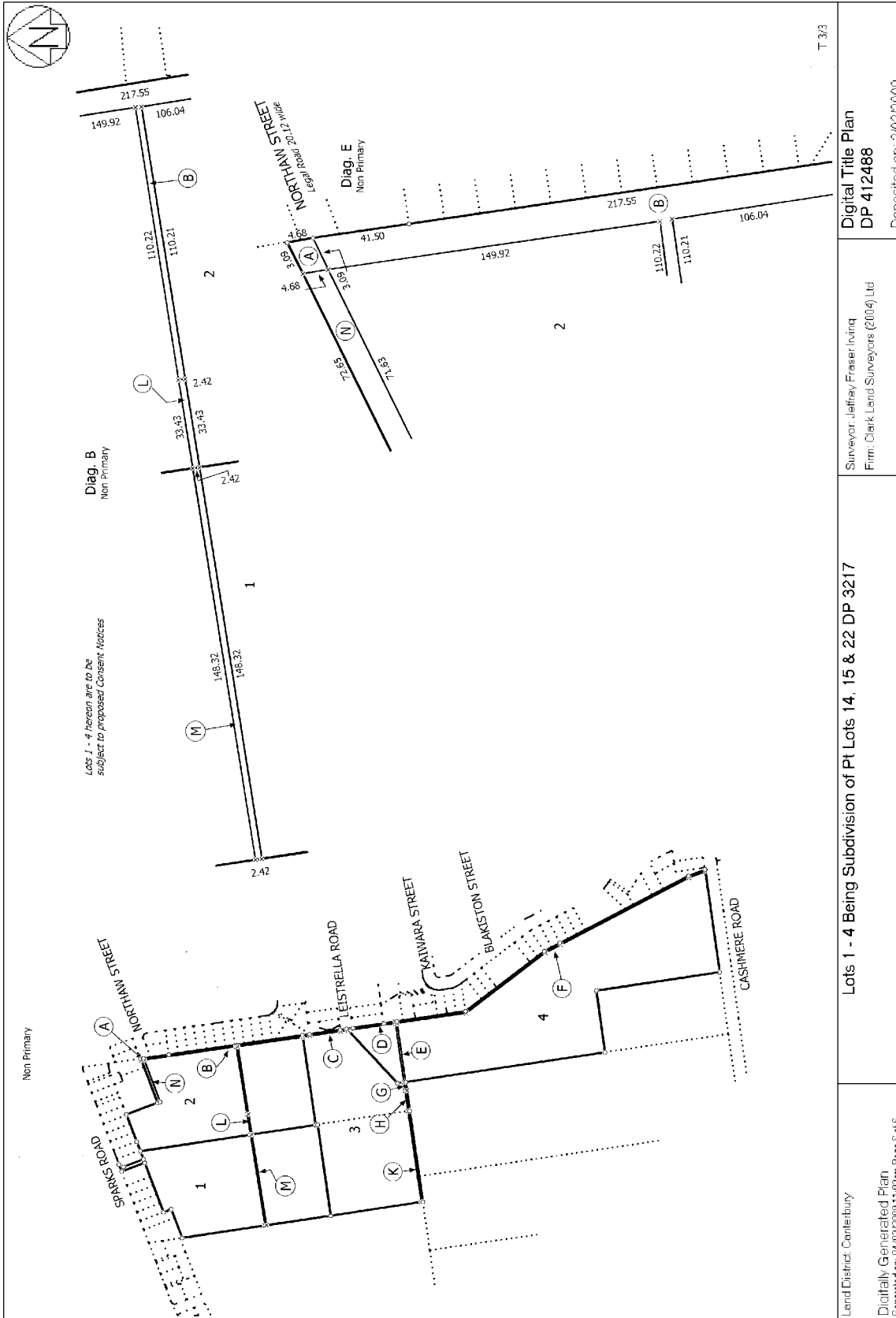
Appurtenant hereto are rights to drain water created by Transfer 102271 - 31.3.1914 at 12.04 pm
Subject to right of way & right to convey electric power easements over parts marked N & A on DP 412488 created by
Transfer 726490 - 14.3.1968

The easement created by Transfer 726490 is subject to Section 309(1)(a) Local Government Act 1974
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Appurtenant hereto are rights to drain water created by Easement Instrument 8053128.4 - 2.2.2009 at 11:16 am
The easements created by Easement Instrument 8053128.4 are subject to Section 243 (a) Resource Management Act 1991
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Easement Instrument 8053128.4 - 8.4.2021 at 1:35 pm



Lots 1 - 4 herein are to be
subject to proposed Consent Notices

<p>Land District: Canterbury</p> <p>Digitally Generated Plan Generated on: 14/02/2019 11:03am Page 4 of 6</p>	<p>Lots 1 - 4 Being Subdivision of Pt Lots 14, 15 & 22 DP 3217</p> <p>Surveyor: Jeffrey Fraser Living Firm: Clark Lenn Surveyors (2010) Ltd</p>	<p>Digital Title Plan DP 412488</p> <p>Deposited on: 20/02/2009</p>
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**Guaranteed Search Copy issued under Section 60 of the Land
Transfer Act 2017**




R.W. Muir
Registrar-General
of Land

Identifier **446328**
Land Registration District **Canterbury**
Date Issued 02 February 2009

Prior References
CB24A/1212

Estate Fee Simple
Area 4.0003 hectares more or less
Legal Description Lot 3 Deposited Plan 412488

Registered Owners

Warren Richard Lewis, Marianne Ruth Lewis and Landsborough Trustee Services No 30 Limited

Interests

Subject to rights to drain water over part marked K on DP 412488 created by Transfer 98771 - 5.6.1913 at 12.05 pm (surrendered as appurtenant to CT CB842/14 see Transfer 561911)

Appurtenant hereto are rights to drain water created by Transfer 98771 - 5.6.1913 at 12.05 pm

Subject to rights to drain water over parts marked C, G & H on DP 412488 created by Transfer 100237 - 5.6.1913 at 12.05 pm (surrendered as appurtenant to CT CB842/14 see Transfer 561911)

Appurtenant hereto are rights to drain water created Transfer 100237 - 5.6.1913 at 12.05 pm

Subject to rights to drain water over parts marked H & G on DP 412488 created by Transfer 102271 - 31.3.1914 at 12.04 pm (surrendered as appurtenant to CT CB842/14 see Transfer 561911)

Appurtenant hereto are rights to drain water created by Transfer 102271 - 31.3.1914 at 12.04 pm

8053128.2 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 2.2.2009 at 11:16 am

Appurtenant hereto is a right to drain water created by Easement Instrument 8053128.4 - 2.2.2009 at 11:16 am

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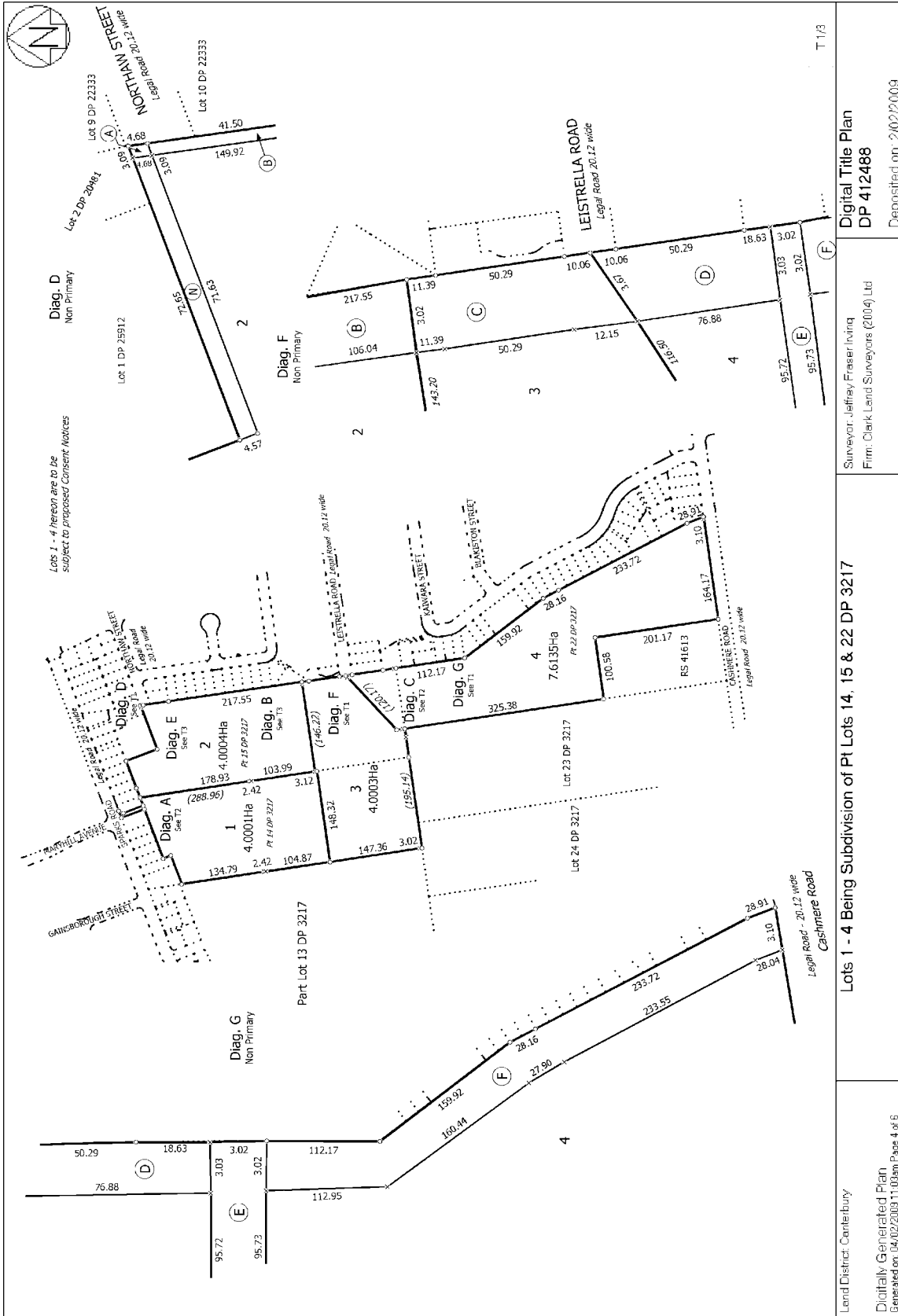
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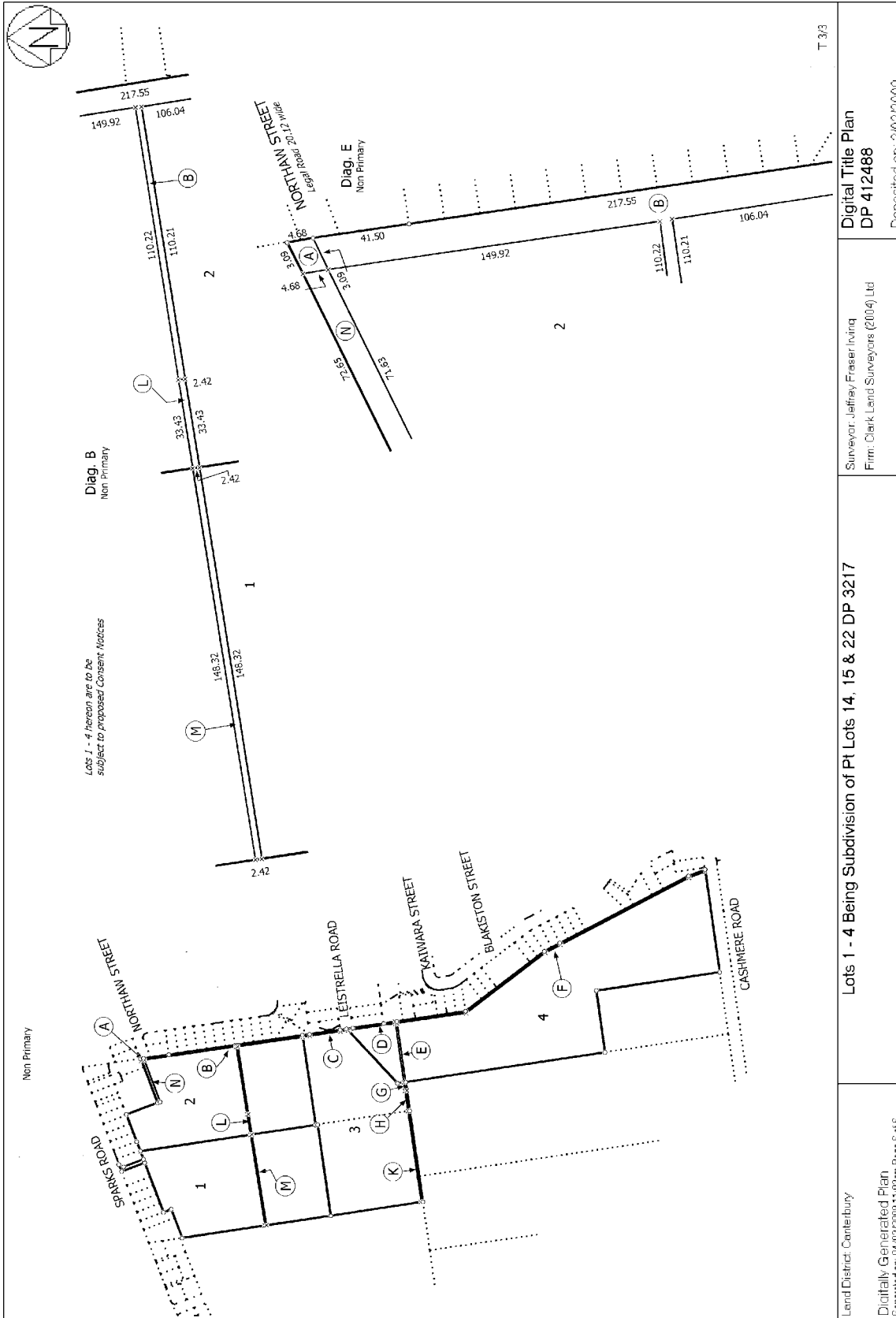
12051074.1 Surrender of the right to drain water as to part marked FA, M, Q, V, W, X, Y and Z on DP 547021 as appurtenant hereto created by Easement Instrument 8053128.4 - 8.4.2021 at 1:35 pm

Subject to a right (in gross) to convey water over part marked AE on DP 547021 in favour of Christchurch City Council created by Easement Instrument 12051074.10 - 8.4.2021 at 1:35 pm

The easements created by Easement Instrument 12051074.10 are subject to Section 243 (a) Resource Management Act 1991



Land District: Canterbury Digitally Generated Plan Generated on: 14/02/2019 11:03am Page 4 of 6	Lots 1 - 4 Being Subdivision of Pt Lots 14, 15 & 22 DP 3217 Surveyor: Jeffrey Fraser Living Firm: Clark Lenn Surveyors (2010) Ltd	Digital Title Plan DP 412488 Deposited on: 20/2/2009
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Land District: Canterbury

Digitally Generated Plan
Generated on: 14/02/2009 11:03am Page 6 of 6

Surveyor: Jeffrey Fraser Living
Firm: Clark, Lenn, Surveyors (2009) Ltd

Lots 1 - 4 Being Subdivision of Pt Lots 14, 15 & 22 DP 3217

Digital Title Plan
DP 412488

Deposited on: 2/02/2009



**RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD**

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Transfer Act 2017**




R.W. Muir
Registrar-General
of Land

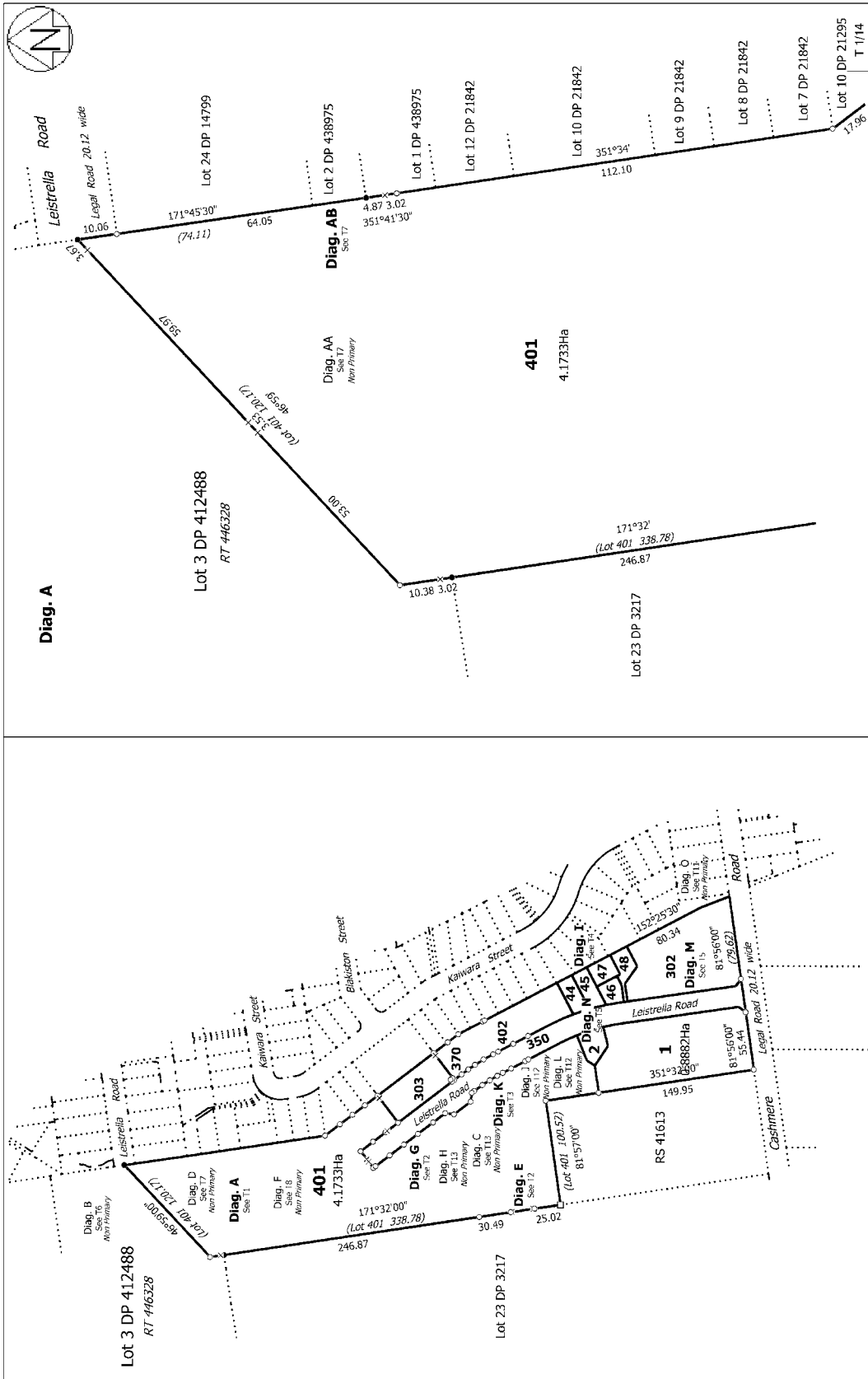
Identifier **932461**
Land Registration District **Canterbury**
Date Issued 08 April 2021

Prior References
446329

Estate Fee Simple
Area 8882 square metres more or less
Legal Description Lot 1 Deposited Plan 547021
Registered Owners
Cashmere Park Limited

Interests

Appurtenant hereto are rights to drain water reserved by Transfer 98505 - 15.5.1913 at 10:44 am
12051074.4 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 8.4.2021 at 1:35 pm



Land District: Canterbury	Surveyor: Christopher Hayden Bennis Firm: Eliot Sinclair & Partners Ltd	Title Plan LT 547021 Approved on: 17/11/2020
Lots 1, 2, 44 to 48, 302, 303, 350, 370, 401 & 402 being Subdivision of Lot 4 DP 412488 and Easement over Lot 3 DP 412488		
Digitally Generated Plan Generated on: 22/03/2021 10:11 am Page 5 of 18		



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Identifier **CB20F/1376**
Land Registration District **Canterbury**
Date Issued 21 November 1979

Prior References
CB299/171

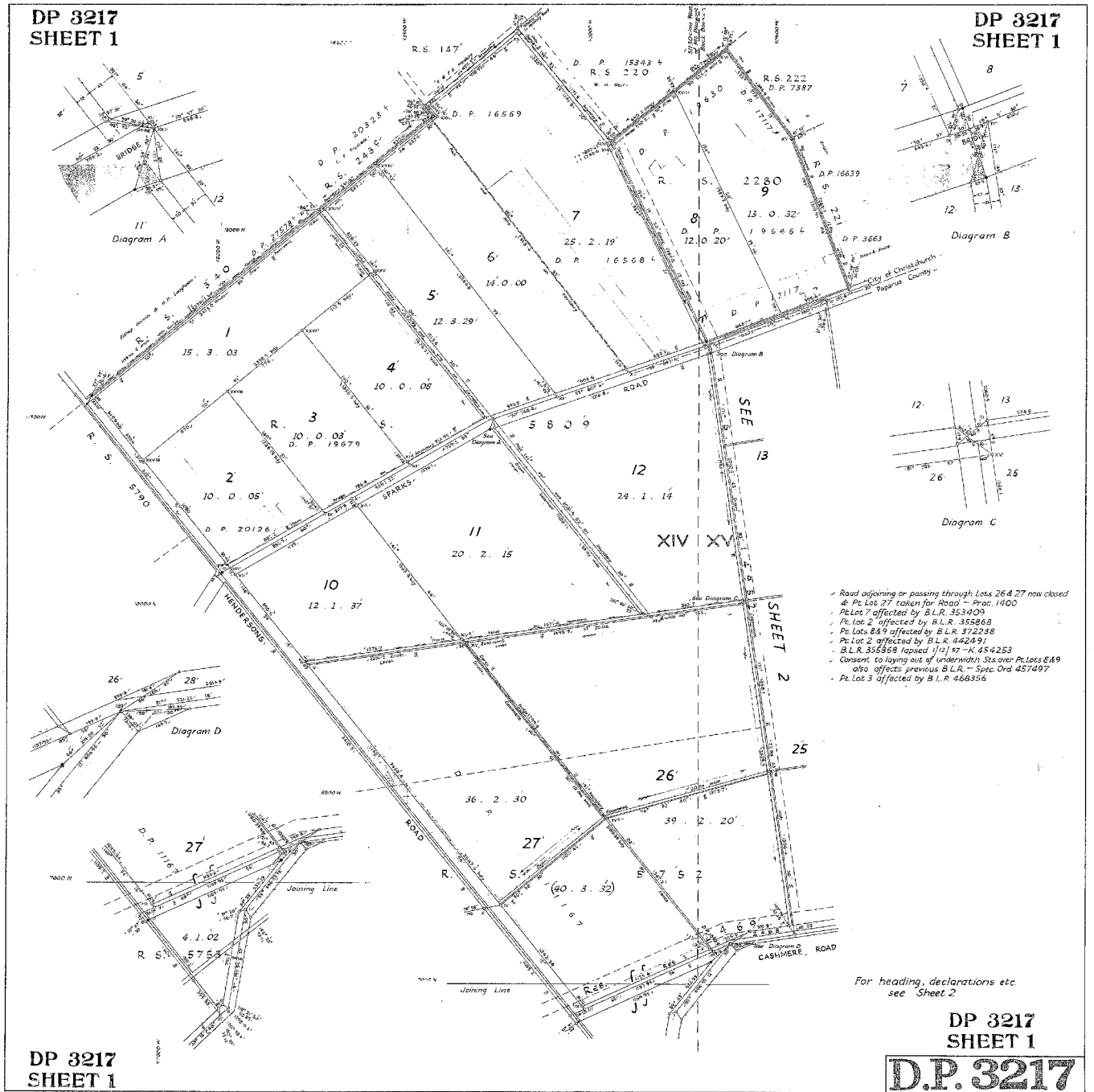
Estate Fee Simple
Area 8.0937 hectares more or less
Legal Description Lot 23 Deposited Plan 3217

Registered Owners

Robert James Brown as to a 1/2 share
Jeanette Katherine Brown as to a 1/2 share

Interests

Subject to a drainage easement created by Transfer 108715
Appurtenant hereto is a drainage easement created by Transfer 108715
651478.1 Mortgage to (now) Westpac New Zealand Limited - 11.11.1986 at 10.45 am and varied 18.10.1996 at 2.40 pm



DP 3217
SHEET 2

Deposited
this 26th day of October 1911
W. Wyniks Register
District Land Registrar



Received for deposit in the
Land Transfer Office Christchurch
this 26th day of October 1911.
DP 3217
SHEET 2

Part Lot 16 affected by B.L.R. 383562
Part Lot 15 affected by B.L.R. 4966339
Consent to laying out of improved roads
of B.L.R. 4966339 cancelled on 15/7/65
Part 10422 set out for school K.294594

This is a certified copy of D.P. 3217
the original may be produced if
comparably necessary
Land Transfer Registrar

Plan of
Part of
R.S. 724, 737, 2280 and Part of R.S. 382, 1160, 5752, 5753, 5809, 14952,
and Part of R.S. 2468, 2469,
Blocks XIV & XV Christchurch, 65,952, 87,581 and C.T. 180/92, 183/247, 220/75
Part now Paparua Scale 3 inches to an inch
Surveyed for Sir J. C. Wilson Trustee
by Geo. McInnes Licensed Surveyor

Approved for deposit
Geo. McInnes
Chief Surveyor
Examined and approved
W. C. L. [Signature]
Land Transfer Registrar
District of Christchurch

DP 3217
SHEET 2

Approved for deposit
W. Wyniks Register
District Land Registrar

DP 3217
SHEET 2

D.P. 3217



**RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD**

**Guaranteed Search Copy issued under Section 60 of the Land
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R.W. Muir
Registrar-General
of Land

Identifier **CB35C/17**
Land Registration District **Canterbury**
Date Issued 02 March 1992

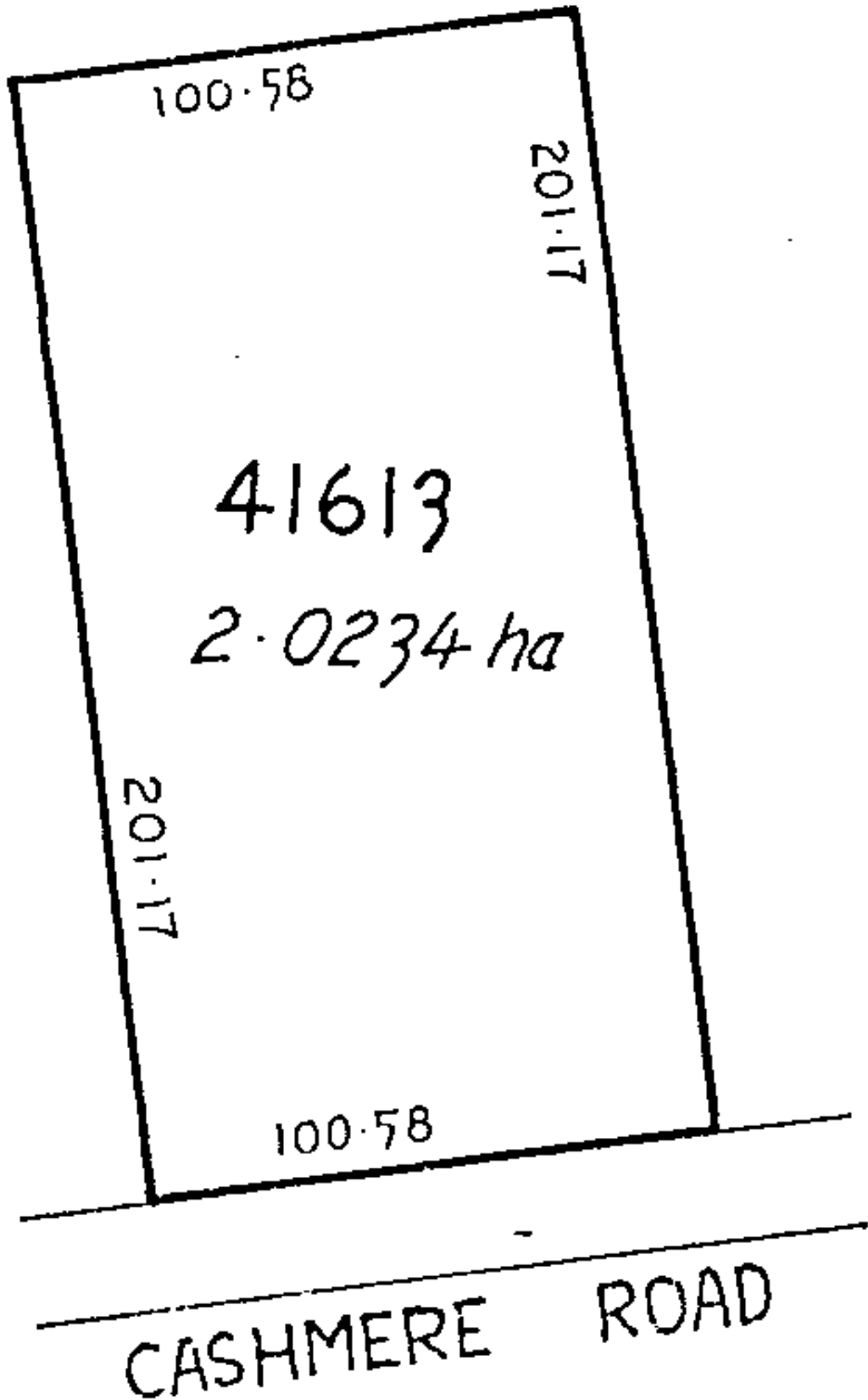
Prior References
CB24F/224

Estate Fee Simple
Area 2.0234 hectares more or less
Legal Description Rural Section 41613

Registered Owners
Geoffrey Peter Ward, Debra Dawn Hartnell-Ward and Young Hunter Trustees Limited

Interests

Subject to Part IV A Conservation Act 1987
Subject to Section 11 Crown Minerals Act 1991
6930452.3 Mortgage to ANZ National Bank Limited - 3.7.2006 at 9:00 am
6990775.1 Variation of Mortgage 6930452.3 - 16.8.2006 at 9:00 am
10355506.1 Variation of Mortgage 6930452.3 - 4.3.2016 at 8:55 am



Appendix D. Flood Risk Assessment - Cashmere Park Assessment Modelling

MEMO

To: Warren Lewis, Geoff Ward, Robert Brown

Cc: Bryan McGillan (ES)

From: Antoinette Tan (DHI)

Project 44801992

Date: 28th February 2023

Subject: Cashmere Park Extension modelling Jan 2023

This memo is to report on the modelling, of the Cashmere Park Extension, completed by DHI in February 2023. The modelling covers a group of proposed developments at the eastern edge of the Henderson's Basin, in Christchurch. The Heathcote City Wide model has been used to assess the flooding pre and post development. This modelling will support a private plan change application for the area.

Modelling

The Heathcote City Wide model version 22, also referred to as the Phase 2 model, was used in this investigation as the base. This model does not include additional updates currently being undertaken around Eastman's basin and does not have the finalised logic for the upper catchment basin control gates. The impact of this is that the final baseline flood levels in the area are subject to change. However, a comparative assessment of differences between the baseline and post development should still be reliable.

Base model

The base model reflects the catchment prior to the proposed development. The Heathcote Phase 2 model did not include the latest land developments in the area. These included the existing Cashmere Park Development and its stormwater ponds to the south. The base model was updated to include the ground levels of the existing Cashmere Park development using the 2021 LiDAR survey. CCC (Christchurch City Council) asset data also showed an additional stormwater pipe network for the development, however, this was not included in the current modelling, due to time constraints and given that the event being simulated is a 1 in 200 year event, which would quickly overwhelm the pipe system.

The following updates were completed for the base model for the existing cashmere park development, Figure 1.

- Added roads and basin outlines to the mesh
- Updated the 2D surface roughness definition
- Updated the infiltration and groundwater depth (based on new ground levels)
- Updated the mesh ground levels using the 2021 LiDAR
- Added a dummy outlet from the stormwater ponds into Luney Drain (southeast of basins), a 300mm diameter pipe with no backflow. No details were available in the CCC asset data for this outlet, so the values were estimated.
- Added 2D dike structures to represent basin overflow points



Figure 1: Modelled ground levels, base using LiDAR and development using design surface

Development model

The development model includes the proposed developments in the three areas adjacent to the existing Cashmere Park Development, Figure 2. A proposed surface for the development area was provided by Elliot Sinclair and used to define the areas in the model.

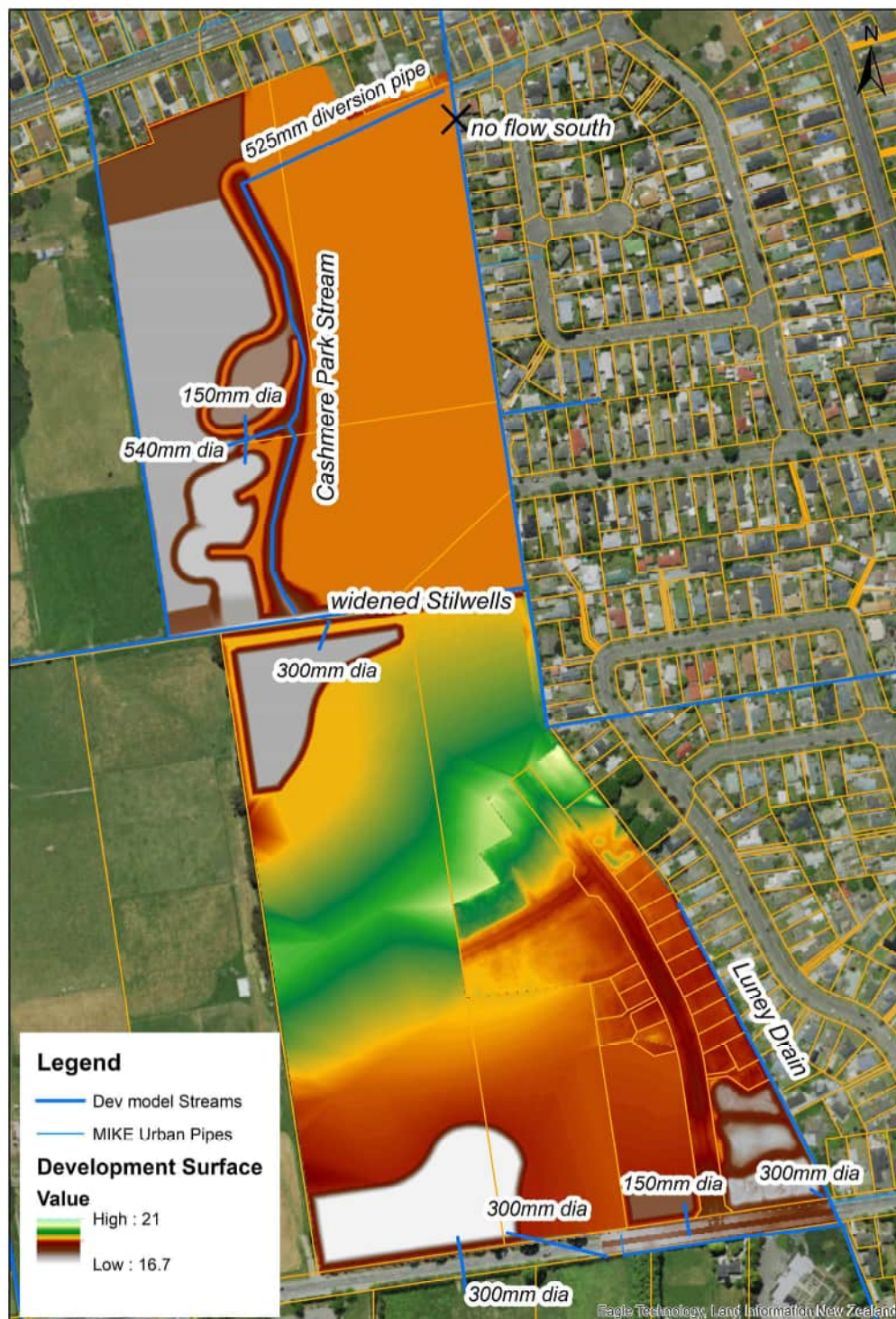


Figure 2: Development areas

The following updates were made to the development model, Figure 3.

- Used updated base model as a starting point
- Added new stream and diversion pipe from the north Stilwell's drain, used cross sections extracted from the development surface. Included backflow prevention on diversion pipe.
- Added pipe structures between the Cashmere Park Stream and the west wetland, and between the first flush basin and downstream pond.
- Blocked the North section of Stilwell's drain from taking flow south
- Updated cross sections along Stilwell's drain within the development area
- Updated mesh to include basin outlines and stream blackout
- Updated mesh levels to reflect the proposed design levels
- Added dummy outlet pipes from basins as indicated in Figure 3. Backflow prevention is included in all basin outflow pipes, except the inter basin pipes in the northwest wetland.
- Updated 2D surface roughness definition
- Updated infiltration based on land use type, area marked as residential development set to 50% of the base infiltration rate, road area set to 0 infiltration rate.
- Updated groundwater depth based on new levels.
- Added 2D dike structures to represent basin overflow levels

- Opened up the west embankment around the central pond directly south of Stillwells drain, allowing water to fill the pond from the western floodplain. Also, increased invert of this pond from the original design 16.8m RL to 17.4m RL.
- Added a culvert beneath Cashmere road to allow the southern floodplain water to enter into the large southern pond. This culvert is one way into the pond.
- Adjusted storage area slightly from DEM in Figure 3, to include storage on the left bank of Cashmere Park stream, and reduce storage at the top west of the DEM.



Assumptions

The following assumptions and simplifications were made in the modelling to account for the limited data available at this stage of the design process and to allow for an efficient model build without compromising model accuracy.

1. The stormwater pipe network was not included for the proposed development area, as this has not yet been designed.
2. The stormwater pipe network was not included for the existing Cashmere Park area, as this would have limited capacity in the 200 year event. Note that this can be included in subsequent modelling, especially if lower ARI events modelling will be required.
3. Basin outlet sizes were all assumed; these were just included to allow the basins to drain and would need to be updated in the model once the actual design is known. The outlet from the south basin, on the Robert Brown site, was connected to Luney Drain further downstream to allow the basin to drain properly, as the basin invert level is lower than the nearest waterway.
4. Road, gutter/crest were not explicitly modelled in mesh ground levels within the existing Cashmere Park area. In the City Wide modelling methodology, the road levels are set to a minimum along the road gutter and at a maximum level along the crest. This allows for more efficient conveyance along the road corridor and allows water to enter into sumps more easily. As the pipe network is not included, this aspect is less important for this modelling stage, and the levels could be updated later when the pipe network is added.
5. Additional roads within the development areas were not included in the mesh structure
6. No bridge was included on Stillwells drain to represent the proposed road crossing. The road is currently modelled to be flush with the development levels, i.e. all levels at RL 19m, which means the road is not acting as an explicit overland flow path in the current surface design. This is less important because the water depth on the site is less than 50mm.

Model simulations

The model was simulated for the 1 in 200 year return period event, using the current climate conditions. The 24 hour duration storm was used, which reflects the critical duration in the area, based on previous modelling.

Results

The model results show that the proposed development has a minimal impact on the surrounding flood levels. Figure 4 and Figure 5 show the flood depth pre and post development, and Figure 6 and Figure 7 show the water level difference, Development minus Base model results. Aside from the local runoff, floodwaters enter into the north wetland via Henderson's basin from the west. In the south, water can cross Cashmere road and enter the larger basin via the culvert. Allowing flow to enter this basin from the south results in essentially no change in the south floodplain; if the flow was not able to enter, a slight increase in flood levels might be expected.

The diversion from the north Stilwell's drain into the new Cashmere Park Stream allows all flow to be diverted into this new stream. This indicates that the pipe size is sufficient for the 1 in 200 year flow.

The basin at the right bank of Stilwell's drain is helping to reduce the levels in the Henderson basin floodplain slightly. The levels here are reduced by around 10mm.

The impact of the development on surrounding levels is less than +5mm in almost all areas. There are minor areas with more than 100mm depth increase that can be addressed at detailed design. The flow into Luney's Drain is increased by 6l/s at the peak, while the flow into Stilwell's pipe (which exits into the Heathcote River) is increased by 50l/s.

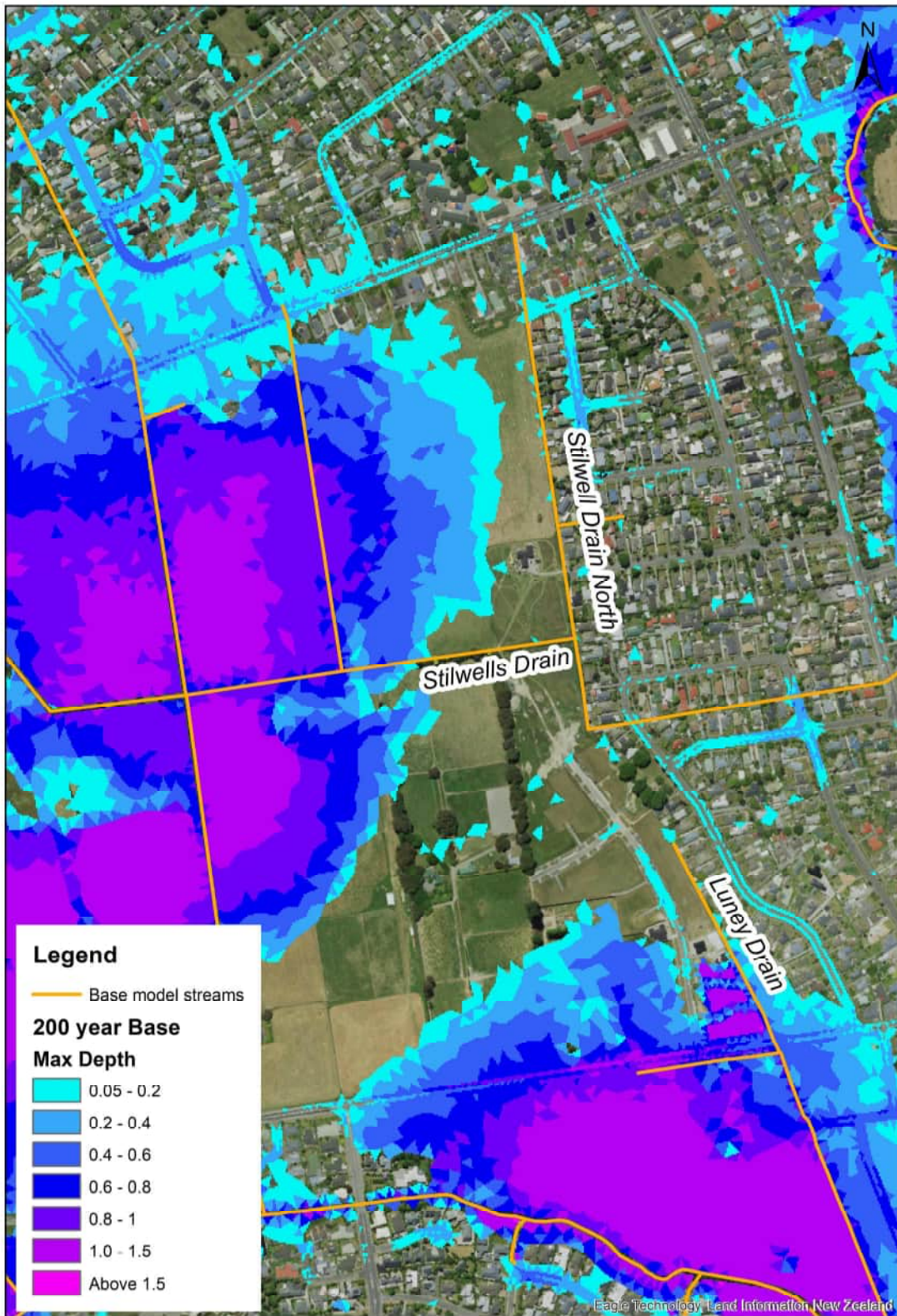


Figure 4: 200 year 24 hour, base model maximum depth

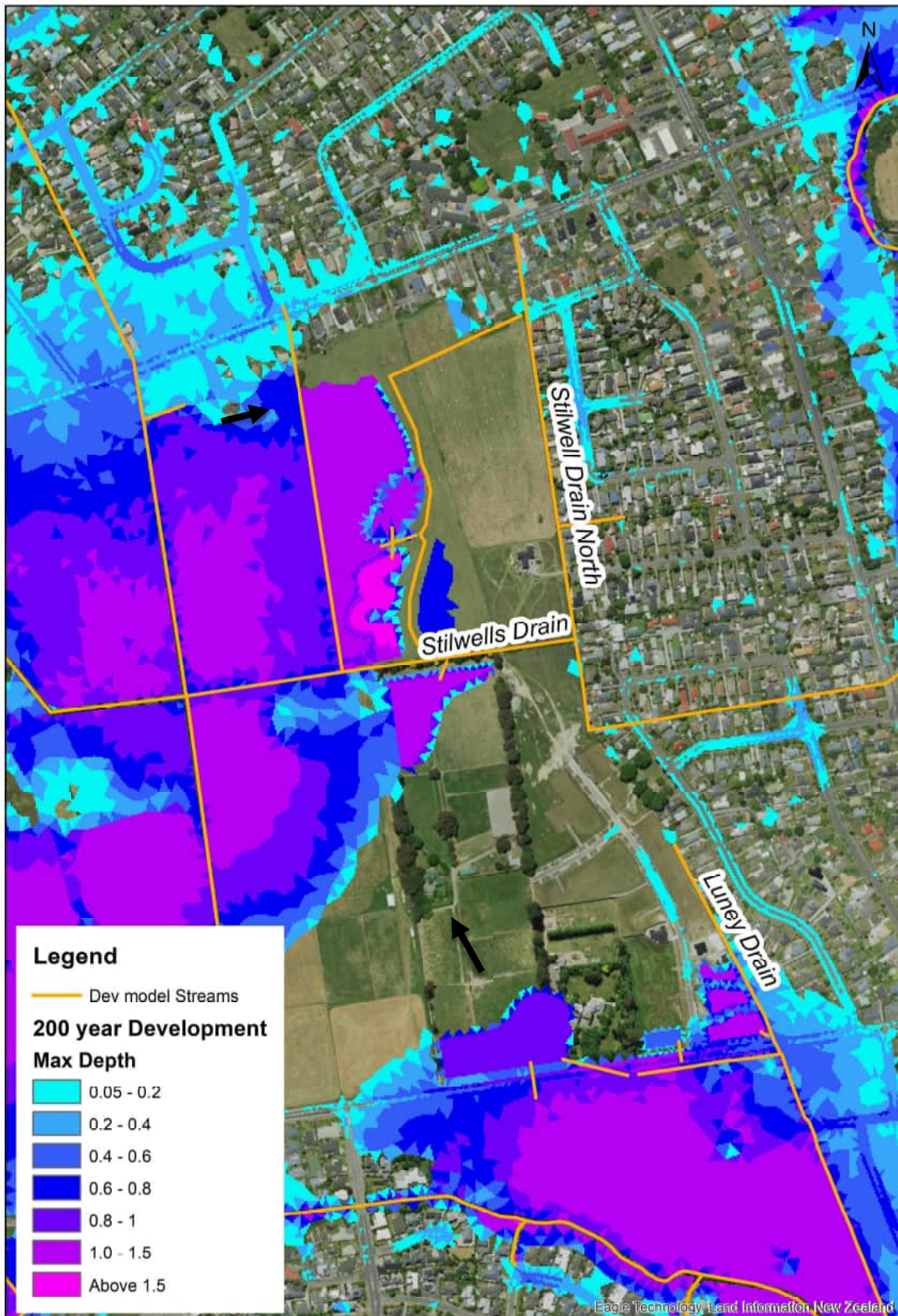


Figure 5: 200 year 24 hour development model maximum depth

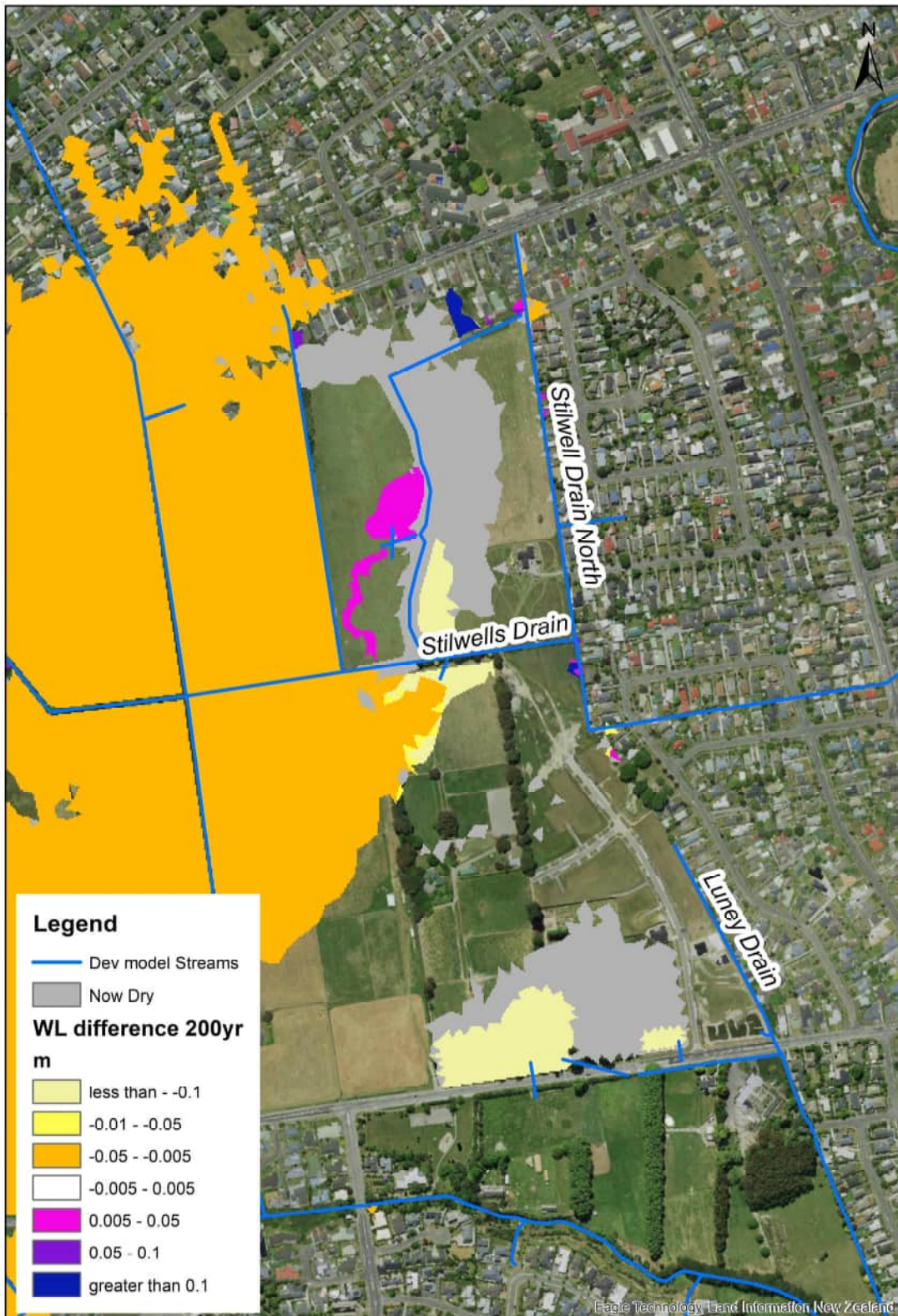


Figure 6: Development - Base, Max Water Level Difference

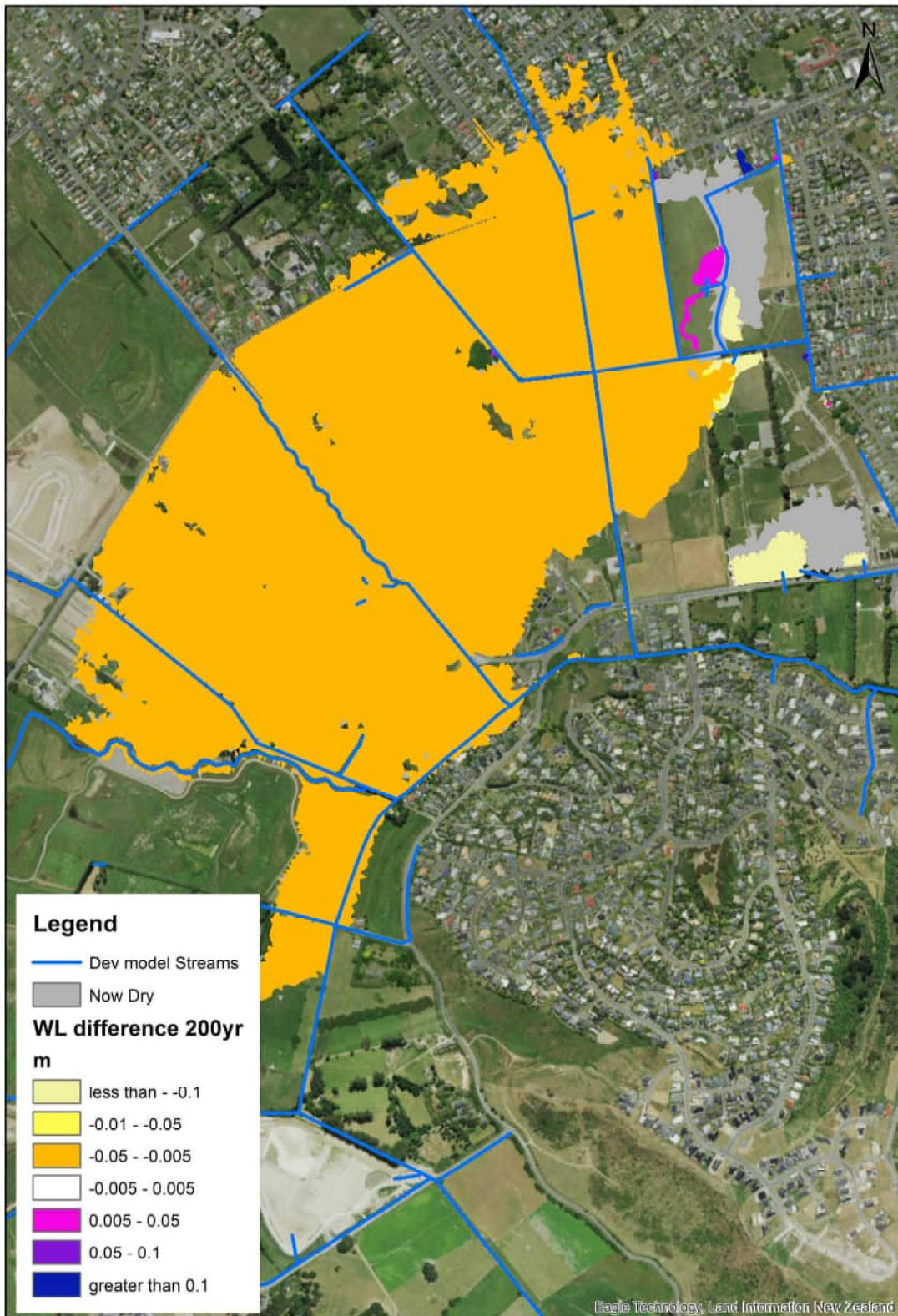


Figure 7: Development - Base, Max Water Level Difference – zoomed out

Appendix E. Integrated Transport Assessment

Hendersons East Rezoning

Integrated Transport Assessment

PREPARED FOR CASHMERE PARK LTD, HARTWARD INVESTMENT TRUST & R
BROWN | MAY 2023

We design with community in mind

This document was prepared by Stantec New Zealand (“Stantec”) for the account of Cashmere Park Ltd, Hartward Investment Trust & R Brown (the “Client”). The conclusions in the Report titled Hendersons East Rezoning Integrated Transport Assessment are Stantec’s professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient’s own risk.

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Quality statement

Project manager	Project technical lead
Kyle Martin	Andrew Leckie

PREPARED BY Andrew Leckie		02 / 05 / 2023
CHECKED AND REVIEWED BY Andrew Metherell		02 / 05 / 2023
APPROVED FOR ISSUE BY Andrew Metherell		02 / 05 / 2023

Level 2, 2 Hazeldean Road, Addington, Christchurch, 8024
Tel 03 366 7449
STATUS FINAL | Project No 310205718



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Appendix A CAST Modelling Outputs

Appendix B Hoon Hay Road / Leistrella Road Intersection SIDRA Outputs



1 Introduction

Cashmere Park Limited, Hartward Investment Trust and R Brown propose a change to the Hendersons East Outline Development Plan through a submission on the Christchurch City Council Housing and Business Choice Plan Change 14 (PC14) process. The change would see approximately 20.3ha of land between Cashmere Road and Sparks Road currently zoned Rural Urban Fringe and Residential New Neighbourhood rezoned to Medium Density Residential. This could enable the development of an additional approximately 230 residential lots.

Development of the additional land would result in increased traffic volumes on surrounding existing and future local roads and a potential additional connection to the arterial road network is proposed.

This integrated transport assessment includes the following:

- Description of the site location and the existing transport environment;
- Description of the future environment in the vicinity of the site;
- Assessment of potential traffic generation and ability of the existing and planned road network to accommodate it;
- Assessment of the accessibility of the proposed additional residential land by active travel modes and public transport;
- Assessment of the proposed ODP; and
- Assessment of consistency with District Plan transport-related objectives and policies.

By way of summary, it is considered that the site is well located within the urban Christchurch transport network to accommodate additional housing. There is good access to a network of arterial roads that enable efficient movement to other parts of the city. The site is adjacent to the network of Major Cycleways and existing public transport services, and it is expected that existing public transport services can be built on to service the surrounding area.

2 Site Location

The land owned by Cashmere Park Limited, Hartward Investment Trust and R Brown (the subject site), outlined in **Figure 2-1**, is located in Hoon Hay, in the south-west of Christchurch.



Figure 2-1: Location of Subject Site in South-West of Christchurch (Aerial Image Source: Canterbury Maps)

Figure 2-2 shows the current District Plan zoning of the subject site. It is predominantly zoned Rural Urban Fringe with some Residential New Neighbourhood zoned land in its southern half. The Residential New Neighbourhood zone is subject to the Hendersons East Outline Development Plan (described in Section 6.1 of this report).

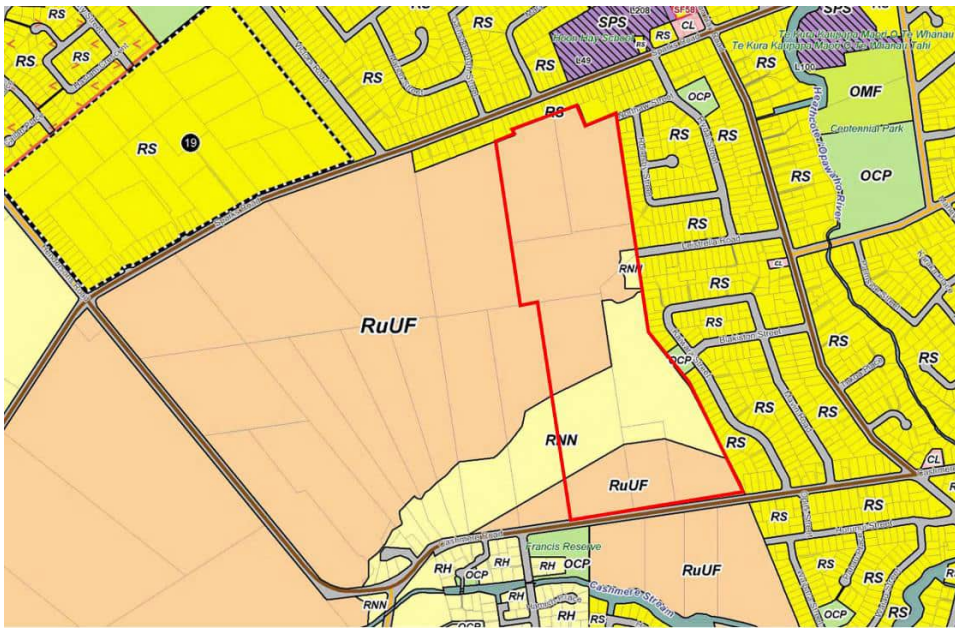


Figure 2-2: District Plan Zoning of Subject Site

Figure 2-3 shows the outline of the subject site in the local context. Most of the subject site is currently rural land, with some residential development recently developed in the south-eastern corner. There is well-established residential land to the east and north of the subject site.

Nearby activities include two primary schools on Sparks Road and Centennial Park / the Pioneer Recreation and Sport Centre to the east. Cashmere High School is on Rose Street approximately 700m east of Lyttelton Street.

The local context plan also shows the District Plan road hierarchy in the area. Sparks Road, Hoon Hay Road, Cashmere Road and Hendersons Road are all minor arterial roads in the area providing key links in the south-west of the city. Rose Street and Lyttelton Street are collector roads on the eastern side of Hoon Hay Road which provide local connections and access to the nearby recreational facilities and Cashmere High School.



Figure 2-3: Subject Site Outline in Local Context and Road Hierarchy (Aerial Image Source: Canterbury Maps)

Figure 2-4 shows the local road network at the southern end of the subject site. A length of Leistrella Road has been constructed off Cashmere Road to provide access to new residential development within the subject site. A short section of Emily Knowles Drive has recently been constructed to the west of Leistrella Road.



Figure 2-4: Existing Local Road Network- Southern End of Subject Site (Aerial Image Source: Canterbury Maps)

Figure 2-5 highlights local roads between the northern part of the subject site and the arterial road network. Leistrella Road currently runs west off Hoon Hay Road to the edge of the subject site. Rydal Street runs between Sparks Road and Leistrella Road, while Northhaw Street runs west from Rydal Street to the boundary of the subject site.



Figure 2-5: Existing Local Road Network- Northern End of Subject Site (Aerial Image Source: Canterbury Maps)

3 Existing Transport Network

3.1 Arterial Road Network

3.1.1 Sparks Road

Sparks Road is a minor arterial road linking Halswell to the inner southern suburbs of Christchurch. It runs east-west to the north of the subject site, separated by a row of existing residential properties. **Photograph 3-1** shows Sparks Road to the north of the subject site. The road is formed with a single traffic lane in each direction, a flush median, a parking lane on the northern side, a separated two-way cycleway on the southern side, and a footpath on both sides.



Photograph 3-1: Sparks Road, Looking West at Maryhill Avenue Intersection

Photograph 3-2 shows Sparks Road further east, in the vicinity of the Rydal Street intersection. There is a signalised pedestrian crossing outside the primary schools just to the west of the Rydal Street intersection.



Photograph 3-2: Sparks Road / Rydal Street Intersection and Signalised Pedestrian Crossing

3.1.2 Hoon Hay Road

Hoon Hay Road is a minor arterial road which runs generally north-south from Cashmere Road to Lincoln Road (and beyond to the Christchurch Southern Motorway as Curletts Road). It is approximately 300m east of the subject site, separated by existing residential neighbourhoods. **Photograph 3-3** shows Hoon Hay Road at the Leistrella Road intersection. It has a single wide traffic lane and a parking lane in each direction, and a footpath on both sides of the road.



Photograph 3-3: Hoon Hay Road, Looking South at Leistrella Road

Hoon Hay Road and Sparks Road meet at a signalised intersection.

3.1.3 Cashmere Road

Cashmere Road is a minor arterial road which runs along the foot of the Cashmere Hills, linking Christchurch's southern suburbs. It runs along the southern edge of the subject site. **Photograph 3-4** shows Cashmere Road at the Leistrella Road intersection. The road has a single traffic lane and cycle lane in each direction, with a right turn bay formed at the Leistrella Road intersection. The frontage of the existing Leistrella Road subdivision has been upgraded to an urban standard while further west, the road has more of a rural look and feel.



Photograph 3-4: Cashmere Road, Looking West at Leistrella Road

Cashmere Road and Hoon Hay Road meet at a signalised intersection.

3.2 Local Road Network

3.2.1 Leistrella Road (Hoon Hay)

The section of Leistrella Road running west off Hoon Hay Road is a local road providing access to the Leistrella Road / Rydal Street residential catchment of approximately 155 houses. It is one of two roads available for entry to this area (with Rydal Street accommodating left turn entry movements from Sparks Road), and the only road available for exit movements.

Photograph 3-5 shows Leistrella Road which is formed with a 9m wide carriageway and two footpaths within a 20m wide corridor.



Photograph 3-5: Leistrella Road, Looking West from Hoon Hay Road

Leistrella Road meets Hoon Hay Road at an uncontrolled T-intersection (visible in Photograph 3-3). There is no turning provision on Hoon Hay Road, with the parking lane on the eastern side of the road continuous past the intersection. There are large kerb radii at the intersection considering the residential nature of the road (approximately 12m), resulting in a relatively large intersection and a long crossing distance for pedestrians.

Photographs 3-6 and **3-7** show driver sightlines to the right and the left from Leistrella Road. Hoon Hay Road has a straight and flat alignment in this location so long sightlines are possible however these can be obstructed by parked vehicles.



Photograph 3-6: Leistrella Road Sightline South at Hoon Hay Road



Photograph 3-7: Leistrella Road Sightline North at Hoon Hay Road

3.2.2 Rydal Street

Rydal Street is a local residential road which runs from Sparks Road to Leistrella Road.

Left turn in movements are the only permitted movements at the Sparks Road / Rydal Street intersection shown earlier in Photograph 3-2.

The road has a 9m carriageway width and two footpaths within a 20m wide corridor. It has a mainly straight alignment but there are two curves in the vicinity of the Northaw Street intersection and the Rydal Reserve. **Photograph 3-8** shows Rydal Street looking north in this section of the road, with Northaw Street on the left, while **Photograph 3-9** shows the street in the other direction.



Photograph 3-8: Rydal Street, Looking North at Curves



Photograph 3-9: Rydal Street, Looking South at Curves

Rydal Street meets Leistrella Road at a basic, uncontrolled T-intersection, as shown in **Photograph 3-10**. 12m kerb radii have been adopted at the intersection.



Photograph 3-10: Leistrella Road / Rydal Street Intersection

3.2.3 Northaw Street

Northaw Street (**Photograph 3-11**) is a local residential road running from Rydal Street to the northern part of the subject site. It is also formed with a 9m wide carriageway and two footpaths but within a 16.5m wide corridor.



Photograph 3-11: Northaw Street, Looking West from Rydal Street

Northaw Street meets Rydal Street at an uncontrolled intersection, as shown earlier in Photograph 3-8. As shown in **Figure 3-1**, Northaw Street meets Rydal Street on the outside of a curve. A large kerb radius has been adopted on the southern side of the intersection resulting in somewhat of a Y-intersection rather than a T-intersection.



Figure 3-1: Rydal Street / Northhaw Street Intersection

3.2.4 Leistrella Road (Cashmere)

The section of Leistrella Road off Cashmere Road has been constructed in recent years to serve new residential development in the south-eastern corner of the subject site. **Photograph 3-12** shows the road within the new residential area. It has been constructed with a 6m wide carriageway plus parking bays outside of that, and two footpaths.



Photograph 3-12: Leistrella Road Looking North

Leistrella Road meets Cashmere Road at an uncontrolled T-intersection (**Photograph 3-13**). There is a flush, paved threshold treatment on Leistrella Road at the intersection. As shown earlier in Photograph 3-4), a right turn bay has been formed on Cashmere Road.



Photograph 3-13: Cashmere Road / Leistrella Road Intersection

3.3 Public Transport Network

Figure 3-2 shows that there are three bus services within close proximity of the subject site; the Orbiter service, the 44 Shirley / Westmorland service and the 60 Hillmorton / Southshore service. The figure also indicates the locations of bus stops in the area.

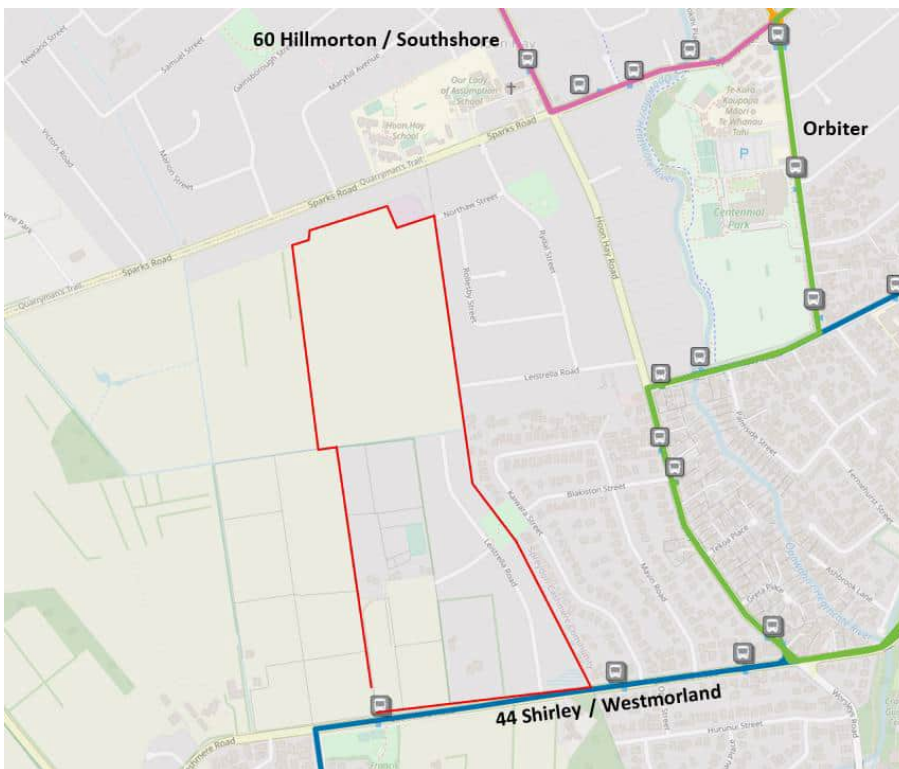


Figure 3-2: Bus Services in the Surrounding Area (Metroinfo)

The Orbiter service runs quarter-hourly in each direction on an orbital route between key destinations around the city, including the nearby Barrington Mall. The route runs along Hoon Hay Road (south of Rose Street), Rose Street and Lyttelton Street in the vicinity of the subject site.

The 44 Shirley / Westmorland service runs between Westmorland and Shirley via Cashmere Road and Hoon Hay Road in the vicinity of the subject site, Barrington Mall, the Sydenham shops and the City Centre. The 60 Hillmorton / Southshore service runs between Wigram / Hillmorton and Shirley / New Brighton via Hoon Hay Road and Sparks Road in the vicinity of the site, Barrington Mall, Christchurch Hospital and the City Centre. Both of these services run half-hourly in each direction, with more frequent services during peak times.



3.4 Cycle / Pedestrian Network

Figure 3-3 is the Christchurch Bike Map, which shows two off-road cycleways in the vicinity of the site. These are two of the Christchurch 'Major Cycleways', being the Quarryman's Trail Cycleway and the Nor'West Arc Cycleway. The Quarryman's Trail Cycleway is the separated two-way cycleway running along the southern side of Sparks Road. It runs from Halswell into the City Centre via Hoon Hay and Somerfield. The Nor'West Arc Cycleway runs through Centennial Park near the site and connects Cashmere to the University and other major cycleways.

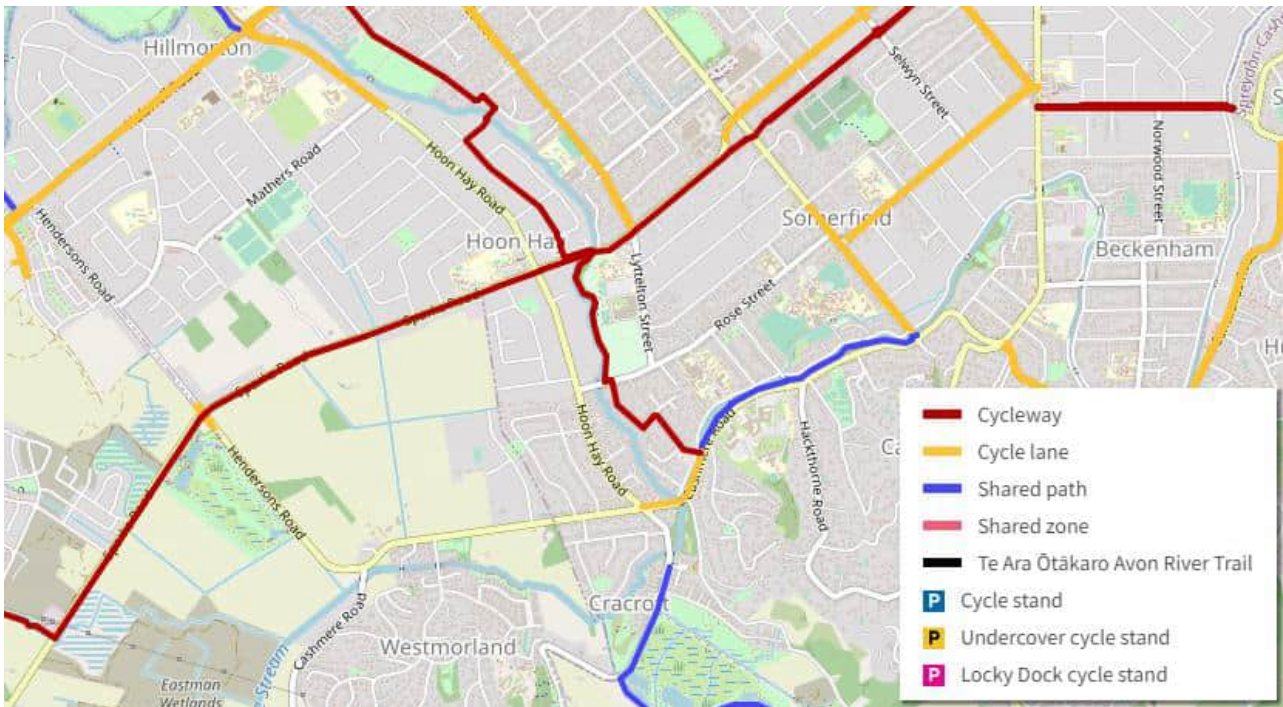


Figure 3-3: Christchurch Bike Map (CCC)

Cyclists on Cashmere Road and Hoon Hay Road are required to cycle on the road. Cycle lanes have been marked on Cashmere Road on the recently upgraded section of road at the Leistrella Road intersection.

Generally, there are two footpaths on all roads within the vicinity of the site. There is only a footpath on the southern side of Cashmere Road west of Leistrella Road, where the road still has a somewhat rural formation.

As described already, there is a signalised pedestrian crossing on Sparks Road outside the nearby primary schools. There is also a crossing point with a refuge island west of the Maryhill Avenue intersection (visible in Photograph 3-1).

There are no dedicated pedestrian crossing facilities on Hoon Hay Road in the vicinity of Leistrella Road, as shown in Photograph 3-3.

There is a pedestrian crossing point with a refuge island on Cashmere Road to the east of Leistrella Road, shown below in **Photograph 3-14**.



Photograph 3-14: Cashmere Road East of Leistrella Road

4 Existing Traffic Volumes

4.1 Daily Traffic Volumes

Table 1 contains daily traffic volumes for the three nearby arterial roads sourced from Christchurch City Council as well as an estimated daily traffic volume for Leistrella Road. While the arterial road traffic volumes do not correspond to sections of road immediately adjacent to the subject site, they give an indication that the three arterial roads carry high traffic volumes consistent with their statuses.

Table 1: Traffic Volume Increases on Leistrella Road (vph)

Road	Location	Count Date	Average Daily Traffic Volume
Sparks Road	East of Lyttelton Street	August 2019	13,250vpd
Hoon Hay Road	North of Sparks Road	September 2018	10,290vpd
Cashmere Road	East of Hoon Hay Road	September 2020	13,960vpd
Leistrella Road	West of Hoon Hay Road	March 2023 (Estimate)	1,000vpd

4.2 Peak Hour Traffic Volumes

4.2.1 Traffic Observations

As outlined above, Sparks Road, Hoon Hay Road and Cashmere Road are high volume arterial roads. During peak periods, there are relatively high levels of delay and queuing at the intersections of these roads. A morning peak period site visit was carried out on Thursday 30 March 2023 to observe the performance of the existing road network. Long eastbound queues on Sparks Road back from Hoon Hay Road (estimated to be longer than 500m) were observed throughout much of the morning peak period. The other legs of the intersection were operating efficiently from observations. It is understood that eastbound queues on Cashmere Road back from Hoon Hay Road can also extend a relatively long distance along Cashmere Road during the morning peak period however this was not observed on the day of the site visit.

It was decided to carry out peak hour traffic surveys at the three local road intersections on the arterial road network that will serve the subject site, being the Cashmere Road / Leistrella Road, Hoon Hay Road / Leistrella Road and Sparks Road / Rydal Street intersections. These surveys would allow the local road intersections and their ability to accommodate additional traffic as a result of the proposed rezoning to be assessed in detail. Given the high use of the arterial roads by wide area traffic, and the relatively small area of additional residential land proposed, it was considered appropriate to rely upon the Christchurch Assignment and Simulation Traffic model for assessing impacts of additional

traffic on the arterial road network intersections. The three intersection surveys were carried out on Thursday 30 March 2023 and are summarised in the following sections of the report.

4.2.2 Cashmere Road / Leistrella Road Intersection

The recorded traffic volumes for the morning and evening peak hours at the Cashmere Road / Leistrella Road intersection are shown below. Volumes displayed are traffic volumes and cyclist volumes.

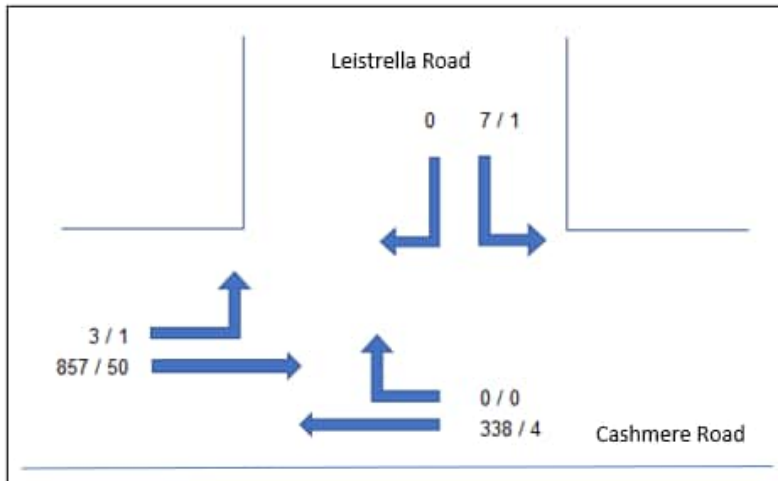


Figure 4-1: Cashmere Road / Leistrella Road Intersection Morning Peak Hour (7:45am-8:45am) Traffic Volumes / Cyclist Volumes

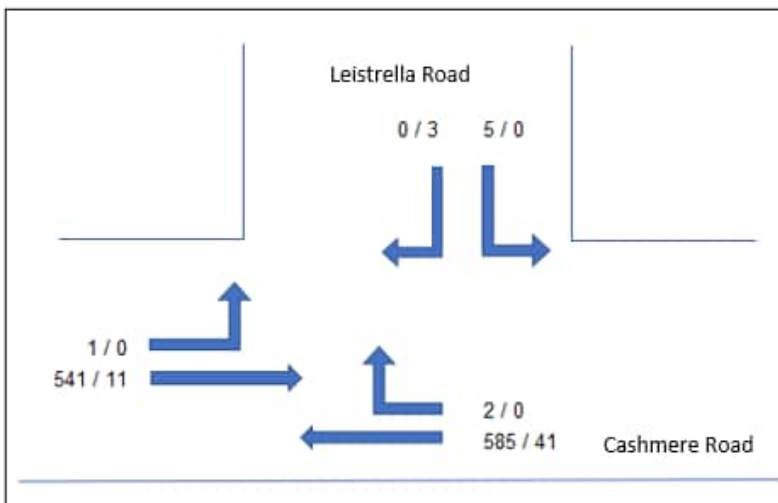


Figure 4-2: Cashmere Road / Leistrella Road Intersection Evening Peak Hour (4:30pm-5:30pm) Traffic Volumes / Cyclist Volumes

Cashmere Road carries approximately 1,200 vehicles per hour (vph) during the morning peak hour, of which 860vph plus 50 cyclists per hour (cph) are in the eastbound direction. Westbound traffic volumes during the same period are less than half those eastbound. During the evening peak hour, traffic volumes on Cashmere Road are still high at approximately 1,130vph, but relatively balanced with 540-585vph in each direction. The number of cyclists travelling westbound in the evening is of a similar scale to that eastbound in the morning.

Leistrella Road carries low traffic volumes of 8-10vph during the peak hours, reflective of the low level of development that it serves currently.

4.2.3 Hoon Hay Road / Leistrella Road Intersection

The recorded traffic volumes for the morning and evening peak hours at the Hoon Hay Road / Leistrella Road intersection are shown below. Volumes displayed are traffic volumes and cyclist volumes.

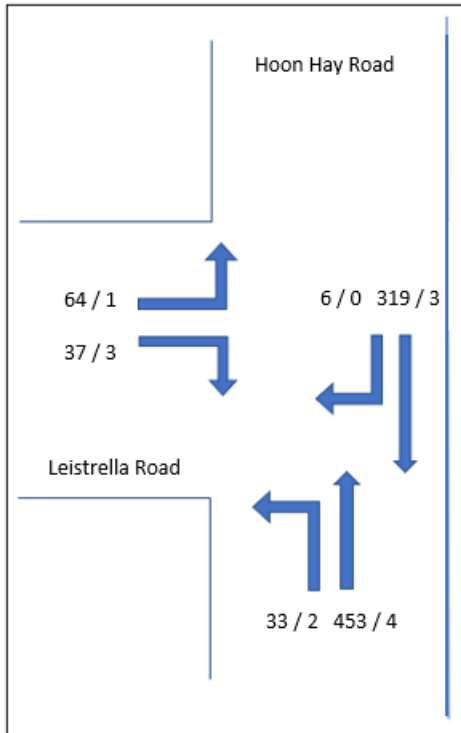


Figure 4-3: Hoon Hay Road / Leistrella Road Intersection Morning Peak Hour (7:45am-8:45am) Traffic Volumes / Cyclist Volumes

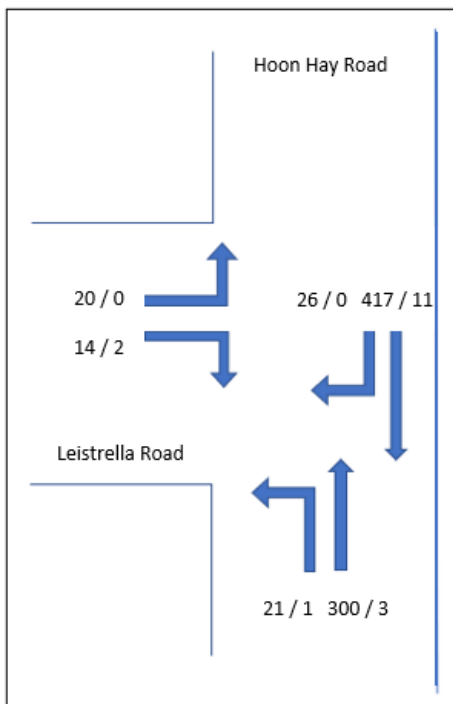


Figure 4-4: Hoon Hay Road / Leistrella Road Intersection Evening Peak Hour (4:30pm-5:30pm) Traffic Volumes / Cyclist Volumes

Hoon Hay Road carries lower traffic volumes than Cashmere Road of approximately 720-770vph. The volumes are relatively balanced by direction although there is a tidality towards the north in the morning and vice versa in the evening. Cyclist volumes on Hoon Hay Road are also lower with approximately 12-17cph to the south of Leistrella Road.

There are approximately 100vph out of Leistrella Road in the morning peak hour, with approximately two thirds turning left out towards the north. During the same hour there are approximately 40vph into Leistrella Road, with most being left turns in from the south. During the evening, volumes on Leistrella Road are lower, with those entering and exiting Leistrella Road and the directional splits being relatively even.

4.2.4 Sparks Road / Rydal Street Intersection

The figures below summarise the traffic and cyclist volumes recorded at the Sparks Road / Rydal Street intersection. The cyclist volumes presented were recorded on the separated cycleway but are shown with the corresponding traffic movement for simplicity.

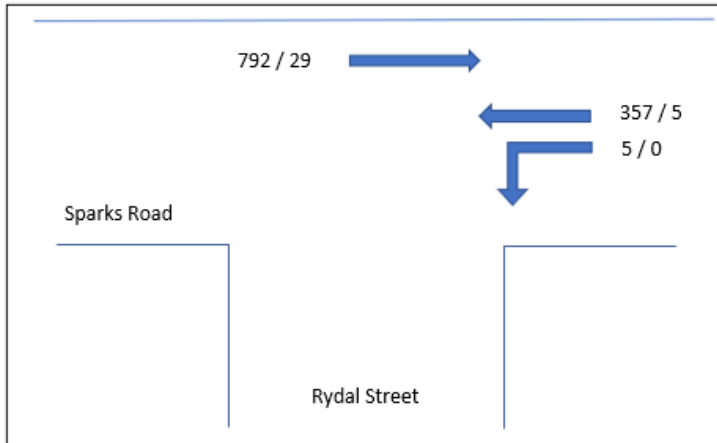


Figure 4-5: Sparks Road / Rydal Street Intersection Morning Peak Hour (7:15am-8:15am) Traffic Volumes / Cyclist Volumes

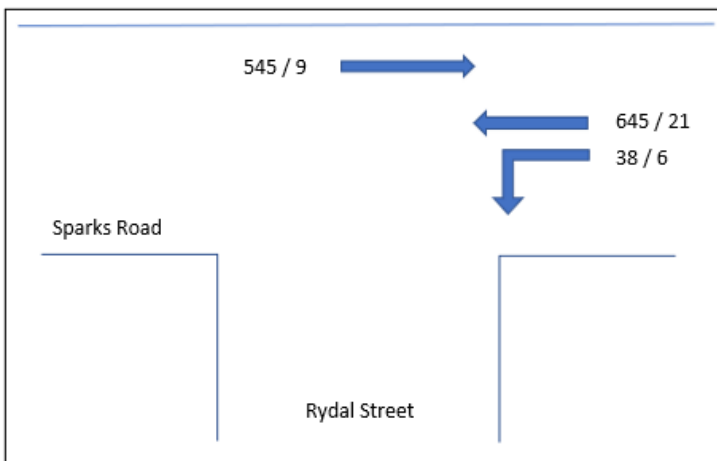


Figure 4-6: Sparks Road / Rydal Street Intersection Evening Peak Hour (4:30pm-5:30pm) Traffic Volumes / Cyclist Volumes

Sparks Road carries high traffic volumes of approximately 1,150-1,190vph past Rydal Street. Eastbound traffic volumes towards the city are approximately twice the westbound volumes during the morning peak, while the volumes are more balanced in the evening peak. Approximately 40vph were recorded entering the residential area via Rydal Street during the evening.

There are approximately 30cph on the separated cycleway during the peak hours.

5 Existing Road Safety

Waka Kotahi's Crash Analysis System has been used to review reported crashes in the vicinity of the subject site. The area analysed, shown below, included the existing local roads that will connect to the subject site (Leistrella Road, Rydal Street and Northaw Street) and their intersections on the arterial road network. The search area also included the Hoon Hay Road / Rose Street intersection given its proximity to the Hoon Hay Road / Leistrella Road intersection, and the Hoon Hay Road / Blakiston Street, Cashmere Road / Mavin Road, and Cashmere Road / Kaiwara Street intersections for an indication of any broader crash patterns.

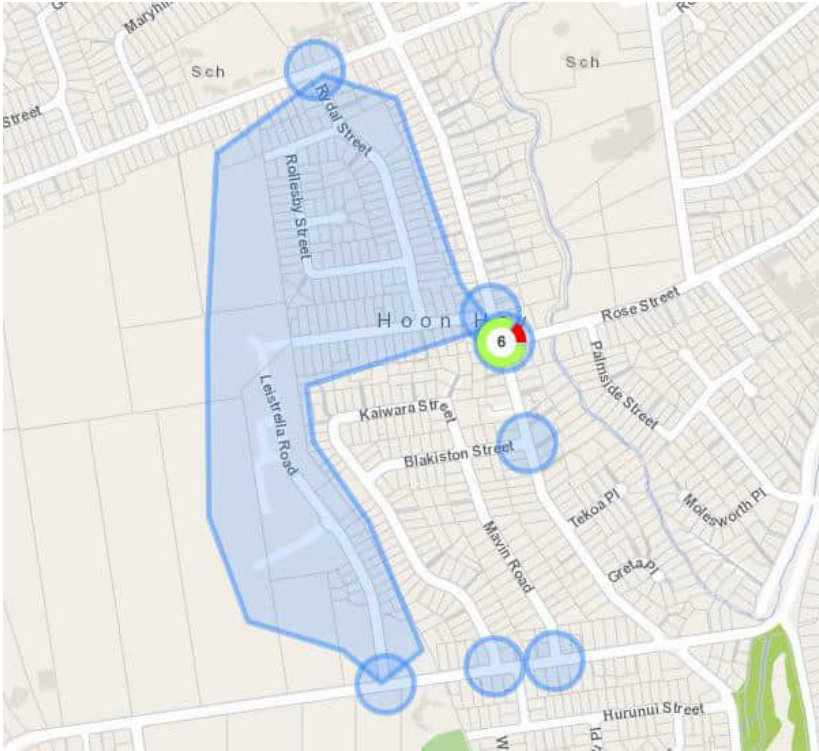


Figure 5-1: Extent of Crash Search

As indicated above, there were six crashes reported in the search area since the start of 2017 (as at 4 April 2023).

Five of these (one fatal and four non-injury) occurred at (or within 50m of) the Hoon Hay Road / Rose Street intersection. The fatal crash occurred when a northbound driver on Hoon Hay Road turned right into Rose Street and failed to notice a southbound cyclist on Hoon Hay Road. Two of the non-injury crashes were rear-end type crashes; one occurring on Hoon Hay Road when a northbound driver crashed into the rear of a stationary vehicle, and the other occurring on Rose Street when a queued driver mistakenly thought the driver in front had proceeded. The other two non-injury crashes occurred to the south of the Rose Street intersection and involved U-turns outside the nearby neighbourhood shops.

A single non-injury crash was reported at the Hoon Hay Road / Leistrella Road intersection. This involved a vehicle being pursued by police clipping another vehicle as it turned into Leistrella Road. This is not considered to reflect the normal operation of the intersection.

No crashes have been reported at the Sparks Road / Rydal Street intersection, at the Cashmere Road / Leistrella Road intersection or along the sections of local road searched.

In the wider area, there have also been no crashes reported at the Hoon Hay Road / Blakiston Street, Cashmere Road / Mavin Road, and Cashmere Road / Kaiwara Street intersections.

6 Proposed Future Environment

6.1 Hendersons East ODP

Figure 6-1 shows the existing Hendersons East Outline Development Plan (ODP) with the portion of the ODP area within the subject site outlined in black.

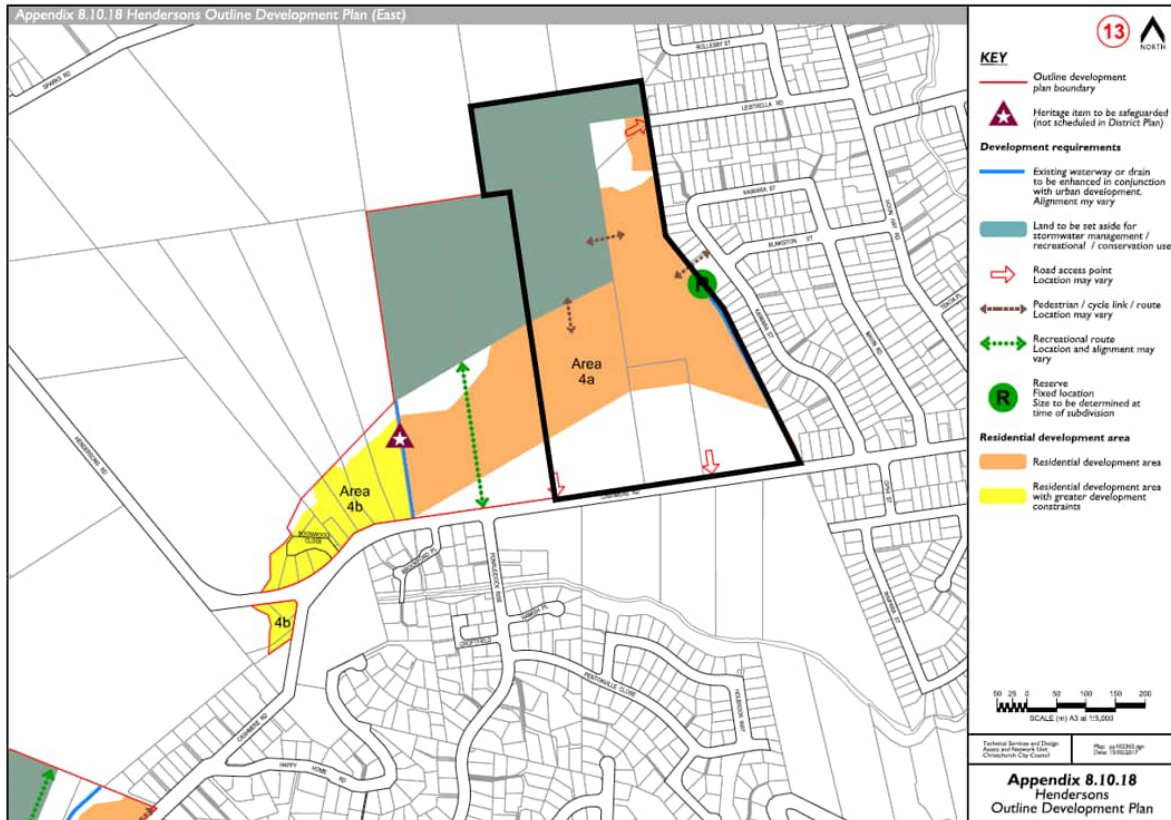


Figure 6-1: Existing Hendersons East ODP

The Hendersons East ODP provides for approximately 15.9ha of residential development area north of Cashmere Road (Areas 4a and 4b). It is understood that this could accommodate approximately 320 residential lots based on a development rate of 20 lots per hectare. Approximately 8.8ha (or 55%) of this residential development area is within the subject site.

Two road access points are indicatively shown on Cashmere Road. The eastern one has now been constructed as Leistrella Road and the western one is shown on the boundary of the subject site.

The ODP also shows a road connection to Leistrella Road, with it anticipated that the two sections of Leistrella Road would be connected through development of this ODP area.

It is understood that the shape of the residentially zoned land in the ODP was governed by flooding / stormwater considerations. **Figure 6-2** shows the District Plan 'High Flood Hazard Management Area' Natural Hazard Overlay, with this overlay covering much of the remaining undeveloped land west of the subject site and on the southern side of Cashmere Road.

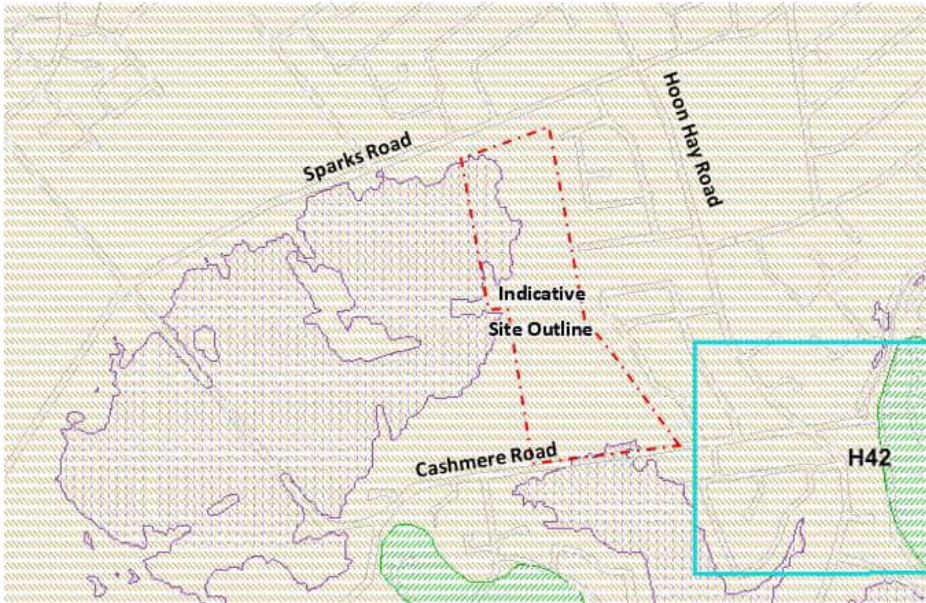


Figure 6-2: District Plan 'High Flood Hazard Management Area' Natural Hazard Overlay

6.2 Planned Changes to Transport Network

The Christchurch City Council Annual Plans and Long-Term Plan have been reviewed for relevant transport-related projects in the vicinity of the subject site. The following were identified as possibly occurring in the vicinity of the subject site but they are not considered likely to affect potential increased residential development of the subject site:

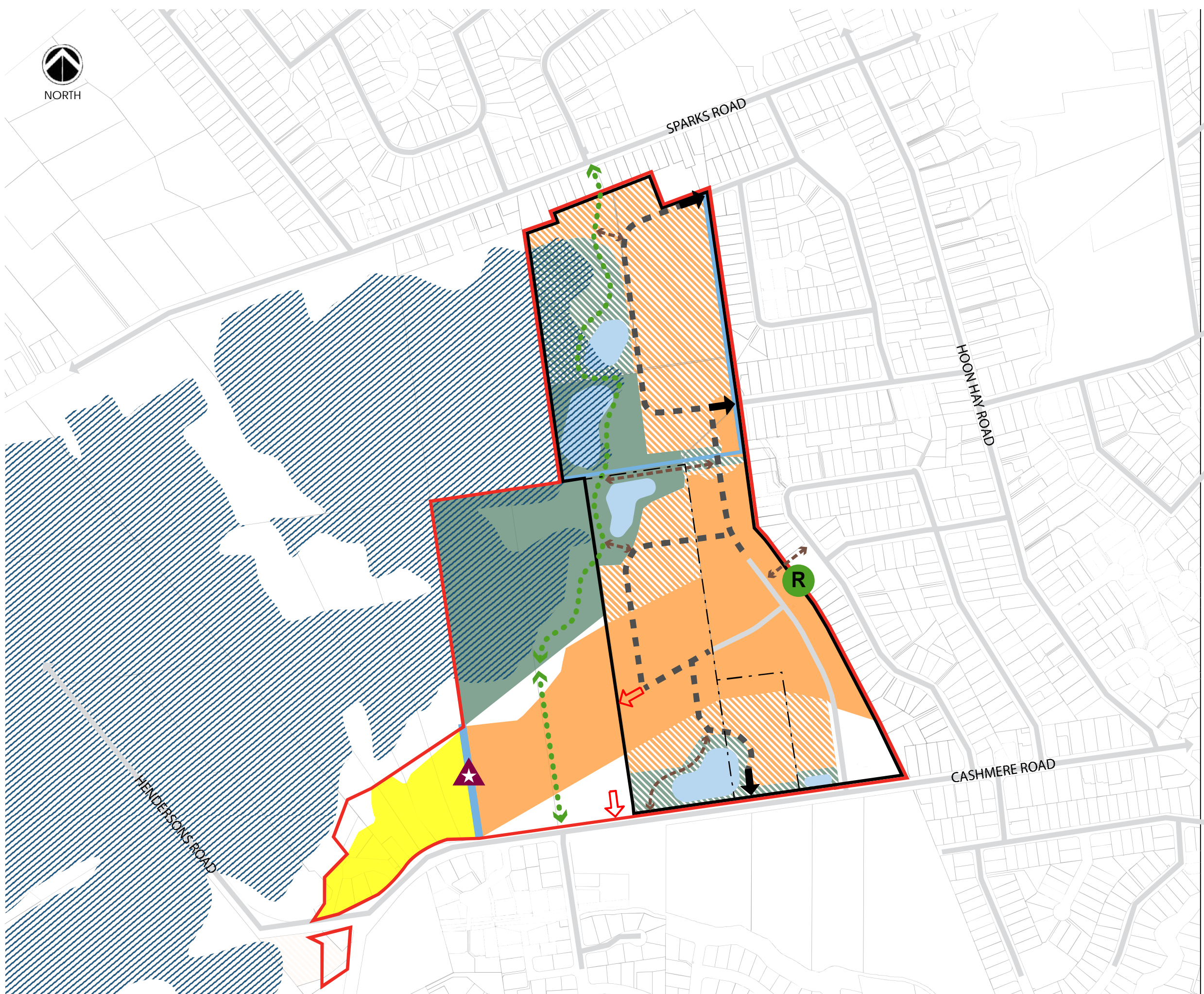
- Sparks Road Improvements, \$160,000, 2023/24 Draft Annual Plan; and
- Cashmere Road Bus Priority, \$45,000, 2022/23 Annual Plan and \$75,000, 2023/24 Draft Annual Plan.

7 Proposed Rezoning








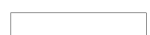












7.1 Overview and ODP

Cashmere Park Limited, Hartward Investment Trust and R Brown propose a change to the Hendersons East Outline Development Plan through a submission on the Christchurch City Council Housing and Business Choice Plan Change 14 (PC14) process. The change would see approximately 20.3ha of land within the subject site currently zoned Rural Urban Fringe and Residential New Neighbourhood rezoned to Medium Density Residential. Approximately 11.5ha of this land is currently zoned Rural Urban Fringe and this additional residentially zoned land could accommodate an additional approximately 230 residential lots, representing an increase of approximately 70% of residential land in the Hendersons East ODP area.

Eliot Sinclair has developed an ODP, shown below in **Figure 7-1**, which is a modified version of the existing Hendersons East ODP. The additional residential land proposed is predominantly in the northern part of the subject site, while there is a smaller block centrally located and another fronting Cashmere Road.



Proposed Hendersons Outline Development Plan

-  Existing ODP Boundary [Appendix 8.10.18 Hendersons Outline Development Plan]
-  Application Site boundary [Proposed alternate ODP]
-  Internal landowner boundaries
-  Existing road network
-  Proposed road network
-  Fixed road access point
-  Indicative road access point [aligned with neighbouring subdivision plans recieved]
-  Rural/Urban fringe zone within ODP boundary
-  District Plan High floodplain hazard management area
-  Heritage stream to be safeguarded
-  Residential development area
-  Residential development area with greater constraints
-  Land set aside for stormwater management / recreational / conservation use
-  Existing box drain
-  Proposed recreational route Location and alignment may vary (including extension)
-  Existing Recreation Reserve
-  Proposed residential development area
-  Proposed Land to be set aside for stormwater management / recreational / conservation use
-  Proposed stormwater management area
-  Proposed pedestrian / cycle link (including extensions)

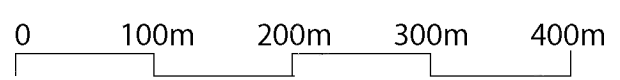


Figure 7-1

7.2 Proposed Access by Active Modes

The proposed ODP makes provision for an active mode connection to be made to Sparks Road. This is proposed in the location of the existing vehicle access leg to 126 Sparks Road (shown in **Photograph 7-1**), near Maryhill Avenue, which is only suitable for an active mode connection given its narrow width. The active mode connection will provide convenient access to the Quarryman's Trail cycleway on Sparks Road, as well as the Sparks Road footpath network (including the nearby signalised crossing).



Photograph 7-1: Existing Access Leg to 126 Sparks Road

Other pedestrian / cycle link routes and recreational routes are indicated on the proposed ODP connecting the residential areas and the stormwater reserve areas.

7.3 Proposed Vehicle Access

Generally, the proposed additional residential development areas are small additions to existing / planned residential areas and they will rely on the existing / planned local road network.

The northern portion of the subject site will connect to Northaw Street to provide local connectivity as well as the planned Leistrella Road route.

The central block of proposed additional residential land will connect to existing / planned local roads i.e. Leistrella Road and Emily Knowles Drive.

The southern additional development area is proposed with a new local road intersection on Cashmere Road, approximately 150m west of Leistrella Road. The location of the western Cashmere Road intersection is shown west of where it is in the existing ODP to reflect planned development of the land adjacent to the subject site.

8 Assessment of Accessibility for Non-Car Travel

8.1 Active Modes

The proposed active mode connection to Sparks Road will provide a convenient link to the Quarryman's Trail major cycleway for the subject site as well as potentially the wider area to the south and west. The connection via the existing vehicle access leg for 126 Sparks Road is considered to be an appropriate use of the existing access leg, providing a convenient route for cyclists as well as pedestrians. The nearby primary schools on Sparks Road are likely to generate pedestrian activity from the subject site and the connection to the Sparks Road footpaths (and the signalised crossing outside the schools) will offer a safe and convenient pedestrian route.

There is no pedestrian provision along the subject site frontage on Cashmere Road however this will be expected to be provided at the subdivision development stage, tying in with existing and future pedestrian infrastructure on Cashmere Road.



Between the northern portion of the subject site and Hoon Hay Road, pedestrians will be required to use the existing local road network. Leistrella Road, Rydal Street and Northaw Street all have two footpaths which will be suitable for increased pedestrian use. The local road intersections have large kerb radii which result in long crossing distances for pedestrians, increasing the time and distance over which pedestrians are exposed to turning traffic. It is considered that, with the future increased use of Leistrella Road by both pedestrians and traffic (forecast later), modifications to the Hoon Hay Road / Leistrella Road and Leistrella Road / Rydal Street intersections to provide shorter pedestrian crossing distances should be implemented. The Hoon Hay Road / Leistrella Road intersection is seen as more critical given the high traffic volumes and higher vehicle speeds on Hoon Hay Road. It is considered that kerb build outs and reduced kerb radii would be appropriate, but this could be considered further through adoption of an assessment matter at the subdivision stage related to pedestrian safety on the adjoining local road network.

There are several activities east of the subject site which are likely to generate pedestrian activity including Pioneer Sport and Recreation Centre and Cashmere High School. Development of particularly the northern portion of the subject site will increase the pedestrian crossing demand on Hoon Hay Road between Leistrella Road and Rose Street. Currently there is no pedestrian crossing provision on this section of Hoon Hay Road, and the carriageway is wide to cross at 13m in width. It is considered that a safe pedestrian crossing point should be provided between Leistrella Road and Rose Street and the design of this can be a matter to be considered at the subdivision stage. It is considered likely that a refuge island would be appropriate and localised car parking removal would be necessary to accommodate it.

Within the ODP area, a good level of connectivity for pedestrians and cyclists is proposed. Local roads will be expected to provide footpaths and be safe for shared use by cyclists in what should be designed to be a slow speed environment. There are also off-road routes proposed between the residential areas and connecting to the stormwater reserve areas.

8.2 Public Transport

The southern portion of additional residential land is very well located for public transport uptake, being within a short distance of Cashmere Road where there is the existing Westmorland / Shirley bus service. This service provides accessibility to key destinations including the City Centre as well as Barrington Mall and Sydenham. It will be necessary to ensure at the subdivision stage that pedestrian provision along Cashmere Road connecting to existing infrastructure is provided.

The central block of proposed additional residential land is similar to the surrounding zoned residential land in terms of accessibility for public transport. It is approximately 400m from Cashmere Road and 600m from Hoon Hay Road via the Kaiwara Street reserve and Blakiston Street. The Westmorland / Shirley route as well as the Orbiter route, which provides regular connectivity to key destinations around the city including Barrington Mall, run along Hoon Hay Road.

The northern block of proposed additional residential land is similar to the existing Leistrella Road / Rydal Street residential catchment in terms of accessibility for public transport. The northern part of the block will be approximately 600m from the Hoon Hay Road / Sparks Road intersection, through which the Hillmorton / Southshore bus service runs. This provides access to Barrington Mall, Christchurch Hospital and the City Centre among other destinations. The southern part of the block will be approximately 600m from Rose Street where both the Westmorland / Shirley and Orbiter bus services run. As outlined above, it is recommended that a pedestrian crossing point on Hoon Hay Road is provided between Leistrella Road and Rose Street and this will improve the accessibility of the Rose Street bus stops.

It is considered that the 600m-800m distances from the central and northern blocks to the nearest existing bus stops are acceptable. While they may be at the higher end of walking distances to bus stops that people are prepared to take, residents would have options of using other modes, e.g. bicycle or scooter, to connect to the bus routes. With three bus routes in the vicinity of the subject site, and all three connecting to the nearest major centre, being Barrington Mall, it is considered that development of the subject site will be relatively well served by public transport when compared to many parts of the city.

There have been a number of residential developments in the south and east of Halswell in recent years, with more planned along with the nearby North Halswell Key Activity Centre. It is expected that additional bus services will be provided in this part of the city, with Sparks Road a potential route towards the city. It is noted that the Christchurch City Council South-West Area Plan anticipated a bus route on Sparks Road to the west of the subject site. A bus service along Sparks Road would offer improved public transport accessibility to the subject site as well as existing residential areas north of Sparks Road.

The intention is that the additional residential areas are small areas connecting to the existing / zoned residential areas rather than new residential areas in their own right. The internal road network is intended to be an extension of the existing / planned local road network and therefore it would not be expected to accommodate a bus route.

9 Traffic Modelling Assessment

9.1 CAST Modelling Approach

The Christchurch Assignment and Simulation Traffic (CAST) Model has been utilised to assist with an assessment of the ability of the surrounding road network to accommodate the additional traffic that could be generated by the proposed residential areas.

A future year of 2038 has been adopted. The base model has been modified to include all development anticipated under the Hendersons East ODP. This included allowing for traffic that could be generated by the approximately 320 lots within the ODP area and a local road network including two intersections on Cashmere Road and the two sections of Leistrella Road being connected. Standard peak hour traffic generation rates of 0.9 vehicle movements per hour (vph) per residential lot and the traffic distribution of the existing zone in the CAST Model were adopted.

A second scenario allowing for the proposed additional residential development areas was also modelled. This allowed for the additional possible 230 residential lots split across the three areas as indicated in the proposed ODP. Additions to the local road network were made including a connection to Northaw Street at the northern end of the subject site.

9.2 CAST Modelling Outputs

Appendix A contains AM and PM peak hour traffic volume and delay plots for the 'base' and 'with rezoning' scenarios.

The base model outputs show that Leistrella Road to Hoon Hay Road could be an attractive route into and out of the ODP area for a large proportion of residents. With the two sections of Leistrella Road connected in the base model, there are peak hour traffic volume forecasts of 230-290vph on Leistrella Road (Hoon Hay). Traffic volumes forecast to use the two Cashmere Road intersections are low compared to the forecast volumes on Leistrella Road (Hoon Hay).

With the additional residential development that the proposed rezoning would allow, traffic volume forecasts on Leistrella Road (Hoon Hay) are approximately 310-420vph during peak hours, indicating an increasing movement function.

Minimal changes to overall delays at the signalised arterial road intersections in the area (Hoon Hay Road / Cashmere Road, Sparks Road / Hoon Hay Road and Sparks Road / Hendersons Road) are forecast with the additional development allowed for. Accordingly, the remainder of this assessment is focused on the suitability of the surrounding local roads to accommodate increases in traffic volumes and the safety and efficiency of access to the arterial road network.

10 Assessment of Suitability of Local Roads

10.1 Leistrella Road (Hoon Hay)

As outlined above, the traffic modelling carried out indicates that Leistrella Road to Hoon Hay Road could be an attractive route for a large proportion of residents within the ODP area.

The existing Hendersons East ODP requires: 'a road network which provides a connection between Cashmere Road and Hoon Hay but is designed to avoid traffic shortcutting between Westmorland and Hoon Hay'. It goes on to say that this is likely to be via Leistrella Road. It is possible that the traffic modelling over-estimates the future use of Leistrella Road (Hoon Hay) given this requirement to design it to discourage use. However, the traffic forecasts from the modelling have been adopted as a worst case in this assessment.

With Leistrella Road connected and full development of the existing ODP area, there could be peak hour traffic volumes of 230-290vph on the initial length of Leistrella Road off Hoon Hay Road. Traffic volumes would be reduced west of Rydal Street. With the additional development that would be possible with the proposed rezoning, these volumes could increase to 310-420vph east of Rydal Street. Using a standard rule of thumb for converting peak hour traffic volumes to daily traffic volumes¹, daily volumes on the eastern section of Leistrella Road could increase from approximately 2,600 vehicles per day (vpd) to 3,550vpd, representing a 35% increase.

¹ Daily volume = (AM peak volume + PM peak volume) x 5



Leistrella Road (Hoon Hay) has an existing carriageway width of 9m, with kerbside car parking permitted on both sides of the road. In practice, this carriageway width allows for two-way traffic movement where there is a parked vehicle on one side of the road but commonly only one-way movement where there is a vehicle parked on both sides of the road.

The Christchurch District Plan New Road Standards and NZS4404 Land Development and Subdivision standards have been reviewed for guidance on the assessment of the suitability of the existing carriageway width.

The District Plan standards outline that a 7m-9m carriageway width for a local road is a controlled activity, while the Council has more discretion over narrower or wider carriageways. The standards outline that a collector road carriageway should be 10m-14m wide with car parking to be outside of that.

According to NZS4404, a 5.5m movement lane would be appropriate for a local road (~2,000vpd) and an 8.4m movement lane would be appropriate for a collector road (~8,000vpd). Car parking should be outside of the movement lane given the road serves more than 100 lots.

As outlined earlier, it is intended that the additional residential areas would be relatively small extensions of existing / zoned residential areas rather than new residential areas. Accordingly, it is envisaged that the new areas would be served by extensions of the existing / planned local road network rather than any higher order roads (such as a new collector road). Retaining the existing 9m carriageway width of Leistrella Road and permitting kerbside car parking on both sides of the road, i.e. continuing to treat it as a local road, will help to encourage slow vehicle speeds and it may also help achieve the requirement to discourage its use by through traffic.

Traffic traveling along Leistrella Road to / from the ODP area (and further afield) will need to travel along the approximately 350m, straight length of Leistrella Road. Where there is no kerbside car parking present, the 9m carriageway width combined with the straight road alignment will not encourage slow vehicle speeds appropriate for the residential environment. Ensuring appropriate vehicle speeds will help ensure the road can be used safely by all users, including cyclists and pedestrians. It is considered that traffic calming measures should be adopted along the existing section of Leistrella Road at the time that the two sections of Leistrella Road are connected and this could be considered further through an assessment matter for the subdivision stage.

10.2 Leistrella Road (Cashmere)

Leistrella Road (Cashmere) has been constructed with a 6m carriageway width plus indented parking outside of that. This carriageway formation will be suitable to accommodate the small increases in use forecast as a result of development of the proposed rezoning. The design of the extension of this road to the north should incorporate traffic calming measures to ensure vehicle speeds remain appropriately slow for the residential setting and to ensure the safety of all road users, including cyclists. This will also help to achieve the requirement to design the road to discourage through traffic use.

10.3 Rydal Street / Northaw Street

The traffic modelling indicates that increases in use of Rydal Street and Northaw Street will be relatively modest, and this is to be expected based on the additional residential catchment that could be served by these roads. It is estimated that increases in use of Northaw Street and Rydal Street will be less than 60vph or an average of one vehicle movement per minute during peak times. During the morning, most additional movements would be out Northaw Street and right into Rydal Street. During the evening, the largest increase would be to the number of movements from Sparks Road left into Rydal Street and right into Northaw Street.

The traffic volumes on both Rydal Street and Northaw Street will remain relatively low with the increased use and there are no concerns from a traffic carrying capacity perspective.

Northaw Street and Rydal Street have the same 9m wide carriageway formation as Leistrella Road however with the shorter sections of straight road, along with curves in the alignment of Rydal Street and lower traffic volumes, mean there are not the same concerns with potentially higher than desirable vehicle speeds at this stage.

A concern with the existing Rydal Street / Northaw Street intersection was highlighted earlier, primarily resulting from the large kerb radius on the southern corner resulting in somewhat of a Y-intersection layout. The concern is that it may not be clear who has priority and the minor-leg right turn from Northaw Street to Rydal Street is the movement which will be increased the most at the intersection. It is considered that the intersection would benefit from the installation of Give Way signage / marking on Northaw Street but this could be considered further at the time of subdivision of the northern section of the subject site through adoption of a subdivision assessment matter. Other matters to consider in the vicinity of the intersection would be whether the existing pedestrian crossing provision should be improved and whether a dedicated crossing point to the Rydal Reserve would be warranted.

11 Access to Arterial Road Network

11.1 Hoon Hay Road / Leistrella Road Intersection

The Hoon Hay Road / Leistrella Road intersection is seen as the critical location for access to / from the arterial road network for development of the subject site based on the traffic modelling outputs. Accordingly, the performance of the intersection has been analysed in more detail than the CAST model provides. 2021, 2038 'Base' and 2038 'With Rezoning' CAST model volume plots for the Hoon Hay Road / Leistrella Road intersection are presented in **Appendix A.3**.

11.1.1 Comparison between 2021 CAST Forecasts and Counts

Table 2 shows a comparison of 2021 CAST model traffic forecasts with the recently recorded traffic counts.

Table 2: Comparison of Traffic Volumes on Hoon Hay Road and Leistrella Road, 2021 CAST Model vs 2023 Counts (vph)

Traffic Movement	Peak Hour	2021 CAST Model Forecast	2023 Count	Difference
Hoon Hay Road Through Traffic (Two-Way)	AM	715	772	+57
	PM	720	717	-3
Leistrella Road Traffic (Two-Way)	AM	93	140	+47
	PM	53	81	+28

The through traffic volumes on Hoon Hay Road past Leistrella Road recorded in 2023 were higher than the 2021 forecasts in the morning peak hour and matched the 2021 forecasts in the evening peak hour. Traffic volumes on Leistrella Road are higher than forecast during both peak periods.

11.1.2 Traffic Volumes for Analysis

The important thing to assess at the Hoon Hay Road / Leistrella Road intersection is the change in performance with the additional traffic resulting from the proposed rezoning.

The CAST model forecasts a reduction in through volumes on Hoon Hay Road from 2021 to 2038 and another reduction in through volumes with the additional land developed. For a conservative assessment, the recently recorded through volumes on Hoon Hay Road have been adopted in the analysis presented below.

Table 3 summarises the changes in traffic volume forecast on Leistrella Road, between the 2021 and 2038 'Base' models, and then between the 2038 'Base' model and the 2038 'With Rezoning' model.

Table 3: Traffic Volume Increases on Leistrella Road (vph)

Change in Landuse	Peak Hour	Extra Traffic In	Extra Traffic Out	Total Difference
2021 CAST to 2038 CAST 'Base'	AM	37	159	196
	PM	109	64	173
2038 CAST 'Base' to 2038 CAST 'With Rezoning'	AM	12	119	131
	PM	45	47	92

These volume changes have been adopted in analysis, with left turn / right turn distributions based on those recorded at the existing intersection. As the recent count volumes are higher than the 2021 forecasts, the first lot of traffic volume increases presented above have been applied to the count volumes to give a conservative '2038 base' scenario for analysis. The second lot of traffic volume increases were then applied to the base scenario to give a '2038 with rezoning' scenario.



11.1.3 Intersection Performance Forecast

The 2038 base and 2038 with rezoning scenarios have been modelled using SIDRA Intersection 9. The intersection has been modelled as a priority T-intersection with no right turn provision on the main road, and separate left and right turn lanes on the minor road (consistent with the existing intersection). Critical gap and follow up headway parameters of 5.5s and 3.2s have been adopted for the critical right turn out of Leistrella Road, in accordance with SIDRA User Guide guidance.

SIDRA modelling output summary tables are contained in **Appendix B**. The two tables below summarise the outputs of the analysis. Minimal changes in average delays and only small increases in queuing are forecast across both peak periods as a result of the additional traffic that could be generated by the additional residential development areas proposed.

Table 4: Summary of SIDRA Outputs- AM Peak

Period	Approach	Movement	Volume	Average Delay	95% Queue Length
2038 Base	Hoon Hay S	Left	64vph	5s / LOS A	-
		Through	453vph	-	-
	Hoon Hay N	Through	319vph	0s / LOS A	0.2veh
		Right	12vph	7s / LOS A	0.2veh
	Leistrella	Left	165vph	9s / LOS A	1.1veh
		Right	95vph	17s / LOS C	1.2veh
2038 With Rezoning	Hoon Hay S	Left	74vph	5s / LOS A	-
		Through	453vph	-	-
	Hoon Hay N	Through	319vph	0s / LOS A	0.2veh
		Right	14vph	8s / LOS A	0.2veh
	Leistrella	Left	240vph	9s / LOS A	1.9veh
		Right	139vph	19s / LOS C	2.1veh

Table 5: Summary of SIDRA Outputs- PM Peak

Period	Approach	Movement	Volume	Average Delay	95% Queue Length
2038 Base	Hoon Hay S	Left	70vph	5s / LOS A	-
		Through	300vph	-	-
	Hoon Hay N	Through	417vph	1s / LOS A	1.0veh
		Right	86vph	7s / LOS A	1.0veh
	Leistrella	Left	58vph	6s / LOS A	0.3veh
		Right	40vph	15s / LOS C	0.5veh
2038 With Rezoning	Hoon Hay S	Left	90vph	5s / LOS A	-
		Through	300vph	-	-
	Hoon Hay N	Through	417vph	1s / LOS A	1.3veh
		Right	111vph	7s / LOS A	1.3veh
	Leistrella	Left	85vph	7s / LOS A	0.4veh
		Right	60vph	17s / LOS C	0.8veh

11.1.4 Intersection Assessment

The analysis summarised above shows that the intersection will be expected to operate similarly without and with the additional residential development.

Delays representative of a level of service C on Leistrella Road during peak periods will remain acceptable for a local road intersection on an arterial road. Only a low level of queuing of 2-3 vehicles is anticipated. Drivers will safely be able to wait for appropriate gaps to safely turn into.

The volume of right turn movements from Hoon Hay Road is relatively high during the evening when people are returning home. While the opposing northbound through movement is the lower volume of the through movements, drivers will regularly face short delays when waiting to turn right into Leistrella Road. Currently with the parking lane opposite the intersection, there is no room for a southbound vehicle to pass a vehicle waiting to turn right, meaning any delays for the right turn movement could impact through vehicle movement. This is typical along corridors such as this, where drivers need to be ready to slow and potentially stop momentarily while a vehicle turns right. Generally, this arrangement results in slower vehicle speeds which is desirable in what is a residential environment. It is noted that the nearby Rose Street is a much higher volume road than Leistrella Road and it operates without right turn provision.

11.2 Cashmere Road / Leistrella Road Intersection

The Cashmere Road / Leistrella Road intersection has been built to a high standard with a right turn bay on Cashmere Road. It is expected that this intersection layout will remain appropriate with the small increases in traffic volume anticipated as a result of the proposed additional residential development.

11.3 New Cashmere Road Intersection

As outlined earlier, a new minor local road intersection is proposed on Cashmere Road approximately 150m west of Leistrella Road. This is to provide local access and connectivity within the new residential area.

The Christchurch City Council Infrastructure Design Standard specifies that arterial / local road intersections should be a minimum of 150m apart (centreline to centreline). Further to this, it states that this distance should be doubled for intersections on the same side of the road to allow for future intersections on the opposite side of the road. In this location, no future road is expected on the opposite side of Cashmere Road given the 'High Flood Hazard Management Area' Natural Hazard Overlay that exists on the land to the south.



It is considered that a 150m separation between local roads in an urban setting is adequate to ensure that vehicle movements at the intersections / conflict points are suitably separated. It is noted that Kaiwara Street and Mavin Road to the east of the subject site are only approximately 110m apart, with Opihi Street between them on the opposite side of Cashmere Road.

The design of the intersection and associated upgrades to Cashmere Road would be considered at the subdivision stage. The existing ODP anticipates road widening along the front of the subject site so that cycle lanes can be provided, as has been done past the Leistrella Road intersection.

It will be preferable that the new local road connects through to adjacent development, e.g. to Emily Knowles Drive, for local area connectivity and the ODP includes an indicative connection.

12 Consistency with District Plan Policy

Objective 7.2.1 'Integrated transport system for Christchurch District' is the relevant objective related to land use and the transport network. The objective is:

7.2.1 Objective - Integrated transport system for Christchurch District

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

Policies considered relevant to the proposed rezoning under this objective are copied below with comment on the consistency of the proposed rezoning with these following.

7.2.1.1 Policy - Establishment of a road classification system

- a. Identify a road network that connects people and places and recognises different access and movement functions for all people and transport modes, whilst:
 - i. supporting the safe and efficient operation of the transport network;
 - ii. providing for public places in accordance with the function of the road to enable community activities including opportunities for people to interact and spend time;
 - iii. providing space for utility services;
 - iv. reflecting neighbourhood identity and amenity values;
 - v. recognising cross-boundary connections with adjoining districts; and
 - vi. providing for the efficient and effective functioning of the strategic transport network, including for freight.

7.2.1.2 Policy - High trip generating activities

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



7.2.1.6 Policy - Promote public transport and active transport

- a. Promote public and active transport by:
- i. ensuring new, and upgrades to existing, road corridors provide sufficient space and facilities to promote safe walking, cycling and public transport, in accordance with the road classification where they contribute to the delivery of an integrated transport system;
 - ii. ensuring activities provide an adequate amount of safe, secure, and convenient cycle parking and, outside the Central City, associated end of trip facilities;
 - iii. encouraging the use of travel demand management options that help facilitate the use of public transport, cycling, walking and options to minimise the need to travel; and
 - iv. requiring new District Centres to provide opportunities for a public transport interchange.
 - v. encouraging the formation of new Central City lanes and upgrading of existing lanes in the Central City, where appropriate, to provide for walking and cycling linkages and public spaces.
 - vi. developing a core pedestrian area within the Central City which is compact, convenient and safe, with a wider comprehensive network of pedestrians and cycle linkages that are appropriately sized, direct, legible, prioritized, safe, have high amenity, ensure access for the mobility impaired and are free from encroachment.

As outlined, it is considered appropriate that the relatively small additional areas of residential development are treated as small extensions of the existing / zoned residential areas and they are served by extensions of the existing / planned local road network. It has been assessed that the additional traffic volumes that could be generated will be able to be accommodated on the existing / planned local road network, with some minor upgrade works recommended in the local road network between the subject site and Hoon Hay Road. Development of the additional residential areas, particularly that in the north of the subject site, will be able to integrate with the stormwater reserves to the west.

The subject site is well located for uptake of non-private vehicle travel modes. Development of the northern section of the subject site will allow a connection to be made for walking and cycling from Cashmere Road to Sparks Road and the Quarryman's Trail cycleway. Development of the subject site will also be well connected to existing residential areas to the east for walking and cycling towards destinations including Pioneer Centre and Cashmere High School. Recommendations have been made to improve the pedestrian provision along Leistrella Road and across Hoon Hay Road.

There are three bus routes in the area which all connect to the nearby Barrington Mall and beyond. The southern additional residential area will be well served by the bus route on Cashmere Road, while the central and northern areas will have similar accessibility to their nearest bus routes as the immediately adjacent existing / zoned residential areas.

It is considered that the proposed additional residential areas are logical extensions of the existing / zoned residential areas from a transport perspective. Allowing for the connection from Cashmere Road and the existing ODP area to the Quarryman's Trail cycleway will be a good outcome for the wider area enabled by the proposed ODP.

13 Conclusion

The proposed rezoning will allow an extra approximately 230 residential lots to be developed in three areas adjacent to zoned residential land within the Hendersons East ODP area.

A revised ODP has been prepared and includes:

- An active mode connection from the ODP area to Sparks Road and the Quarryman's Trail cycleway;
- A local road connection to Northaw Street; and
- An additional local road intersection on Cashmere Road 150m west of Leistrella Road.

It has been assessed that the proposed ODP provides a good level of connectivity between the subject site and the surrounding existing / zoned residential areas. The active mode connection to Sparks Road and the Quarryman's Trail cycleway is a positive outcome for the wider area, while good connectivity will be achieved to the existing neighbourhoods to the east. Improved pedestrian provision has been recommended along Leistrella Road and across Hoon Hay Road to allow safe and convenient access to destinations east of Hoon Hay Road.

Traffic modelling carried out indicates that traffic generated by the additional 230 lots will be readily accommodated on the wider arterial road network. The Hoon Hay Road / Leistrella Road intersection is seen as the critical intersection in terms of access to / from the arterial road network given the potential attractiveness of the Leistrella Road route for travel towards the north / east. Detailed analysis of the intersection suggests that it will continue to operate with acceptable delays and levels of service during peak periods. It has been assessed that the existing local roads adjacent to the subject site will be able to accommodate the additional traffic, with some minor recommendations relating to traffic management made.

It is concluded that the additional residential development areas that will be enabled by the proposed rezoning will be logical, well-connected, accessible extensions of the existing / zoned residential areas and the proposed rezoning can be supported from a transport perspective.



Appendices

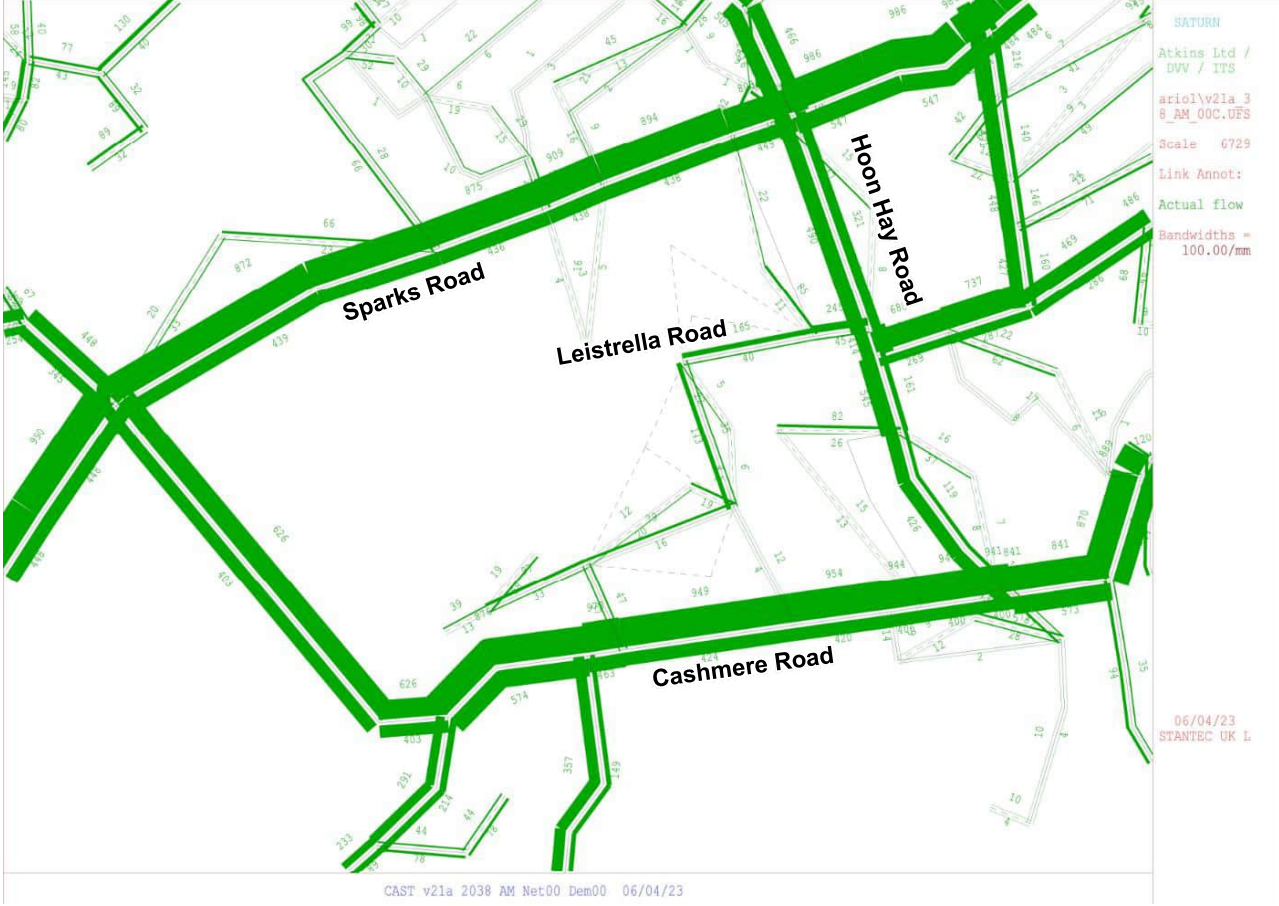
We design with community in mind



Appendix A CAST Modelling Outputs

A.1 2038 'Base' Model Outputs

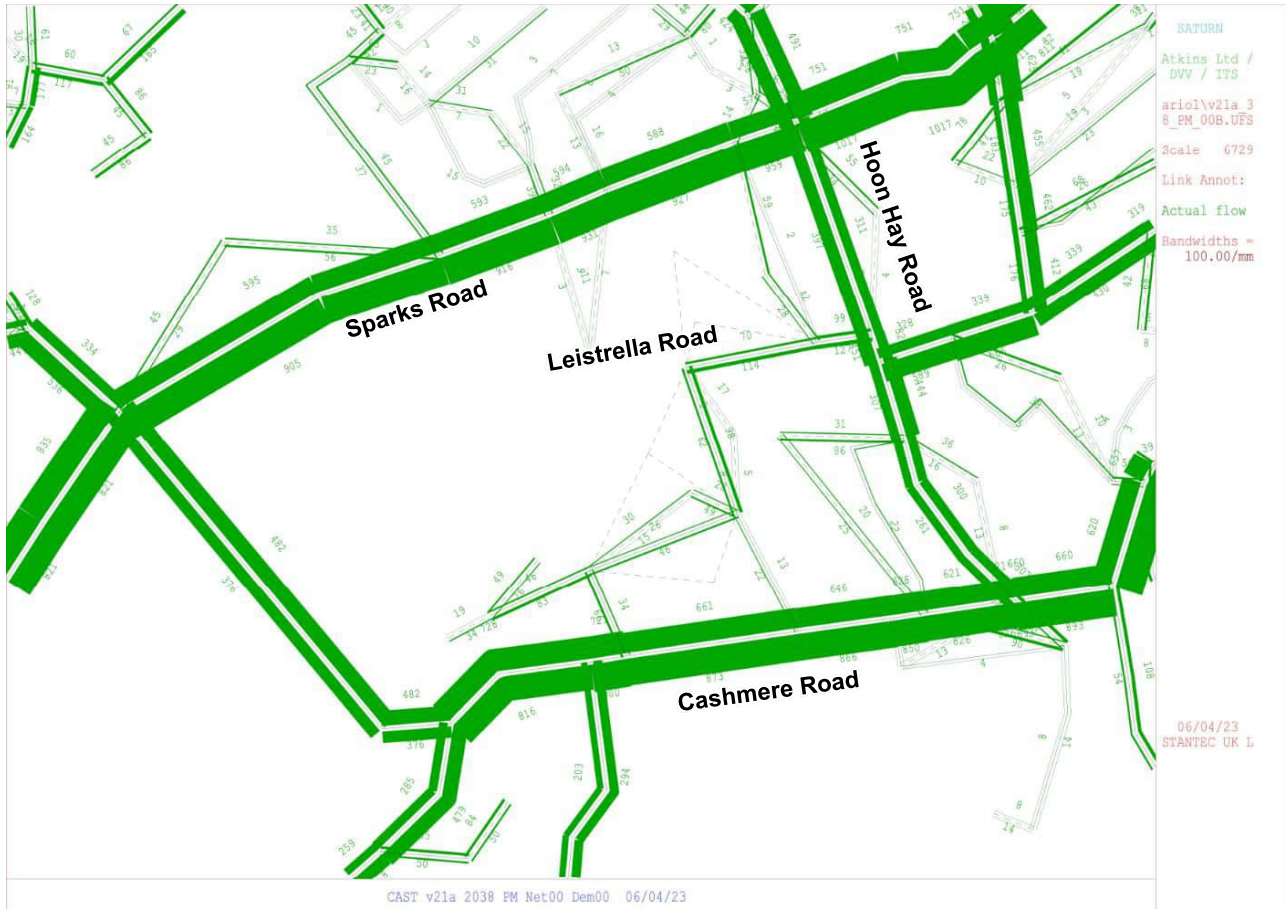
AM Peak Hour Traffic Volumes:



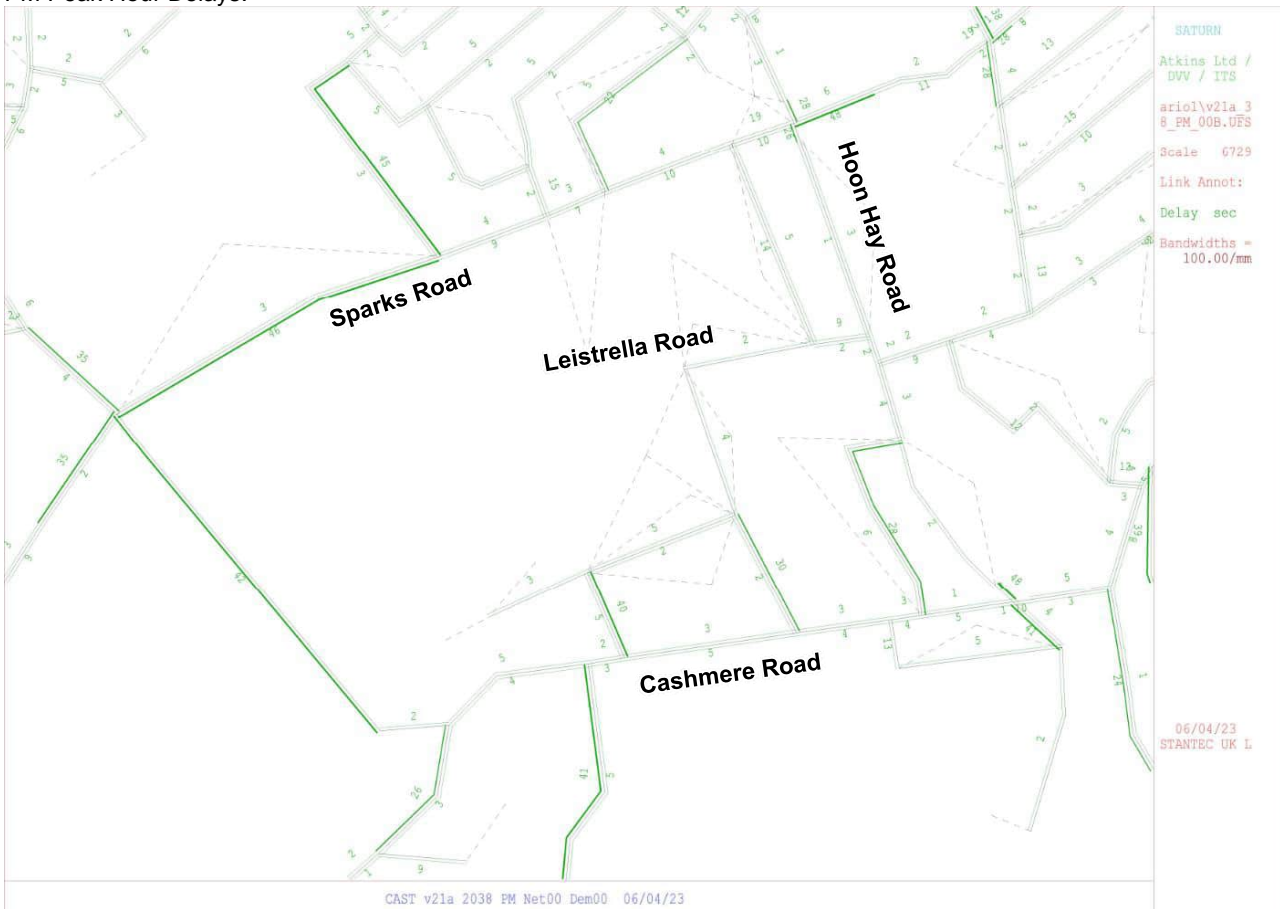
AM Peak Hour Delays:



PM Peak Hour Traffic Volumes:

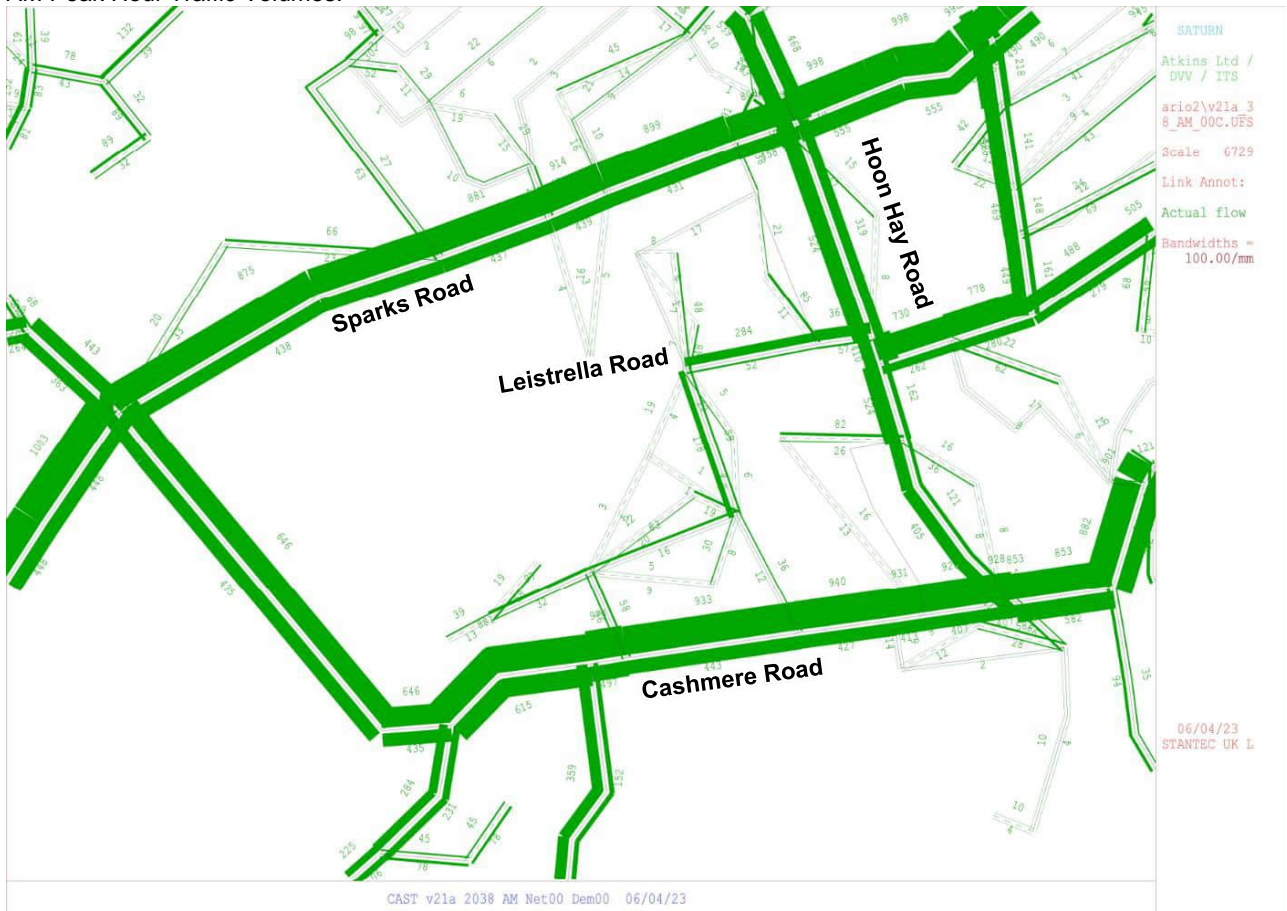


PM Peak Hour Delays:



A.2 2038 'With Rezoning' Model Outputs

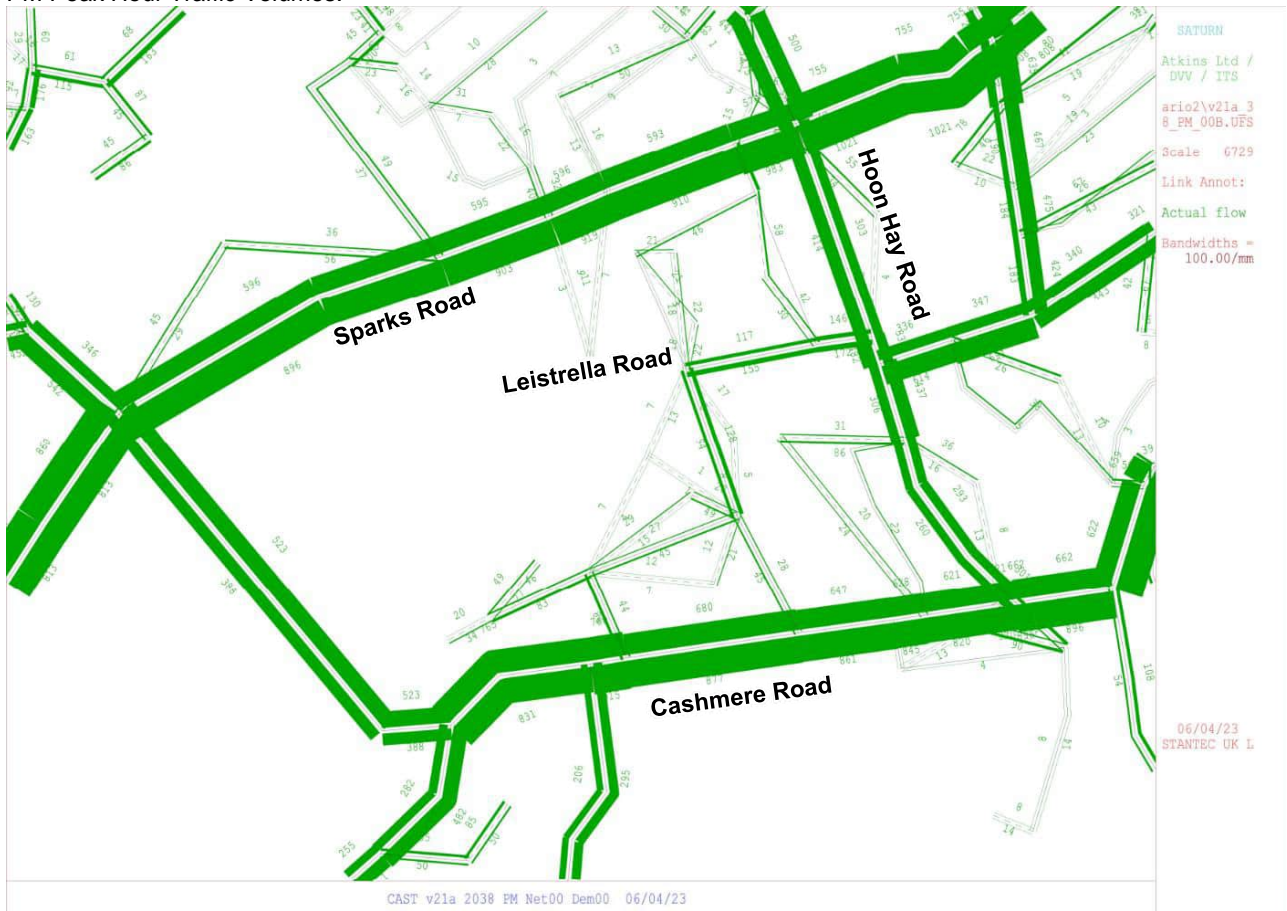
AM Peak Hour Traffic Volumes:



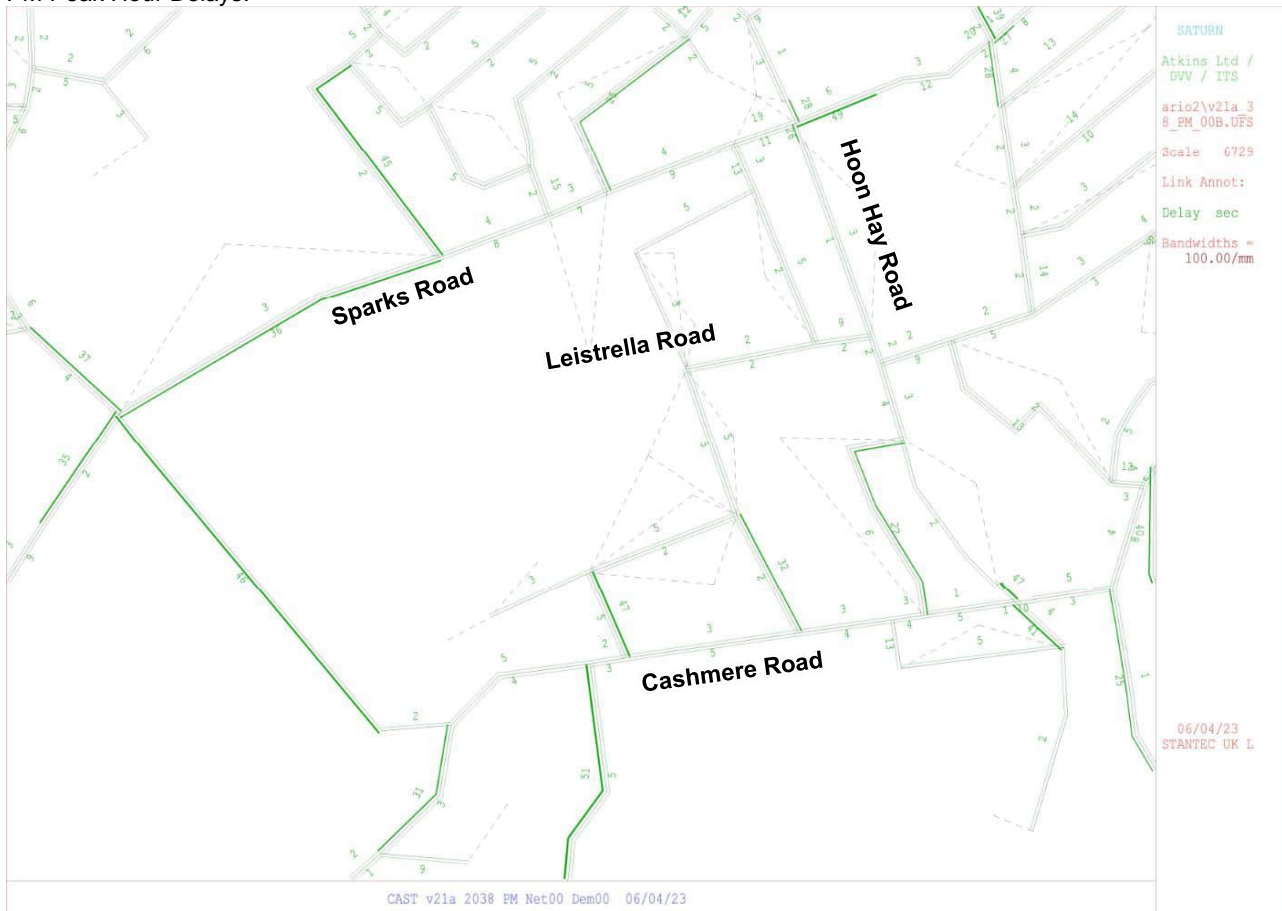
AM Peak Hour Delays:



PM Peak Hour Traffic Volumes:

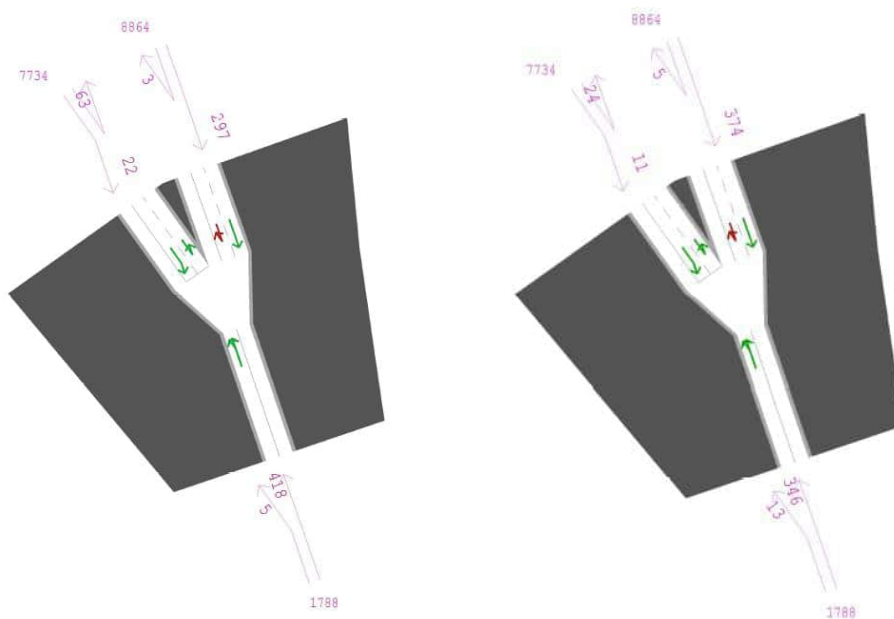


PM Peak Hour Delays:

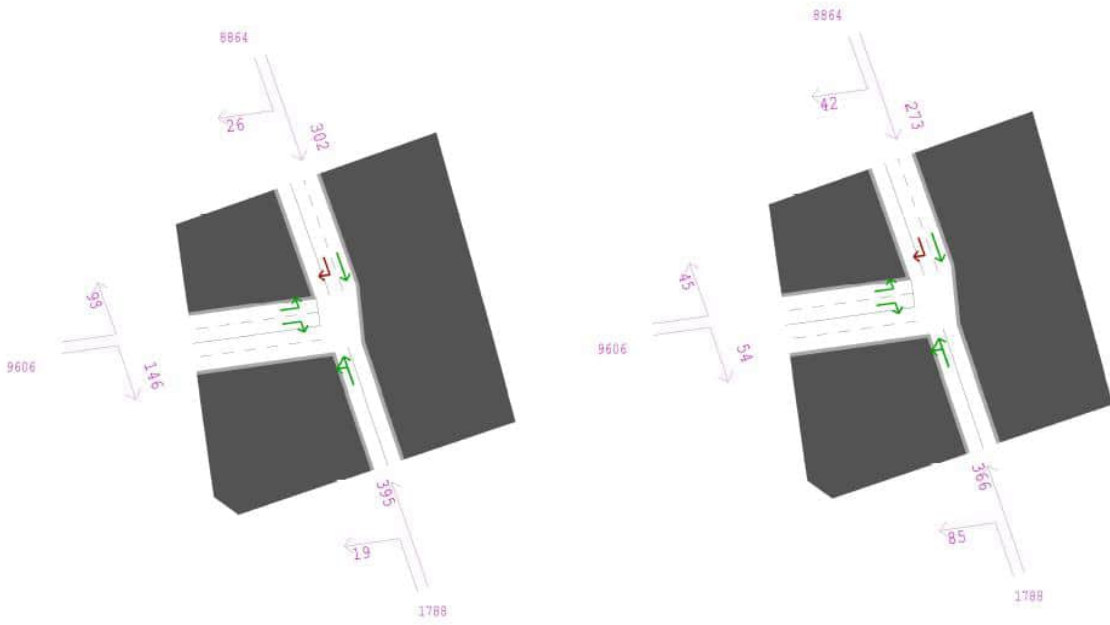


A.3 Hoon Hay Road / Leistrella Road Traffic Volume Plots

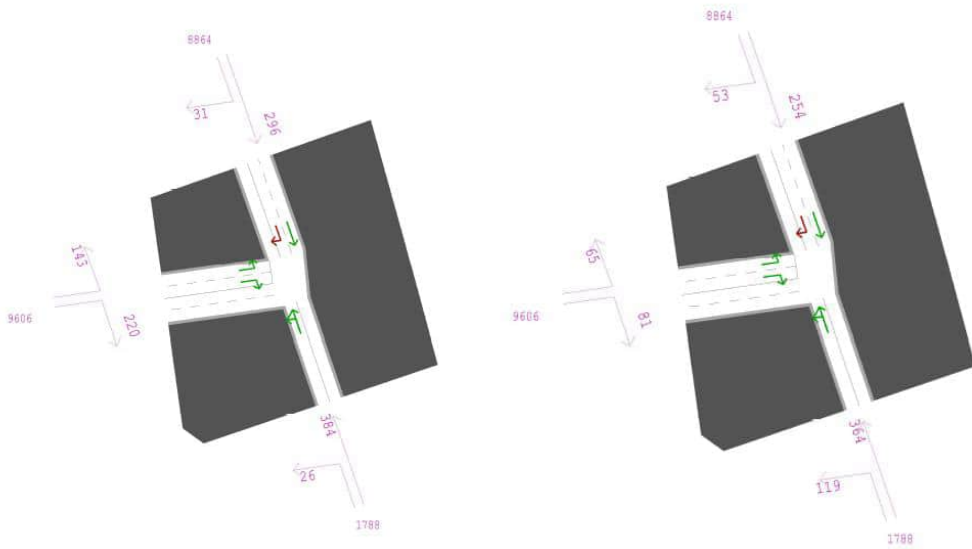
2021 CAST Model Volumes, AM (Left) and PM Peak (note acute angle between roads related to model representation and does not affect forecast T-intersection performance)



2038 CAST 'Base' Model Volumes, AM (Left) and PM Peak



2038 CAST 'With Rezoning' Model Volumes, AM (Left) and PM Peak



Appendix B Hoon Hay Road / Leistrella Road Intersection SIDRA Outputs

2038 Base AM Peak

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Hoon Hay S														
1	L2	64	1.0	67	1.0	0.286	4.7	LOS A	0.0	0.0	0.00	0.07	0.00	49.0
2	T1	453	3.0	477	3.0	0.286	0.1	LOS A	0.0	0.0	0.00	0.07	0.00	49.5
Approach		517	2.8	544	2.8	0.286	0.7	NA	0.0	0.0	0.00	0.07	0.00	49.4
North: Hoon Hay N														
8	T1	319	3.0	336	3.0	0.188	0.2	LOS A	0.2	1.2	0.06	0.02	0.06	49.7
9	R2	12	1.0	13	1.0	0.188	7.4	LOS A	0.2	1.2	0.06	0.02	0.06	49.0
Approach		331	2.9	348	2.9	0.188	0.4	NA	0.2	1.2	0.06	0.02	0.06	49.7
West: Leistrella														
10	L2	165	1.0	174	1.0	0.263	8.5	LOS A	1.1	7.4	0.55	0.80	0.59	44.4
12	R2	95	1.0	100	1.0	0.312	16.8	LOS C	1.2	8.7	0.78	0.96	0.94	40.0
Approach		260	1.0	274	1.0	0.312	11.5	LOS B	1.2	8.7	0.64	0.86	0.72	42.7
All Vehicles		1108	2.4	1166	2.4	0.312	3.1	NA	1.2	8.7	0.17	0.24	0.19	47.7

2038 Base PM Peak

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Hoon Hay S														
1	L2	70	1.0	74	1.0	0.205	4.6	LOS A	0.0	0.0	0.00	0.10	0.00	48.8
2	T1	300	3.0	316	3.0	0.205	0.1	LOS A	0.0	0.0	0.00	0.10	0.00	49.3
Approach		370	2.6	389	2.6	0.205	0.9	NA	0.0	0.0	0.00	0.10	0.00	49.2
North: Hoon Hay N														
8	T1	417	3.0	439	3.0	0.305	0.6	LOS A	1.0	6.8	0.23	0.11	0.23	48.8
9	R2	86	1.0	91	1.0	0.305	6.6	LOS A	1.0	6.8	0.23	0.11	0.23	48.1
Approach		503	2.7	529	2.7	0.305	1.6	NA	1.0	6.8	0.23	0.11	0.23	48.7
West: Leistrella														
10	L2	58	1.0	61	1.0	0.073	6.4	LOS A	0.3	1.8	0.40	0.62	0.40	45.6
12	R2	40	1.0	42	1.0	0.137	15.2	LOS C	0.5	3.2	0.75	0.89	0.75	40.7
Approach		98	1.0	103	1.0	0.137	10.0	LOS B	0.5	3.2	0.55	0.73	0.55	43.4
All Vehicles		971	2.5	1022	2.5	0.305	2.2	NA	1.0	6.8	0.17	0.17	0.17	48.3

2038 With Rezoning AM Peak

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Hoon Hay S														
1	L2	74	1.0	78	1.0	0.292	4.7	LOS A	0.0	0.0	0.00	0.08	0.00	48.9
2	T1	453	3.0	477	3.0	0.292	0.1	LOS A	0.0	0.0	0.00	0.08	0.00	49.4
Approach		527	2.7	555	2.7	0.292	0.7	NA	0.0	0.0	0.00	0.08	0.00	49.4
North: Hoon Hay N														
8	T1	319	3.0	336	3.0	0.191	0.2	LOS A	0.2	1.4	0.07	0.02	0.07	49.6
9	R2	14	1.0	15	1.0	0.191	7.5	LOS A	0.2	1.4	0.07	0.02	0.07	48.9
Approach		333	2.9	351	2.9	0.191	0.5	NA	0.2	1.4	0.07	0.02	0.07	49.6
West: Leistrella														
10	L2	240	1.0	253	1.0	0.382	9.4	LOS A	1.9	13.4	0.59	0.87	0.76	43.9
12	R2	139	1.0	146	1.0	0.463	19.4	LOS C	2.1	14.8	0.83	1.03	1.18	38.8
Approach		379	1.0	399	1.0	0.463	13.1	LOS B	2.1	14.8	0.68	0.93	0.91	41.9
All Vehicles		1239	2.2	1304	2.2	0.463	4.5	NA	2.1	14.8	0.23	0.32	0.30	46.9



2038 With Rezoning PM Peak

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Sat'n	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Hoon Hay S														
1	L2	90	1.0	95	1.0	0.216	4.6	LOS A	0.0	0.0	0.00	0.13	0.00	48.7
2	T1	300	3.0	316	3.0	0.216	0.1	LOS A	0.0	0.0	0.00	0.13	0.00	49.2
Approach		390	2.5	411	2.5	0.216	1.1	NA	0.0	0.0	0.00	0.13	0.00	49.1
North: Hoon Hay N														
8	T1	417	3.0	439	3.0	0.330	0.8	LOS A	1.3	9.5	0.29	0.14	0.30	48.5
9	R2	111	1.0	117	1.0	0.330	6.8	LOS A	1.3	9.5	0.29	0.14	0.30	47.8
Approach		528	2.6	556	2.6	0.330	2.1	NA	1.3	9.5	0.29	0.14	0.30	48.4
West: Leistrella														
10	L2	85	1.0	89	1.0	0.107	6.5	LOS A	0.4	2.8	0.41	0.63	0.41	45.5
12	R2	60	1.0	63	1.0	0.221	17.2	LOS C	0.8	5.5	0.79	0.93	0.85	39.8
Approach		145	1.0	153	1.0	0.221	10.9	LOS B	0.8	5.5	0.57	0.75	0.59	43.0
All Vehicles		1063	2.3	1119	2.3	0.330	2.9	NA	1.3	9.5	0.22	0.22	0.23	47.8

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Appendix F. Urban Design Report



Urban Design Statement

Cashmere / Hendersons, Christchurch
Rezoning Submission

Prepared for Cashmere Park Ltd, Hartward
Investment Trust and Robert Brown
511270

Urban Design Statement

Henderson's Basin Plan Change

Quality Control Certificate

Prepared for Cashmere Park Ltd, Hartward
Investment Trust and Robert Brown

Eliot Sinclair & Partners Limited

511270

eliotsinclair.co.nz

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Directed and approved for release by:	Jade McFarlane Landscape Architect/Urban Designer Associate BLA(Hons) NZILA Reg jade.mcfarlane@eliotsinclair.co.nz		05 May 2023
Status:	A		
Release date:	05 May 2023		
Distributed to:	Cashmere Park Ltd, Hartward Investment Trust and Robert Brown Christchurch City Council		

Version History

Status	Description	Author	Release Date
A	First issue of document		05 May 2023

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Appendix A – Outline Development Plan

Appendix B – CCC Black Maps

Appendix C – Otautahi Christchurch Ecosystems

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1. Introduction

Eliot Sinclair has been engaged by Cashmere Park Ltd, Hartward Investment Trust and Robert Brown ('the Applicant'), to undertake the preparation of an indicative Outline Development Plan ('ODP') for a portion of the north-eastern portion of Henderson's Basin ('the Site') to support a submission requesting the rezoning of the Applicants' site as part of the PC14 process.

The area known colloquially as Henderson's Basin refers to land that falls approximately within a local depression between four major roads, being, Henderson's Road (Minor Arterial), Sparks Road (Minor Arterial), Hoon Hay Road (Minor Arterial) and Cashmere Road (Minor Arterial). The western part of this area is broadly comprised of circa 30Ha of predominantly Rural Urban Fringe (RuUF) zoned land and is adjoined on the northern and eastern boundaries by established low density residential development.

This submission seeks to rezone a portion of the Henderson's Basin area to Medium Density Residential Zone (MDRZ), in a manner that integrates with existing surrounding residential zoning, as well as existing residential zoning that occurs within the site already (Residential New Neighbourhood (RNN) Zoning). It illustrates a high-level anticipated use for the application site, supported by a new Outline Development Plan over the areas that proposes medium density applicable to the site as well as identifying a suggested intensification areas within that zone to enable a high-quality urban design outcome- while respecting the pre-urban nature of the eastern portion of the site, existing interfaces with residential, and open space areReport baseas to the west and south.

The strategy and framework for the proposed zoning / ODP is predominantly grounded on the existing uses and activities shown in the current Appendix 8.10.18 Henderson's Outline Development Plan (East), and the Operative District Planning Maps. This proposal, on the back of extensive and detailed flood modelling, proposes extensions to these residential areas to facilitate efficient use of land as well as completion of a comprehensively designed, highly connected new neighbourhood that would otherwise not be enabled under the current fragmented RNN zoning 'island'.

The amendments to the layout, while aligning with the above, has been guided primarily by the Christchurch City Council's (CCC) New Neighbourhood Design Guide for RNN Zones and is based on best-practice urban design principles (as referred to in the report). An assessment of how the Site responds to the Ministry for the Environment's Urban Design Protocol (UDP) is also included with respect to the Site's wider context.

2. Process to date

The planning and development of Henderson's Basin dates back decades, with initial Council-led city-scale planning followed by landowner-produced plans and documents, and subsequent council rezoning outcomes more recently by council. The earliest relevant document applicable to the site was the Southwest Area Plan (SWAP), which identified key growth areas but also included potential treatment for lower lying flood prone lands found in the district.

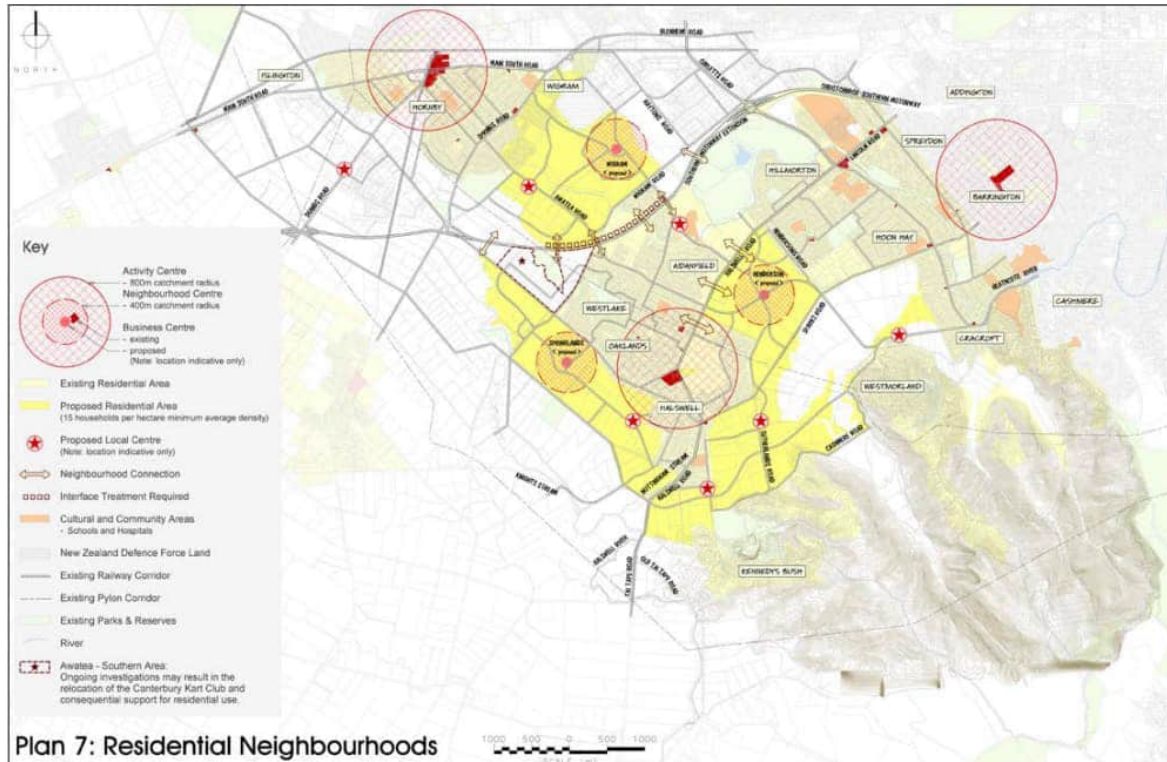


Figure 1. Excerpt from the South West Area Plan produced in 2009 (SWAP) showing the site, as well as yellow portion (currently RNN Zone)

Many findings from this area plan, the Henderson's basin area of which is illustrated below, are still relevant to a degree and have been considered during the design process when producing the proposed ODP.

An earlier ODP iteration, as outlined in Figure 2 below, was produced in 2015 by one of the Henderson's Basin's landowners, Warren Lewis.

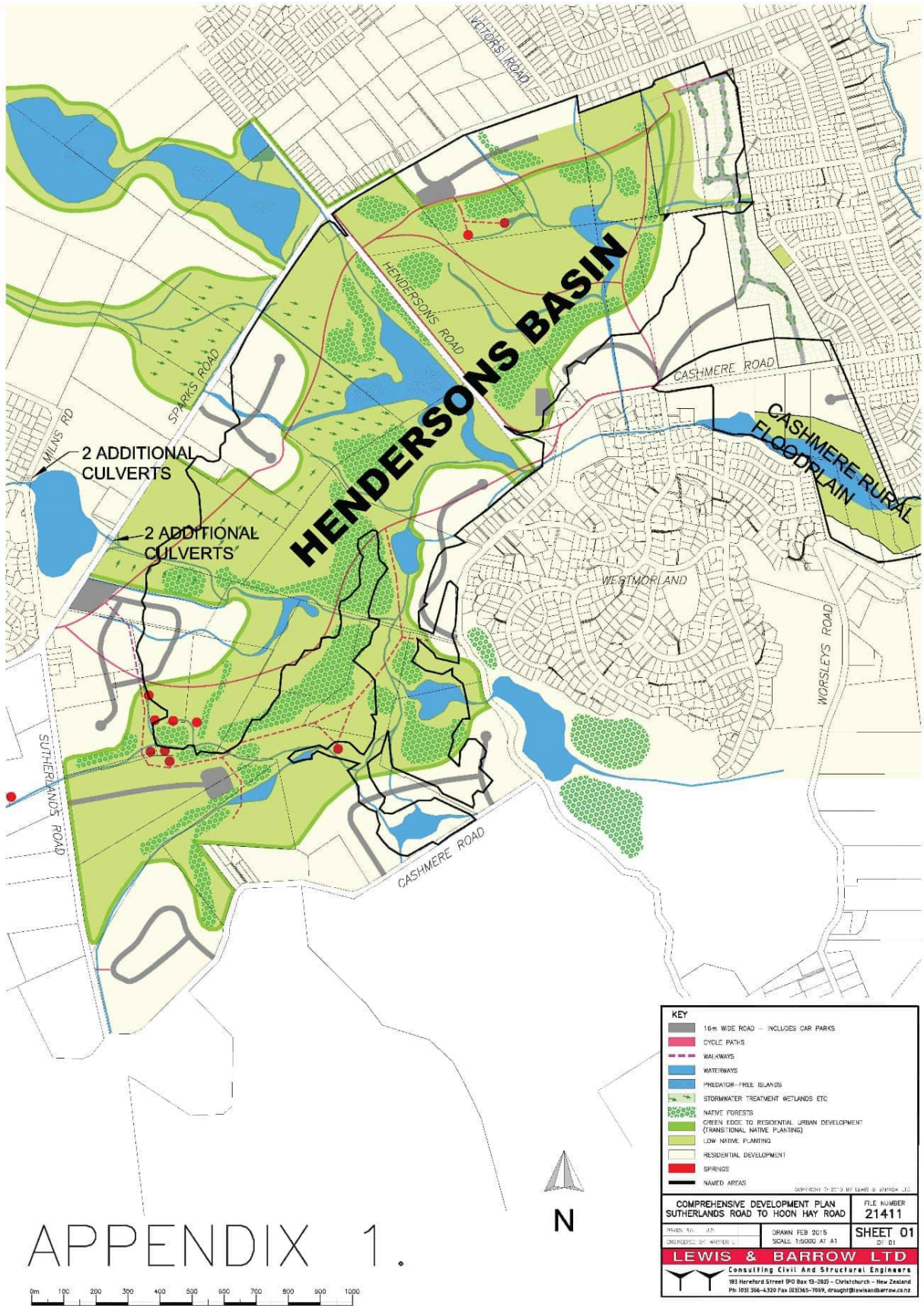


Figure 2. Previous structure plan produced by landowner (2015)

These previous plans, the Land Drainage Recovery Programme, and the Land Use Recovery Plan then informed the Councils 2017 rezoning of large swaths of Henderson's Basin area and wider southwest Christchurch, primarily identifying Residential Development Areas, Reserves, and high-level connectivity networks.

CCC rezoned the Henderson's Basin area (illustrated in Figure 3 below), following high level / coarse grain flood modelling (that has recently been updated through this process to be more accurate). This extensive iterative process has resulted in the latest version of the proposed Outline Development Plan for this area. This is illustrated as Appendix A within this application, and is the result of a highly collaborative effort by three adjoining landowners, with the intention to create a holistic and comprehensively designed new community – with an integrated approach founded on best practice urban design, transport, and engineering techniques.

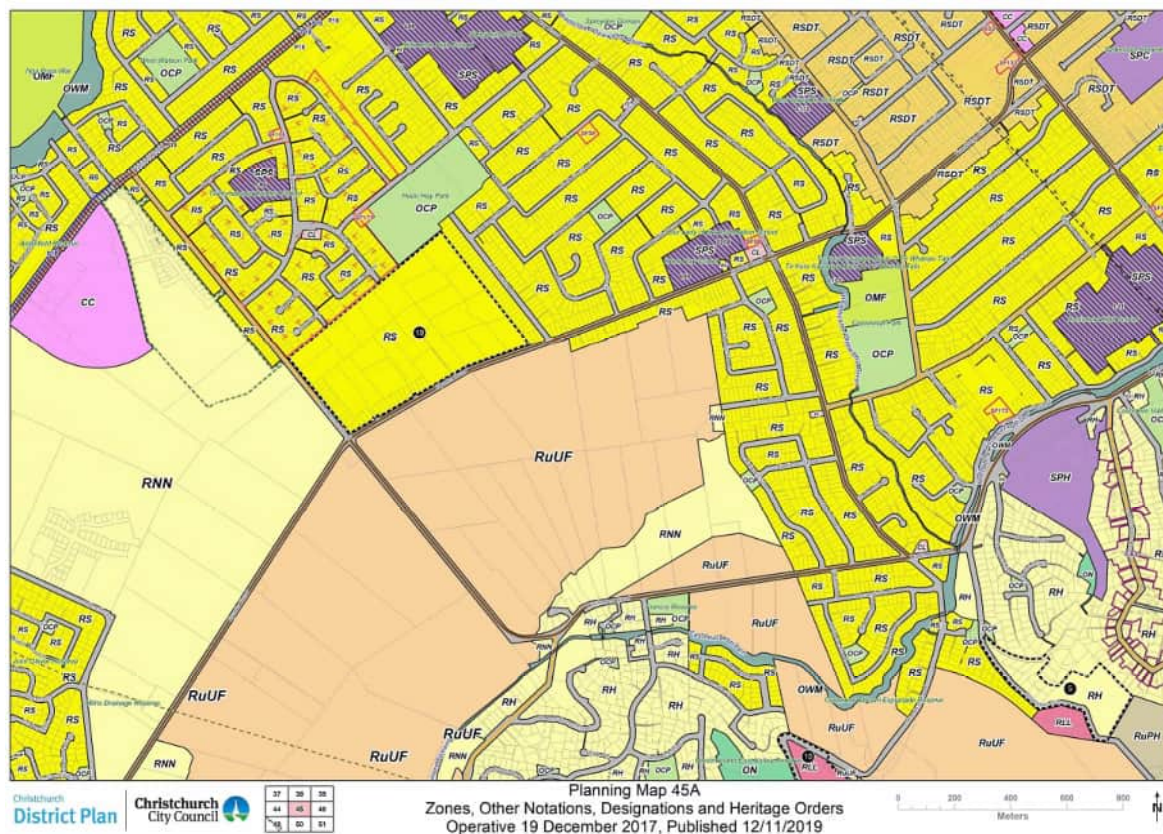


Figure 3. Current planning map in the Operative CCC District Plan (rezoned in 2017), which shows the site and two zones- RNN (Residential New Neighbourhood) and RuUF (Rural Urban Fringe).

The proposed ODP (Appendix A of the application) takes into consideration the prior plans, with additional layers adapted from new information acquired through the Council process. It currently anticipates a master planned neighbourhood adjoining the PC14 proposed MDRZ to the east. This intensification and integration will allow for a seamless cohesion with existing developed interfaces.

The proposed ODP area and subsequent development has been design with managing stormwater appropriately (and practically) through collaboration between three waters engineers, landscape architects and Council officers, as well as seeking out opportunities for active and passive open space and establishing links to existing open space networks and adjacent established communities.

3. Site Context & Receiving Environment

3.1. Regional Context

The Site is located at:

- 126 Sparks Road (Lot 1 DP 412488)
- 17 Northaw Street (Lot 2 DP 412488)
- 36 Leistrella Road (Lot 3 DP 412488)
- 240 Cashmere Road (Lot 23 DP 3217)
- 236 Cashmere Road (RS 41613)
- 200 Cashmere Road (Lot 1 DP 547021)

The site is approximately 7.5km from Christchurch city centre and borders residential the suburbs of Somerfield and Spreydon to the northeast; Hoon Hay to the east; Westmorland to the southwest; Halswell north to the west (across Henderson's Basin); Cracroft to the southeast; and Cashmere further to the east. The Site is currently zoned as RNN and RuUF and has several landowners, namely, Cashmere Park Ltd, Hartward Investment Trust and Robert Brown.

The wider Hoon Hay neighbourhood is serviced by the Orbiter (c) bus, traveling along Hoon Hay Road, continuing east on Rose Street and Cashmere Road. The bus stops along Hoon Hay Road are shared with the number 44 Bus, and are within an 800m (or 10min) walk from the majority of the Site.

Westmorland, to the southwest of the Site, is serviced by the number 44 bus, travelling along Cashmere Road, Hoon Hay Road and Rose Street, sharing bus stops with the Orbiter (c). These bus stops are generally within 400m (or 5 minute) walk from the Site boundary.

Located between Sparks Road and Cashmere Road, Henderson's Basin provides a significant natural stormwater storage system. Areas within the Site are currently identified in the District Plan as being within a "Flood Ponding Area", which typically limits certain types of development, with its primary function reserved for that of capacity for flood storage. This ponding area extent has since been modelled using more accurate measurements for this application.

A core focus to produce an amended ODP and rezoning for the Site is respond to, and integrate with, the existing surroundings, environment, and communities. It requires flexibility to evolve as the surroundings change, whilst establishing a clear foundation for future communities to feel connected to the place. Understanding the context of the Site has been central to the design response for the ODP, and key structural elements in the receiving environment that have influenced the design direction are illustrated below (Figure 4).

3.2. Neighbourhood Context

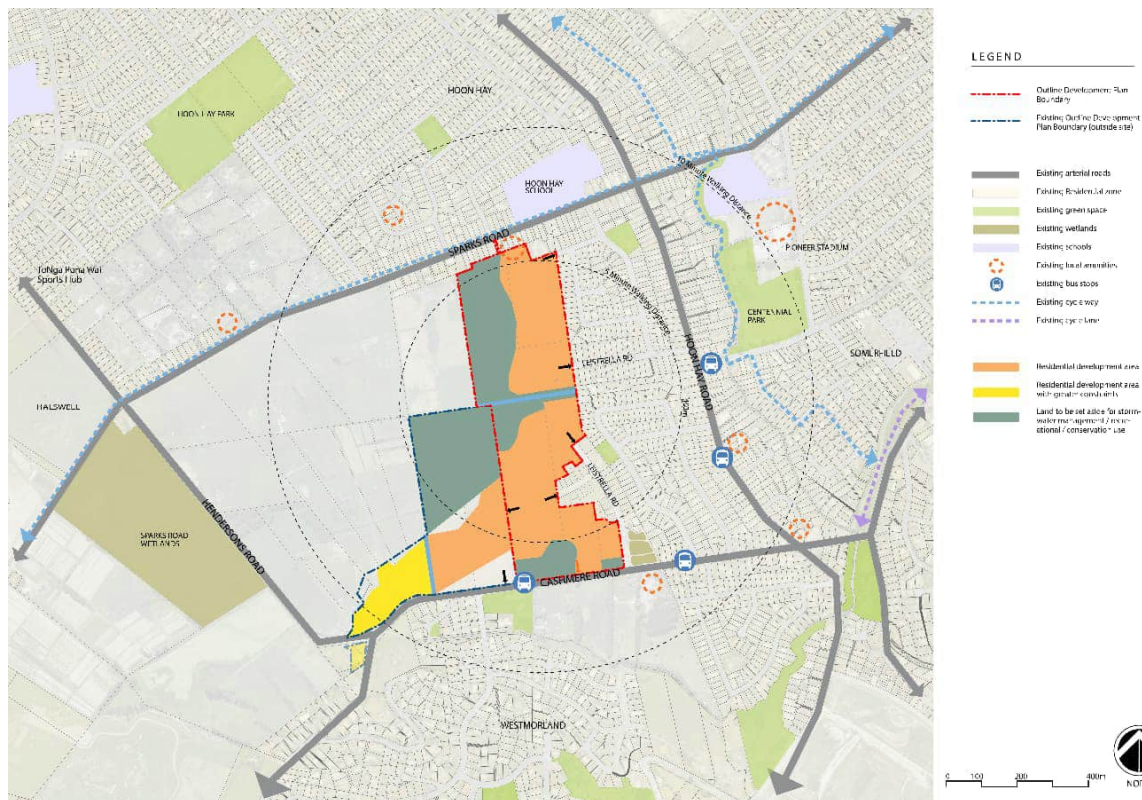


Figure 4. Context Plan

3.2.1. Land use

The wider undeveloped portion of the Henderson's Basin area has a peri-urban land use character, comprised generally of established lifestyle and rural residential type activities, including small scale pastoral grazing, orchards, and within the central basin to the west of the site closer to Hendersons Road, pockets of marshland (particularly within Lot 11 DP 3217).

Existing residential neighbourhoods to the north and east of the site are almost exclusively low-density single-family homes, the majority of which are single storey- with limited two-storey. The north of the Site is bounded by old 1.8m solid timber fencing demarcating the back boundaries of older dwellings fronting Sparks Road, close to the medical centre and Hoon Hay School. To the east is one of Hoon Hay's most established residential neighbourhoods centred on Centennial Park as the primary community node, and the Nor'West Arc offroad cycleway than runs north south through this area.

To the west is an expansive area of open land utilised predominantly for light pastoral activities. CCC owns land within this area and intends to increase the opportunities for wetlands, planting of native species and recreational use to the west of the site, as outlined in the South West Area Plan.

The southern boundary of the Application Site fronts Cashmere Road and is close to the entrance of Orderings, a large nursery with cafe, as well as further east along Cashmere Road, where there is a small neighbourhood centre, with several service and fine grain retail shops including a popular local café, and gift shop.

3.2.2. Scale and built form

Although surrounded by significant roading infrastructure and residential development, the Site retains an element of peri-urban character within the rurally zoned areas of the wider Hendersons Basin area, although the site is becoming increasingly residential in character as the RNN zone has steadily constructed with new dwellings along the south of Listrella Road of Cashmere Road, that extends into the site.

3.2.3. Movement and access

The Site is bound by roads of minor arterial status, with State Highway 75 defining the western edge. The Site is within a 10 min. walk (800m) to existing amenities to support residential living, including a plant nursery, café, playgrounds (various), medical centre, bus stops, gas station and schools. Quarryman's Trail is located within proximity to the Site on Sparks Road, with a dedicated shared path that leads into central Christchurch. Bus stops are located along Cashmere Road, Hoon Hay Road and on Sparks Road close to the Hoon Hay intersection.

Schools within a 10 min. walk (800m) of the neighbourhood include Hoon Hay School, Our Lady of Assumption School, and Te Kura Kaupapa Māori o Te Whanau Tahī. Located further afield in the wider community are Cashmere High School, Cashmere Primary, Hillmorton High and Somerfield School.

There is a disjointed network of green space in the neighbourhood vicinity, including Kaiwara Reserve extending into the site, Rydal Reserve to the east, Francis Reserve to the south, and Sparks Road Wetland with a 1.8km shared loop path to the west. Located further afield is Centennial Park and Pioneer Pool to the northeast of Hoon Hay Road interface. The proposed ODP design seeks to connect the disparate open spaces and road networks present around the Site through new roading connection as well as an integrated off-road shared pedestrian cycle path network, to expand the passive and recreational open spaces readily accessible to residents and wider Hoon Hay community.

3.2.4. Natural systems

Historical systems are important to the site, with two key references in this regard, namely:

a) Christchurch Black Maps (Appendix B)

<https://opendata.canterburymaps.govt.nz/maps/c5f7d946b8fb43ce80fd3441cde5b78e/explorer?location=-43.577404%2C172.601208%2C14.24>

b) Otautahi Christchurch Ecosystems (produced by Lucas & Associates for Christchurch City Council) (Appendix C)

https://experience.arcgis.com/experience/4a2df6a4560e42f6b91e42593da8630e?data_id=datasource_2-177ebbf49c6-layer-36-18513168cf6-layer-21%3A4

While most of Christchurch has been drained and this is historical data, it influences future landscape strategies of the district, and highlights potential values- landscape or cultural, that could be considered. On the latter, the Applicant has been proactive in consulting mana whenua as part of this process, and while entities such as Mahaanui Kurataiao Ltd will be involved in any subsequent resource consent application (which is when they have advised they would typically be involved), we have received confirmation that, on a high level basis, they do not object at this stage to the proposed development- which hinges on extending the residential zone (to an appropriate density), and will include a high level of natural ecosystem restoration.

The Otautahi Christchurch Ecosystems mapping is also useful, highlighting the site as 'Wet Plains' with endemic flora being classified in this mapping system as "*spring-fed and drainage impeded lands - includes Kahikatea, Te Kakahi, Tōtara and Pūkio ecosystems*" and it is proposed that any planting of stormwater basins, low lying areas outside of the proposed residential area to be rezoned, be planted in line with this document to achieve a high quality outcome with species that used to occur in the

area, with the ultimate aim of this development contributing to the future effort of establishing the Hendersons Basin areas a 'destination lowland urban forest/ wetland' – similar to the appeal of Travis Wetland to the north east of the city (albeit with less standing water and a different flora mix).

3.3. Site Context

The Site is bordered by Rural Urban Fringe Zone to the west and south and existing Residential Suburban Zone (Proposed MDRZ) to the north, east and southwest.

The Site's southern interface fronts onto Cashmere Road and is located opposite Francis Park and Oderings. Cashmere Road is classified as a Minor Arterial Road in the District Plan- and this classification status determines certain intersection spacing requirements that are to be complied with for the site being 150m between this arterial and any local roads entering the site. The Site is a single row of allotments removed from Sparks Road, also a Minor Arterial Road, with only a minor 6m wide legal connection from the site through to Sparks Road.

The Site is predominantly flat with an open character, characterised by shelterbelts, established exotic trees, man-made boxed drains bordering the suburban development of Hoon Hay and running central to the site and collecting piped conveyed stormwater from upper piped networks to the north through a Rydal Street connection. These provide a 'modified rural outlook'- with no 'natural' waterways observed. The large mature exotic trees around the perimeter of the Site strengthen the peri-urban aesthetic common to much of Hoon Hay. The species of the trees vary from undesirable invasive species such as willows to well-formed Eucalyptus trees. Vegetation on the Site is predominantly exotic, consisting of pasture and shelterbelt plantings of willows, pine, eucalypt, macrocarpa, and poplars.

Much of the remaining indigenous vegetation is fragmented and confined to minor drains and waterways outside and to the west of the site, which, while grazed intermittently by stock, could be expanded on in the future to the west of the sites developable area to restore and enhance this poor-quality environment, and returning it to a biodiverse and ecosystem rich natural system bordering new residential areas.

The Site is bisected from east to west by a box-drain which will be anticipated to be naturalised and incorporated into a natural depression that occurs in this location. Due to the low-lying nature of Henderson's Basin at the base of Cracroft Hill, and the restricted flow capacity of the Heathcote River, the Site is a natural ponding area for floodwater following major rainfall events- however it is noted that anecdotal evidence suggests recent major upgrades to Hoon Hay valley with a control gate and large-scale detention networks installed have mitigated this issue. The Site has a strong, salient, hydrological character.

Viewshafts east across the Site highlight the southern Port Hills, allowing for views to Mount Pleasant across to Gibraltar Rock.

3.4. Historical & Cultural Significance

Henderson's Basin is culturally significant, being the remnant of a former wetland associated with the mahinga kai area known as Ōtawhito, which was also the headwaters of the Cashmere Stream. Kā Huru Manu lists an area to the west of the Site as Te Kuru, which is the Māori name for the wetlands drained by the Ōpāwaho (Heathcote River). This was referred to by European settlers as Cashmere Swamp.

The landcover has undergone substantial modification due to city wide draining practices and urbanisation, with a series of field tile drains, swale and box drains that serve a dewatering purpose

across the site, combined with stock grazing that has significantly reduced the size and quality of any wetland and marginal swamp habitats over decades. It is proposed that the development and restoration of the Site (with residential, stormwater management, stock exclusion and the establishment of an urban forest canopy) will enable the system of waterways, wetlands and wider receiving environment of Henderson's basin to be reconnected and enhanced through landscape restoration on the sites western boundary facing the Hendersons Basin ponding area- as well as some localised restoration planting along Cashmere Road interface.

4. Site Analysis

The following analysis is a response to existing Site features as well as the proposed ODP. It describes primary features that influence the design of the Site, as well as outlining certain mitigation and design techniques.

4.1. Constraints

- Visual and noise effects from Cashmere Road and Sparks Road due to the volume of traffic as they have minor arterial status, will need to be mitigated through separation and landscape treatment.
- Lack of connectivity between the Site and surrounding community due to current zoning not extending either north or south to Cashmere Road. Adjacent reserve spaces to the east and south of the Site are disconnected and inconvenient to access in a logical manner with the current zoning.
- There is an element of rural character that requires careful design of interfaces such as against Cashmere Road, which may be bolstered by retention of some large exotic trees and shelterbelts at least in the short term or reserve planting to provide this retention of open space character along this interface.
- Henderson's Basin provides a significant natural detention storage system in the upper portions of the catchment. Areas within the Site are currently identified in the District Plan as being within a "Flood Ponding Area", which means that the stormwater system will have to be carefully incorporated into the site layout and residential ideally not proposed within the ponding area where possible.
- The adjoining rural lifestyle land use/ intermittent farming activity to the west of the Site creates a potential for reverse sensitivity issues, and these interfaces will need to be considered with care such as providing open space where possible next to these more rural areas.
- Natural depressions/ site levels determine lot layout and dictate the placement of stormwater management elements.



Figure 5. Constraints Diagram

4.2. Opportunities

- The Site is relatively flat with road frontage on one side – this creates an opportunity to create an attractive frontage and create strategic vistas into the Site from this frontage.
- There is opportunity to contribute to Hoon Hay's and Westmoreland's recreational network by connecting the adjoining development's open space network through the stormwater management reserve and pedestrian/cycle routes, including enhancing the crossings over Cashmere Road.
- There is an opportunity to connect to adjoining roading networks with a high degree of legibility that can support active transport and future public transport routes, such as shared pedestrian cycle paths to both Sparks Rd and through the existing Kaiwara Reserve.
- The Site presents an opportunity to meet the market demand for residential sections in the sought-after neighbourhood of Hoon Hay, while allowing for intensification if zoned MDRZ.
- The box-drain running perpendicular through the middle of the Site creates an opportunity for significant visual and ecological improvement of this ephemeral waterway through using native riparian planting endemic to the area.
- Integrate a comprehensive stormwater system that treats water from in and around the Site which ultimately reduces flood risk along the Heathcote River, with additional benefits of improved water quality and increased recreational areas.
- The Site has significant views to the Port Hills to the northeast which presents the opportunity to frame these views, for the development and wider community.
- Retention of peri-urban interface and character by creating appropriate interfaces to surrounding neighbourhoods, utilising permeable fencing typologies, varying rooflines and pitches, and promoting single storey housing along these boundaries if/ as appropriate- with areas of intensification carefully located in pockets to reduce the visual bulk and effects of higher density typologies.



Figure 6. Opportunities Diagram

5. Description of Proposal

5.1. Proposed Outline Development Plan

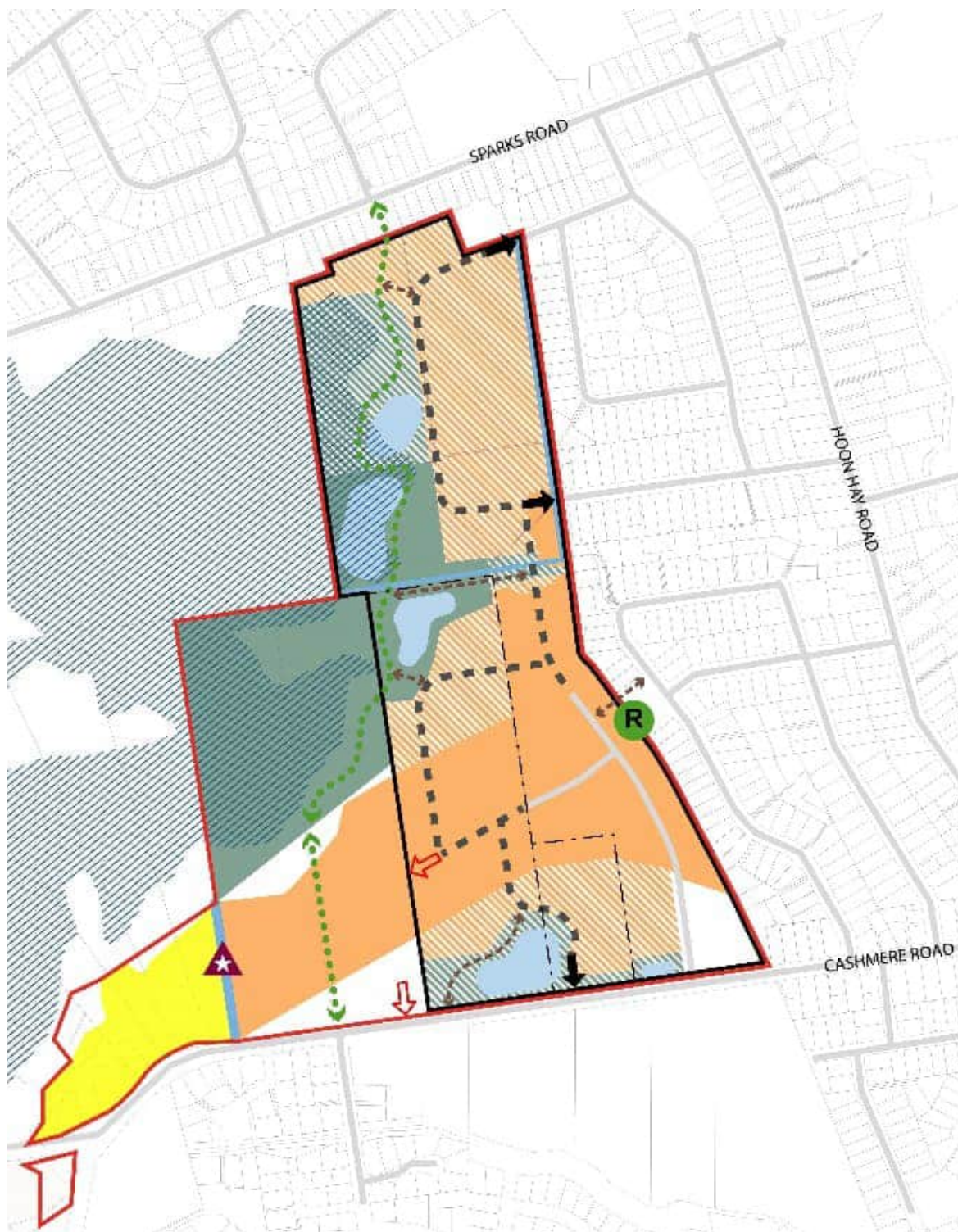


Figure 7. Proposed Outline Development Plan (see Appendix A for larger image)

The above ODP is based on a functional layout for the site that is explained further in sections 3.2 – 3.7 below.

5.2. Land Use

The proposed zone change of the Site from the existing RuUF and RNN Zone to MDRZ in this location aligns with the intention of the NPS-UD, integrates with an existing urban interface within the township of Hoon Hay and facilitates a healthy transition from residential development to more rural lifestyle land use to the west. Although the proposed density is higher than the surrounding existing developments, the careful placement of reserves, road and allotments alongside strategic interface treatments, will play an important role in ensuring the development is visually cohesive with the adjoining rural land use.

5.2.1. Residential Land Use

The development of a residential community on the Site would meet the anticipated market demand for residential properties in the area, with the addition of increased diversity among living environments within Hoon Hay. The ODP designed based on MDRZ is anticipated to achieve an average density of 20 dwellings per hectare.

The development provides integrated living environments that would reflect the peri-urban character of Hoon Hay through careful location of lots and reserves in a way that respects the visual character of surrounding rural land uses. Using the proposed stormwater management area west of the Site as a natural boundary between the residential development and adjoining rural land use will preserve an open rural outlook to the west, and moreover, will enhance and restore the environment within the site boundary that is set aside for stormwater management.

5.2.2. Arrangement of Lots

The semi-rectangular shape of the Site particularly in the north allows for a variety of allotment sizes, with a variety of shapes and orientations adjacent open space, providing future landowners with a range of options. This development also creates a community that is within a 10-minute walking distance to existing services and community amenities, such as the medical centre and Hoon Hay School.

5.2.3. Potential for Density Diversity

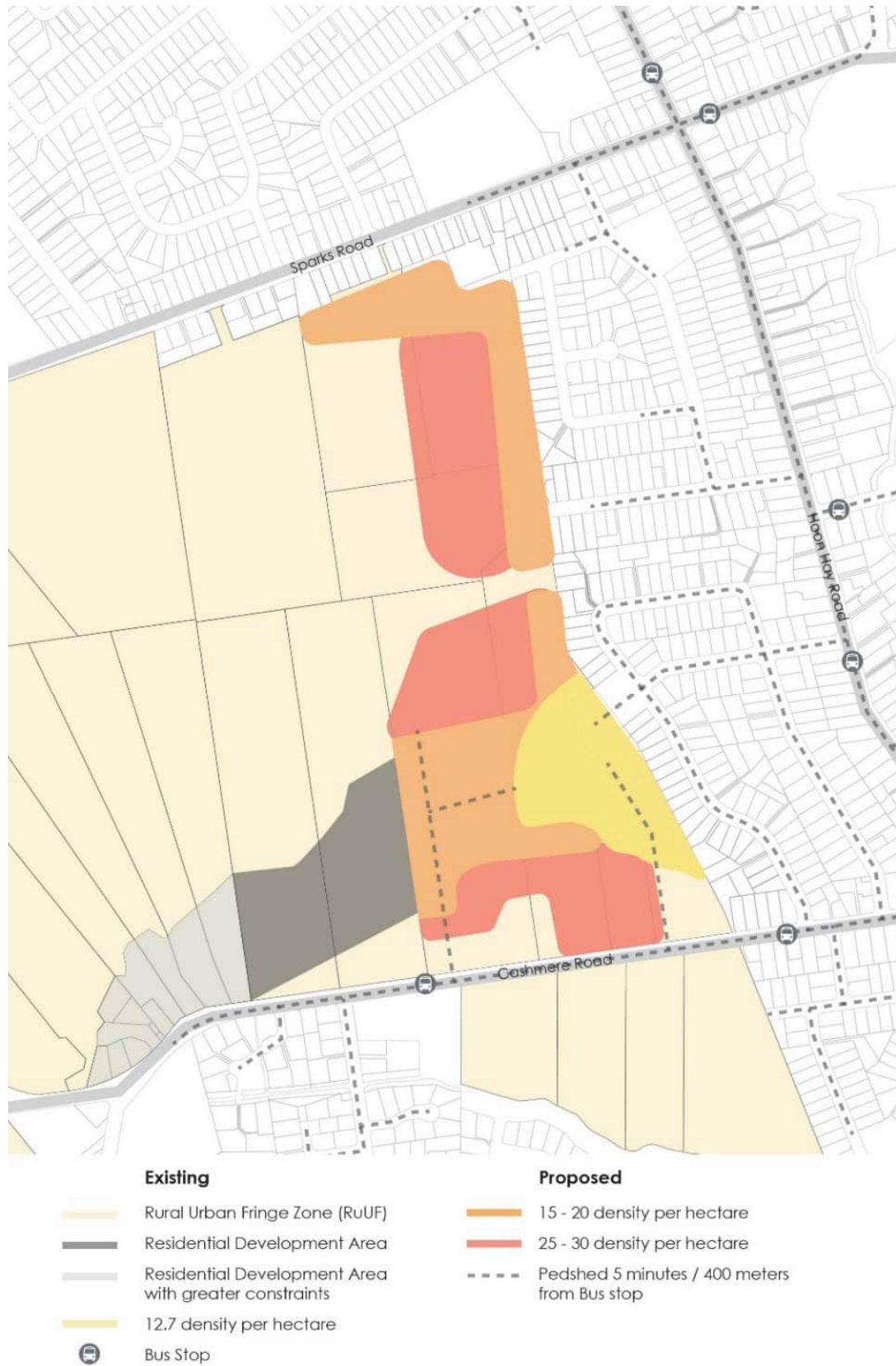


Figure 8. Densities Diagram showing an ideal arrangement of densities- within an overall site average of 20dph. Note dashed lines show 400m 5minute walking pedshed- with the 800m 10minute walking pedshed covering the entirety of the proposed residential area within the application site

To establish a diverse community that fosters socio-economic cohesion, where residents can upsize or downsize without having to leave their neighbourhood as their housing needs change throughout their life, it is imperative to balance affordable homes through a range of allotment sizes, forms and densities. The variety of typologies also enables affordable housing options for first-time homebuyers and low-maintenance options for retirees.

To satisfy the need for more affordable housing on the market and a wide range of densities, the Site has the capacity to allow for the potential placement of smaller, higher density allotments more suited to areas within walkable catchment to public transport but also close to open space areas – for communal outdoor living opportunities. These locations are more specifically ideally anticipated adjacent the open space reserves along Cashmere Road and the open space and stormwater reserves adjacent Hendersons Basin ponding area to the west, and away from existing low-density housing interfaces where the built form standards of this proposed zone could cause afternoon shading issues.

Moreover, these areas of intensification are appropriately located near significant open space networks, access to multiple transportation modes (walking, cycling, bus and private car networks), and provides passive surveillance over the recreational reserve areas, particularly with the orientation of lots and outdoor living spaces directed towards the open area.

5.3. Connectivity



Figure 9. Figure 13. Connectivity diagram- 400m (5 minute) walking radius from the north and south portion

5.3.1. Road Hierarchy

Access to the Site is from the southern Site boundary on an existing Cashmere Road entrance and proposed road connections located to the east on Northaw Street, Leistrella Road and Emily Knowles Drive, extending through from established residential areas. The placement of both Leistrella (existing) and the proposed entrance at least 150m away, with open space and swale reserve mitigates the issue of having individual driveways fronting onto an already busy Cashmere Road- minimising the numerous conflicts that would occur if dwellings had this direct access.

The overall roading strategy proposed within the development is consistent with the surrounding context and has been developed to integrate with the existing landform and natural features present, to minimise impact on the extensive stormwater management reserve.

Three roads are proposed to link the development with the existing residential area to the east, creating logical and efficient vehicle access, with local roads anticipated to service the interior of the neighbourhood. The local road off Northaw Street has been located to provide a linear split between the residential area to the east, and the stormwater reserve to the west. This split manages the integration for public use of the reserve, adding safety through passive surveillance while managing privacy for future residents. Where this road adjoins open space, there is an opportunity to narrow the carriageway, slow traffic, and implement threshold features such as paving to delineate these slower traffic areas- created neighbourhood streets that double as shared space against these reserves.

These measures would improve the pedestrian environment by widening the footpath and creating more space for amenity planting, as well as having the footpath adjoining a reserve. Narrower roads located centrally within the development provide for slower vehicle speeds and a safer environment for community interactions.

Due to the Site's peri-urban character, it is encouraged roads have a high level of amenity and landscape design elements within the streetscape to create an attractive and aesthetic environment- similar to those already designed in this area including Leistrella which maintains a wide legal dimension, wide berms for street trees, but narrow 6.4m carriage with formal parking outside these lanes. This is especially important in prominent areas such as entrances, internal intersections, road narrowing thresholds, and areas adjacent to open space networks, but also overall, this type of design at subdivision and engineering approval stages will discourage use of the roads as a shortcut to Hoon Hay Road and will promote a slow speed environment that will be necessary for any higher density zone which is proposed.

5.3.2. Pedestrian and cycle network

The development's location is in close proximity to existing community amenities and employment opportunities within Hoon Hay neighbourhood centre as well as recreational areas such as Kaiwara and Francis Reserve, consequently promoting social interaction and wellbeing.

A well-connected pedestrian and cycle network within the Site's roads and informally through reserves creates meaningful links to existing amenities and integrates well with existing recreational routes in the neighbourhood. The provision of green links in key locations enhances the walkability of the development, enabling better connections to local amenities and aid in avoiding potential issues of isolation and under-serviced communities. There is a linkage from the northern boundary of the Site on Sparks Road, which will provide a shared-path connection to the recreation network to enable connectivity convenience to the wider neighbourhood.

The stormwater reserve along the western edge of the development connecting Cashmere Road to Sparks Road would contribute to a safe and pleasant walking and cycling environment, along opportunities for pedestrian and cycle links that could connect to wider networks.

5.3.3. Amenities

The area is well served by an array of amenities and the ODP aims to seamlessly connect the new community to the existing urban fabric, including the playground in Kaiwara Street, tennis court and playground in Cashmere Road and Worsleys Reserve, Ashgrove Reserve and Princess Margaret Hospital landscaping further eastwards along Cashmere Stream. There are several developed communities surrounding the Site, with Hoon Hay to the north, Barrington to the north-east, Cashmere to the east and Halswell to the west. Within this vicinity are various local shops, service stations, medical centres, shopping malls, pool, libraries, sports clubs, and community services that will comfortably serve future residents.

The Site's central neighbourhood node is based around the expansive network of green space reserves and wetlands. The emphasis on these spaces will harmoniously serve both people and the environment through ecosystem servicing and amenity values. The central placement encourages active management from future residents to enhance the long-term viability of the proposed future urban forest/ wetland environment.

There is an opportunity to integrate increased recreational areas within the centre area to further foster a sense of well-being and encourage opportunities for social interaction within the community. Natural elements for play or exercise equipment can be incorporated for a low-impact design option and care will be taken to locate equipment in areas with high passive surveillance and open vistas to promote a safe and welcoming environment. Approximate location, size and function of recreational infrastructure can be determined at detailed design stage. The inclusion of these 'active' amenities is expected to increase the marketability and re-sale value for residents as well as increasing quality of life for residents.

5.4. Blue and Green Networks

The proposed blue and green networks are key connectors to nature that allow the Site to achieve a holistic, biophilic design by maximizing both physical and visual access to the environment. A large percentage of land has been designated for comprehensive stormwater management, or otherwise planted low lying balance areas that are envisaged would be community assets/ reserves in conjunction with restoration (naturalising existing box drains) and recreation (providing access into the stormwater basin areas). These networks protect and accentuate the historical/ natural narratives of the Site that are currently lost in its existing ecosystem- degraded state, while emphasising the natural drainage, vegetation patterns and landmarks.



Figure 10. Blue and Green Networks Diagram

5.4.1. Blue Network

Key components informing the ODP are the drivers of enhancing water quality through treatment and alleviating flood risk along the Heathcote River and respecting natural catchments – avoiding mixing between natural systems.

Meandering shared paths through the treatment wetlands delineate spaces for water collection, treatment, and cleaning, while promoting habitat creation through sedimentation and planting. An additional benefit of the proposed planting is assisting in absorbing livestock effluent from paddocks to the west, given the existing land use of grazing livestock. The landscape concept addresses naturalising existing waterways, deepening portions to increase detention volumes, and incorporating unique natural features such as stormwater management areas to increase biodiversity.

The proposed ODP incorporates an enhanced, naturalised approach to the existing stormwater conveyance system. The Site has a concrete pipe off Sparks Road which enters the existing open drain. Our intention is to continue the pipe along the proposed road, to the west towards the basin, where the water will be naturalised into a proposed swale and treatment system. This integration will provide a soft edge to the development and add an ecological corridor to support habitat for invertebrates and aquatic species- that is currently not achieved in the box drain that is exposed to the sun with not vegetation. This addition has been considered with expertise from our team of three water engineers – Please refer to the Infrastructure Report for further detail.

There are opportunities to further incorporate functional systems such as swales and potentially rain gardens into the streetscape, to guide multi-modal transportation through the Site while treating stormwater. These integrations allow community to passively engage without interfering with the natural processes. The location and design of these interventions can be confirmed at a later detail design phase.

5.4.2. Green Network

The proposed reserve networks are multi-functional and designed to incorporate formal and informal recreational routes, provide amenity, as well as conveying and treating stormwater. The green network system has been thoughtfully located to promote Crime Prevention Through Environmental Design (CPTED) by locating these amenities next to adjoining and proposed roads and dwelling frontage- not backs, to enable passive surveillance.

The reserves soften the surrounding built form of the development with vegetation and minor landform contouring. The provision of passive and active recreational elements will add interest and establish well-functioning spaces that promote social interaction.

5.5. Aesthetic Considerations

Developing a sense of place within this Site provides a significant restoration opportunity. Value has been placed on the previous ways in which Henderson's Basin was historically shaped and occupied to acknowledge the Ōtāwhito wetland that has shaped the present environment. The ODP has incorporated various elements that evoke subtle cues to the landscape using network orientations, viewshafts and proposed restoration- which will be implemented at future design phases of development, such as including local endemic species in landscape strategy for example.

The existing landscape features and waterways within the Site such as Cashmere Stream will be enhanced by re-establishing native plants local to the area, integrating modern stormwater management systems, and bringing to life several local places and plant species that have value to mana whenua. This will aid in establishing a strong identity throughout the development.

5.5.1. Wetland Restoration

The opportunity available with the proposed Plan Change is to integrate a comprehensive storm water system that treats water from in and around the Site, whilst creating an environment within the community that is engaging from an ecological standpoint. Tangata whenua values will benefit from enhanced protection and restoration efforts due to Henderons Basins association with both the Ōpāwaho/Heathcote and Huritini/Halswell Rivers.

The incorporation of wetlands and stormwater systems will ultimately reduce flood risk along the Heathcote River with additional benefits of improved water quality and increased recreational areas. Refer to flood modelling undertaken as part of this application – Please refer to the Infrastructure Report for further detail. Incorporating the stormwater management and wetland areas into the proposed development softens the built form and supports a network of pathways, roads, accessways while recognising the history of former wetlands that spanned the catchment.

5.5.2. Viewshafts over Henderson’s Basin and Port Hills

The Site has significant views to the Port Hills to the northeast which presents the opportunity to frame these views, for the development and wider community. The proposed layout endeavours to maximise the outlook across Henderson’s Basin wetlands and allow visual and physical access to the reserves.

The development provides visual permeability throughout the Site to preserve important viewshafts through alignment of connection networks and corridors on a north and north-east axis to emphasise the prominence of the Port Hills.

5.5.3. Protection of the Rural Interface and Character

There are opportunities to retain existing vegetation and established trees, to preserve a sense of maturity and peri-urban character across the Site. Established shelterbelts and rows of mature trees located near the Cashmere Road boundary may be appropriate to keep within the development which can be determined at a later stage. There are also opportunities to further develop a sense of place into public spaces, including the reserves and walkways, through educational species, naming of areas, creative interventions, and interpretative signage.

Other mitigation measures involve creating appropriate interfaces to surrounding neighbourhoods by utilising permeable fencing typologies, varying rooflines and pitches, and promoting single storey housing along these boundaries. These measures, coupled with the separation between existing residential and the proposed development by roads and reserves, are expected to minimise visual edge effects and maintain a peri-urban character.

5.6. Key Interfaces

5.6.1. Cashmere Road interface

The section of the Site fronting Cashmere Road will need to be visually cohesive with the adjoining land uses. The placement of street trees in front of the development, or retention of existing trees in this location, in combination with extensive stormwater treatment areas and off road pedestrian linkages, will play an important role in preserving and enhancing the local visual amenity and soften the interface while promoting activity.

5.6.2. Residential interface to the north and east

The existing residential development of Hoon Hay to the north and east of the Site has a lower density suburban aesthetic. As the land use and section sizes proposed along this interface will be similar to that of Hoon Hay, with an emphasis on protection of shading on the adjacent existing allotments

afternoon sun, this boundary will be visually cohesive with the adjoining residential land use. Refer to the density diagram for anticipated density placement areas.

5.6.3. Rural Open Space interfaces

The western interface with the Site will preserve an open outlook to the existing RuUF zone.

Measures such as open-style fencing, landscape treatments and potentially building setbacks would be appropriate mitigation for this boundary and should be considered at the development stages.

Where possible, the retention and addition of large trees along this boundary would further enhance and preserve Hoon Hay's peri-urban character. Further specialist investigation is required to determine which existing trees can be retained on the Site, along with appropriate replacements.

6. Urban Design Assessment

6.1. Urban Design Protocol

This section provides a summary assessment of the ODP against the MFE Urban Design Protocol (UDP), which sets out key concepts to create healthy, safe, and attractive living environments where business, social and cultural life can flourish. An evaluation of the ODP against the key concepts has been undertaken below.

6.1.1. Context

The UDP states 'quality urban design sees buildings, places, and spaces not as isolated elements, but as part of the whole town or city. For example, a building is connected to its street, the street to its neighbourhood, the neighbourhood to its city, and the city to its region. Urban design has a strong spatial dimension and optimises relationships between buildings, places, spaces, activities, and networks. It also recognises that towns and cities are part of a constantly evolving relationship between people, land, culture, and the wider environment.'

The Site's proposal is a coherent development of places, spaces, streets, and activities that relate well to each other. It also recognises its place within the wider Hoon Hay community and environment, as well as establishing connectivity to local recreational networks and surrounding open space networks. It has a high level of diversity and integration internally and its design is sympathetic to its existing external interfaces with Sparks, Hoon Hay, and Cashmere Roads. Given that the Site is surrounded by urban communities and vast open space areas, along with the Site's integration with surrounding recreational routes, the ODP proposal allows for residential intensification while encouraging connectivity to the surrounding area.

6.1.2. Character

The UDP states 'quality urban design reflects and enhances the distinctive character and culture of our urban environment, and recognises that character is dynamic and evolving, not static. It ensures new buildings and spaces are unique, are appropriate to their location and compliment their historic identity, adding value to our towns and cities by increasing tourism, investment, and community pride.'

Existing elements of the Site, including the historical wetland as well as the Tōngata Whenua values embodied by the land, give the development a strong base identity for reverting the Site to its pre-settlement use for ecological, cultural, educational and recreational benefit. Mahaanui Kurataiao Ltd has been consulted and while they will be involved in subsequent stages with more information, they have not objected at a high level to the proposal.

The ODP has been guided using strategic elements such as recreational networks and landscape elements as the focus of the design, utilising significant viewshafts and reshaping the historical environment. The existing peri-urban character has been retained, or in most cases, promoted and

enhanced through protected restorative planting / open space reserve area provision, with a high percentage of allotments located within proximity to the expansive vistas over the Site. The use of lower interface densities and permeable fencing, where appropriate, allows for this cohesion with neighbouring properties on the existing urban edges.

In addition, the character of the development will also be influenced by the streetscape design and the relationship of the proposed densities. Therefore, the road hierarchy, layout of open space areas, configuration of lots surrounding open space and the multi-functional use of these will need to be carefully designed to create spaces will all create a unique identity, promote a slow speed environment, and give a high-quality feel to the development.

Further opportunities exist at detail design level to engage with sculptural elements, interpretive signage, and artistic expression, in collaboration and consultation with appropriate parties.

6.1.3. Choice

The UDP states *'quality urban design fosters diversity and offers people choice in the urban design form of our towns and cities, and choice in densities, building types, transport options, and activities. Flexible and adaptable design provides for unforeseen uses and creates resilient and robust towns and cities.'*

As shown in the ODP proposed zoning, the Henderson's Basin development allows for the creation of diverse living environments, which allow future residents to own or live in a unique product that suits their situation. This uniqueness is apparent within the layout of the Hendersons Basin ponding area, allotments, reserves, and street alignments. The location of densities, including the strategic placement of densities within the overall zone, will encourage a range of housing typologies. It is recommended that if MDRZ is supported, a structure plan could be drafted to ensure higher density areas of 25dph or higher are designated in the correct location- in collaboration between the landowners and Council's spatial team, while meeting the overall average density that aligns with MDRZ. This would ensure walkable catchments and blocks with ease of movement to public transport is achieved, unique environments, open space next to higher density, and respected interfaces such as against existing residential are respected and preserved- particularly given MDRZ could technically allow 3-storey next to the existing northern and eastern edges, that are single storey low density and could be impacted by shading.

A fundamental aspect of the design is to situate the majority of allotments within close proximity to open space areas, including the provision for both active and passive recreational space with unimpeded views. The proposed central reserve area will provide an immediate choice of local amenities able to sustain residents. A shared walk and cycle path are examples of the type of activity the Site anticipates and will provide choice and convenience for residents.

6.1.4. Connections

The UDP states *'good connections enhance choice, support social cohesion, make places lively and safe, and facilitate contact among people. Quality urban design recognises how all networks – streets, railways, walking and cycling routes, services, infrastructure, and communication networks – connect and support healthy neighbourhoods, towns and cities. Places with good connections between activities and with careful placement of facilities benefit from reduced travel times and lower environmental impacts. Where physical layouts, and activity layouts and patterns are easily understood, residents and visitors can navigate around the city easily.'*

The development proposes very high connectivity for multi-modal transport and active recreational network linkages to existing, neighbouring urban environments to create cohesion. In addition, recreational and other open space reserves combine with strategic roading links adjoining the Site, providing unique and established connectivity and recreational opportunities for the residents and the public. The use of off-road pedestrian footpaths, cycle ways and shared paths contribute to a safe approach to connectivity. The ODP demonstrates comfortable walking distances to the proposed

reserves, bus routes, and wider amenities by proposing extensive pedestrian and cycle links. These also allow for connections to future surrounding developments for these residents.

6.1.5. Creativity

The UDP states *'quality urban design encourages creative and innovative approaches. Creativity adds richness and diversity and turns a functional place into a memorable place. Creativity facilitates new ways of thinking, and willingness to think through problems afresh, to experiment and rewrite rules, to harness new technology, and to visualise new futures. Creative urban design supports a dynamic urban cultural life and fosters strong urban identities.'*

The Site's variation in lot size, orientation, and density spread, landscape treatment and streetscape design create legibility and expressiveness in demonstrating natural, formative processes. Semi-private and communal open space areas allow for resident 'personalisation' of these spaces, with private access onto public land through established and legible access ways encouraged. Residents can express their own creativity using front garden spaces, particularly along the numerous reserve frontages, as well as within private access lanes, adding to the visual interest and creativity of the development.

The complex nature of the Site's shape creates an irregular and unique development from the initial phase of design. The stormwater management areas and open space networks are designed to complement this unique quality as well as being multifunctional spaces.

6.1.6. Custodianship

The UDP states *'quality urban design reduces the environmental impacts of our towns and cities through environmentally sustainable and responsive design solutions. Custodianship recognises the lifetime costs of buildings and infrastructure and aims to hand on places to the next generation in as good or better condition. Stewardship of our towns includes the concept of kaitiakitanga. It creates enjoyable, safe public spaces, a quality environment that is cared for, and a sense of ownership and responsibility in all residents and visitors.'*

The Henderson's Basin development exhibits elements of environmentally responsive design, particularly regarding treating runoff 'at source' across the Site through naturalised stormwater management systems. Sections have been designed to front or overlook these open spaces, providing passive surveillance of the street corridors, increasing safety for residents, and facilitating a sense of responsibility of these areas. This has the benefit of fostering a community environment with social responsibilities to communal open space areas.

The intention of the development is to be something that the future residents will take pride in and look after. Therefore, the detailed design of the reserves and street scene will be critical in fostering this residential 'guardianship' or kaitiakitanga of public spaces.

Fencing is an important design tool in fostering custodianship. Permeable fencing next to reserves and other open space areas, with care taken to protect residents' private outdoor living areas, typically enhance custodianship of these spaces. It also actively encourages the use and private maintenance of such public interfaces.

Shared community values are very important with a successful subdivision design. The design of the ODP with the connected and integrated nature of open space, allotment layout, and recreational routes will allow for the creation of a socially engaged environment. Thus, residents will take ownership of their communal 'back yard'.

6.1.7. Collaboration

The UDP states *'towns and cities are designed incrementally as we make decisions on individual projects. Quality urban design requires good communication and co-ordinated actions from all decision-makers: central government, local government, professionals, transport operators,*

Applicants and users. To improve our urban design capability we need integrated training, adequately funded research and shared examples of best practice'.

A collaborative approach involving urban designers, planners, Council staff and water engineers has forged a unique and exciting design that is practical on the ground and achieves the fundamental baseline for increased density at an appropriate level. This collaboration between external consultants has involved the Council with the decision making from the outset to create the most appropriate design from both a policy and regulatory perspective.

6.2. Safer Canterbury

As outlined in the 'Safer Canterbury' document, key aspects of the design of the Site reflect principles for creating a safer environment for residents and visitors to the development, such as:

- Designing residential development areas that allow buildings to overlook streets and public spaces.
- Ensuring there are clear sightlines as well as good standard of signs and lighting along recreational routes- while the former is achieved, the latter is enabled at consent stage.
- Encouraging plenty of activity through recreational spaces, routes, and playgrounds- highlighted by numerous pedestrian linkages through and around the site.
- Designing to avoid potential entrapment situations or narrow corridors with only one route option.
- Allowing for Council asset management team to be able to maintain and keep a good appearance of council vested reserves by offering practical designs that do not frustrate maintenance procedures.
- Advocating clear ownership of spaces.

6.3. Christchurch City Council 'New Neighbourhoods Design Guide'

This document has assisted the layout of the various design elements within the ODP, by providing best practice design solutions for an RNN Zone development. Given the application is for MDRZ, collaboration with Council around location of density, such as the density diagram provided- but with the opportunity of creating a more formal structure plan to guide development, is strongly encouraged to enable a high-quality outcomes with less adverse effects.

7. Conclusion

The Site is unique, with its rich heritage and peri-urban, vast open-space character allowing for an innovative design outcome. The design of the ODP is Site responsive, with its intentional layout of open space and densities respecting the existing neighbourhood, landscape features and vistas.

The provision of an extensive wetland reserve, off-road recreational networks and connectivity provide the necessary amenities required to sustain a development such as this through the process of adopting an environmental approach with an innate awareness of the Site's distinct hydrological conditions.

The resulting development promotes a high-quality urban design outcome of mixed density which retains and builds on the existing Site features, while providing opportunities for open-space connections and recreation that are both ecologically sensitive and community friendly. It is anticipated the outcome will achieve a high level of visual amenity and increased quality of life, and allow for the alignment with the NPZ-UD for enabling housing and intensification in appropriate areas.

It is acknowledged that if Council do not support MDRZ for the areas specified within the site boundary as residential area- along with a specific urban design guide and structure plan around location of

density and outcomes, then the applicant would like to propose FUZ as an alternative (as opposed to no zone change) given how this would still be an advantageous development, albeit under FUZ, for the community.



Jade McFarlane

Associate, Landscape Architect, Urban Design Team Leader

Eliot Sinclair & Partners Limited

4th May 2023

8. Disclaimer

This report has been prepared by Eliot Sinclair & Partners Limited (“Eliot Sinclair”) only for the intended purpose as a technical supporting documentation for a Private Plan Change application.

The report is based on:

- Internal activities undertaken by ES (e.g., Desktop review, site investigations)
- Reference external references (e.g., NZGD, NCC GIS)

Where data supplied by Cashmere Park Ltd, Hartward Investment Trust and Robert Brown or other external sources, including previous site investigation reports, have been relied upon, it has been assumed that the information is correct unless otherwise stated. No responsibility is accepted by Eliot Sinclair for incomplete or inaccurate data supplied by other parties.

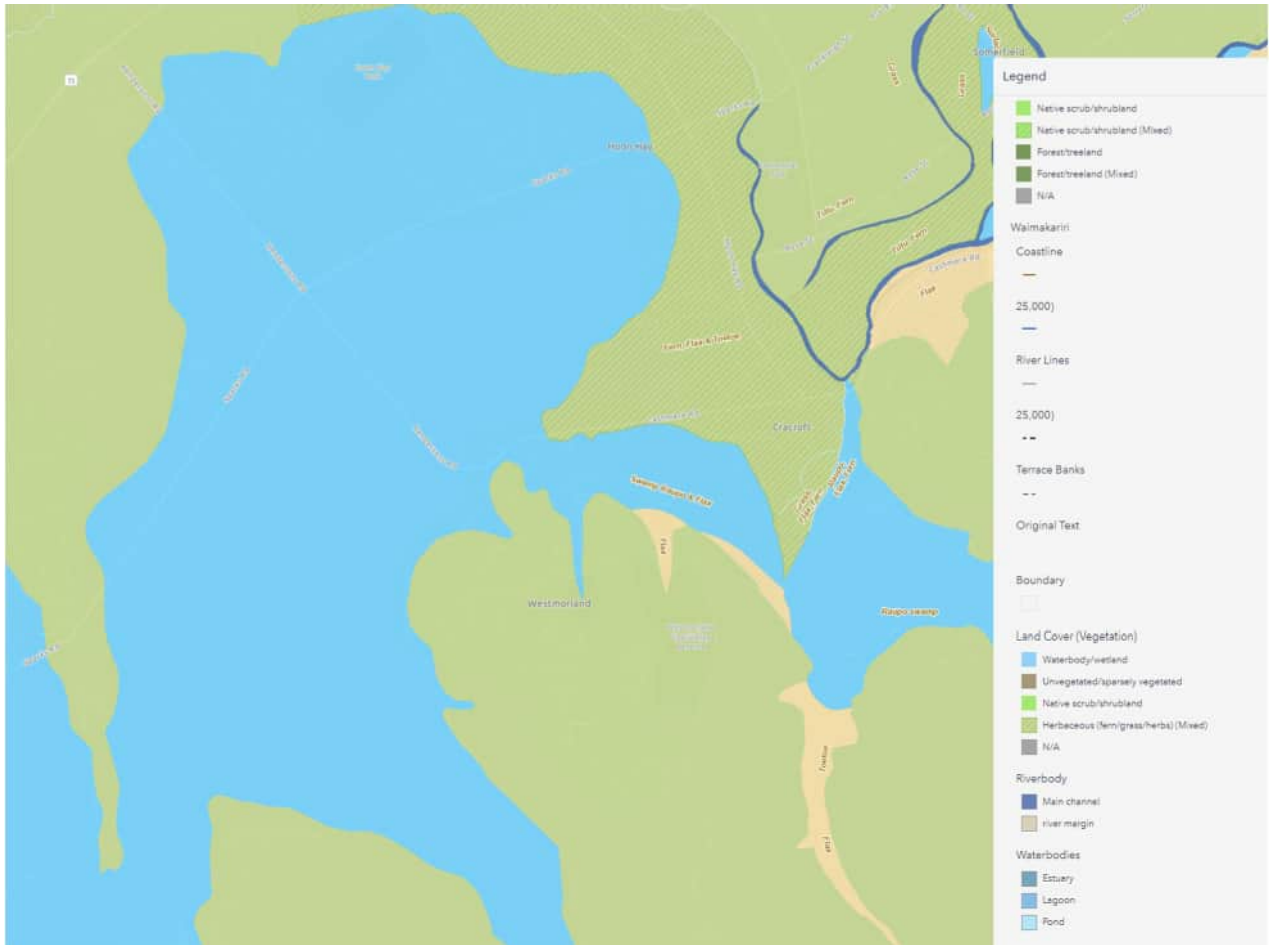
Whilst every care has been taken during our investigation and interpretation of the landscape conditions of the Site to ensure that the conclusions drawn, and the opinions and recommendations expressed are correct at the time of reporting, Eliot Sinclair has not performed an assessment of all possible conditions or circumstances that may exist at the site. Variations in conditions may occur between investigatory locations and there may be conditions that were not detected by the scope of the investigation that was carried out or have been covered over or obscured over time. Eliot Sinclair does not provide any warranty, either express or implied, that all conditions will conform exactly to the assessments contained in this report.

The exposure of conditions or materials that vary from those described in this report, or any update to relevant Christchurch City Council standards or Ministry for the Environment Urban Design Protocol may require a review of our recommendations. Eliot Sinclair should be contacted to confirm the validity of this report should any of these occur.

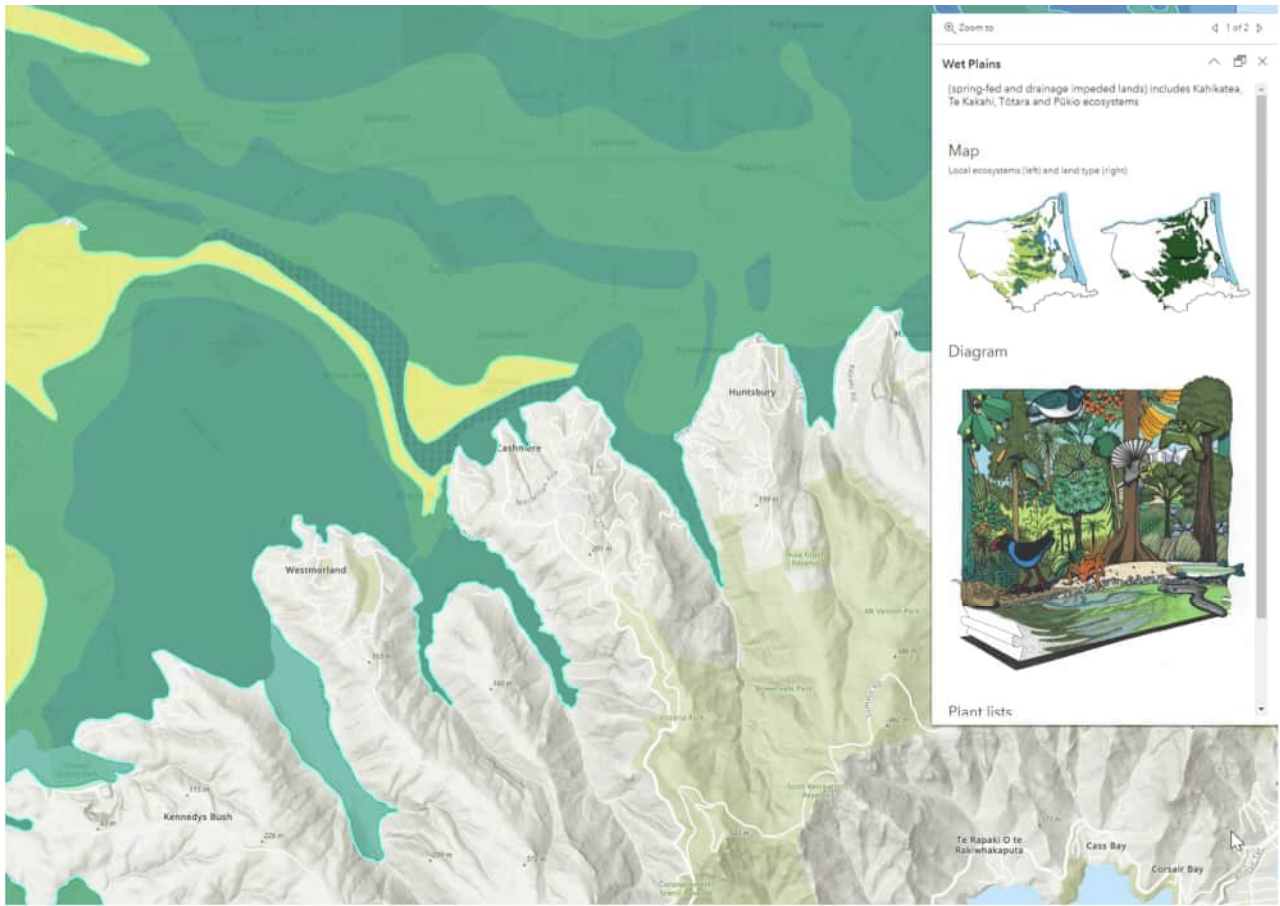
This report has been prepared for the benefit of Cashmere Park Ltd, Hartward Investment Trust and Robert Brown and the Christchurch City Council for the purposes as stated above. No liability is accepted by Eliot Sinclair or any of their employees with respect to the use of this report, in whole or in part, for any other purpose or by any other party.

Appendix A. Proposed Outline Development Plan

Appendix B. CCC Black Maps



Appendix C. Ōtautahi Christchurch Ecosystems mapping and plant lists (Lucas & Associates Ltd)





PLANT LISTS Selected from vegetation natural to wet & peaty Waimairi & Aranui soils

Plant Tolerances:

- = tolerates or needs
- = intolerant
- ½ = tolerant of some
- * = to establish, protect from frost
- t = toxic for toddlers

Staging:

- 1 = 1st structural
- 2 = 2nd year
- 3 = only after canopy closure

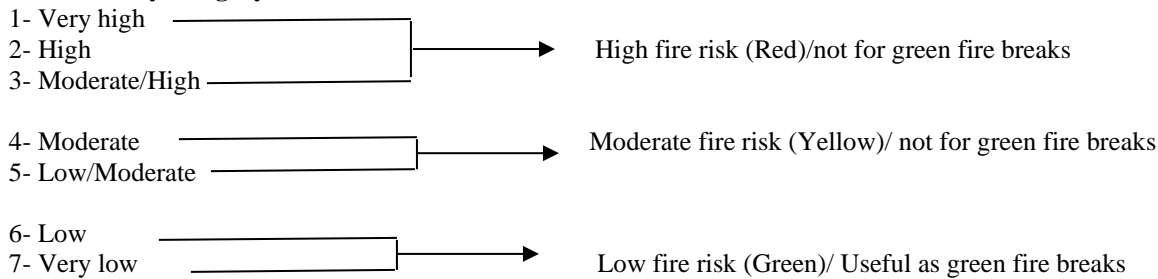
Food for native birds:

- F = Fruit
- S = Bird Seed
- N = Nectar
- B = Bud/foilage
- I = Insects
- For lizards: L = fruit

Plants keyed to landform units, as shown in diagram:

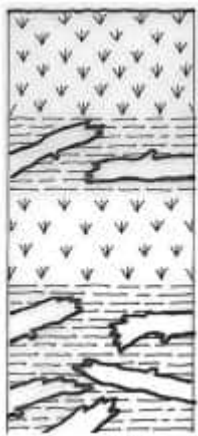
* = to establish, protect from frost; t = toxic for toddlers

Flammability category



		Fire risk	Food	Tolerances					Stages
				sun	shade	wet	dry	wind	
SMALL TREES & LARGER SHRUBS (> 3 m)									
<i>Coprosma robusta</i>	karamū	M	F	■	■	■	½	½	1
<i>Cordyline australis</i>	tī kōuka, cabbage tree	M	F,N,I	■	½	■	■	■	1
<i>Leptospermum scoparium</i>	mānuka, tea tree	H	N,I	■	□	■	■	■	1
<i>Lophomyrtus obcordata</i>	rōhutu, NZ myrtle		F,I	½	■	½	½	■	
<i>Neomyrtus pedunculata</i>	rōhutu, NZ myrtle		F,I	½	■	■	□	□	
<i>Pennantia corymbosa</i>	kaikōmako	L	F,N,I	½	■	■	½	½	
<i>Pittosporum tenuifolium</i>	kōhūhū, black matipo	M	F,I	■	■	½	■	■	1
<i>Plagianthus regius</i>	mānatu, ribbonwood (deciduous)	L	F,I	■	½	½	½	■	
SHRUBS (< 3 m)									
<i>Coprosma propinqua</i>	mikimiki	L	F,L	■	½	■	■	■	1
<i>Dracophyllum longifolium</i> (complex)	totorowhiti, inaka, grass tree		N	■	□	½	½	■	
<i>Halocarpus bidwillii</i>	bog pine		F	■	½	■	½	■	
<i>Myrsine divaricata</i>	weeping māpou		F,I	½	½	■	½	■	
<i>Olearia bullata</i>	crinkly shrub daisy		S,I	■	½	■	½	■	
<i>Plagianthus divaricatus</i>	marsh ribbonwood		I	■	□	■	½	■	
TUSSOCKS, REEDS & GROUNDCOVERS									
<i>Apodasmia similis</i>	oioi, jointed wire rush (H)	H	S	■	□	■	½	■	1
<i>Baumea rubiginosa</i>	baumea, twig rush		S	■	□	■	□	■	1
<i>Bulbinella angustifolia</i>	maori onion, bog lily		I	■	□	■	½	■	
<i>Carex geminata</i>	cutty grass, rautahi		S	■	□	■	½	■	1
<i>Carex maorica</i>	sedge, purei		S	■	½	■	□	■	1
<i>Carex secta</i>	pūkio, tussock sedge		S	■	□	■	□	■	1
<i>Austroderia richardii</i>	toe toe		S	■	□	■	■	■	1
<i>Drosera binata</i>	sundew		I	■	½	■	□	½	
<i>Eleocharis acuta</i>	spike sedge		S	■	□	■	□	■	1
<i>Eleocharis gracilis</i>	spike sedge		S	■	□	■	□	■	

<i>Epilobium spp. pallidiflorum</i>	willow-herbs		I	■	□	■	½	■	
<i>Juncus edgareae</i>	wīwī; tussock rush		S	■	□	■	½	■	1
<i>Phormium tenax</i>	harakeke, NZ flax	L	N,L	■	□	■	■	■	1
<i>Schoenus pauciflorus</i>	bog sedge		S	■	□	■	□	■	1
<i>Sphagnum cristatum</i>	sphagnum moss			■	□	■	□	■	
<i>Spiranthes orientalis</i>	ladies tresses orchid (pink)		I	■	□	■	□	■	
<i>Typha orientalis</i>	raupo, bulrush [becomes invasive]			■	□	■	□	■	1
<i>Urtica linearifolia</i>	narrow-leaved onga-onga			■	½	■	□	■	
<i>Utricularia monanthos</i>	bladderwort		I	■	□	■	□	■	
FERNS									
<i>Lomaria discolor</i>	crown fern			□	■	■	□	□	
<i>Parablechnum novae-zelandiae /minus</i>	swamp kiokio, fern			½	■	■	□	□	
<i>Austroblechnum penna-marina</i>	kiokio, little hard fern	L		■	■	■	■	½	
<i>Parablechnum procerum</i>	kiokio			½	■	■	½	□	
<i>Histiopteris incisa</i>	mata, water fern			½	■	½	□	□	
<i>Hypolepis ambigua</i>	rough pig fern			½	■	■	½	½	
<i>Microsorium pustulatus</i>	maratata, hounds tongue fern			½	■	½	½	□	
<i>Polystichum vestitum</i>	pūniu, prickly shield fern	M		½	■	■	□	½	



Underlayers: Alternating peat with logs & clay/sand. This overlies clay/sand & beach-worn greywacke stones (discoïd) & shell beds.



PLANT LISTS Selected from vegetation natural to these moist & deep Kaiapoi soils

Plant Tolerances:

- = tolerates or needs
- = intolerant
- ½ = tolerant of some
- * = to establish, protect from frost
- t = toxic for toddlers

Staging:

- 1 = 1st structural
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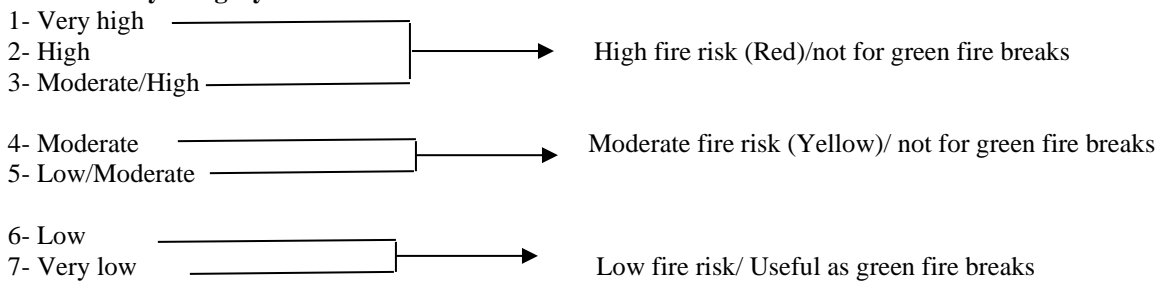
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- I = Insects
- For lizards: L = fruit

Plants keyed to landform units, as shown in diagram:

* = to establish, protect from frost; t = toxic for toddlers

Flammability category



ALL (NOBLE) TREES (> 12 m)

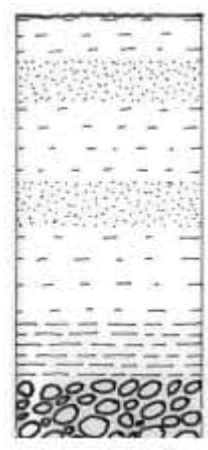
	Fire risk	Food	Tolerances					Stages
			sun	shade	wet	dry	wind	
<i>Alectryon excelsus</i> tītoki	H	F,I	½	■	½	½	□	3*
<i>Cordyline australis</i> tī kōuka, cabbage tree	M	F,N,I	■	½	■	■	■	1
<i>Elaeocarpus dentatus</i> hīnau		F,I	½	½	½	½	□	3*
<i>Pittosporum eugenioides</i> tarata, lemonwood	M	F,I	■	■	½	■	½	1
<i>Plagianthus regius</i> mānatu, lowland ribbonwood (deciduous)	L	I,B	■	½	½	½	■	1
<i>Podocarpus totara</i> tōtara	H	F	■	½	½	■	■	2
<i>Prumnopitys taxifolia</i> mataī, black pine	M	F	■	½	■	½	■	2
<i>Pseudopanax crassifolius</i> lancewood, horoeka	L	F,N,B,I	■	½	½	■	■	2
<i>Sophora microphylla</i> South Island kōwhai	L	N,B	■	½	½	■	■t	2

SMALL TREES & TALL SHRUBS (> 5 m)

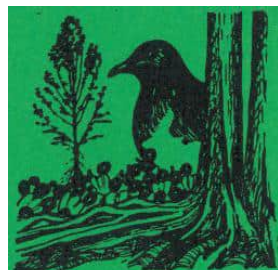
<i>Aristotelia serrata</i> makomako, wineberry (semi-decid)	L	F,I,B	½	½	½	½	□	2
<i>Carpodetus serratus</i> putaputaweta, marbleleaf	L	F,I	½	■	½	½	□	2
<i>Coprosma areolata</i> net-leaved coprosma		F,B	½	■	■	½	□	2*
<i>Coprosma linariifolia</i> linear-leaved coprosma, yellow-wood		F	½	■	½	½	½	2
<i>Coprosma lucida</i> shining karamū		F	½	■	½	½	■	2
<i>Coprosma robusta</i> karamū	M	F	■	■	■	½	½	1
<i>Coprosma rotundifolia</i> round-leaved coprosma		F,B	½	□	■	□	□	2*
<i>Dodonaea viscosa</i> akeake	M	I	□	½	□	□	□	2*
<i>Fuchsia excorticata</i> kōtukutuku, tree fuchsia (decid)	L	F,N,B	½	■	½	□	□	3*
<i>Griselinia littoralis</i> kāpuka also known as pāpāuma, broadleaf	L	F,I	■	■	½	■	■	2
<i>Hedycarya arborea</i> porokaiwhiri, pigeonwood		F,I	½	■	½	□	□	3*

<i>Hoheria angustifolia</i>	houhere, narrow-leaved lacebark (semi-dec)	M	I	■	½	½	■	■	1
<i>Kunzea robusta</i>	kānuka	H	I	■	□	□	■	■	1
<i>Leptospermum scoparium</i>	mānuka, tea tree	H	I	■	□	■	■	■	1
<i>Lophomyrtus obcordata</i>	rōhutu, NZ myrtle		F,I	½	■	½	½	■	2
<i>Melicytus micranthus</i>	manakura, shrubby māhoe		F,I	½	■	½	½	□	3
<i>Melicytus ramiflorus</i>	māhoe, whiteywood	L	F,L,I	½	■	½	½	½	3*
<i>Myoporum laetum</i>	ngaio	L	F,I	□	½	□	□	□	3*
<i>Myrsine australis</i>	mapau, red mapau	L	F,L,I	■	■	½	½	½	3*
<i>Neomyrtus pedunculata</i>	rōhutu, NZ myrtle		F,I	½	■	■	□	□	3*
<i>Pennantia corymbosa</i>	kaikōmako, ducksfeet	L	F,N,I	½	■	■	½	½	2
<i>Pittosporum tenuifolium</i>	kōhūhū, black matipo/mapau, tawhar	M	F,I	■	■	½	■	■	1
<i>Pseudopanax arboreus</i>	fivefinger, whauwhaupaku	L	F,N,I	■	■	□	½	½	2
<i>Pseudowintera colorata</i>	horopito, peppertree	H	F,N,I	■	■	■	□	½	2
CLIMBERS & VINES									
<i>Clematis forsteri</i>	yellow clematis		I	½	½	□	½	½	3
<i>Clematis paniculata</i>	puawananga, bush/white clematis		I	½	■	½	□	□	3*
<i>Parsonsia capsularis</i>	kaiwhiria, NZ jasmine		I	■	■	½	½	■	3
<i>Parsonsia heterophylla</i>	kaiwhiria, NZ jasmine		I	■	■	½	■	■	3
<i>Passiflora tetrandra</i>	kōhia, NZ passionvine		I	□	■	½	□	½	3*
<i>Rubus cissoides</i>	not in Riccarton!	M	F,I	½	½	½	□	½	2
<i>Rubus schmidelioides</i>	taramoa, narrow-leaved lawyer		F,I	■	½	½	■	■	2
SHRUBS & SCRAMBLERS									
<i>Calystegia tuguriorum</i>	powhiwhi, NZ bindweed		I	■	½	□	■	■	2
<i>Coprosma propinqua</i>	mikimiki, mingimingi	L	F,L	■	½	■	■	■	1
<i>Coprosma rhamnoides</i>	red-fruited mikimiki		F,L	□	□	½	½	□	3*
<i>Coprosma rubra</i>	red-stemmed coprosma		F,L	■	½	½	½	■	1
<i>Fuchsia perscandens</i>	climbing fuchsia		F,L,N,I	½	½	□	½	½	3*
<i>Veronica salicifolia</i>	koromiko		I	■	□	□	½	■	1
<i>Leucopogon fasciculatus</i>	mingimingi	M	F,I	½	½	□	½	½	2
<i>Melicope simplex</i>	poataniwha		F,I	½	■	½	½	■	3
<i>Myrsine divaricata</i>	weeping māpou		F,L,I	½	½	■	½	■	2
<i>Pseudopanax anomalus</i>	shrub pseudopanax		F,N	½	■	½	□	½	3
<i>Rubus squarrosus</i>	leafless lawyer		F,L,I	■	½	□	■	■	2
<i>Urtica ferox</i>	ongaonga, tree nettle		I	½	■	□	½	□	3*
PERCHING PLANTS & PARTIAL PARASITES									
<i>Ileostylus micranthus</i>	NZ mistletoe		F,N,B	■	□	□	□	■	3
<i>Korthalsella lindsayi</i>	dwarf mistletoe		I	■	□	□	□	■	3
<i>Pyrrosia elaeagnifolia</i>	leather-leaf fern			■	■	□	■	■	3
<i>Tupeia antarctica</i>	NZ mistletoe		F,I	■	□	□	□	■	3
GROUNDCOVER HERBS & 'GRASSES'									
<i>Acaena anserinifolia</i>	piripiri, bidibidi		S,I	■	½	□	½	■	2
<i>Acaena novae-zelandiae</i>	bidibidi, piripiri		S,I	■	□	□	■	■	2
<i>Anemanthele lessoniana</i>	hunangamoho, bamboo/wind grass		S	■	■	□	½	■	2
<i>Astelia fragrans</i>	kakaha, bush flax		F,I	■	■	½	½	■	2
<i>Carex cockayneana</i>	forest sedge		S	■	■	½	½	■	3
<i>Carex forsteri</i>	forest sedge		S	■	■	½	½	■	3
<i>Carex lambertiana</i>	forest sedge		S	■	■	½	½	■	3
<i>Carex solandri</i>	forest sedge		S,I	■	■	½	½	■	3
<i>Carex virgata</i>	swamp sedge		S,I	■	½	■	½	■	1
<i>Austroderia richardii</i>	toetoe		S	■	□	½	■	■	1
<i>Dianella nigra</i>	tūrutu, blue berry		F,I	■	■	□	■	■	2
<i>Echinodium hispidum</i>	moss			□	■	½	½	□	3
<i>Hypnum cupressiforme</i>	moss			½	■	½	■	■	3
<i>Juncus distegus</i>	wīwī, tussock rush		S	■	□	■	½	■	1
<i>Juncus edgareae</i>	wīwī, tussock rush		S	■	□	■	½	■	1

<i>Juncus sarophorus</i>	wīwī, tussock rush	S	■	□	■	½	■	1	
<i>Libertia ixioides</i>	mīkoikoi, NZ iris	F,I	■	■	□	■	■	3	
<i>Microlaena polynoda</i>	a rice grass	S	½	■	½	½	■	3	
<i>Microlaena stipoides</i>	meadow rice grass	S	■	■	½	■	■	3	
<i>Parietaria debilis</i>	NZ pellitory	I	½	■	□	½	½	3	
<i>Phormium tenax</i>	harakeke, NZ flax	L	N,L	■	□	■	■	1	
<i>Pratia angulata</i>	panakeneke, creeping pratia	F,I	■	½	½	½	■	1-3	
<i>Ranunculus reflexus</i>	NZ buttercup	S,I	□	■	□	½	□	3	
<i>Stellaria parviflora</i>	NZ stitchwort	S,I	□	■	□	■	□	3	
<i>Thuidium sparsum</i>	moss		■	■	□	■	■	3	
<i>Carex corynoidea</i>	watau/kamu, hooked sedge	S	½	■	½	½	½	3	
<i>Urtica incisa</i>	dwarf nettle	I	½	■	□	½	□	3	
GROUND & TREE FERNS									
<i>Asplenium flabellifolium</i>	necklace fern	B	½	■	□	■	□	3*	
<i>Asplenium gracillimum</i>	makau, graceful spleenwort	B	½	■	½	½	□	3*	
<i>Asplenium terrestre</i>	ground spleenwort	B	½	■	□	■	□	3*	
<i>Parablechnum novae-zelandiae /minus</i>	swamp kiokio		½	■	■	□	□	2	
<i>Austroblechnum penna-marina</i>	kiokio, little hard fern	L	■	■	½	■	½	3	
<i>Cyathea dealbata</i>	ponga, silver (tree) fern	M	½	■	□	½	□	3*	
<i>Dicksonia fibrosa</i>	kurīpākā, whekī ponga - tree fern		½	■	■	□	□	3*	
<i>Dicksonia squarrosa</i>	whekī, rough tree fern	H	½	■	½	½	□	2	
<i>Hypolepis ambigua</i>	rough pig fern		½	■	■	½	½	3	
<i>Pellaea rotundifolia</i>	tarawera, button fern		½	■	□	■	□	3	
<i>Microsorium pustulatus</i>	maratata, hounds tongue fern		½	■	□	■	□	2	
<i>Polystichum zelandica/richardii</i>	pikopiko/tutoke, shield fern		½	■	□	■	□	2	
<i>Pteridium esculentum</i>	rahurahu, bracken fern	M	■	½	½	■	■	1	



Underlayers: Alternating silt, sand & clay on greywacke river stones (2-100mm rounded)



PLANT LISTS Selected from vegetation natural to these wet Taitapu soils.

Plant Tolerances:

- = tolerates or needs
- = intolerant
- ½ = tolerant of some
- * = to establish, protect from frost
- t = toxic for toddlers

Staging:

- 1 = 1st structural
- 2 = 2nd year
- 3 = only after canopy closure

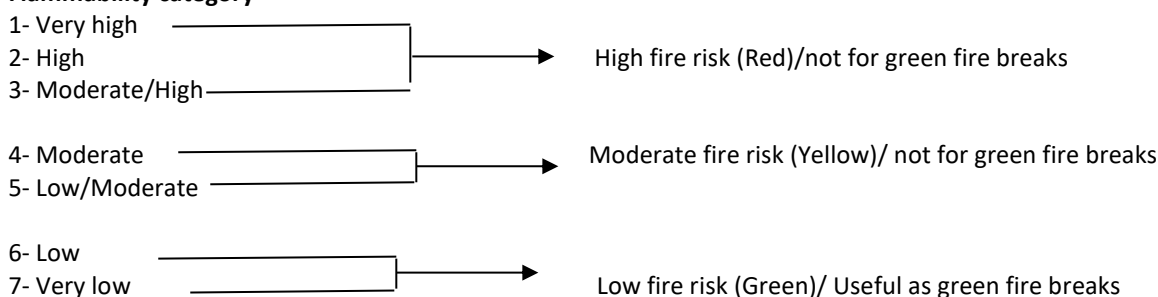
Food for native birds:

- F = Fruit
- S = Bird Seed
- N = Nectar
- B = Bud/foilage
- I = Insects
- For lizards: L = fruit

Plants keyed to landform units, as shown in diagram:

* = to establish, protect from frost; t = toxic for toddlers

Flammability category



		Fire risk	Food	Tolerances					Stages
				sun	shade	wet	dry	wind	
TALL (NOBLE) TREES (> 12 m)									
<i>Alectryon excelsus</i>	tītoki	H	F,I	½	■	½	½	□	3*
<i>Cordyline australis</i>	tī kōuka, cabbage tree	M	F,N,I	■	½	■	■	■	1
<i>Dacrycarpus dacrydioides</i>	kahikatea, white pine	H	F	■	½	■	□	■	2
<i>Elaeocarpus dentatus</i>	hīnau		F,I	½	½	½	½	□	3*
<i>Elaeocarpus hookerianus</i>	pokaka		F,I	½	■	■	½	□	2
<i>Pittosporum eugenioides</i>	tarata, lemonwood	M	F,I	■	■	½	■	½	1
<i>Plagianthus regius</i>	mānatu, lowland ribbonwood (deciduous)	L	I,B	■	½	½	½	■	1
<i>Podocarpus totara</i>	tōtara	H	F	■	½	½	■	■	2
<i>Prumnopitys ferruginea</i>	miro	M	F	□	■	■	□	□	3
<i>Prumnopitys taxifolia</i>	mataī, black pine	M	F	■	½	■	½	■	2
<i>Pseudopanax crassifolius</i>	horoeaka, lancewood	L	F,B,N,I	■	½	½	■	■	2
<i>Sophora microphylla</i>	kōwhai	L	N,B	■	½	½	■	■t	2
SMALL TREES & TALL SHRUBS (> 5 m)									
<i>Aristotelia serrata</i>	makomako, wineberry (semi-decid)	L	F,I,B	½	½	½	½	□	2
<i>Carpodetus serratus</i>	putaputaweta, marbleleaf	L	F,I	½	■	½	½	□	2
<i>Coprosma areolata</i>	net-leaved coprosma		F,B	½	■	■	½	□	2*
<i>Coprosma linariifolia</i>	linear-leaved coprosma, yellow-wood		F	½	■	½	½	½	2
<i>Coprosma lucida</i>	shining karamū		F	½	■	½	½	■	2
<i>Coprosma robusta</i>	karamū	M	F	■	■	■	½	½	1
<i>Coprosma rotundifolia</i>	round-leaved coprosma		F,B	½	■	■	½	½	2*
<i>Fuchsia excorticata</i>	kōtukutuku, tree fuchsia (decid)	L	F,N,B	½	■	■	□	□	3*
<i>Griselinia littoralis</i>	kāpuka also known as pāpāuma, broadleaf	L	F,I	■	■	½	■	■	2
<i>Hedycarya arborea</i>	porokaiwhiri, pigeonwood		F,I	½	■	½	□	□	3*
<i>Hoheria angustifolia</i>	houhere, narrow-leaved	M	I	■	½	½	■	■	1

<i>Leptospermum scoparium</i>	lacebark (semi-dec)									
<i>Lophomyrtus obcordata</i>	mānuka, tea tree	H	I	■	□	■	■	■	■	1
<i>Meliccytus micranthus</i>	rōhutu, NZ myrtle		F,I	½	■	½	½	■	■	2
<i>Meliccytus ramiflorus</i>	manakura, shrubby māhoe		F,I	½	■	½	½	□	■	3
<i>Myrsine australis</i>	māhoe, whiteywood	L	F,L,I	½	■	½	½	½	½	3*
<i>Neomyrtus pedunculata</i>	mapau, red mapau	L	F,L,I	■	■	½	½	½	½	3*
<i>Pennantia corymbosa</i>	rōhutu, NZ myrtle		F,I	½	■	■	□	□	□	3*
<i>Pittosporum tenuifolium</i>	kaikōmako, ducksfeet	L	F,N,I	½	■	■	½	½	½	2
	kōhūhū, black	M	F,I	■	■	½	■	■	■	1
	matipo/mapau, tawhari									
<i>Pseudopanax arboreus</i>	fivefinger, whauwhaupaku	L	F,N,I	■	■	□	½	½	½	2
<i>Pseudowintera colorata</i>	horopito, peppertree	H	F,N,I	■	■	■	□	½	½	2
<i>Schefflera digitata</i>	patete, seven-finger	L	F,I,B	½	□	½	□	□	□	3*
<i>Streblus heterophyllus</i>	tūrepo, small-leaved milk tree		F,I	½	■	■	□	□	□	3*

CLIMBERS & VINES

<i>Clematis forsteri</i>	yellow clematis		I	½	½	□	½	½	½	3
<i>Clematis paniculata</i>	puawananga, bush/white clematis		I	½	■	½	□	□	□	3*
<i>Parsonsia capsularis</i>	kaiwhiria, NZ jasmine		I	■	■	½	½	■	■	3
<i>Parsonsia heterophylla</i>	kaiwhiria, NZ jasmine		I	■	■	½	■	■	■	3
<i>Passiflora tetrandra</i>	kōhia, NZ passionvine		I	□	■	½	□	½	½	3*
<i>Ripogonum scandens</i>	kareao, supplejack		F,I	½	■	½	□	½	½	3*
<i>Rubus australis</i>	taramoa, bush lawyer		F,I	½	■	■	□	□	□	3
<i>Rubus cissoides</i>	not in Riccarton!	M	F,I	½	½	½	□	½	½	2
<i>Rubus schmidelioides</i>	taramoa, narrow-leaved lawyer		F,I	■	½	½	■	■	■	2

SHRUBS & SCRAMBLERS

<i>Calystegia tuguriorum</i>	powhiwhi, NZ bindweed		I	■	½	□	½	■	■	2
<i>Coprosma rhamnoides</i>	red-fruited mikimiki		F,L	□	■	½	½	½	½	3*
<i>Coprosma propinqua</i>	mikimiki, mingimingi	L	F,L	■	½	■	■	■	■	1
<i>Coprosma rubra</i>	red-stemmed coprosma		F,L	■	½	½	½	■	■	1
<i>Veronica salicifolia</i>	koromiko		I	■	□	□	½	■	■	1
<i>Fuchsia perscandens</i>	climbing fuchsia		F,L,N,I	½	½	□	½	½	½	3*
<i>Melicope simplex</i>	poataniwha		F,I	½	■	½	½	■	■	3
<i>Metrosideros diffusa</i>	white/climbing rata		I	□	■	½	□	□	□	3*
<i>Myrsine divaricata</i>	weeping māpou		F,L,I	½	½	■	½	■	■	2
<i>Olearia bullata</i>	crinkly shrub daisy		S,I	■	½	■	½	■	■	
<i>Pseudopanax anomalus</i>	shrub pseudopanax		F,N	½	■	½	□	½	½	3
<i>Rubus squarrosus</i>	leafless lawyer		F,L,I	■	½	□	■	■	■	2
<i>Urtica ferox</i>	ongaonga, tree nettle		I	½	■	□	½	□	□	3*

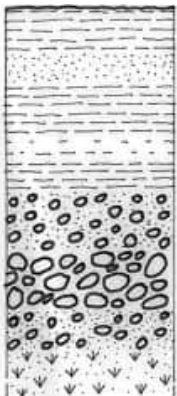
PERCHING PLANTS & PARTIAL PARASITES

<i>Asplenium flaccidum</i>	raukatauri, hanging spleenwort		B	½	■	□	□	□	□	3
<i>Ileostylus micranthus</i>	NZ mistletoe		F,N,B	■	□	□	□	■	■	3
<i>Korthalsella lindsayi</i>	dwarf mistletoe		I	■	□	□	□	■	■	3
<i>Pyrrosia elaeagnifolia</i>	leather-leaf fern			■	■	□	■	■	■	3
<i>Tupeia antarctica</i>	NZ mistletoe		F,I	■	□	□	□	■	■	3

GROUNDCOVER HERBS & 'GRASSES'

<i>Acaena anserinifolia</i>	piripiri, bidibidi		S,I	■	½	□	½	■	■	3
<i>Anemanthele lessoniana</i>	hunangamoho, bamboo/wind grass		S	■	■	□	½	■	■	2
<i>Astelia fragrans</i>	kakaha, bush flax		F,I	■	■	½	½	■	■	2
<i>Astelia grandis</i>	kakaha, swamp flax		F,I	■	■	■	½	■	■	1
<i>Carex cockayneana</i>	forest sedge		S	■	■	½	½	■	■	3
<i>Carex forsteri</i>	forest sedge		S	■	■	½	½	■	■	3
<i>Carex lambertiana</i>	forest sedge		S	■	■	½	½	■	■	3
<i>Carex secta</i>	pūkio		S	■	□	■	□	■	■	1
<i>Carex solandri</i>	forest sedge		S	■	■	½	½	■	■	3
<i>Carex virgata</i>	swamp sedge		S	■	½	■	½	■	■	1
<i>Austroderia richardii</i>	toetoe		S	■	□	■	■	■	■	1
<i>Cyperus ustulatus</i>	Ūpoko tangata-tangata,		S	■	□	■	½	■	■	1

<i>Deschampsia caespitosa</i>	umbrella sedge		S	■	□	■	½	■	1
<i>Dianella nigra</i>	tufted hair grass		F,I	■	■	□	■	■	2
<i>Echinodium hispidum</i>	moss			□	■	½	½	□	3
<i>Gahnia xanthocarpa</i>	giant gahnia		S	½	■	½	½	□	3
<i>Hypnum cupressiforme</i>	moss			½	■	½	■	■	3
<i>Juncus distegus</i>	wīwī, tussock rush		S	■	□	■	½	■	1
<i>Juncus edgareae</i>	wīwī, tussock rush		S	■	□	■	½	■	1
<i>Juncus sarophorus</i>	wīwī, tussock rush		S	■	□	■	½	■	1
<i>Libertia ixioides</i>	mīkoikoi, NZ iris		F,I	■	■	□	■	■	3
<i>Microlaena avenacea</i>	bush rice grass		S	□	■	■	½	½	3
<i>Nertera depressa</i>	nertera		F,I	½	■	½	½	■	3
<i>Parietaria debilis</i>	NZ pellitory		I	½	■	□	½	½	3
<i>Phormium tenax</i>	harakeke, NZ flax	L	N,L	■	□	■	■	■	1
<i>Pratia angulata</i>	panakeneke, creeping pratia		F,I	■	½	½	½	■	1-3
<i>Ranunculus reflexus</i>	NZ buttercup		S,I	□	■	□	½	□	3
<i>Stellaria parviflora</i>	NZ stitchwort		S,I	□	■	□	■	□	3
<i>Thuidium sparsum</i>	moss			■	■	□	■	■	3
<i>Carex cyanea</i>	matau, hooked sedge		S	½	■	■	□	½	3
<i>Carex corynoidea</i>	watau/kamu, hooked sedge		S	½	■	½	½	½	3
<i>Urtica incisa</i>	dwarf nettle		I	½	■	□	½	□	3
GROUND & TREE FERNS									
<i>Asplenium flabellifolium</i>	necklace fern		B	½	■	□	■	□	3*
<i>Asplenium gracillimum</i>	makau, graceful spleenwort		B	½	■	½	½	□	3*
<i>Asplenium terrestre</i>	ground spleenwort		B	½	■	□	■	□	3*
<i>Austroblechnum lanceolatum</i>	kiokio, a hard fern			□	■	½	□	□	3*
<i>Lomaria discolor</i>	piupiu, crown fern			□	■	½	□	□	3*
<i>Blechnum fluviatile</i>	kiwakiwa, creek fern			□	■	½	□	□	3*
<i>Blechnum novae-zelandiae/minus</i>	swamp kiokio			■	■	■	□	□	2
<i>Austroblechnum penna-marina</i>	kiokio, little hard fern	L		■	■	½	■	½	3
<i>Cyathea dealbata</i>	ponga, silver (tree) fern	M		½	■	□	½	□	3*
<i>Cyathea smithii</i>	kātote, soft tree fern			½	■	½	□	□	3*
<i>Dicksonia fibrosa</i>	kurīpākā, whekī ponga - tree fern			½	■	■	□	□	3*
<i>Dicksonia lanata</i>	tuokura, woolly tree fern			½	■	½	□	□	3*
<i>Dicksonia squarrosa</i>	whekī, rough tree fern	H		½	■	½	½	□	2
<i>Histiopteris incisa</i>	mata, water fern			½	■	½	□	□	3
<i>Hypolepis ambigua</i>	rough pig fern			½	■	■	½	½	3
<i>Hypolepis rufobarbata</i>	sticky pig fern			½	■	½	½	½	3
<i>Lastreopsis glabella</i>				□	■	½	□	□	3*
<i>Leptopteris hymenophylloides</i>	heruheru, crape fern			□	■	½	□	□	3*
<i>Pellaea rotundifolia</i>	tarawera, button fern			½	■	□	■	□	3
<i>Microsorium pustulatus</i>	maratata, hounds tongue fern			½	■	□	■	□	2
<i>Polystichum vestitum</i>	pūniu, prickly shield fern	M		■	■	■	□	½	2
<i>Polystichum zelandica/richardii</i>	pikopiko/tutoke, shield fern			½	■	□	■	□	2
<i>Pneumatopteris pennigera</i>	pakau-roharoha, gully fern			□	■	½	□	□	3*



Underlayers: Clay & sand alternating on silt over greywacke river stones (2-100mm rounded) with some peat

Appendix D. 3D Perspective Visuals



Above Hoon Hay, looking south



To the south west of the site looking over the proposed stormwater management area and central naturalised swale



Above playground to the south of site, looking at Cashmere Road frontage and reserves



From road connection point to central reserve area, looking north

Appendix E. Indicative Concept Masterplan

Note: higher density than shown is anticipated under MDRZ, visual illustrating road and open space concept only. Density shown aligned with FUZ density.



Appendix G. Infrastructure Servicing Report

A white topographic map with contour lines is overlaid on a solid red background. The map covers most of the upper and middle portions of the page.

Infrastructure Servicing Report

Cashmere/Hendersons Plan Change

Prepared for Cashmere Park Ltd, G. Ward & R.

Brown

511270

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sinclair**

Infrastructure Servicing Report

Cashmere/Hendersons Plan Change

Prepared for Cashmere Park Ltd, G. Ward & R. Brown

511270

Quality Control Certificate

Eliot Sinclair & Partners Limited

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Status:	B		
Release date:	27 April 2023		
Distributed to:	Cashmere Park Ltd, G. Ward & R. Brown Christchurch City Council		

Version History

Status	Description	Author	Release Date
A	First issue of document		19 December 2022
B	Updated number of lots	S. Pandrea	27 April 2023

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1. Introduction

This Infrastructure Servicing Report has been prepared in support of a submission by Cashmere Park Limited, Geoff Ward and Robert Brown for the rezoning of part of a 23.0061 ha area of land (survey area) from rural to residential, located within the Cashmere Stream and Henderson's Basin catchments, as shown in Figure 1.



Figure 1. Plan Change Zone Boundary

This report addresses the servicing requirements for earthworks, roading, stormwater, wastewater, water supply and utility services.

The following information is provided within the Appendices.

Appendix A: Outline Development Plan (ODP).

Appendix B: Geotechnical Investigation Report.

Appendix C: Water Supply Design Report.

Appendix D: Stormwater Management Area Sizing Calculations.

2. Site Description

2.1. Location and Surrounds

The proposed submission area is located at the following addresses:

Legal Description	Owner	Address	Survey Area
Lot 1 DP 412488	Landsborough Trustee Services No 30 Limited Marianne Ruth Lewis Warren Richard Lewis	126 Sparks Road	4.0001 ha
Lot 2 DP 412488	Landsborough Trustee Services No 30 Limited, Marianne Ruth Lewis, Warren Richard Lewis	17 Northaw Street	4.0004 ha
Lot 3 DP 412488	Landsborough Trustee Services No 30 Limited, Marianne Ruth Lewis, Warren Richard Lewis	36 Leistrella Road	4.0003 ha
Lot 23 DP 3217	Jeanette Katherine Brown Robert James Brown	240 Cashmere Road	8.0937 ha
RS 41613	Debra Down Hartnell-Ward, Geoffrey Peter Ward Young Hunter Trustees Limited	236 Cashmere Road	2.0234 ha
Lot 1 DP 547021	Cashmere Park Limited	200 Cashmere Road	0.8882 ha

There is an existing residential dwelling within Lot 23 DP 3217 and Lot RS 41613, the remainder of the plan change area is pasture which is occasionally grazed.

The plan change area is bounded by Sparks Road to the north and Cashmere Road to the south. There are existing residential neighbourhoods to the north and east, and pasture land to the west. Oderings Garden Centre, lifestyle blocks and residential neighbourhoods are located to the south of Cashmere Road.

2.2. Topography

The plan change area is located within the Cashmere Stream and the Hendersons Basin Catchments. A ridgeline at an elevation of approximately 20.0 m RL is the demarcation border between the two catchments.

The portion of the plan change area within the Cashmere Stream Catchment has a gently sloping topography towards the southeast, from approximately 20.0 m RL (in the north) down to approximately 17.9 m RL at the frontage with Cashmere Road.

The portion of the plan change area within the Hendersons Basin Catchment has a gently sloping topography from approximately 20.0 m RL (in the south) down to approximately 18.2 m RL at Stillwells Drain (which intersects the catchment and flows in a west to east direction). The western part of the Hendersons Basin plan change area tends to be low lying at an elevation of approximately 17.8 m RL and rises up towards the north and east where it has an elevation of approximately 19.0 m RL.

Figures 2 and 3 show the demarcation boundary between the Hendersons Basin and Cashmere Stream catchments and the land elevation profile.

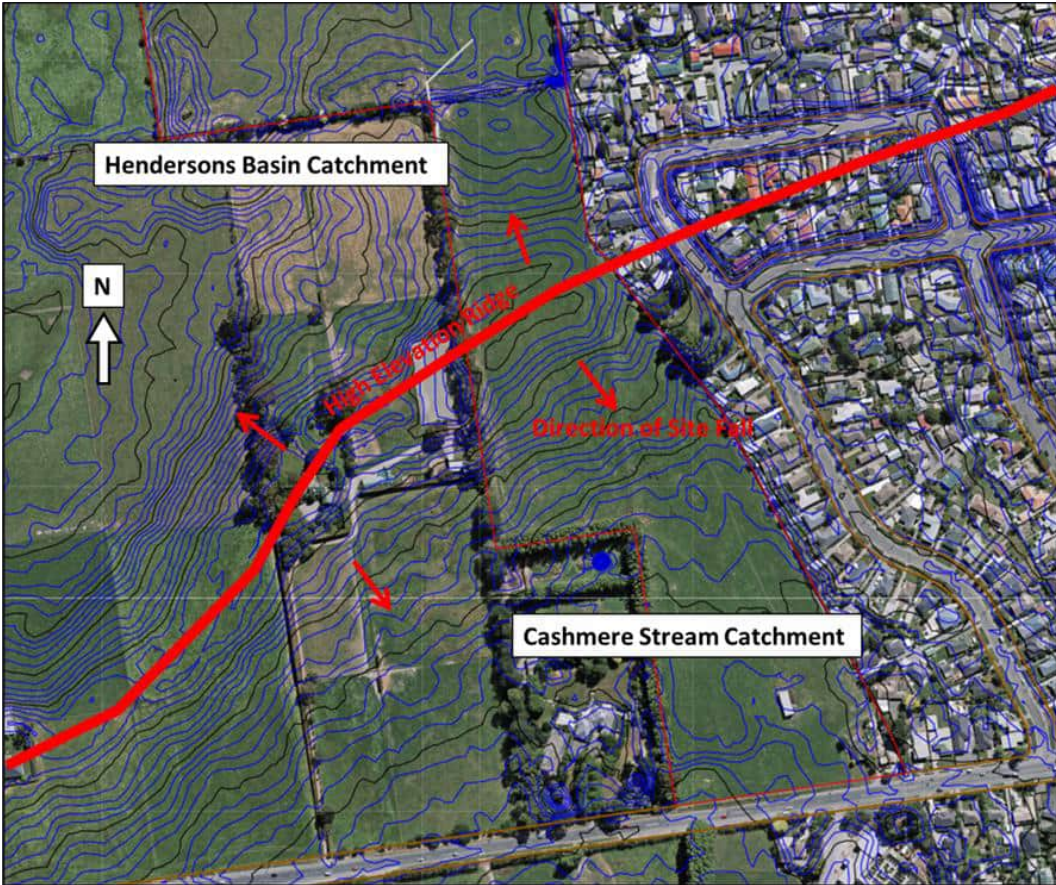


Figure 2. Demarcation (Ridgeline) Separating the Hendersons Basin and the Cashmere Stream Catchments

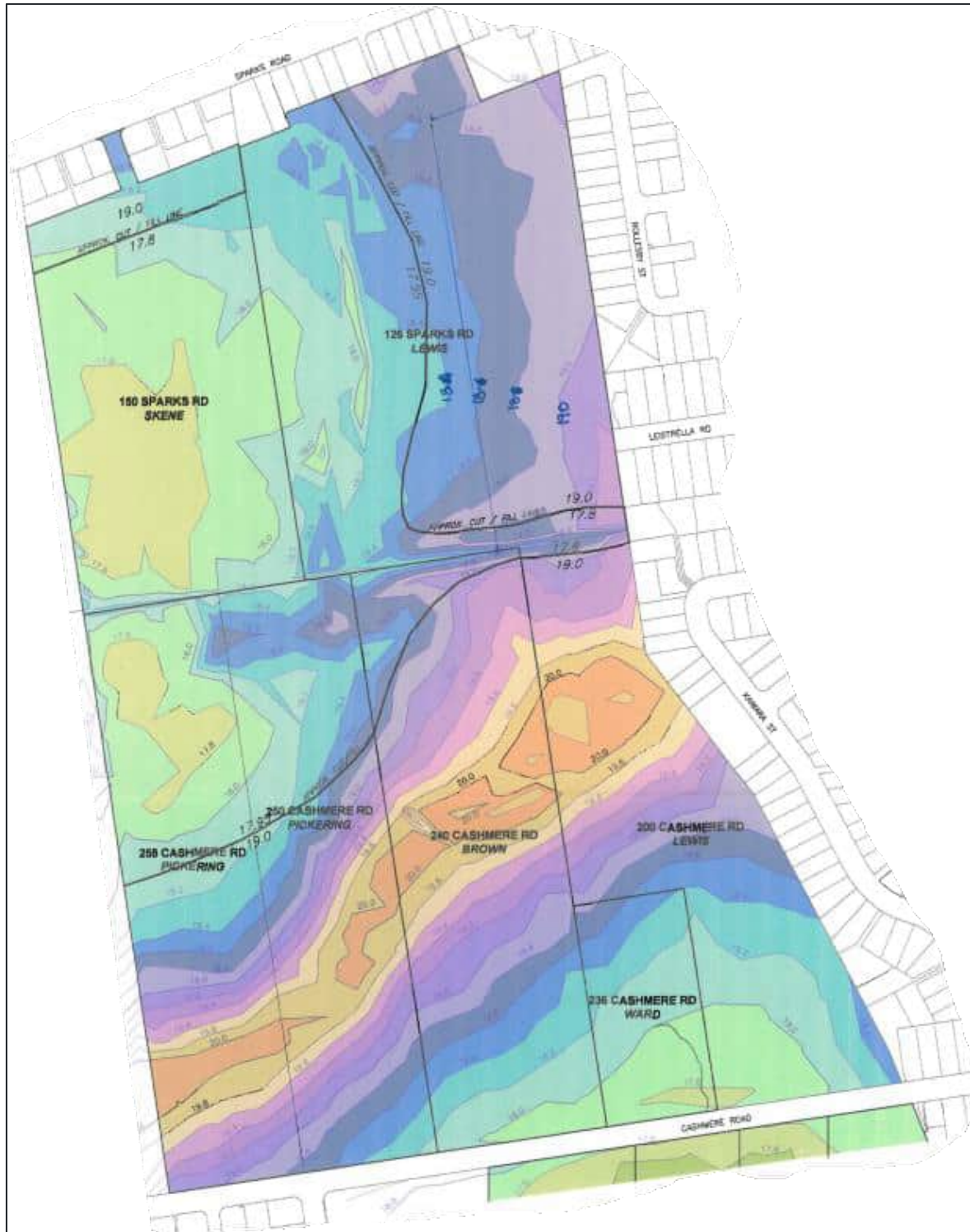


Figure 3. Hendersons Basin and Cashmere Stream Catchments Contour Plan

2.3. Surface Waters

The proposed plan change area has a number of surface waters within the vicinity, as follows:

- Stillwells Drain runs in a west to east direction through the centre of the plan change area (within the Hendersons Basin catchment).
- A branch of Stillwells Drain runs in a north to south direction down the northwest boundary of the plan change area (within the Hendersons Basin catchment).

- An unnamed timber lined drain runs in a north to south direction down the northeast boundary of the plan change area (within the Hendersons Basin catchment).
- Ballintines Drain is located further to the west (outside of the plan change area), within the Hendersons Basin catchment.
- Luney's Drain is located to the south of the plan change area and runs in a north to south direction.
- The Heathcote River is located to the east.
- Cashmere Stream is located to the south.

Figure 4 shows the location of each surface water.

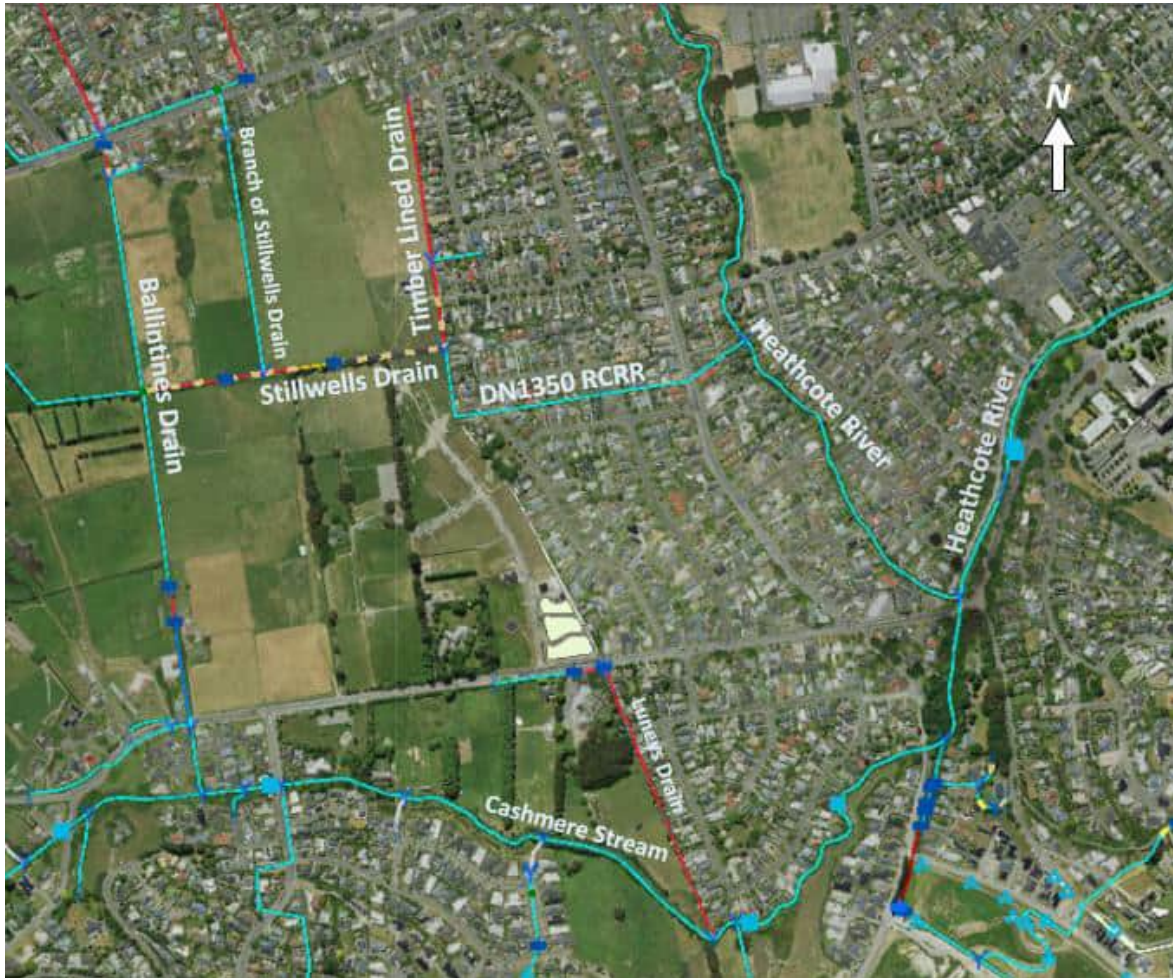


Figure 4. Waterways Bordering and Within the Proposed Plan Change Area

2.3.1. Cashmere Stream & Heathcote River

The Cashmere Stream is located to the south of Cashmere Road and flows in an easterly direction. The Heathcote River is located to the east of Hoon Hay Road and forms a confluence with the Cashmere Stream at approximately the Cashmere Road and Shalamar Drive intersection (refer to Figure 4).

2.3.2. Stillwells Drain

Stillwells Drain is located centrally within the plan change area and flows in an easterly direction. There is a branch of Stillwells Drain which flows along the western plan change boundary in a north to south direction. At the development eastern boundary Stillwells Drain is piped (DN1350 reinforced concrete rubber ring joint (RCRRJ) pipe) in a southerly direction for approximately 110 m, down the eastern

boundary fence line, from where it is piped to the east, towards Kaiwara Street and has an outlet to the Heathcote River, as shown in Figure 5.

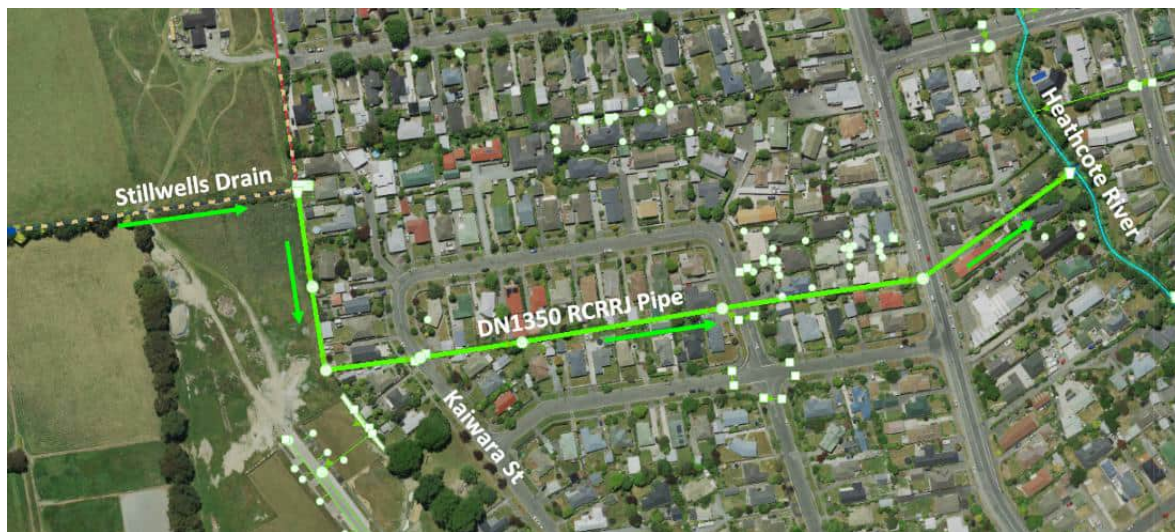


Figure 5. Stillwells Drain and DN1350 Concrete Pipe

2.3.3. Timber Lined Drain

The Timber Lined Drain starts at Northaw Street and runs down the eastern boundary of the plan change area for approximately 400 m prior to forming a confluence with Stillwells Drain (at the location of the inlet to the DN1350 RCRRJ pipe inlet). The drain receives stormwater discharges from upstream DN450 and DN300 RCRRJ pipes, as shown in Figure 6.

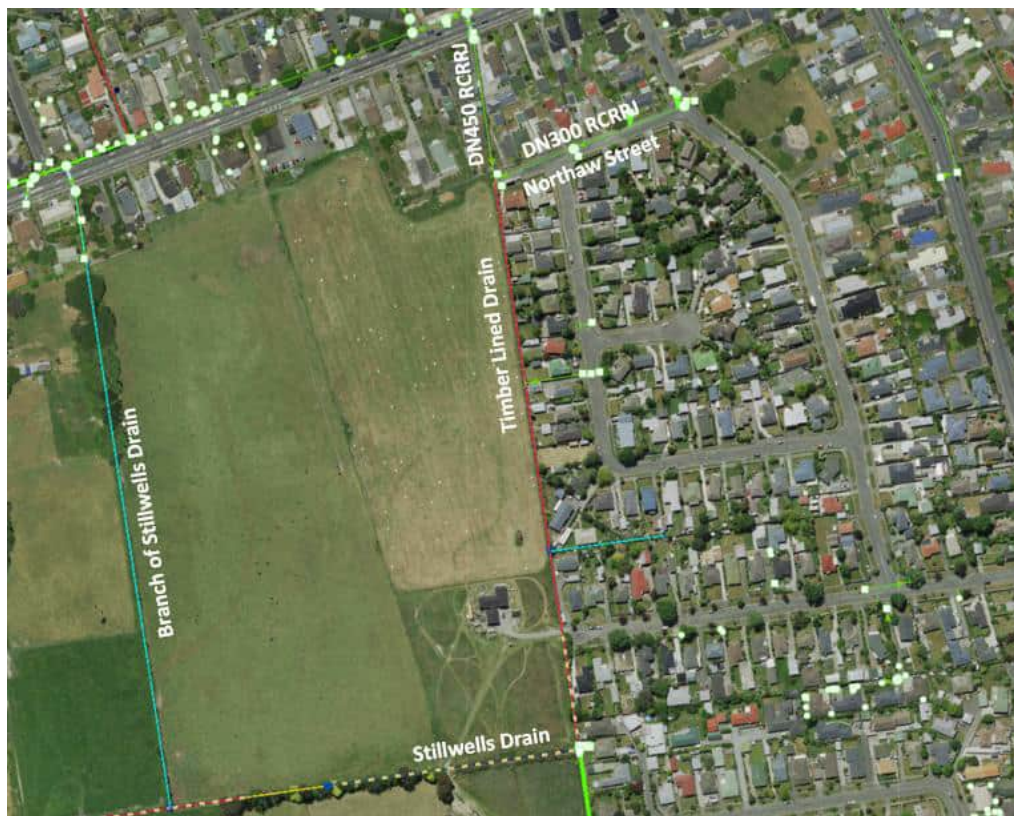


Figure 6. Timber Lined Drain and DN300 & DN450 RCRRJ Pipes

2.4. Soils and Geology

Geotech Consulting Limited (2022) has carried out a geotechnical investigation of the plan change area. The investigation concluded that the site has interbedded loose to very loose silts and sandy silts/silty sands, with some bands of medium dense clean sands, and also significant bands of non-liquefiable clayey materials. Most of the CPT probes terminated in a lower sand or silt layer prior to refusing suddenly on a dense gravel layer some 9 m to 12 m below ground level. Below this are interbedded sands, gravels and silts to 16 m – 19 m depth, then dense gravels to at least 21 m depth.

The Geotechnical Investigation Report is located in **Appendix B**.

2.5. Hydrogeology

The plan change area is located within the Coastal Confined Aquifer zone and groundwater generally flows towards the south east.

2.5.1. Cashmere Stream Catchment

Groundwater monitoring prior to the construction of Stage 1 of the Cashmere Park subdivision indicated a seasonal fluctuation of between approximately 0.3 m to 1.9 m below ground level (the monitoring bores appeared to be less reliable during high ground water conditions and after rainfall). Generally, the average groundwater levels is around 1.0 m to 1.5 m below ground level, however the level also varies depending on the land elevation.

Groundwater monitoring bores will be installed to gauge the seasonal groundwater fluctuation more accurately across the plan change area, prior to subdivision consent and detailed design.

2.5.2. Hendersons Basin Catchment

The groundwater table within the Hendersons Basin catchment is expected to be similar to that within the Cashmere Stream catchment as the groundwater is interconnected.

3. Flood Management

The proposed plan change area lies within the Hendersons Basin catchment in the north and the Cashmere Stream catchment in the south. The proposed plan change area is located within the 200 year Flood Management Area. All future dwelling finished floor levels will be a minimum of 400 mm higher than the 0.5% (200 year) Annual Exceedance Probability (AEP) storm event flood depth. Figure 7 shows the Christchurch City Council (CCC) 200 year Flood Management Area (FMA) extent (hashed areas) for both catchments.

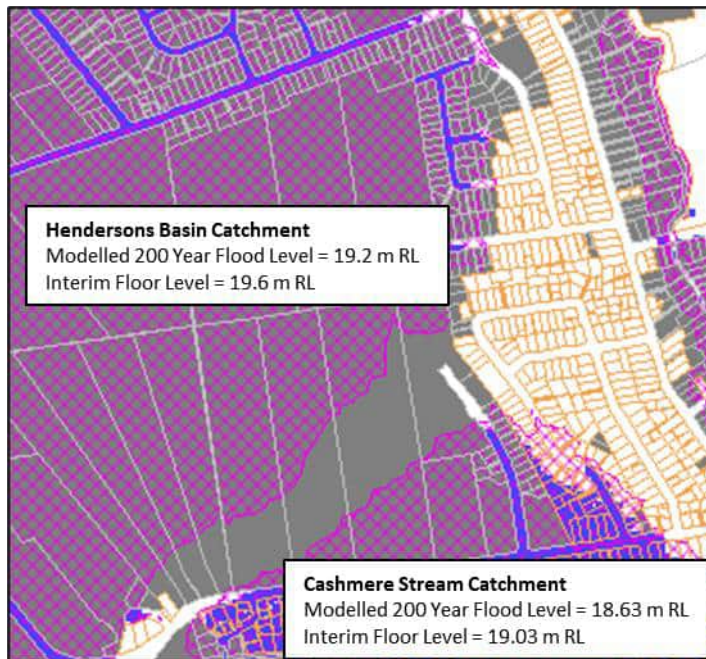


Figure 7. Flood Levels and Interim Floor Level Requirement

During the design of Stage 1 of the Cashmere Park residential subdivision (200 Cashmere Road), CCC advised that the modelled Cashmere Stream Catchment 200 year flood level is 18.63 m RL and the Hendersons Basin flood level is 19.2 m RL. CCC is updating its flood modelling which will include new developments and stormwater/flood management facilities and therefore the flood level can potentially change in the future.

CCC have granted permission for the plan change area to be modelled by DHI using the CCC Heathcote River hydraulic and hydrological 200 year flood model.

The Stormwater Management Area (SMA) has been provided with compensatory storage due to filling of the land, to ensure during the detailed design phase there is sufficient storage available to mitigate any adverse flooding effects, should this be required. DHI has been provided with a preliminary design surface of the proposed plan change area and SMA locations, for confirmation that the proposal will not result in adverse effects on surrounding land areas.

The DHI flood modelling results and reporting is attached in Appendix E. DHI has modelled the pre and post development scenarios and the results indicate that the proposed development has minimal impact on the surrounding flood levels in almost all areas. There is a minor area with more than 100mm depth increase, however this will be addressed at detailed design.

4. Earthworks

The finished surface of each allotment will be filled to the level of the road boundary and increased in height to the rear of each site at a minimum grade of 1 in 500, this will ensure site drainage towards carriageways and associated stormwater conveyance infrastructure.

The modelled 200 year flood depth within the Cashmere Stream catchment is 18.63 m RL and within the Hendersons Basin Catchment is 19.2 m RL and the finished floor levels must be 0.4 m higher at 19.03 m RL and 19.6 m RL, respectively.

The rules for minimum permitted ground clearances as set out in Clause E2 of the Building Code range from 150 mm to 225 mm depending on the cladding type and whether the slab is surrounded by soils or paving. It can be reasonably assumed that the surrounding material, for the most part, will be soils and the finished floor level will have a 225 mm clearance above the surrounding ground surface. Therefore, the ground level within the Cashmere Stream catchment will be raised (filled) to RL 18.81 m and within the Henderson Basin catchment 19.38 m RL, where required, to ensure compliance.

All bulk filling will be compacted in accordance with NZS 4431:1989 and all fill testing will be carried out by an independent laboratory.

5. Roothing

The proposed plan change area will connect to Cashmere Road, Leistrella Road and Northaw Street via new local roads. As shown in the proposed ODP layout in **Appendix A**.

Davie Lovell Smith (DLS) are the engineers engaged to provide subdivision design for neighbouring Lots 24 & 25 DP 3217, to the west of the proposed plan change area. DLS have provided their road connection point which has allowed for the positioning of a local road to connect through to adjoining and future residential zones to the west.

Stantec have carried out a Traffic Impact Assessment attached in Appendix F.

Either standard vertical or lay-back profile Kerb and channel will contain the carriageway formations and convey stormwater runoff to sump inlets. Right of ways will be formed/contoured so that stormwater runoff will be conveyed to the external road reticulation network.

Proposed carriageway widths will be 6.4 m and will facilitate two-way traffic with extra parking provided. All roads will incorporate foot paths and landscaped berms.

Geotechnical reporting during the design of the Cashmere Park subdivision indicated a Californian Bearing Ratio (CBR) of 4% which required a metal formation depth of approximately 0.5 m. It is expected that the overall plan change area will have similar soils. However, further testing will be carried out during the future subdivision design and construction to define the required formation depth with more accuracy.

The roads will be sealed predominantly with Asphaltic Concrete.

6. Wastewater

Future development within the proposed plan change area will be serviced by a Low Pressure Sewer (LPS) network that will discharge to the existing DN300 gravity sewer main within Cashmere Road.

Residential dwellings will drain effluent via a gravity pipe to a Council authorised pump unit (pump within a chamber) located within each individual property boundary. Each pump unit will have at least 24 hours storage capacity and will be controlled by an IOTA OneBox control panel which allows for automation and external control of the pump. The pump unit will discharge effluent to a pressure sewer main located within the street berm.

At the time of subdivision construction, each residential dwelling will be provided with a boundary kit (containing valves and isolation points). The boundary kit will be located just outside the property boundary (within the road reserve services strip). A lateral (pipe) will extend from the boundary kit into each property for later connection of the pump unit.

LPS networks require an odour control unit to be positioned just prior to the discharge point to the existing gravity main. The odour control unit provides treatment for potential hydrogen sulphide discharges.

Stage 1 of the Cashmere Park residential subdivision, located at 200 Cashmere Road, is constructed and serviced by an existing LPS network (and odour control unit) that was sized to convey wastewater from 233 allotments (lots). The number of lots used for the design was an estimation based on 20 Lots/ha. The total plan change area will allow for approximately 396 lots, distributed via the following land areas:

- Cashmere Park Stages 1 (already constructed), 2 and 3 = 237 lots.
- Geoff Wards property (RS 41613) = 32 lots.
- Robert Browns property (Lot 23 DP 3217) = 127 lots.

While the original Cashmere Park design assumed a servicing requirement of 233 lots, the existing LPS network servicing Cashmere Park Stage 1 has sufficient capacity to service all of the Cashmere Park development area (Stages 1, 2 and 3). During the future design stages, the existing wastewater network capacity will be re-modelled for confirmation of capacity. The existing sewer capacity does not restrict servicing of the plan change area because if required a new LPS discharge point to the council owned DN300 sewer main within Cashmere Road can be installed with a new odour control unit.

7. Stormwater

7.1. Treatment and Attenuation

Future development of the plan change area will be required to convey stormwater runoff generated by the upstream catchment to treatment and attenuation facilities, also referred to as Stormwater Management Areas (SMA), prior to discharging to a local surface water (drain). Based on current CCC standards the following design requirements must be adhered with:

- Future development must provide treatment for the first 25 mm rainfall depth.
- Full flood attenuation for the 2% AEP (50 year storm) of 36 hours in duration.

Due to the locality being subject to a high seasonal groundwater, it is expected that the stormwater facilities will comprise of grassed dry basins and wetlands, following the general design shown in Figure 8.

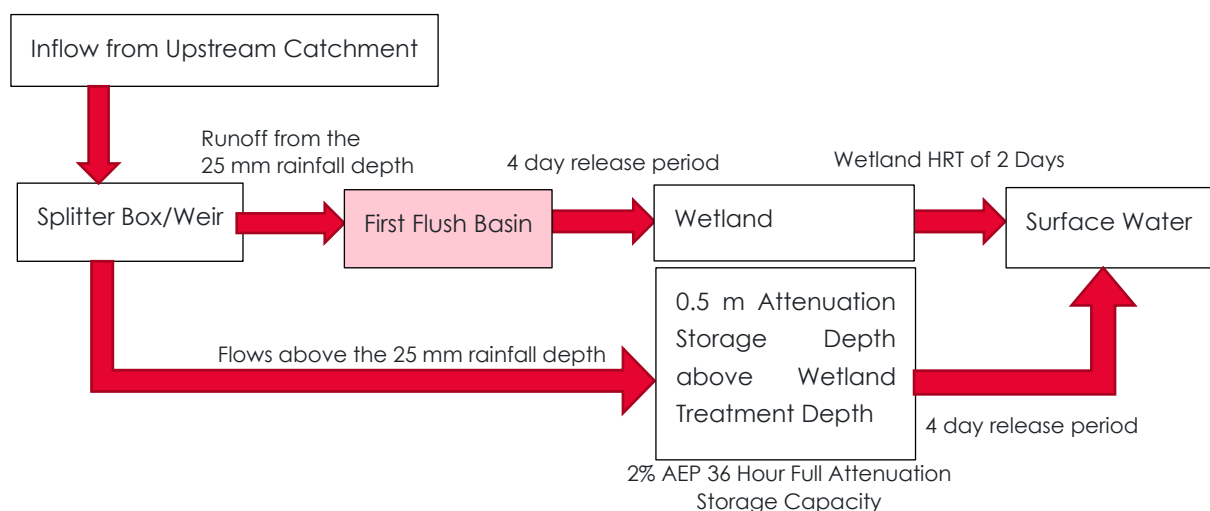


Figure 8. Proposed Stormwater Treatment and Attenuation Layout

It is proposed that four SMA zones be located within the plan change area as shown in Figure 9, on the following page.

Preliminary (simplistic) sizing of the SMA facilities has been carried out, as shown in Table 1. The sizing calculations assume the following parameters:

- 5 m wide buffer (access track) around all basins and wetlands.
- Potential for each wetland to have a 0.5 m depth extended detention capacity has been ignored.
- 1 m basin depth and 0.2 m freeboard (based on the existing Cashmere Park basin parameters).

The SMA area calculations are considered conservative because the potential for each wetland to also store water has not been accounted for and the basins will also have shared access tracks.

Table 1. Stormwater Management Area Preliminary Size Requirements

Characteristic	SMA 1	SMA 2	SMA 3	SMA 4
Upstream Residential Catchment Area (ha)	8.615	4.373	5.0	0.681
First Flush Basin Area (m ²)	2,718	1,727	2,534	675
Wetland Area (m ²)	5,811	3,427	4,507	1,005
Detention Basin Area (m ²)	9,820	5,638	7,307	n/a
Total Area (Including Access Tracks) (m ²)	18,349	10,792	14,349	1,680
Total Land Areas Provided in the ODP(m ²)	55,857	13,037	15,706	1,697

The SMA sizing calculations are based on HIRDS RCP8.5 rainfall data and a runoff coefficient of 0.63 for the volume requiring treatment and 0.72 for the 2% AEP volume requiring attenuation. The SMA sizing calculations are provided in **Appendix C**.

The proposed plan change area is located with the 200 year FMA and the SMA zones will be required to provide compensatory storage due to filling of the land, therefore a large land area has been set aside within each SMA zone, to ensure during the detailed design phase there is sufficient land available to mitigate any adverse effects, should this be required. It should also be noted that DHI has been provided with a preliminary design surface of the proposed plan change area and SMA locations, for confirmation that the proposal will not result in adverse effects on surrounding land areas.

The SMA areas will be planted with wetland species (or potentially form a wetland forest) and have deep and shall pool zones, to provide for a visually pleasing amenity as well as significantly enhancing the ecology of the area.

SMA 4 is located in close proximity to the existing Cashmere Park stormwater facility (SMA) which has sufficient full attenuation capacity to cater for the new 0.681 ha upstream plan change area which will inevitably discharge to it. The existing Cashmere Park SMA has an attenuation capacity of 2,875 m³ of which 2,310 m³ is required to service the existing development area (565 m³ of additional capacity). The 0.681 ha of proposed residential zoning requires a full attenuation storage capacity of 551 m³. Potentially, the existing SMA wetland may also have sufficient capacity to cater for the 0.681 ha of residential land; however, this will need to be confirmed during the future engineering design phase.

SMA's 1 & 2 will potentially form one large facility in the future once the entire land area is developed and SMA's 1, 2 & 3 are positioned to also combine with the western neighbouring land stormwater management facilities, if required.

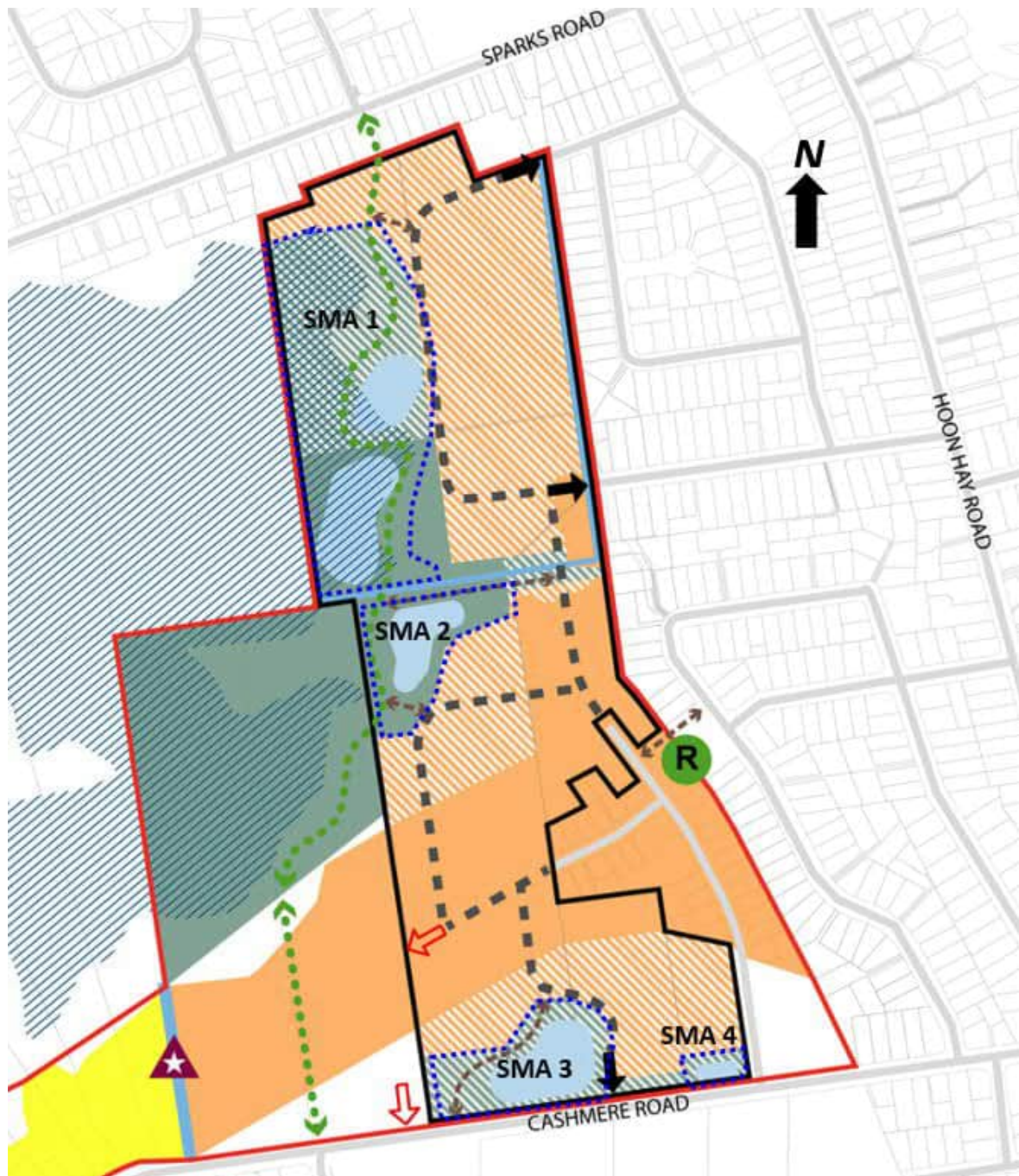


Figure 9. Proposed Stormwater Management Area Locations

7.2. Primary Conveyance Network

Stormwater runoff from residential lots, reserves and roading will be conveyed by kerb and channel, sumps and pipe reticulation. Stormwater discharges from lots will be to the kerb via a PVC kerb entry adaptor. However, should it not be possible to discharge via a kerb entry adaptor, stormwater will be discharged to roadside pipe reticulation either via direct entry lateral or a bubble up sump within the roadside channel.

All stormwater reticulation will discharge to a SMA where discharge will undergo treatment and attenuation.

The stormwater network will have capacity to convey the 20% AEP (5 year) critical duration rainfall runoff and will adhere with the CCC IDS Part 5: *Stormwater Land Drainage*.

7.3. Secondary Conveyance Network

Stormwater runoff flow rates beyond the pipe or sump capacities will discharge into the internal road network and will be conveyed within the road reserve to the appropriate SMA. The SMA's will have capacity to detain the full 2% AEP 36 hour duration stormwater runoff volume. Should an extreme event occur resulting in the SMA capacity being exceeded, stormwater flow will be directed a nearby carriageway or drain.

7.4. Stillwells Drain

It is proposed that the section of Stillwells Drain that runs through the proposed plan change area be widened and naturalised (refer to Figure 10). This will allow for a greater flow carrying capacity and for enhanced ecology (the detailed design can be carried out in conjunction with ecologist recommendations).

7.5. Timber Lined Box Drain

The Timber Lined Box Drain that runs down the northeast boundary of the plan change area (eastern boundary of Lots 2 & 3 DP 412488) is ephemeral and a CCC stormwater drainage asset. Its only source of water comes from upstream stormwater discharges and during winter/spring there is the potential for it to intercept groundwater. It is proposed that the drain be realigned and naturalised, so that it flows along the western boundary of the residential zone, from where it will form a confluence with Stillwells Drain, as shown in Figure 10.

It is considered prudent to realign the drain because to leave it within its current alignment would require at least a 20 m wide easement along the eastern boundary and the drain naturalisation works could potentially impact (destabilise) the adjacent properties during construction. Further, the effects of the drain naturalisation may require additional lateral spread protection for the existing properties in the form of stone columns. The drain is used for stormwater conveyance and realigning it to the west would allow it to flow alongside the future stormwater management area and attenuation facilities, therefore if the drain capacity was exceeded it could spill into the stormwater attenuation area.

While a detailed design has not been prepared, the drain capacity will be increased compared to the existing, and the western area where it will be located is at a lower land elevation, this would potentially allow for a greater level of groundwater interception (if deemed desirable by ecologists) for a more ideal base flow to enhance the drain ability to sustain life (fauna and flora) and would reduce the period in which it may dry out over summer. However, the drain design requirements would need to be confirmed at the detailed design phase, in consultation with an ecologist.

Should any existing properties to the east of the plan change area, currently discharge stormwater or tile drainage to the open drain, a new pipe will be run down the boundary in place of the open drain, and an allowance for secondary overland flow will be made, if required.



Figure 10. Realignment of Timer Lined Drain

8. Water Supply

The proposed plan change area, including neighbouring land areas to the west, have undergone hydraulic modelling to confirm that they can be serviced by the existing water supply network.

Appendix D provides the Water Supply Design Report. The following sections provide a summary.

The area included within the water supply model comprised of the already residential zoned Stages 1 & 2 of the Cashmere Park residential subdivision, the 23 ha plan change area and the approximate 4.17 ha undeveloped residential zoned land neighbouring to the west of the plan change area. The total number of lots accounted for within the hydraulic model was 459.

The plan change area is located on the boundary between the Central and Sutherlands Water Supply Zones. During the development of Stage 1 of the Cashmere Park residential subdivision, the zone boundary valve was moved to the west, down Cashmere Road, to allow the entire Cashmere Park Stages 1, 2 & 3 to fall within the Central Water Supply Zone.

The plan change water supply modelling was based on the current boundary valve location and allowed for the entire plan change area to be supplied with water from the Central Zone. The undeveloped residential zoned land to the west of the plan change area, in reality may require the zone boundary valve to be moved further to the west, however this potential requirement was not accounted for within the modelling.

The modelled points of supply were the existing DN100 water main within Cashmere Road (two points of supply were taken off this main), the DN100 main within Leistrella Road and the DN200 main within Sparks Road.

The hydraulic modelling was carried out for both the potable and firefighting demand and concluded that the existing network has sufficient capacity to supply the plan change and surrounding areas, in compliance with the CCC Infrastructure Design Standard (IDS) and the SNZ PAS 4509:2008 New Zealand Fire Service Fire Fighting Water Supplies Code of Practice.

The future reticulated potable network through the plan change area will consist of OD180 PE mains and OD63 PE submains. All lots will be serviced by OD20 (front sections) or OD25 (rear sections) PE pipes and connected to standard DN15 water meters at the street boundaries in accordance with the CCC IDS and Construction Standard Specification (CSS).

Where water mains to vest in CCC pass through private property, easements will be provided in favour of CCC to protect its access for operations and maintenance.

The potable water supply network will be designed in accordance with CCC IDS and SNZ PAS 4509:2008 *New Zealand Fire Service Fire Fighting Water Supplies Code of Practice*. The fire-fighting water supply classification will be FW2 in keeping with a residential area. Fire hydrants will be placed at no more than 135 m intervals in accordance with this standard.

9. Utility Services

9.1. Power

Orion had not confirmed whether there was capacity within their network to service the plan change area at the time this report was prepared. However, it is considered reasonable to assume that there will be capacity but any upgrades to the network cannot be confirmed at this early stage; however, would not prevent development.

Confirmation of capacity will be provided once it is received from Orion.

The power reticulation network will be installed underground in the berms of the carriageways.

High voltage cables will be laid to all kiosks and from each kiosk low voltage connections will be laid to the frontage of each residential dwelling and street light.

The developer will install high voltage power cables and will on sell these to Orion, after which the power network will be deemed an Orion asset.

9.2. Telecommunications

Enable had not confirmed whether there was capacity within their network to service the plan change area at the time this report was prepared. However, it is considered reasonable to assume that there will be capacity but any upgrades to the network cannot be confirmed at this early stage; however, would not prevent development.

Confirmation of capacity will be provided once it is received from Enable.

9.3. Street Lighting

All street lighting within new roads would be vested in Council and would be required to comply with the CCC IDS Part 11: *Lighting* and AS/NZS 1158 and the specified category unless alternative street lighting options are discussed with and approved by Council.

10. Conclusion

The site can be serviced for wastewater, stormwater and potable water. Enable and Orion have not yet provided confirmation of telecommunications and power capacity, respectively. However, during the Stage 1 construction of the neighbouring Cashmere Park residential subdivision both were aware of the wider development area and it is envisaged that utility services can be provided; network upgrades may be required but this would not prevent development.

Subject to preliminary and detailed design in conjunction with appropriate Council consents being obtained. Roading and earthworks will be designed and constructed in accordance with the CCC Infrastructure Design Standards, Construction Standard Specifications and the appropriate New Zealand standards. On this basis the submission for rezoning can be supported in respect of infrastructure and servicing capacity.

11. Disclaimer

This report has been prepared by Eliot Sinclair & Partners Limited ("Eliot Sinclair") only for the intended purpose as technical supporting documentation in support of a Plan Change Application.

The report is based on information sought from:

- Canterbury Maps (2022).
- Christchurch City Council asset maps (2022).
- Previous site investigation reporting (primarily completed during the design of Stage 1 of the Cashmere Park residential development).
- Landcare Research Soils Maps (2022).

Where data supplied by Cashmere Park Ltd, G. Ward & R. Brown or other external sources, including previous site investigation reports, have been relied upon, it has been assumed that the information is correct unless otherwise stated. No responsibility is accepted by Eliot Sinclair for incomplete or inaccurate data supplied by other parties.

Whilst every care has been taken during our investigation and interpretation of describe conditions e.g. groundwater elevations and soil characteristics to ensure that the conclusions drawn, and the opinions and recommendations expressed are correct at the time of reporting, Eliot Sinclair has not performed an assessment of all possible conditions or circumstances that may exist at the site. Variations in conditions may occur between investigatory locations and there may be conditions that were not detected by the scope of the investigation that was carried out or have been covered over or obscured over time. Eliot Sinclair does not provide any warranty, either express or implied, that all conditions will conform exactly to the assessments contained in this report.











The exposure of conditions or materials that vary from those described in this report, may require a review of our recommendations. Eliot Sinclair should be contacted to confirm the validity of this report should any of these occur.

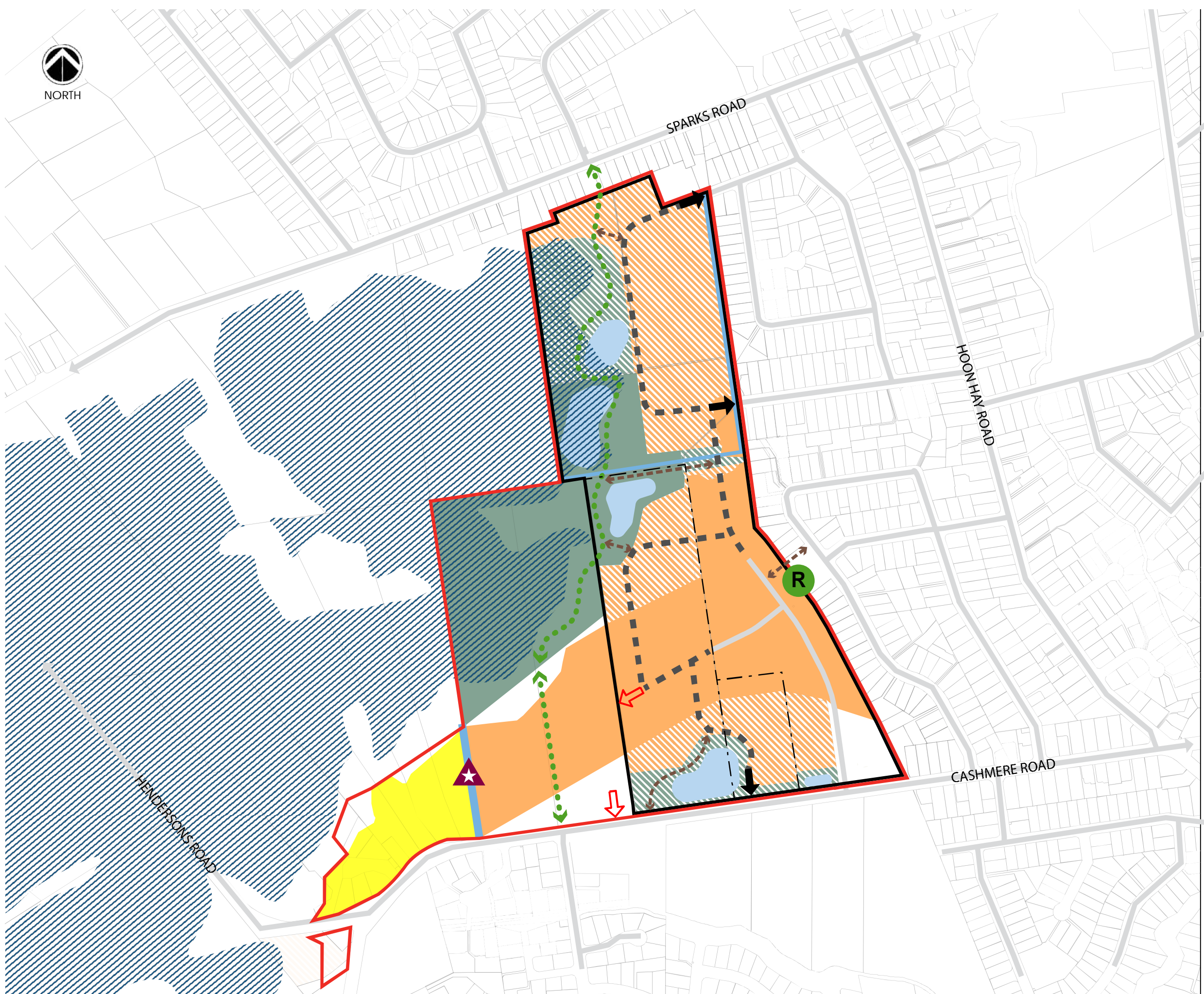
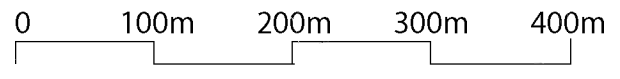
This report has been prepared for the benefit of Cashmere Park Ltd, G. Ward & R. Brown and the Christchurch City Council for the purposes as stated above. No liability is accepted by Eliot Sinclair or any of their employees with respect to the use of this report, in whole or in part, for any other purpose or by any other party.

Appendix A. Proposed Outline Development Plan



Proposed Hendersons Outline Development Plan

-  Existing ODP Boundary [Appendix 8.10.18 Hendersons Outline Development Plan]
-  Application Site boundary [Proposed alternate ODP]
-  Internal landowner boundaries
-  Existing road network
-  Proposed road network
-  Fixed road access point
-  Indicative road access point [aligned with neighbouring subdivision plans recieved]
-  Rural/Urban fringe zone within ODP boundary
-  District Plan High floodplain hazard management area
-  Heritage stream to be safeguarded
-  Residential development area
-  Residential development area with greater constraints
-  Land set aside for stormwater management / recreational / conservation use
-  Existing box drain
-  Proposed recreational route Location and alignment may vary (including extension)
-  Existing Recreation Reserve
-  Proposed residential development area
-  Proposed Land to be set aside for stormwater management / recreational / conservation use
-  Proposed stormwater management area
-  Proposed pedestrian / cycle link (including extensions)



Appendix B. Geotechnical Investigation Report



GEOTECH
consulting ltd

CASHMERE FIELDS REZONING GEOTECHNICAL REPORT



Reference Number: 3933

Date: 15 December 2022

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Appendix 1 **Site Plan & Land Damage Records**

Appendix 2 **CPT and Borelogs**

Appendix 3 **Lab Data and C_{FC} Analysis**

Appendix 4 **Liquefaction Profiles**

OVERVIEW SUMMARY

Project Type:	Land Development			
Nature of Project:	Plan Change			
Investigation undertaken:	24 CPTs to 9 - 15m depth, 4 boreholes to 7 – 21m, 6 hand augers and scala penetrometer tests to 2m depth, seismic dilatometer testing to 10m depth, geophysical testing to 7m depth.			
Subsoil Characteristics:	Interbedded loose to very loose silts and sandy silts/silty sands, with some bands of medium dense clean sands, and also significant bands of non-liquefiable clayey materials. Most of the CPT probes terminated in a lower sand or silt layer prior to refusing suddenly on a dense gravel layer some 9 to 12m below ground level. Below this are interbedded sands, gravels and silts to 16-19m depth, then dense gravels to at least 21m depth.			
Water table depth:	1.3m -1.75m (full saturation) depth.			
Calculated Settlements:	SLS		ULS	
	Total	Upper 10m	Total	Upper 10m
	10-50mm (25mm avg)	10 - 40mm (20mm avg)	50 - 260mm (100mm avg)	50 - 140mm (80mm avg)
Lateral Spread:	Currently not a likely hazard but the imposition of requirements for stormwater detention basins and the like will likely create a lateral spread risk that will require mitigation.			
Technical Category:	Land assessed as TC2-like or Hybrid TC2/TC3 behavior.			
Foundation options:	Shallow TC2-type or TC2/TC3 Hybrid foundations will likely be suitable.			
Suitability for Rezoning	Suitable for rezoning for residential subdivision.			

GEOTECHNICAL REPORT

Cashmere Fields Rezoning

1.0 INTRODUCTION

It is proposed to rezone a block of land that lies to the immediate west of the existing residential suburb of Hoon Hay. The (currently rural) block, consisting mainly of relatively flat farmland, is bounded by a strip of residential land along Sparks Road to the north, runs south (in a width of 300 – 600m) to Cashmere Road. To the west is further rural land; to the east are the suburban houses of Hoon Hay.

A series of geotechnical investigations have been carried out at the site as part of the assessment of the land for the proposed plan change (as well as for an existing subdivision on the land), and a detailed liquefaction assessment has been undertaken. This report outlines that assessment and the conclusions that can be drawn from it.

It is envisaged that at subdivision stage further investigations will be carried out to refine the assessment of liquefaction on the site, and to provide design parameters for any future subdivision.

2.0 DAMAGE OBSERVATIONS

Lidar data shows very little to only moderate cumulative ground deformations at the site from the events spanning from September 2010 to June 2011. Appendix 1 (figure SK2) shows the results of these damage observations.

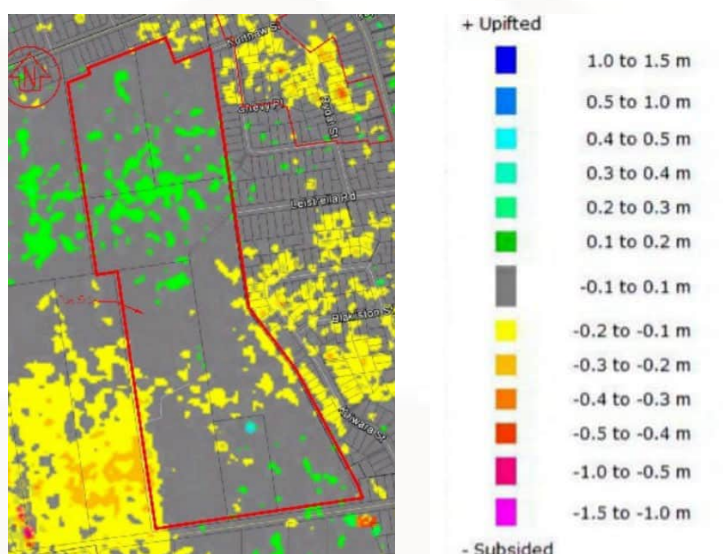


Figure 1 Lidar ground deformations, September 2010 to June 2011 Events

All the land to the immediate east of the site is classified as MBIE Technical category 2 (“TC2”); the Lidar cumulative ground deformations there (i.e. to the immediate east) are similar, if not slightly more intense, than those on this site. Our own observations on the site following the February 2011 earthquake event showed only minor surface manifestation of liquefaction, affecting less than 5% of the land.

Appendix 1 contains summary information from the NZGD (drawing sheets 2 & 3).

3.0 THE SITE INVESTIGATION

3.1 Objectives

This site investigation data has been analysed to provide information about the composition, spatial relationships and geotechnical properties of the materials that underlie the site.

In particular the following information was sought:

- Definition of the quality and variability of the soils underlying the site.
- Water table depth.
- Liquefaction potential.
- Permissible likely foundation types.
- Site subsoil category.

3.2 Methodology

Twenty-four cone penetrometer tests (“CPT”) have been carried out at the site between 2011 and 2019. The combined data for the CPTs range in depth from 9m to 15m below ground level (all refusing on dense gravels). Two dual tube boreholes have been drilled at the site, one in the west of the site and one in the north of the site, to a depth of 21m in each case. A seismic dilatometer test has been carried out in the central part of the site, as well as two boreholes to 7-10m depth. Some geophysical testing (i.e. shear wave velocity) has also been carried out at the site as part of a University research project. Six hand augers with associated scala penetrometer tests to 2 metres depth have been drilled at the site as well.

Further information regarding groundwater levels, ground deformations, levels of shaking, and observed ground damage during the Canterbury Earthquake Sequence was also retrieved from the New Zealand Geotechnical Database.

Appendix 1 (drawing sheet 1) has a plan showing the locations of the investigations that have been carried out to date.

3.3 Subsurface Conditions

The geological map for Christchurch indicates that the site is underlain by predominantly sand and silt overbank deposits (Springston Formation), of Holocene age.

The interpreted CPT probes show variable subsurface conditions. Generally, the soils consist of interbedded loose to very loose silts and sandy silts/silty sands, with some bands of medium dense clean sands (often about 1-2 metres thick, somewhere between 3 and 6 metres below ground level) and also significant bands of non-liquefiable clayey materials. Most of the CPT probes terminated in a lower sand or silt layer prior to refusing suddenly on what is likely to be a dense gravel layer 9-12m below ground. Below this are interbedded sands, gravels, and silts to 16-19m depth, then dense gravels to at least 21m depth.

CPT traces and borelogs are included in Appendix 2.

3.4 Groundwater

Groundwater was observed during the hand auger investigations at 1.0 – 1.9m. Piezometer records from the site indicate that groundwater levels can fluctuate from 2m depth to ground level. The GNS Science Median Groundwater Surface Elevations from the Canterbury Geotechnical Database for this site indicate that the long-term median water table is 1.3m below ground surface.

While these levels are a useful guide to expected conditions during construction, another aspect that can be considered for liquefaction analysis purposes is the degree of saturation of the soils that lie below the apparent water table. If a soil is not 100% saturated then it is unable to liquefy.

Typically, it is assumed that any soil below the water table is 100% saturated. However, in a number of separate liquefaction research projects in Christchurch and also overseas where cross-hole geophysical testing has been undertaken, the measured P-wave velocity (V_p) profiles have shown that in fact it is not uncommon for soils below the water table to be unsaturated. V_p testing was undertaken at Cashmere Fields on two separate occasions. Testing in December 2013 showed that the soils were not saturated in the upper 2.7m of the soil profile. Testing in the same location in late March 2017 showed the depth to complete saturation to be over 8 metres. Therefore, the design depth of 1.3m if used for liquefaction analyses would be conservative.

We have examined core photos from the borehole drilled at BH 38197. This shows a brown colouration to the soils to a depth of 1.75m, below which all of the soils are grey in colour. The grey soils are from the same geological origin as the brown ones, but the grey colouration indicates that they have not been exposed to oxygen in the long term. In other words, the position of the change in colour indicates the long term average (saturated) groundwater table. We also carried out a set of hand auger boreholes on the site. All the soils in those locations were a brown colouration to 2m depth, with the exception of one location where the colour change occurred at 1.8m depth.

Therefore, for liquefaction analysis purposes we have set a design median groundwater level at 1.75m depth.

3.5 Environmental Issues

Environmental engineering is beyond the scope of our expertise, however we have checked the Environment Canterbury 'Listed Land Use Register' (LLUR) (<http://llur.ecan.govt.nz/>) and found that (on the day accessed, 15 December 2022) it advises for this site (excluding the already developed area in the eastern side) the following:

"The Listed Land Use Register does not currently have any information about a Hazardous Activities and Industries List site on this land parcel"

3.6 Flood Levels

The Christchurch City Council flood hazard maps at: <https://www.ccc.govt.nz/services/stormwater-and-drainage/flooding/floorlevelmap> were accessed on 15 December 2022. The CCC system shows that much of the site, with the exception of some higher ground in the central portion of the land, is within the modelled 50-year and 200-year flood extents, and is within the Flood Management Area ("FMA"). The City Council should be referred to for further information.

4.0 INTERPRETATION

The gathered data (as described in the previous section) has been analysed for dynamic and static conditions as follows:

4.1 Fines Content Analysis

For routine liquefaction analysis it is common to use soil fines contents ('FC') that are inferred from the CPT data, rather than actual FC data from laboratory testing. This can affect the outcome of the analysis to varying degrees. The more robust way to carry out an analysis is to use detailed laboratory-measured fines contents from actual soil samples. However, the cost of doing this can be relatively high, and often not warranted on small projects. The CPT data-derived fines content formulation uses a 'best fit' line from a regression of historical FC and I_c data (I_c is a parameter derived from CPT data) – see Figure 2 below.

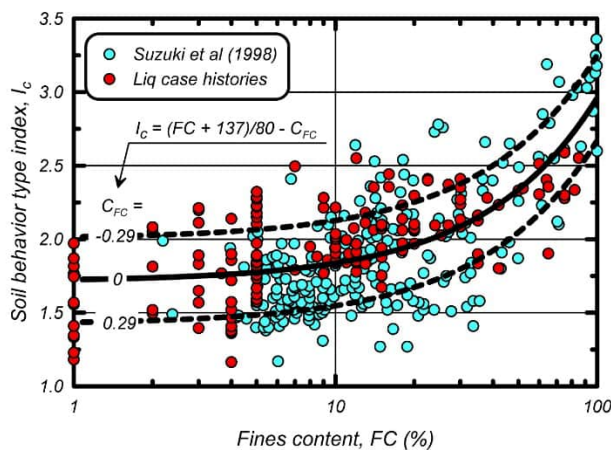


Figure 2 - Figure 2.11 from Boulanger & Idriss (2014)

The data is however quite scattered, and a particular site might not necessarily be best represented by the 'best fit' line ($C_{FC} = 0$ in Figure 2). In Christchurch it is not uncommon for site data to fall well below the best fit line, for example. Other correlations can be used by employing an appropriate site-specific 'fines correction factor' (" C_{FC} "). It is often found in Christchurch that a C_{FC} of 0.2 – 0.3 can be appropriate.

Four samples were retrieved from the liquefiable soils at the Cashmere Fields site and tested for fines content, as part of a silty soils research project in 2013. The fines content tests when regressed against the CPT-derived I_c parameter, showed that a C_{FC} parameter of 0.23 is appropriate. (When additional data is added from adjacent properties, the average C_{FC} is even higher.)

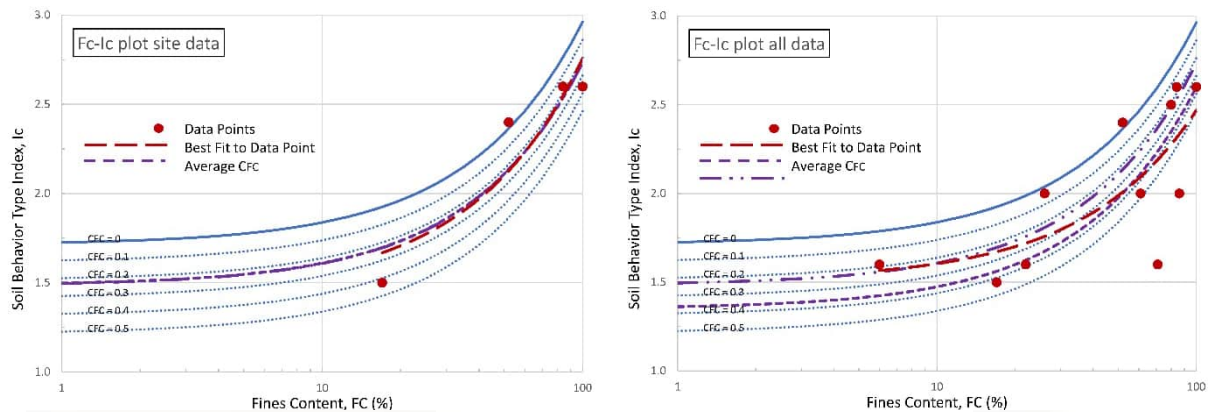


Figure 3 – C_{FC} Plots

(a) site specific data only.

(b) additional data from neighbouring sites

4.2 Liquefaction Potential

The saturated silty and sandy materials below the water table have some potential for liquefaction in a large earthquake. The CPT profiles have been analysed using the method of Boulanger & Idriss (2014); and free field settlements assessed using the method of Zhang et al (2002). A ‘fines correction’ coefficient (C_{FC}) of 0.23 was adopted for the analysis, as described in the previous section. Additionally, given the good performance of the site in the Canterbury Earthquake Sequence as discussed in Section 2, a probability of liquefaction threshold, P_L , of 50% was adopted.

For the design input ground motion accelerations, we have adopted the PGAs (peak ground accelerations) recommended by MBIE, which is an SLS event (at M7.5) of 0.13g, a further SLS event (at M6) of 0.19g, and at ULS 0.35g (M7.5) for an IL2 (importance level 2) building. The SLS event at 0.19g/M6 was found (as is almost always the case) to be the dominant SLS event.

From the CPT data analyses we calculate Ultimate Limit State (‘U.L.S.’) theoretical post liquefaction free-field ground settlements at the site of up to 140mm in the upper 10m of the soil profile, averaging 80mm, and 260mm for the full depth of CPTs (but less than 120mm for all but one CPT location). We have also calculated liquefaction potential and ground settlements from the smaller Serviceability Limit State (‘S.L.S.’) – this indicates ground settlements of up to 40mm in the upper 10m of the soil profile and 50mm for the full depth profiles.

Additionally, we have assessed the ‘Liquefaction Severity Number’ (LSN) for each of the liquefaction cases.

Table 1 – Assessed Liquefaction Induced Settlements (+/-50%) and LSN

CPT I.D.	500 years (ULS) 0.35g/M7.5			25 years (SLS) 0.13g / M7.5, 0.19g / M6		
	Ground Settlement (mm)		LSN	Ground Settlement (mm)		LSN
	Total	Upper 10m		Total	Upper 10m	
CPT 02	257	137	35	51	27	7
CPT 03	109	107	22	29	29	5
CPT 04	96	75	14	23	17	3
CPT 05	93	74	16	42	37	7
CPT 06	52	52	14	11	11	3
CPT 07	53	50	12	15	15	3
CPT 08	104	104	23	22	22	4
CPT 36421	54	52	11	19	19	4
CPT 10	98	90	17	36	35	6
CPT 11	99	78	16	31	22	3
CPT 12	79	62	14	29	22	4
CPT 13	81	64	18	21	14	3
CPT 14	120	75	20	48	36	9
CPT 15	99	99	27	10	10	3
CPT 16	106	86	22	23	20	5
CPT 18	81	81	16	16	16	3
CPT 19	86	85	15	12	12	2
CPT 20	101	101	20	32	32	6
CPT 21	92	88	21	37	34	6
CPT 22	78	70	15	26	23	4
CPT 24	114	47	11	23	13	2
CPT 25	101	98	20	11	11	2
CPT 26	66	66	14	16	16	3
CPT 27	80	75	15	20	19	4

Table 2 – Results Summary

Design Event	Design Ground Acceleration	Ground Settlement		LSN
		Total	Upper 10m	
500 years (U.L.S.)	0.35g / M7.5	50 - 260mm (100mm)	50 - 140mm (80mm)	11-35 (18)
25 years (S.L.S.)	0.13g / M7.5, 0.19g / M6	10-50mm (25mm)	10 - 40mm (20mm)	2-9 (4)

(values in brackets are averages)

The LSN values are a rough guide to the degree of ground surface damage that might be expected. The general descriptors are as follows in Table 3 (taken from the

NZGS Module 3 document, 'Investigation, Assessment and Mitigation of Liquefaction Hazards'):

Table 3– General Performance levels for Liquefied Deposits

Performance Level	Effects	Characteristics and Consequences	Characteristic LSN
L0	Insignificant	No significant excess pore water pressures (no liquefaction).	<10
L1	Mild	Limited excess pore water pressures; negligible deformation of the ground, and small settlements.	5-15
L2	Moderate	Liquefaction occurs in layers of limited thickness (small proportion of the deposit, say 10 percent or less) and lateral extent; ground deformation results in relatively small differential settlements.	10 - 25
L3	High	Liquefaction occurs in significant portion of the deposit (say 30 percent to 50 percent) resulting in transient lateral displacements, moderate differential movements, and settlement of the ground in the order of 100mm to 200mm.	15 - 35
L4	Severe	Complete liquefaction develops in most of the deposit resulting in large lateral displacements of the ground, excessive differential settlements and total settlement of over 200mm.	>30
L5	Very Severe	Liquefaction resulting in lateral spreading (flow), large permanent lateral ground displacements and/or significant ground distortion (lateral strains/stretch, vertical offsets and angular distortion).	

The LSN values assessed at ULS levels of shaking indicate 'moderate' to 'high' effects. For the SLS case the assessed effects are 'insignificant' to 'mild'.

Work by Bradley & Hughes (2012) indicates that in the M6.2 February 2011 event, this site was subject to a median PGA of 0.46g, which scales to an equivalent 0.32g from a 'standard' M7.5 event (i.e. close to a ULS event) and is well in excess of a 100 year 'ILS' event. If the 10-percentile ground motion is considered, this ground motion scales to an equivalent 0.20g from an M7.5 event (i.e. equivalent to a 100-year ILS design event). Similarly, the September 2010 event (0.25g from M7.1) 10-percentile motion scales to an equivalent 0.14g from an M7.5 event (i.e. in excess of an SLS event).

From this we can conclude that the site has been 'well tested' at SLS levels of shaking and ILS shaking.

4.3 Lateral Spread

Lateral spread is the post-liquefaction movement of either level liquefied ground towards a free edge or of sloping liquefied ground downhill. It often occurs along riverbanks and shorelines, and ground deformation is often expressed as extensional fissures. No instances of lateral spread were observed as a result of the Canterbury Earthquake Sequence and in its current state we do not anticipate a lateral spread hazard for this land. However, any requirements imposed on future subdivisions on this land for stormwater detention basins or the like will likely result in the creation of a localised lateral spread risk that will need to be mitigated at the time of construction.

4.4 Static Bearing Capacities

In the limited number of hand augers carried out to date, below the topsoil layer, scala penetrometer testing averages in the order of 50mm per blow, which indicates an ultimate bearing capacity of 200 kPa. More extensive testing will be required at subdivision and building consent stages to confirm this.

5.0 RMA NATURAL HAZARDS

5.5.1 Erosion

There are no major waterways adjacent to this subdivision. If a swale is constructed, then flow quantities and velocities are likely to be small and not cause erosion issues.

5.5.2 Falling Debris

The site is flat and not adjacent to any sloping ground; therefore danger from falling debris is not an issue at this site.

5.5.3 Subsidence

The land is regarded as TC2-like or in some areas 'TC2-3 Hybrid' in its performance (see section 6.2). Penetrometer testing has shown reasonable bearing capacities for foundations, and investigations have not detected any areas of uncontrolled fill or significant organic deposits. If suitable foundations are constructed, then structures will meet the requirements of the building code.

5.5.4 Flooding

This aspect is discussed in section 4.6 of the report. Suitable floor levels will be set in consultation with the Christchurch City Council.

5.5.5 Instability

The site is flat lying and therefore slope instability is not an issue for the subdivision under static conditions.

5.5.6 Volcanic and Geothermal Activity

These are not recognised risks at this site as there are no known active volcanic or geothermal areas in or near Canterbury.

5.5.7 Fire

This is beyond the scope of our expertise, however we note that the site is serviced by the Spreydon Fire Station, located approximately 3.8 km away by road.

5.5.8 Wind

This is beyond the scope of our expertise, however we note that NZS 3604 would suggest that this site is subject to 'high' wind loads.

5.5.9 Tsunami

The site is well outside any designated Tsunami evacuation zones.

6.0 RECOMMENDATIONS

Based on the information contained in section 3, and the data interpretations of section 4, we make the following recommendations for this site:

6.1 MBIE/MfE guidelines

In terms of the 2017 MBIE/MfE guidelines (Planning and Engineering Guidance for Potentially Liquefaction-Prone Land) we have carried out the equivalent of a 'Level C' (i.e. a detailed area-wide) assessment, and this land is classified as 'Liquefaction is Possible - Medium Liquefaction Vulnerability'.

6.2 Likely Technical Category

In considering the likely future land performance at this site we have considered the following aspects:

- Low levels of damage were observed after the September and February earthquakes.
- As concluded in section 4.2, the site has been 'well tested' at SLS levels of shaking and ILS shaking, and possibly near to ULS levels of shaking. Ground damage in a future SLS and ILS event is therefore unlikely to significantly exceed what is already evident on the site (which is relatively minor).
- Research into the over-prediction of liquefaction deformations (which utilised data from the Cashmere Fields site) shows that soil profiles that consist of highly interbedded deposits with few layers of clean sands, and having liquefiable layers that are predominantly silty sands that lack vertical connectivity between liquefiable layers, will likely perform better than the standard analysis methods would predict (Cubrinovski et al, 2017). The soil profiles at Cashmere Fields are of this nature.
- The adjacent suburb is all TC2, but Lidar settlements there from the Canterbury Earthquake Sequence are, on the whole, a little worse than at Cashmere Fields.

Therefore, based on the CPT-based assessment the land, and backed up by its performance in the Canterbury Earthquake Sequence, we advise that the Cashmere Fields land in its current state can be characterised by Technical Category 2 ("TC2") performance. A limited number of CPTs did show slightly worse theoretical performance under ULS conditions, and additional investigations at subdivision stage may also find some areas that indicate potentially worse performance – but

given that SLS performance is uniformly good across the entire site, the worst outcome is likely to be some areas designated as TC2/TC3 Hybrid.

6.3 Likely Foundation Construction

For residential buildings, TC2-type foundation construction likely will be suitable for much of the land here. This typically consists of a TC2 waffle slab or monolithic foundation mat for concrete floors, however other options are available (refer to the MBIE Guidelines for residential construction). For timber floors, shallow piles as per NZS 3604 are permissible (for a 'Type A' dwelling), or a well reinforced ring foundation (as per figure 4a in the MBIE guidelines), with internal shallow piles ('Type B' dwelling).

Where areas of TC/TC3 Hybrid performance are found, these TC2 waffle slabs will need to be underlain with a 600mm thick layer of reinforced compacted gravels.

6.4 Seismic Category

The consistency and depth of the alluvial formations underlying this site makes it a 'Class D' site in terms of the seismic design requirements of NZS1170.5:2004.

7.0 SUMMARY & CONCLUSIONS

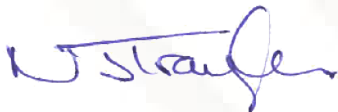
Ground conditions consist of interbedded loose to very loose silts and sandy silts/silty sands, with some bands of medium dense clean sands, and also significant bands of non-liquefiable clayey materials. Most of the CPT probes terminated in a lower sand or silt layer prior to refusing suddenly on a dense gravel layer some 9 to 12m below ground level. Below this are interbedded sands, gravels, and silts to 16-19m depth, then dense gravels to at least 21m depth.

Liquefaction assessments and site performance in the 2010-2011 Canterbury Earthquake Series indicate minor land deformations at SLS and ILS levels of shaking, and moderate deformations at ULS. The land is assessed as likely having TC2-like performance, with some areas that may be akin to TC2/TC3 hybrid performance.

It is my opinion that the land is geotechnically suitable for rezoning for residential subdivision and the construction of housing. Further ground investigations will be needed at subdivision consent stage as well as building consent stage.

Yours faithfully,

Geotech Consulting Ltd per:



Nick Traylen BE(Civil) (Hons) FEngNZ CPEng MICE CEng
CPEng 119170

8.0 LIMITATIONS

This report has been prepared solely for the benefit of, and under specific instruction from Warren Lewis as our client with respect to the brief, for use for this specific project. The reliance by other parties on the information or opinions contained in the report shall be at such parties' sole risk.

Recommendations and opinions (not to be construed as guarantees) in this report are based on data from boreholes and probings, including data provided by others. The borelogs are an engineering interpretation of the subsurface conditions. The nature and continuity of subsoil conditions away from the test locations are inferred and it must be appreciated that actual conditions could vary from the assumed model.

Environmental engineering is not within our area of expertise and therefore others will need to be consulted on such matters as contaminated ground issues.

During excavation and construction, the site should be examined by an Engineer or Engineering Geologist competent to judge whether the exposed subsoils are compatible with the inferred conditions on which the report has been based. It is possible that the nature of the exposed subsoils may require further investigation, and the modification of any design work that may have been based on this report.

It is important that Geotech Consulting Ltd is contacted if there is any variation in subsoil conditions from those described, as well as any variation in the property damage discussed in this report, as it may affect opinions expressed and any design parameters recommended in this report.

Regulatory and insurance issues may arise from some of the recommendations in this report; the client should seek independent advice on these aspects. This opinion is not intended to be advice that is covered by the Financial Advisers Act 2010.

9.0 REFERENCES

Boulanger, R.W., Idriss, I.M. (2014) "CPT and SPT based Liquefaction Triggering Procedures" *UCD Report UCD/CGM-14/01*

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Ministry of Business Innovation and Employment (2012): "Repairing and Rebuilding Houses Affected by the Canterbury Earthquake Sequence" *dated December 2012*

Ministry of Business Innovation and Employment and Ministry for the Environment (2017) "Planning and Engineering Guidance for Potentially Liquefaction-Prone Land" *dated December 2012*

Zhang,,G., Robertson. P.K., Brachman, R.W.I. (2002) "Estimating Liquefaction-Induced Ground Settlements from CPT for Level Ground", *Can. Geotech. J.* (39), 1168-1180.

Appendix 1

Site Plan & Land Damage Records



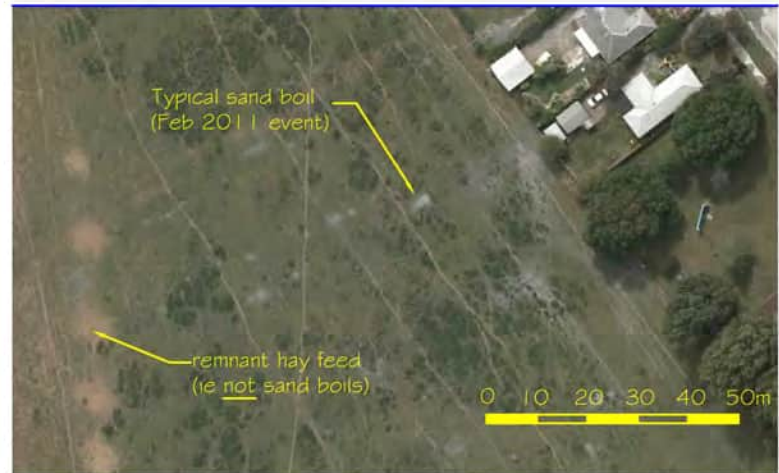
SITE PLAN
1:4000

- Stage 1 CPT
- Stage 2 CPT
- Stage 3 CPT
- DT2
- Stage 1 Borehole
- Stage 2 Hand Auger

DETAIL A
1:2500



DETAIL B
1:1500



DETAIL C
1:1500



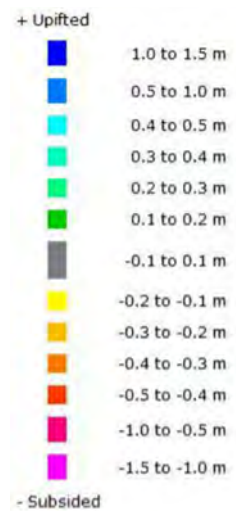
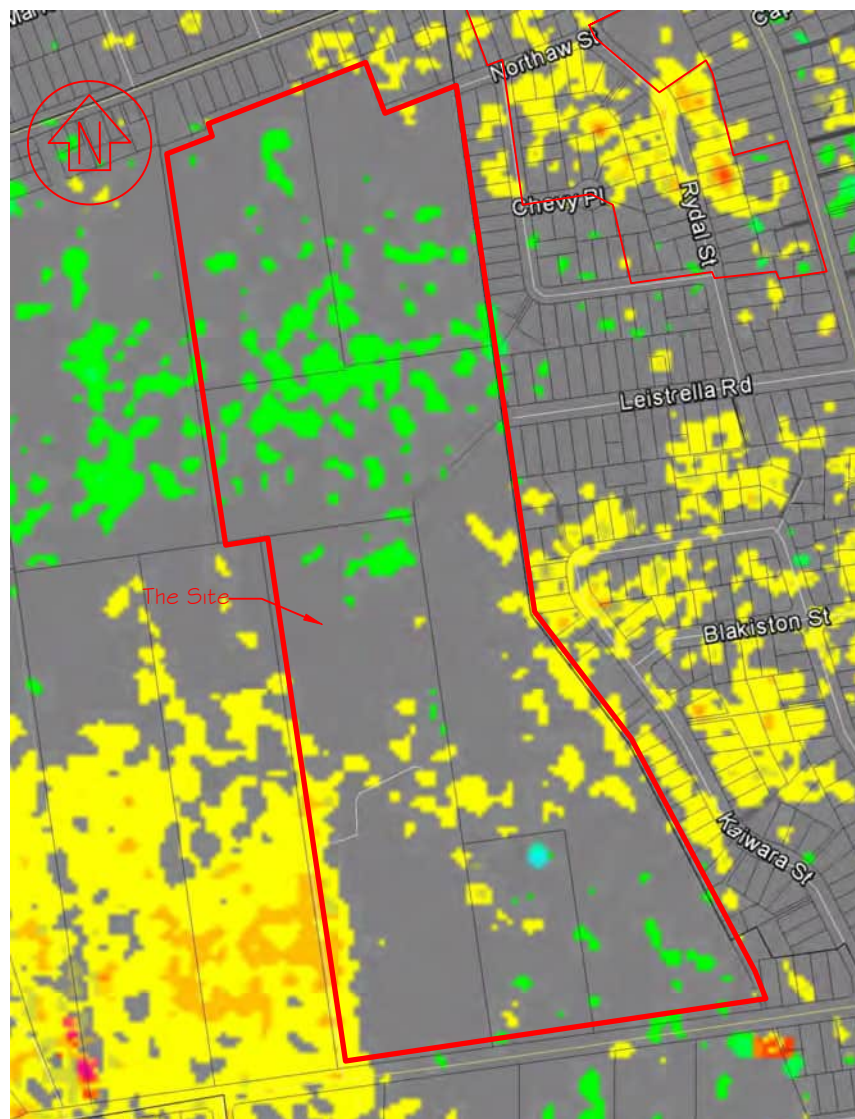
PROJECT:
CASHMERE FIELDS REZONING

DRAWING:

ISSUE	DATE	AMENDMENT DETAILS	CHKD

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		1	A



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LIQUEFACTION PROPERTY OBSERVATIONS FEB 2011
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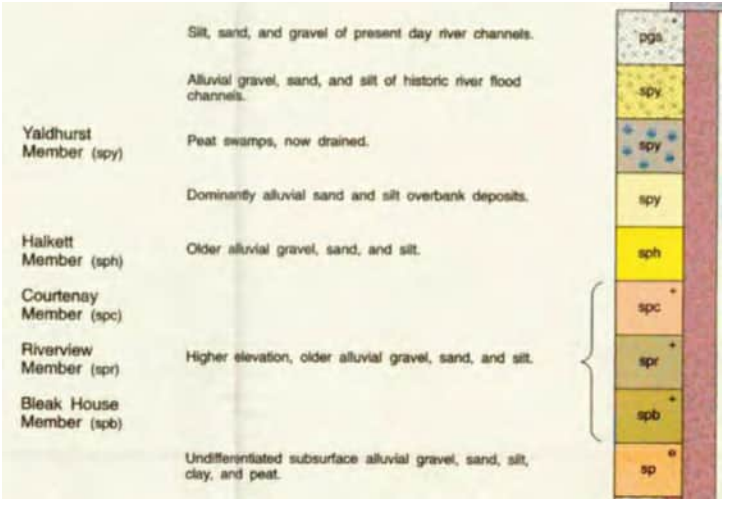
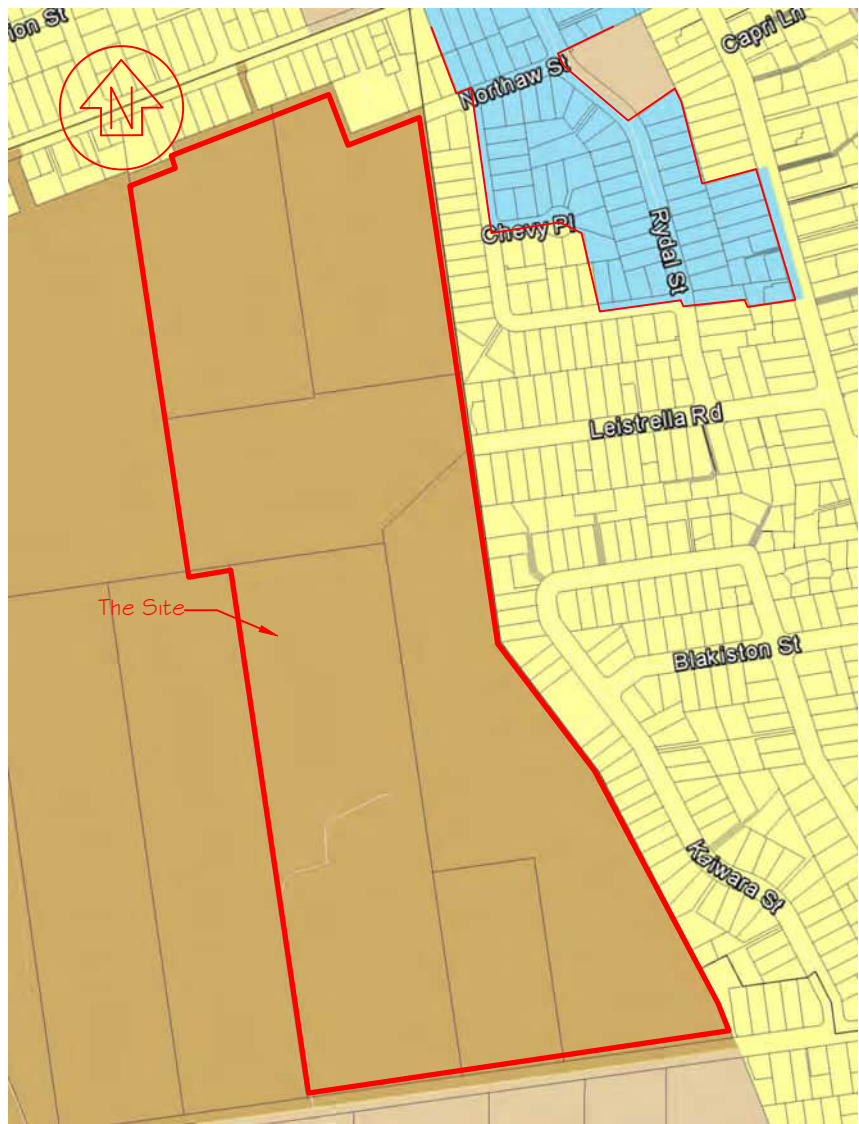
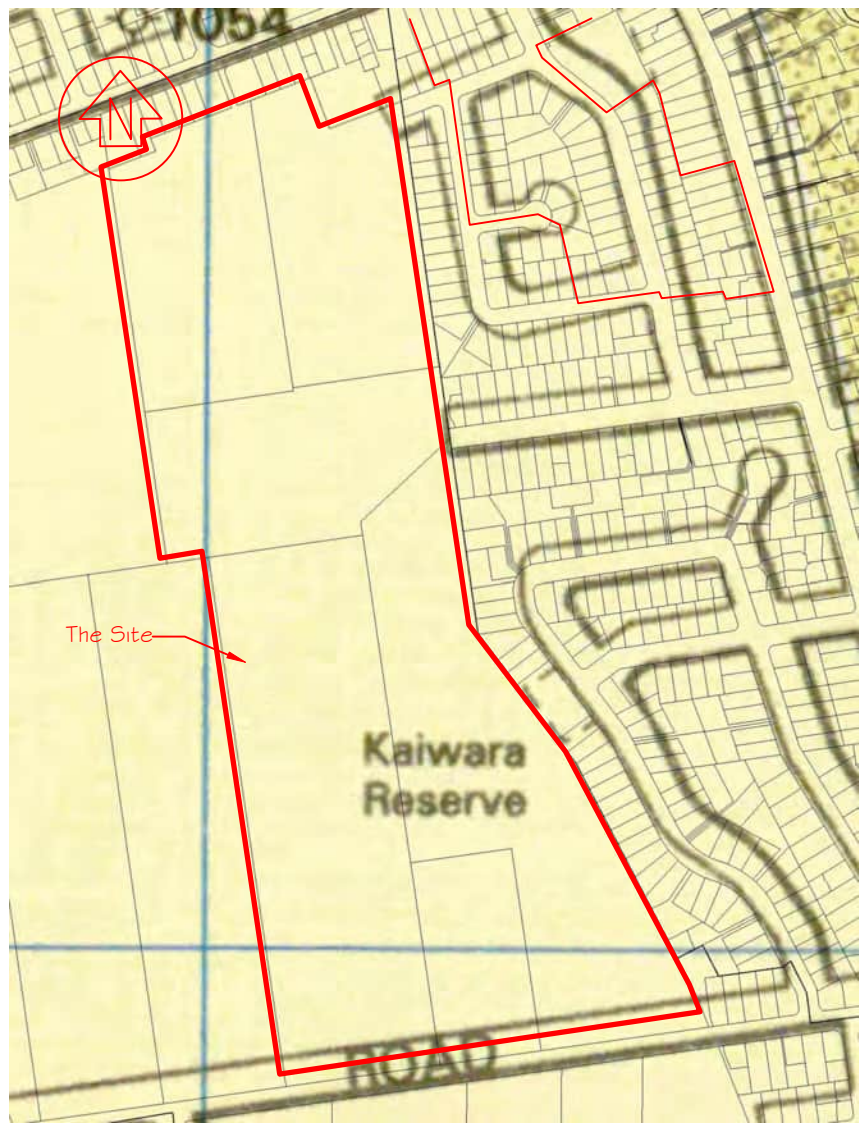
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CASHMERE FIELDS REZONING

DRAWING:
DAMAGE OBSERVATIONS

ISSUE	DATE	AMENDMENT DETAILS	CHKD

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PROJECT No. 3933	SHEET No. 2	ISSUE A



GEOLOGY
1:7500



MBIE TECHNICAL CATEGORIES
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PROJECT:
CASHMERE FIELDS REZONING

DRAWING:
GEOLOGY AND TECHNICAL CATEGORIES


ISSUE	DATE	AMENDMENT DETAILS	CHKD

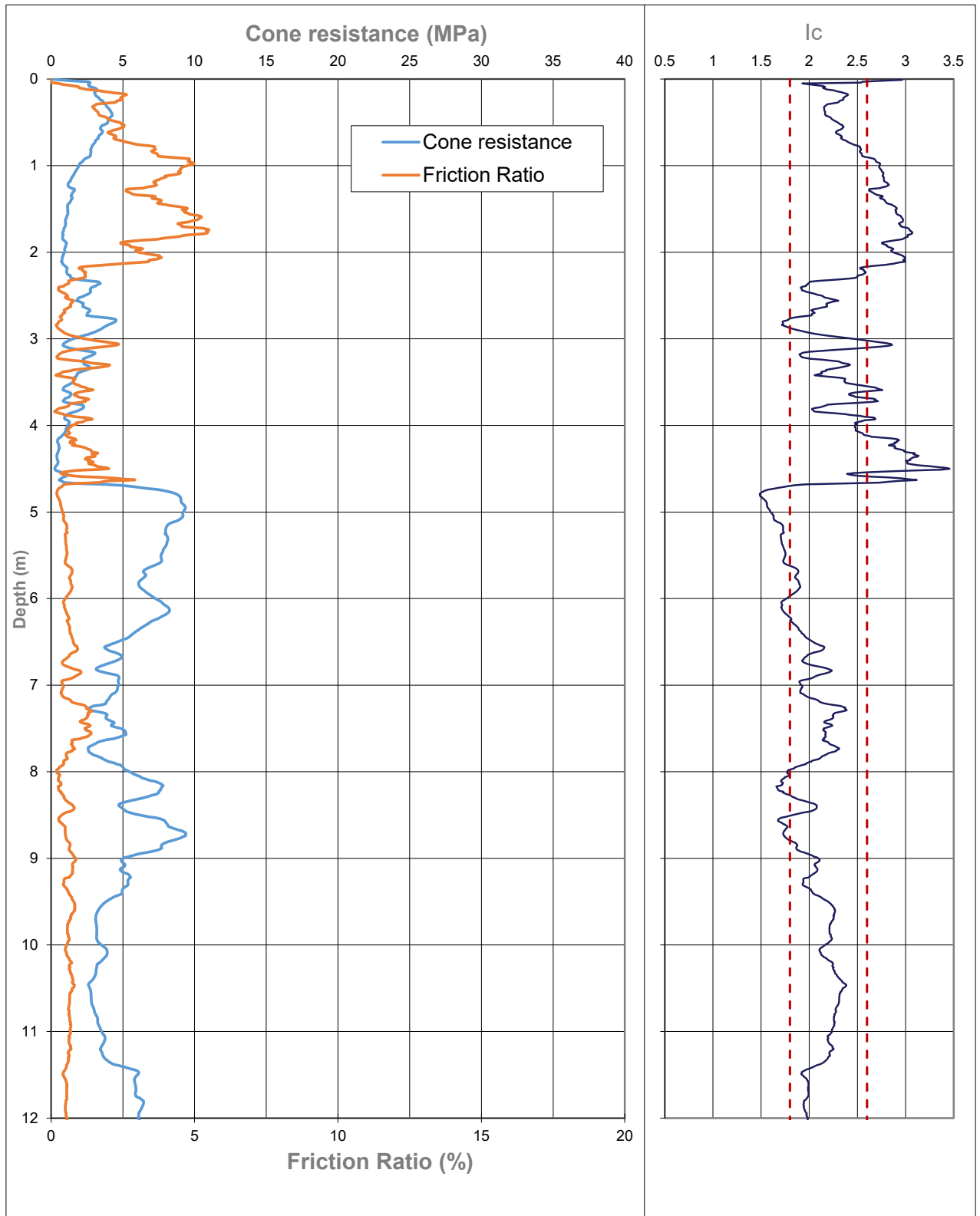
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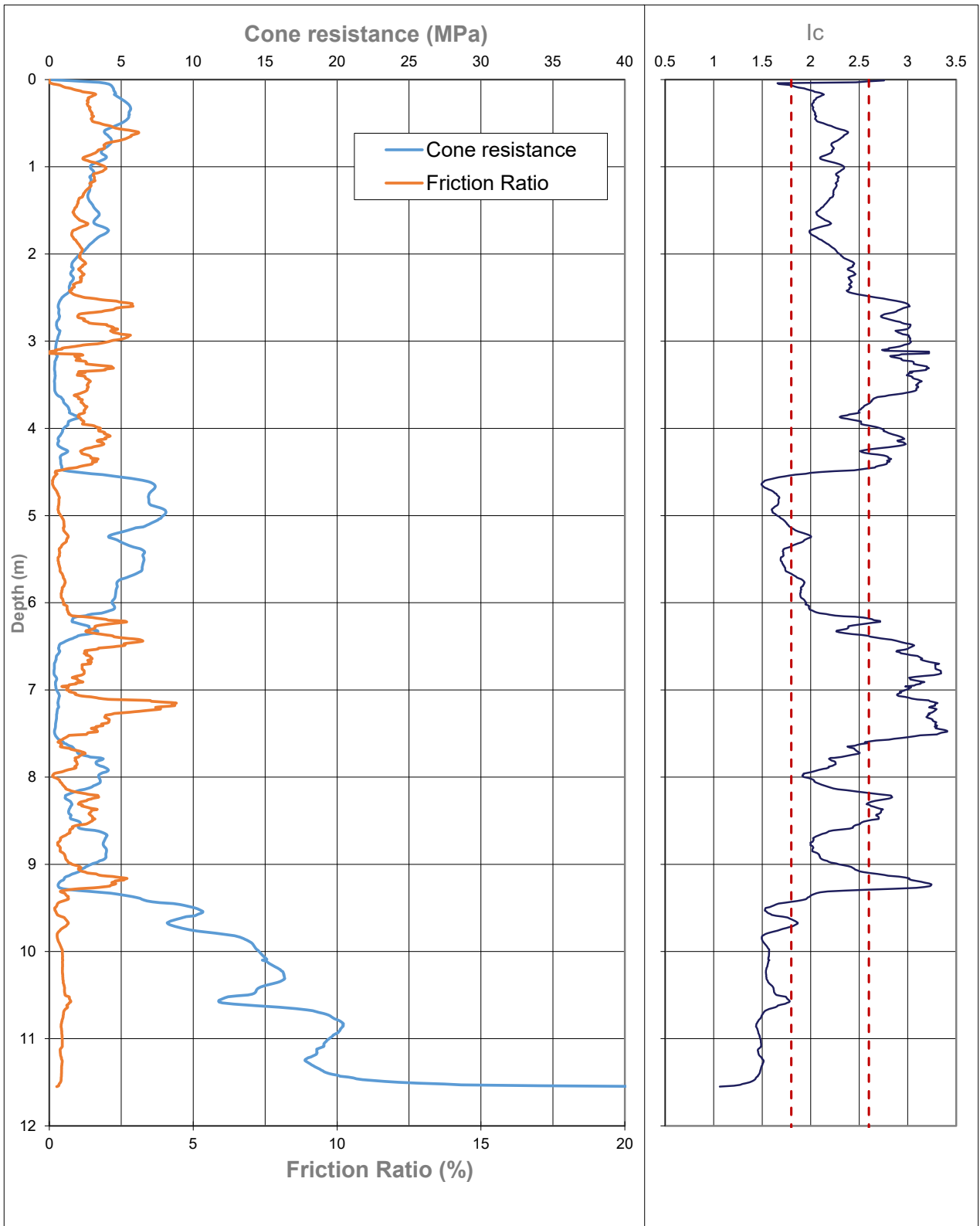
Appendix 2


CPT Profiles & Borelogs

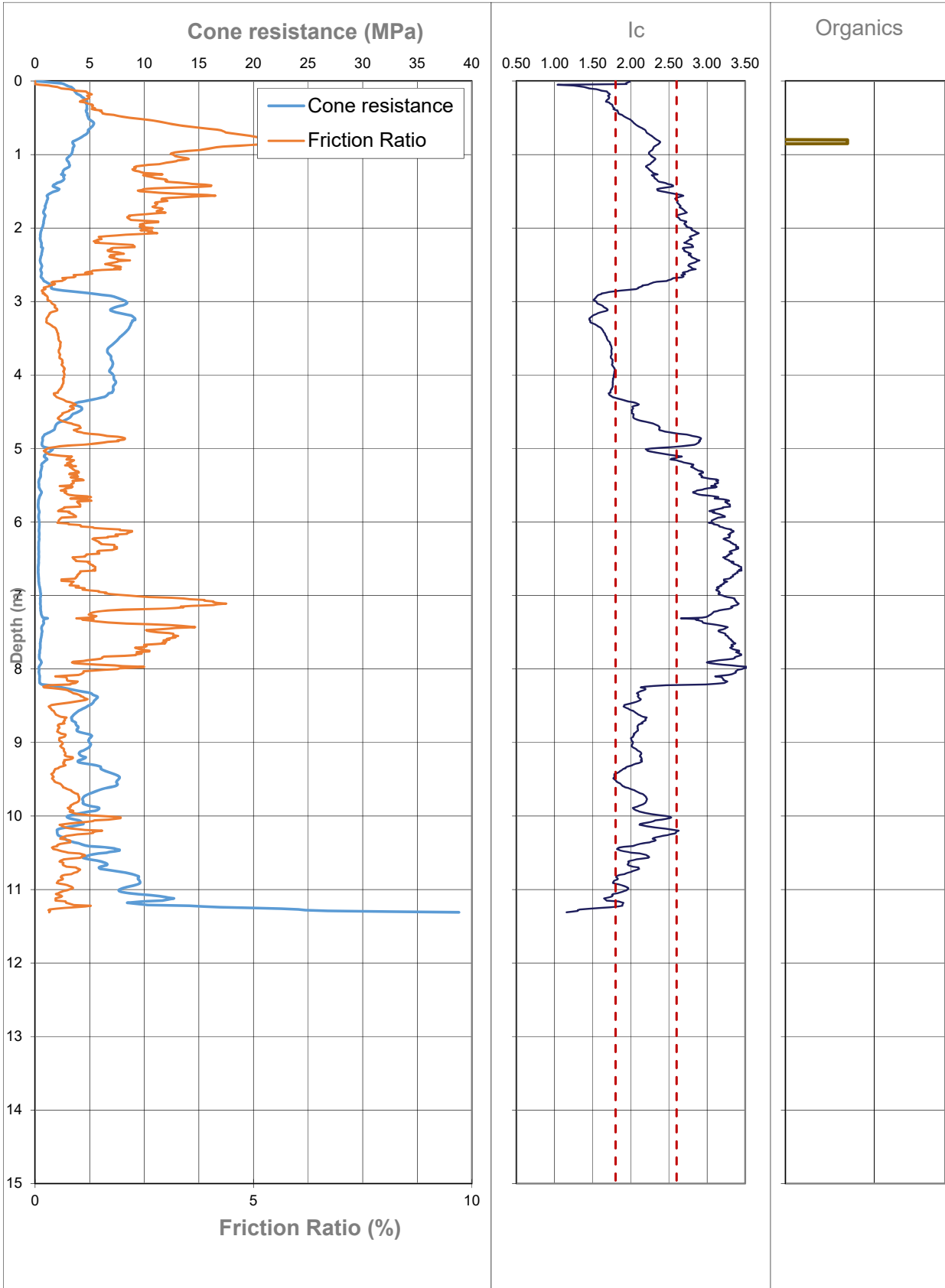
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Client:	W Lewis	Job No:	3933




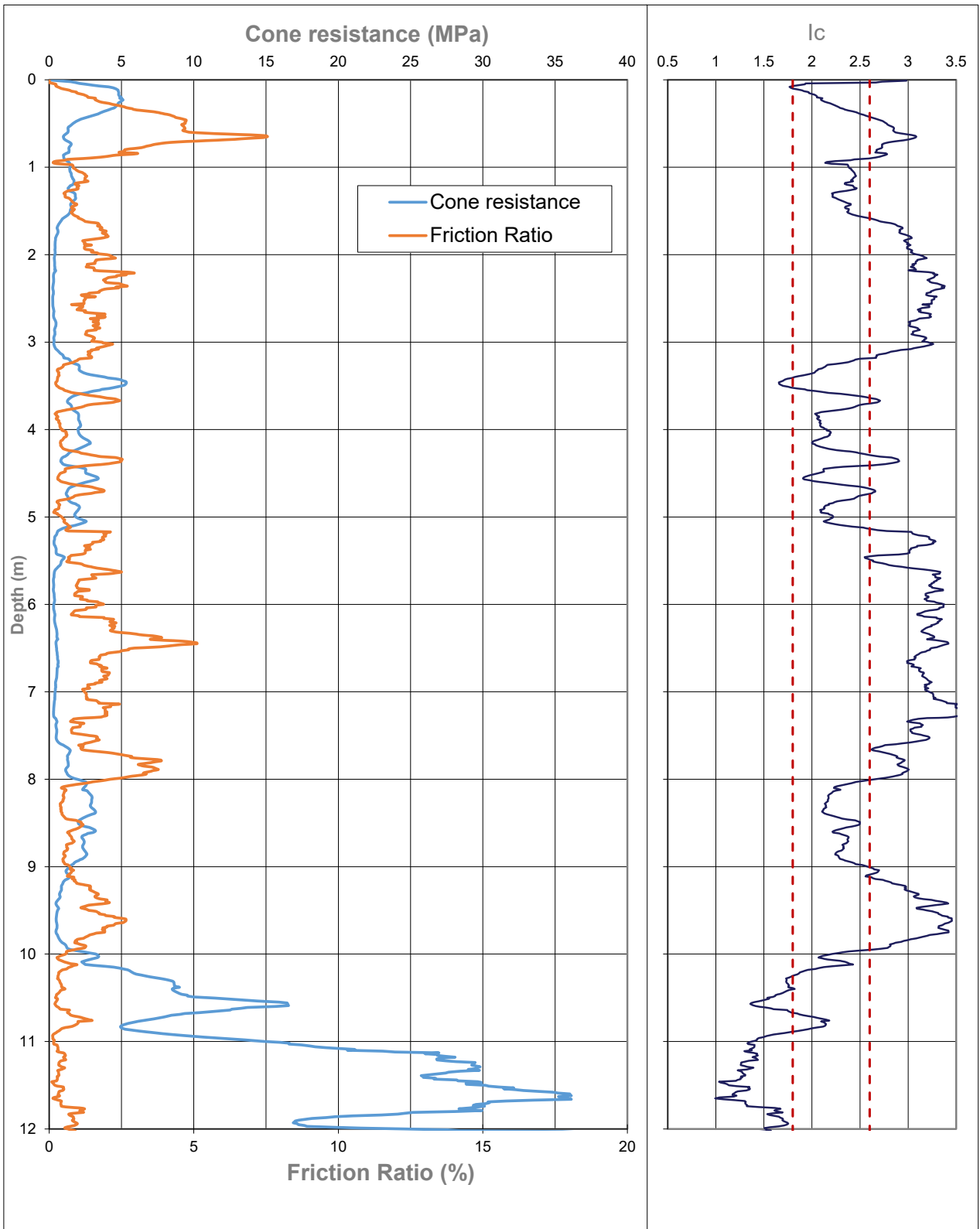
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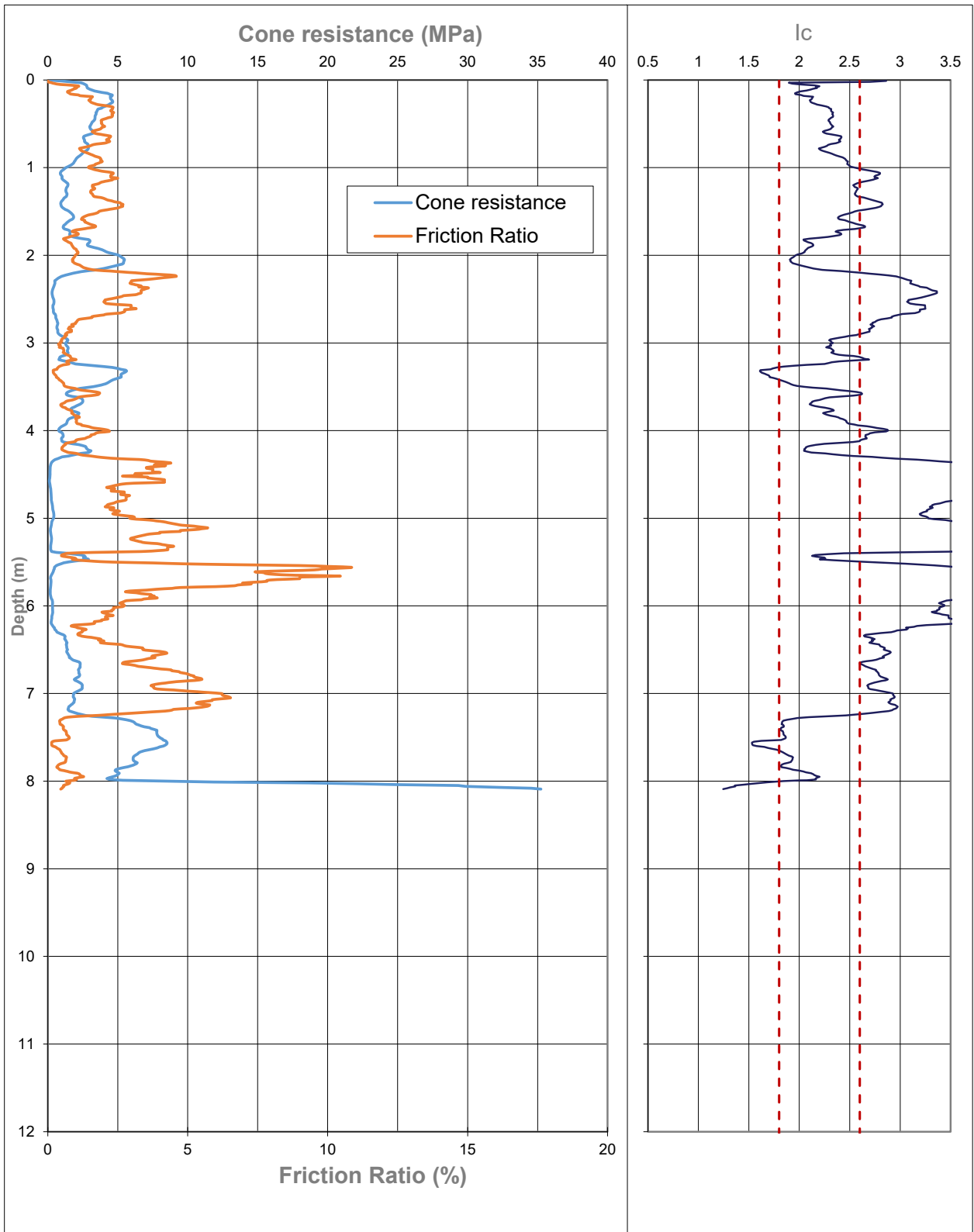
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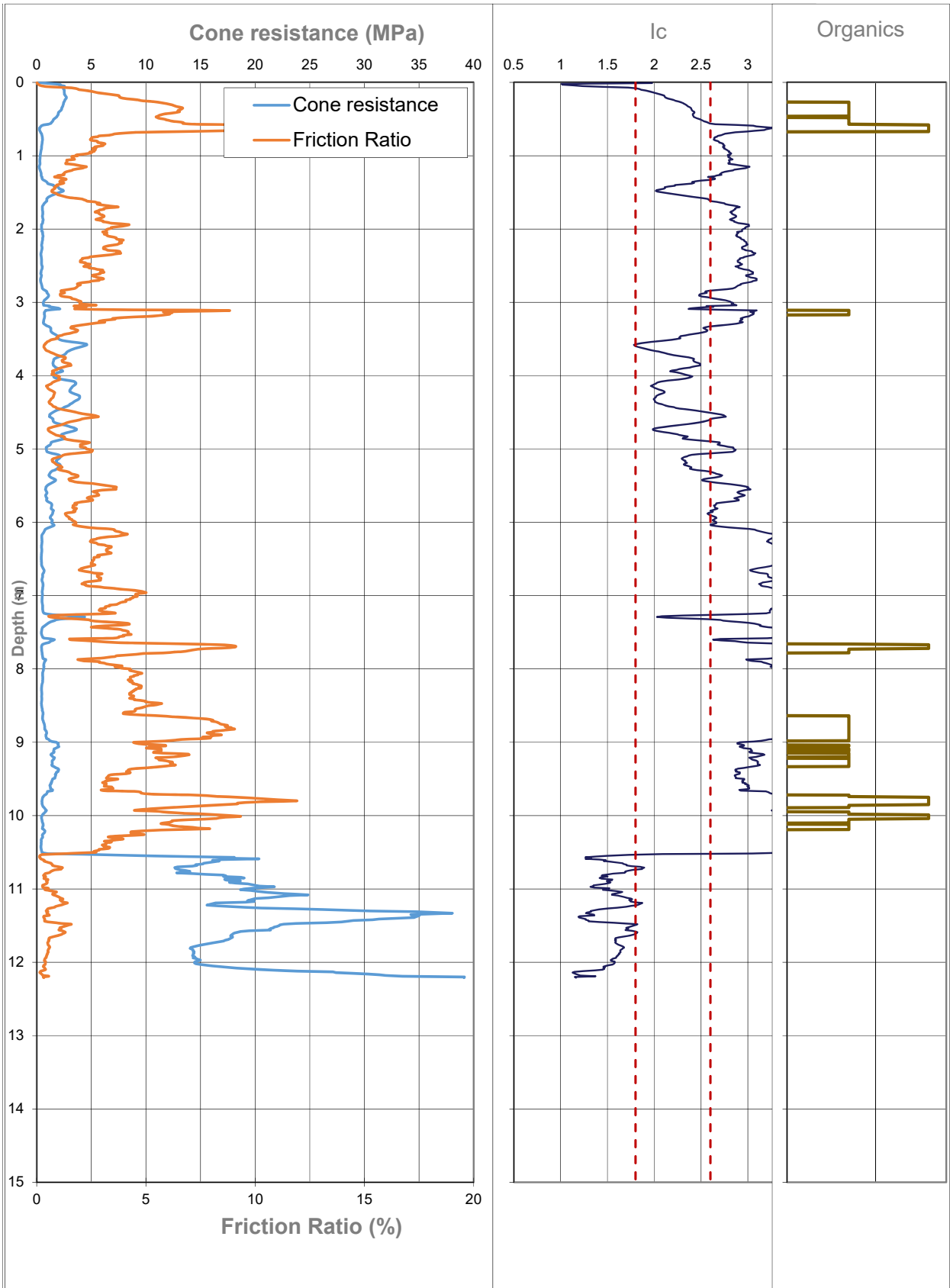
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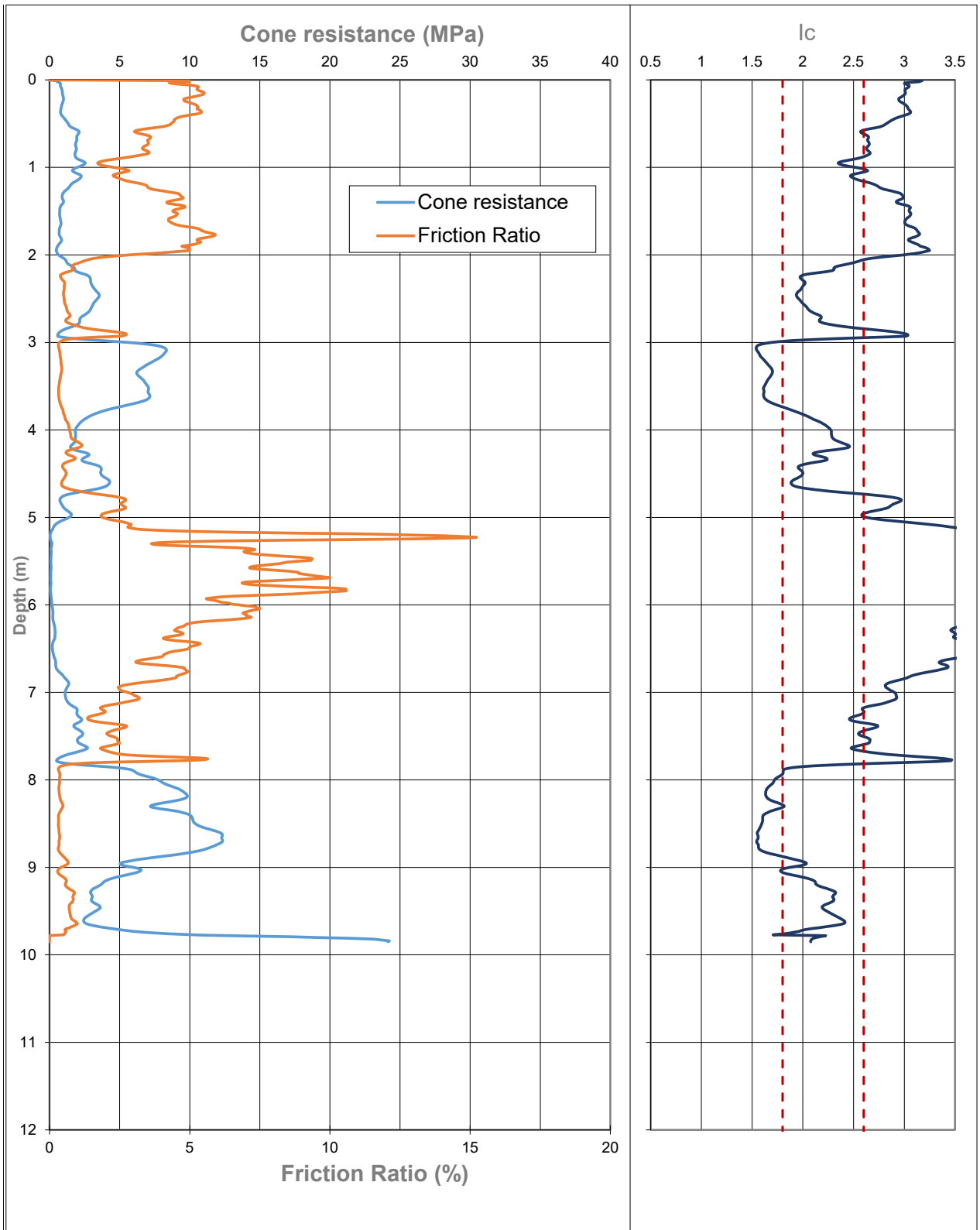
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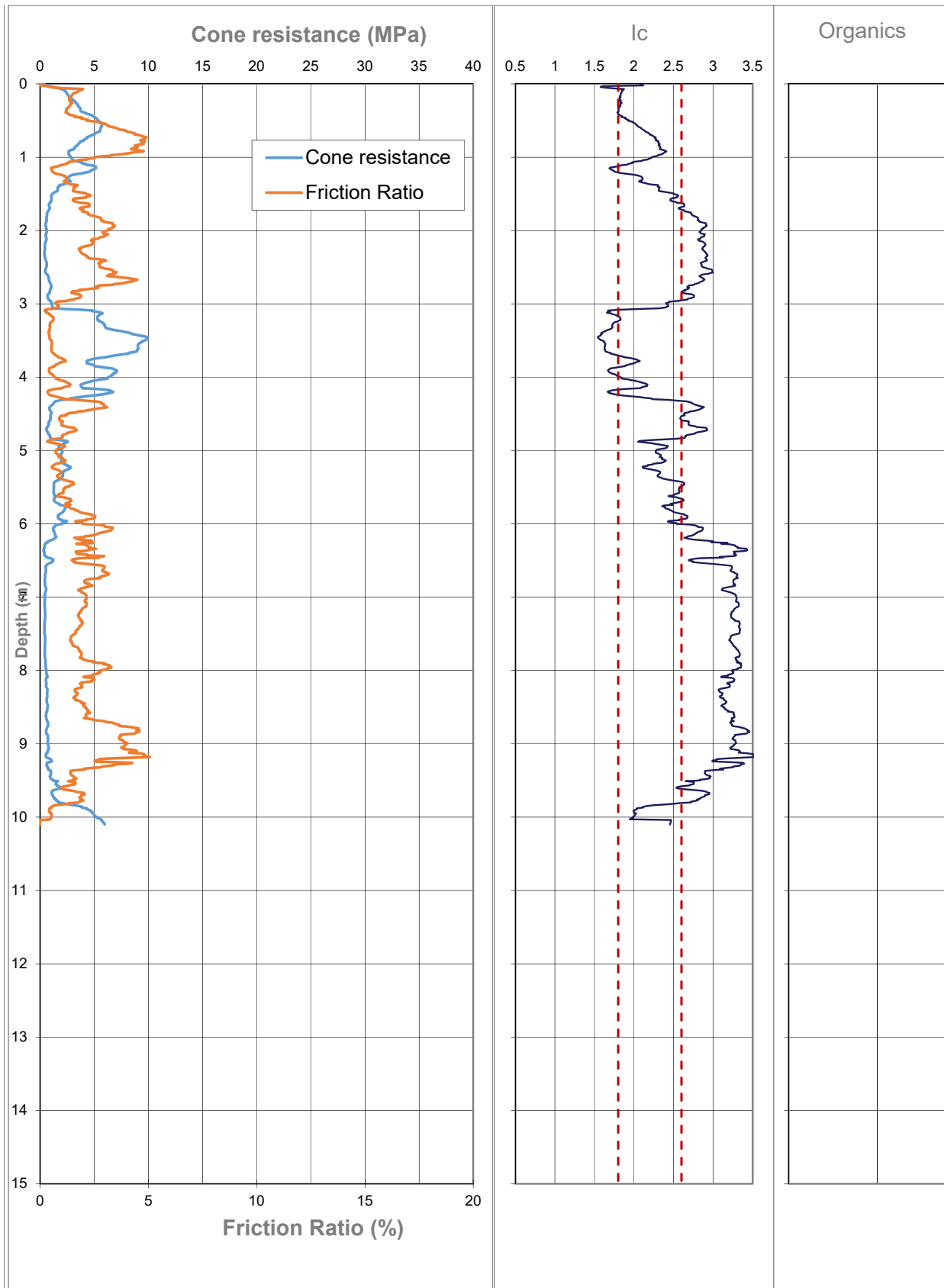
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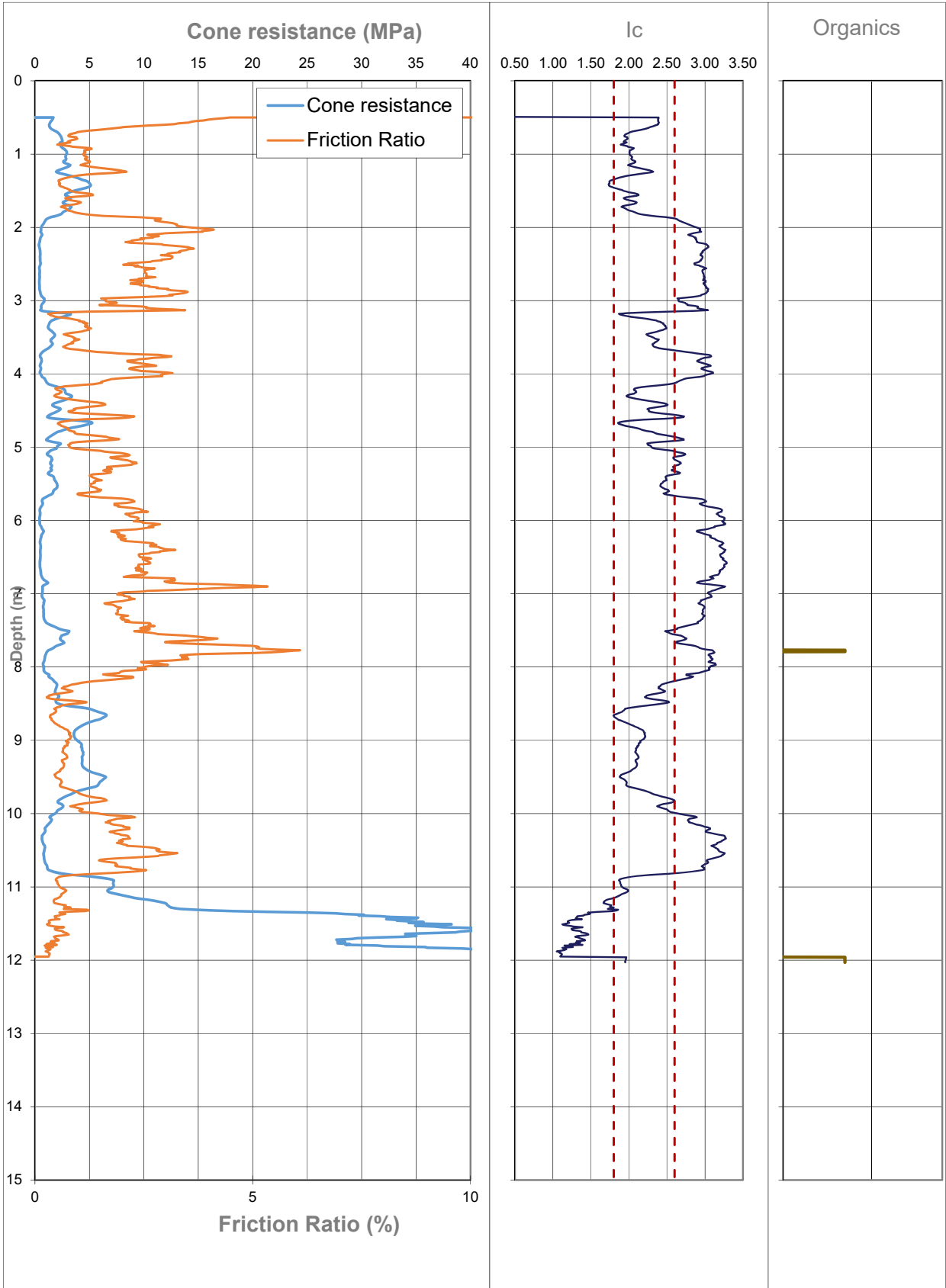
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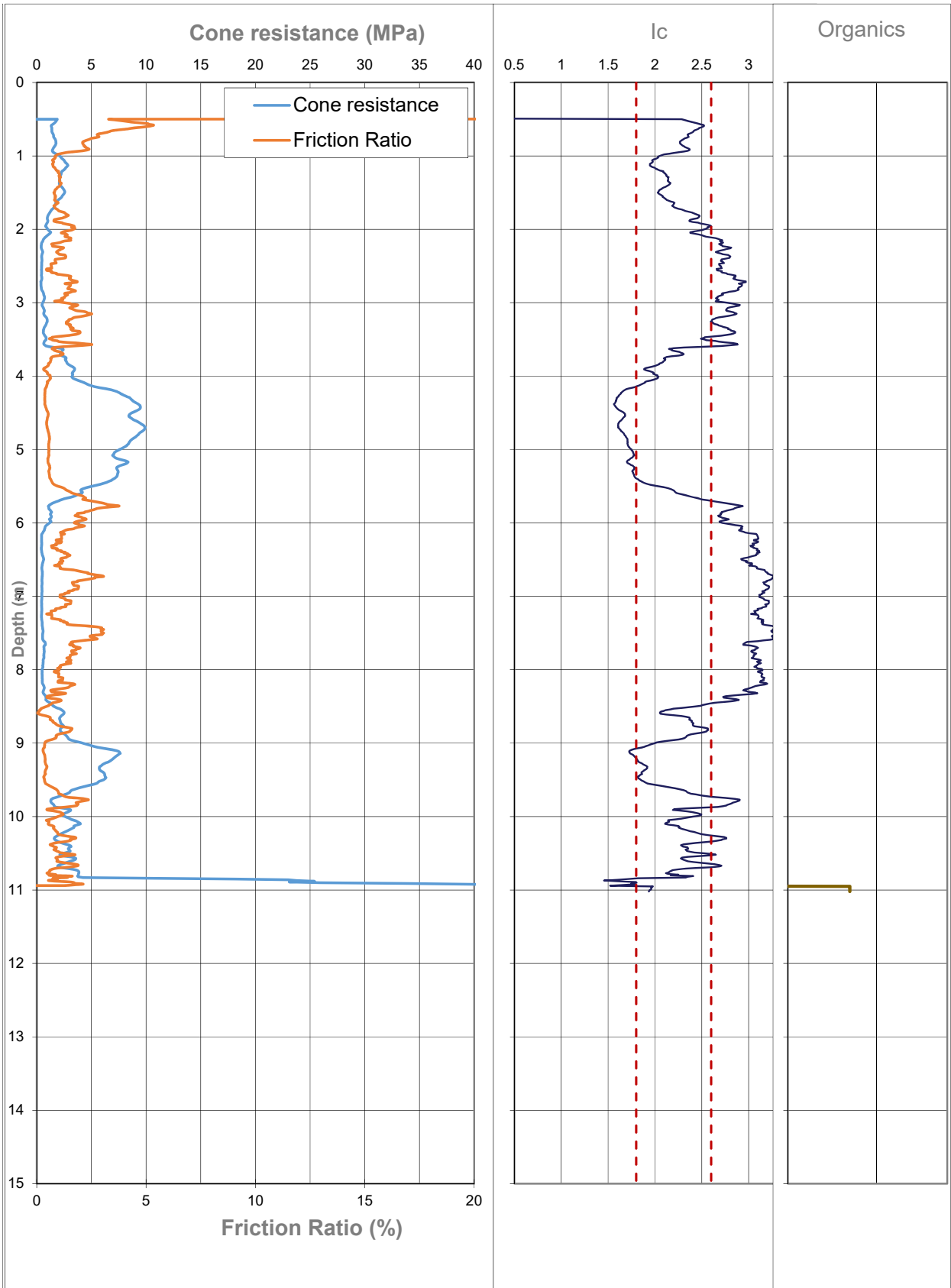
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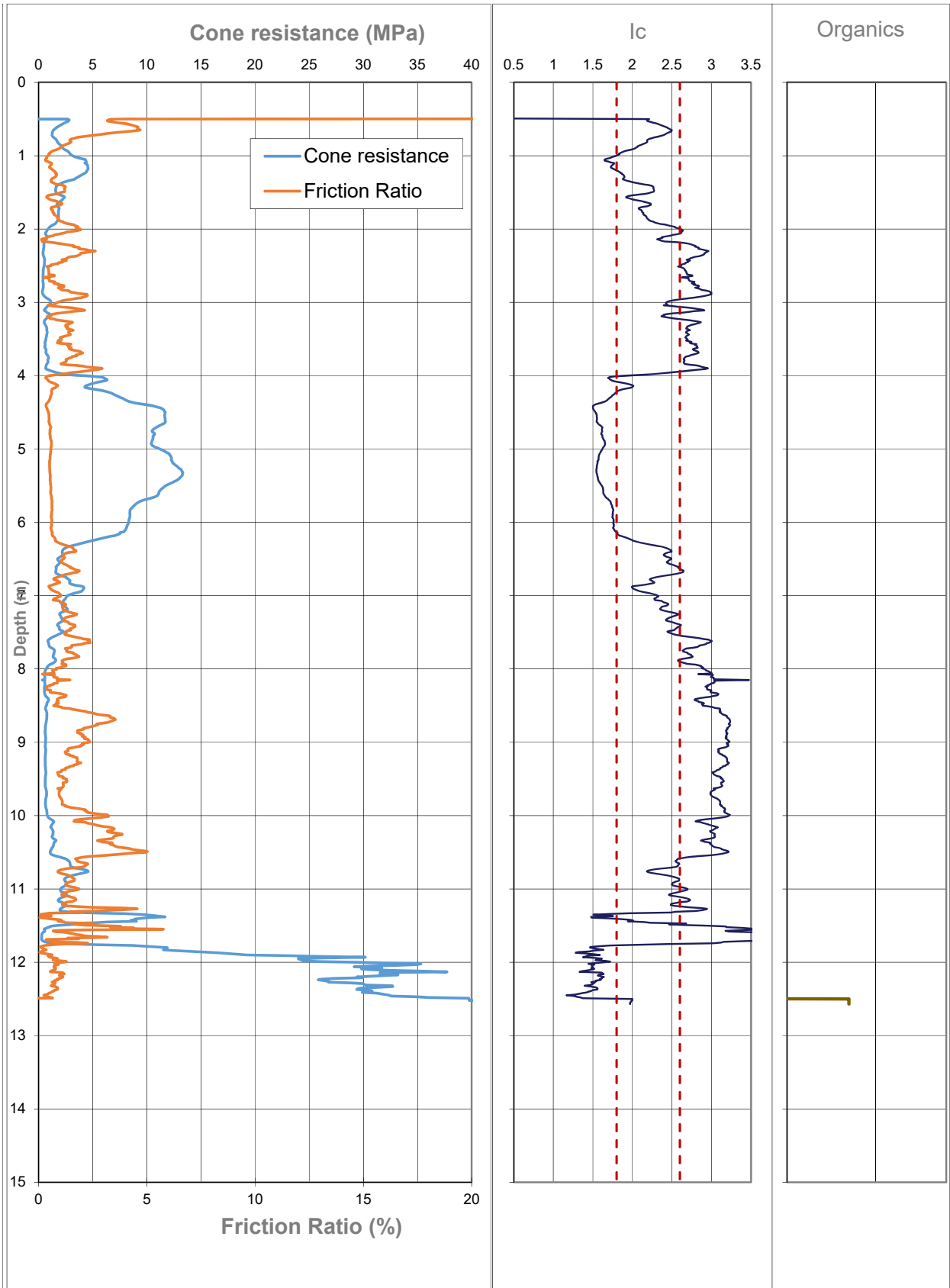
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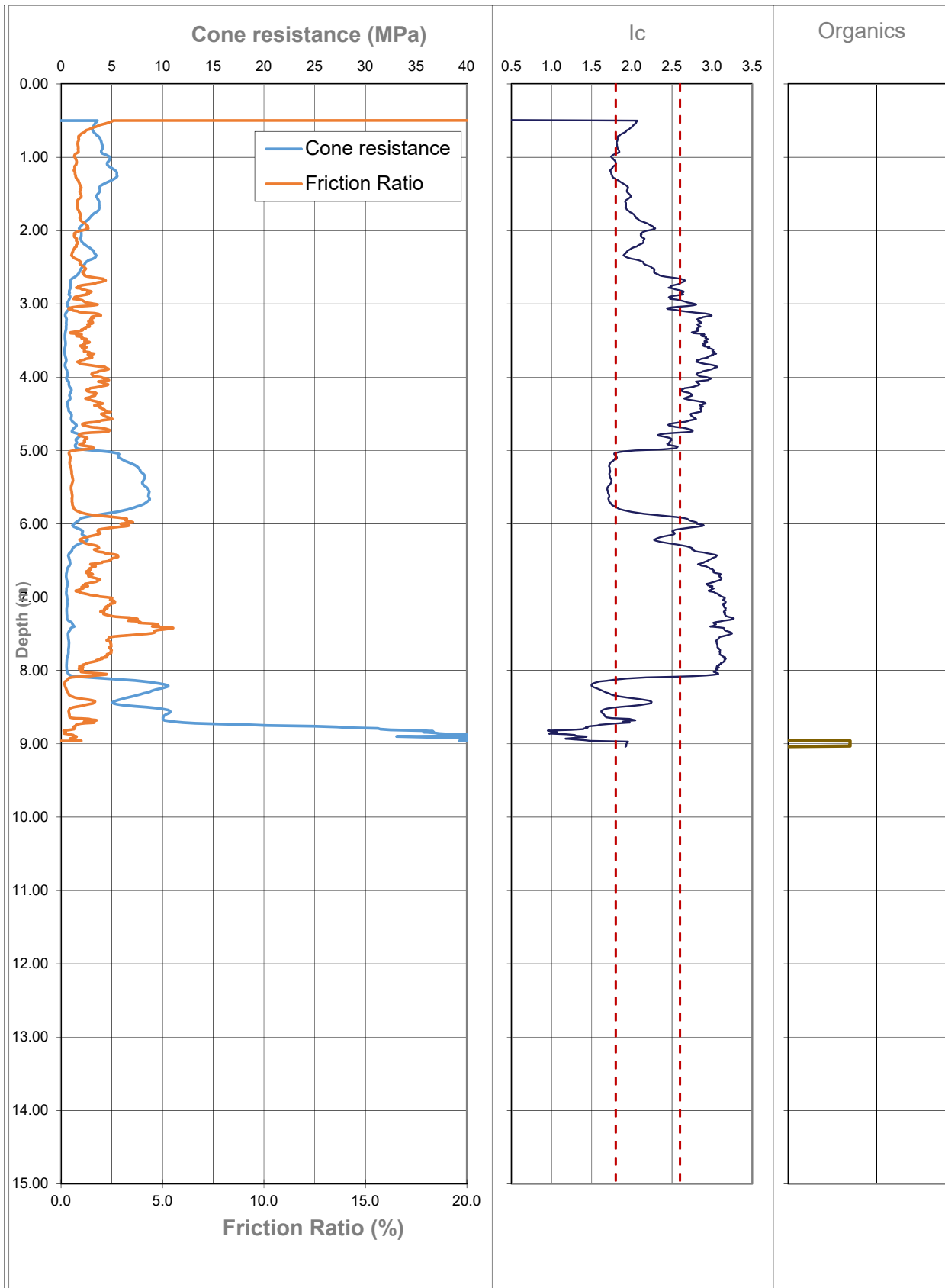
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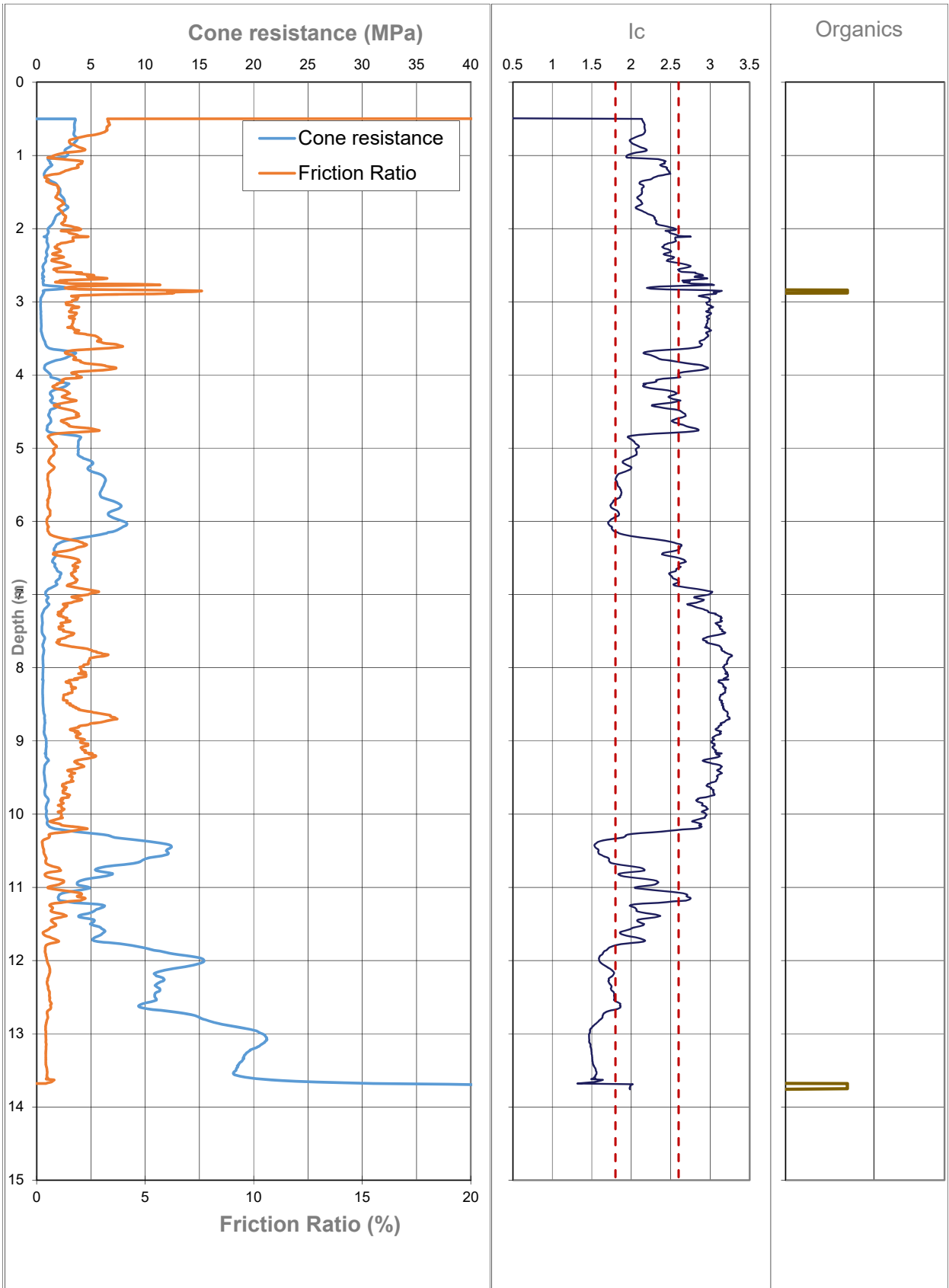
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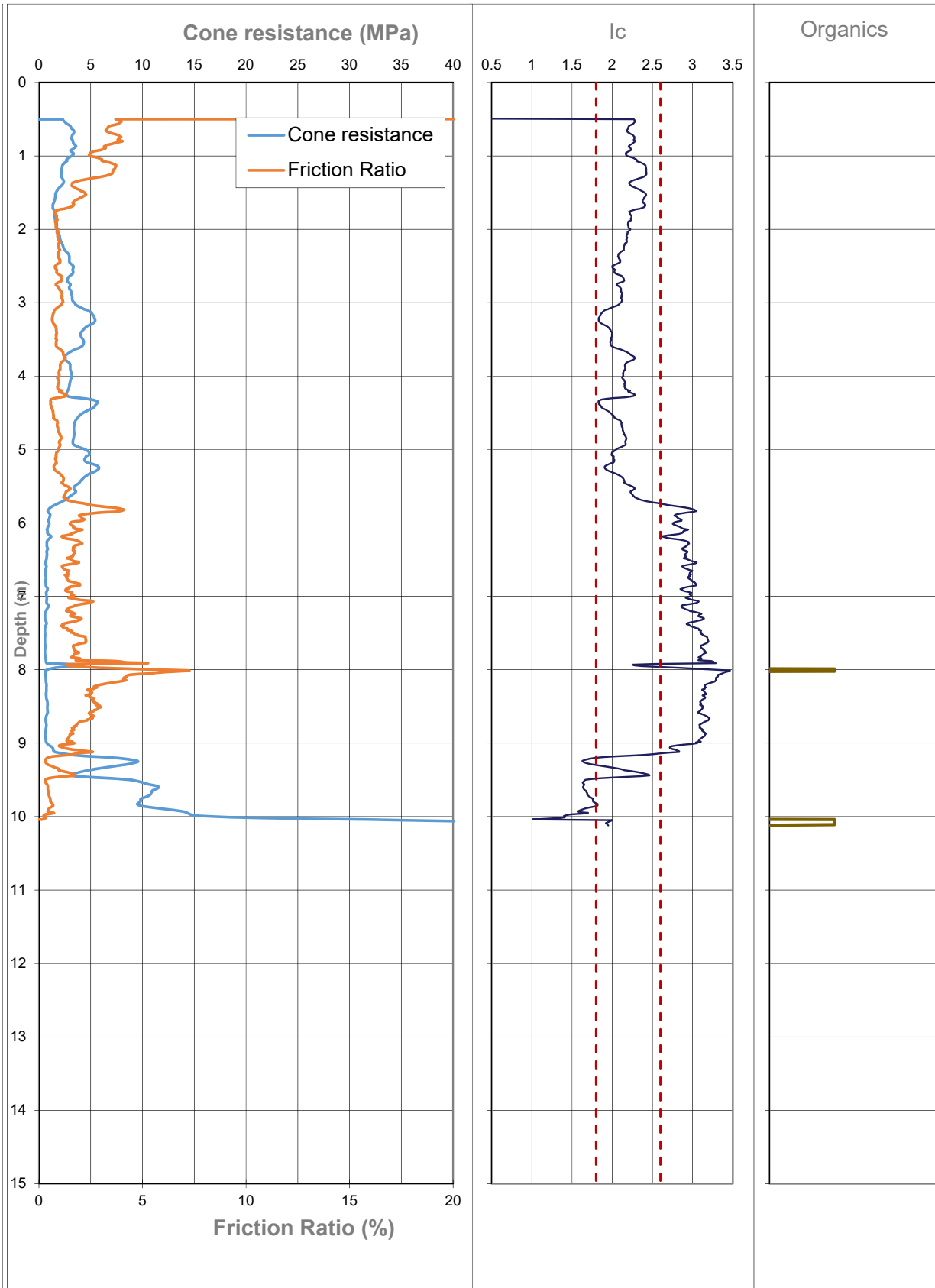
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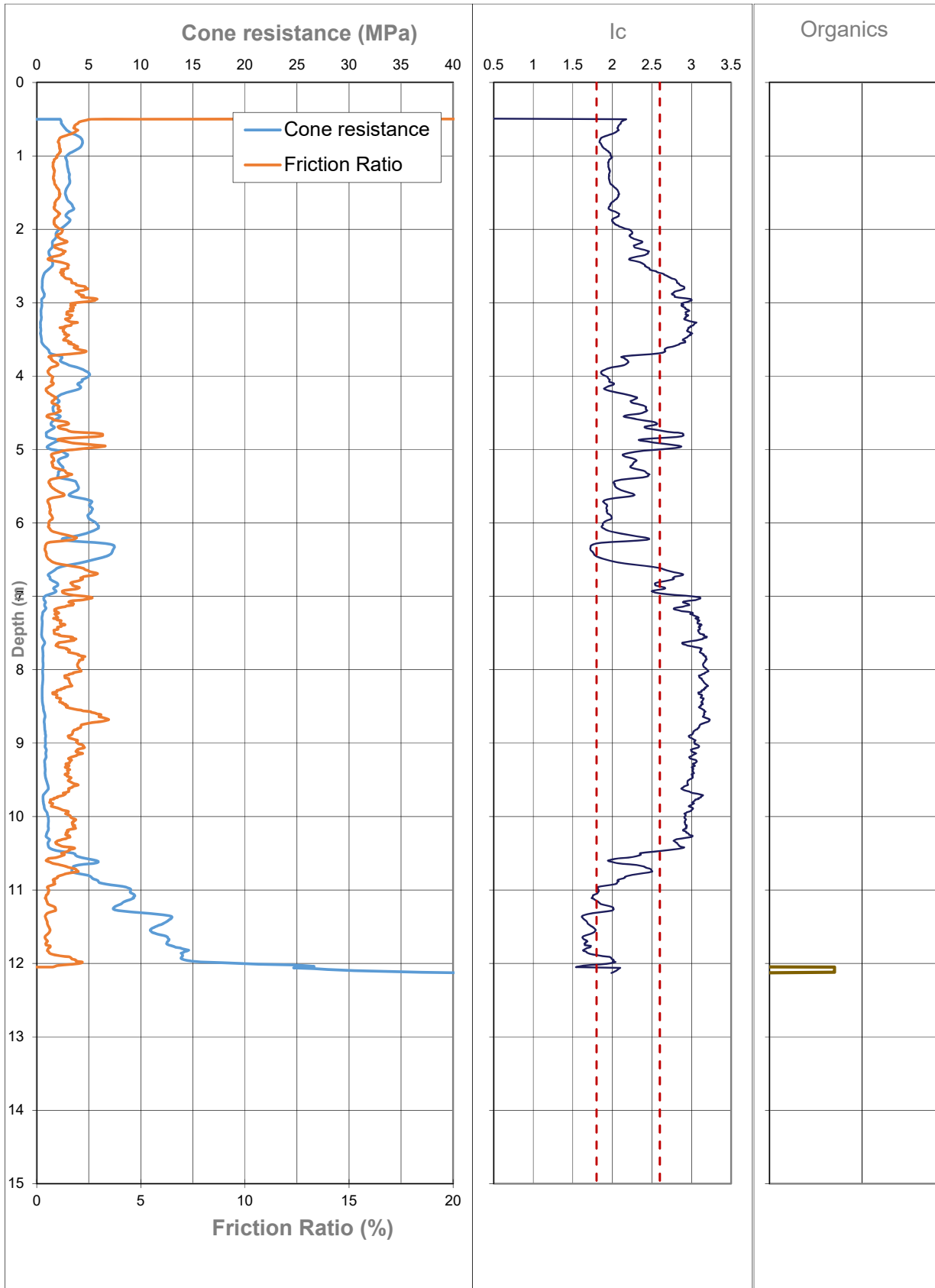
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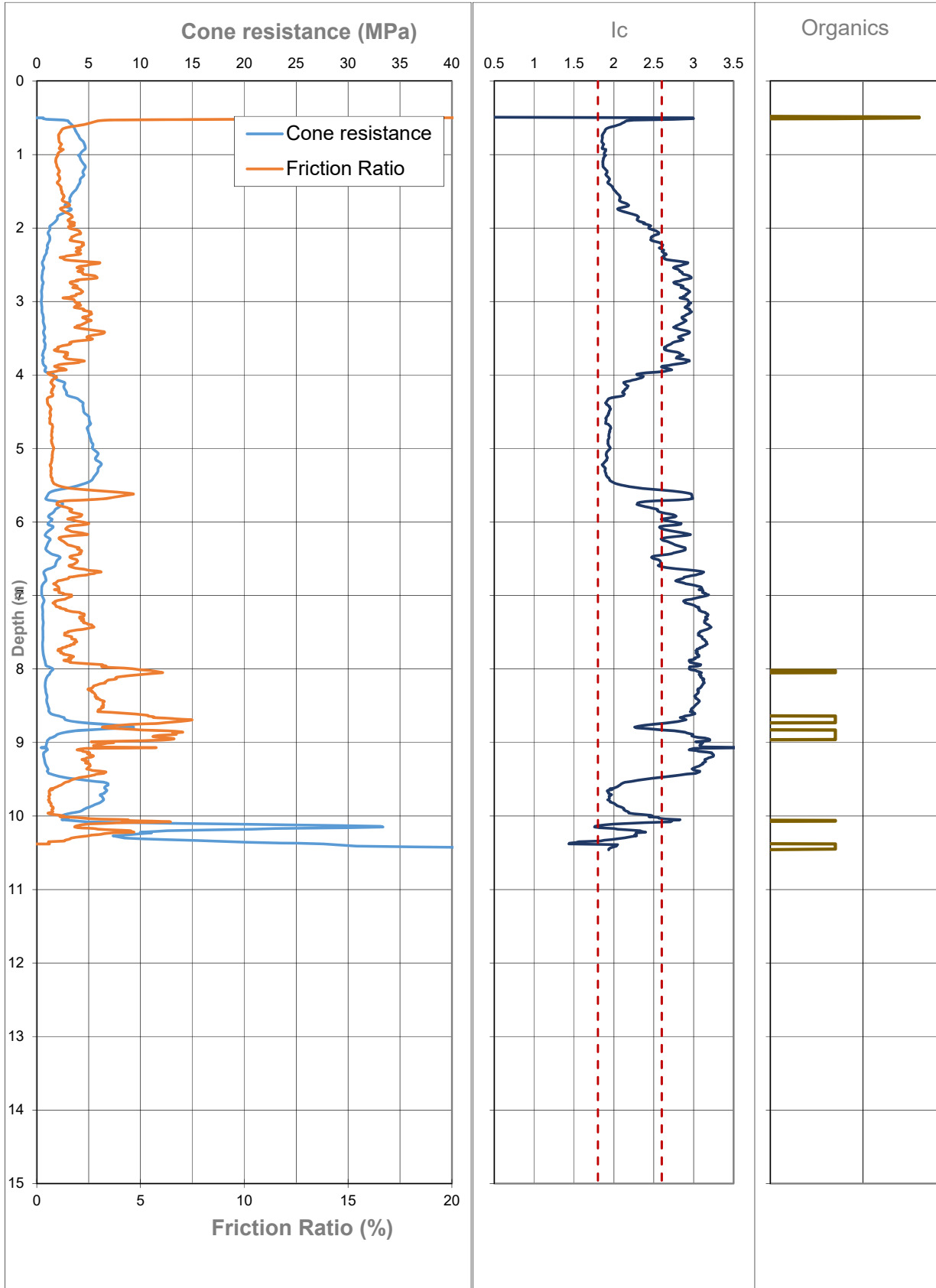
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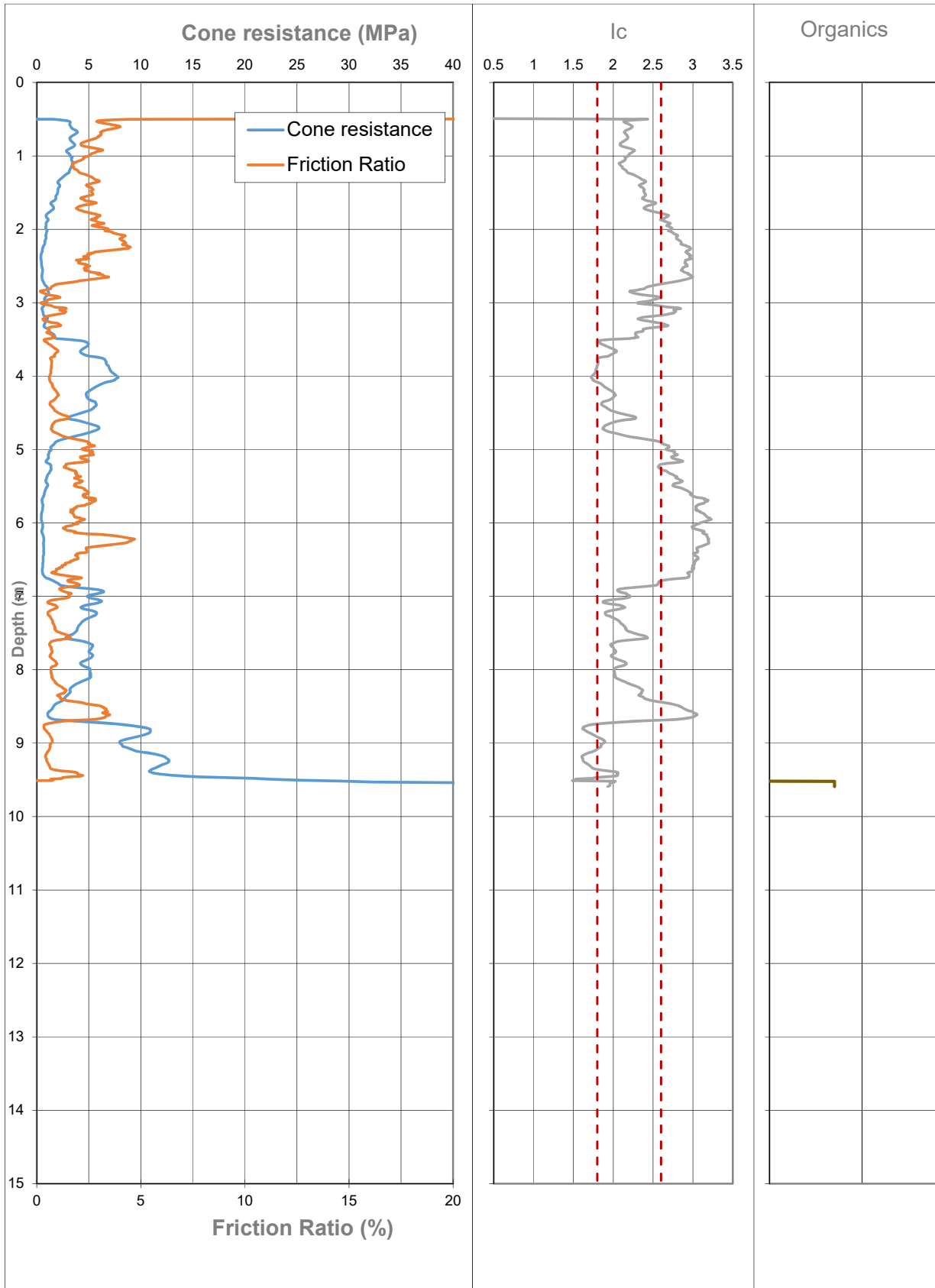
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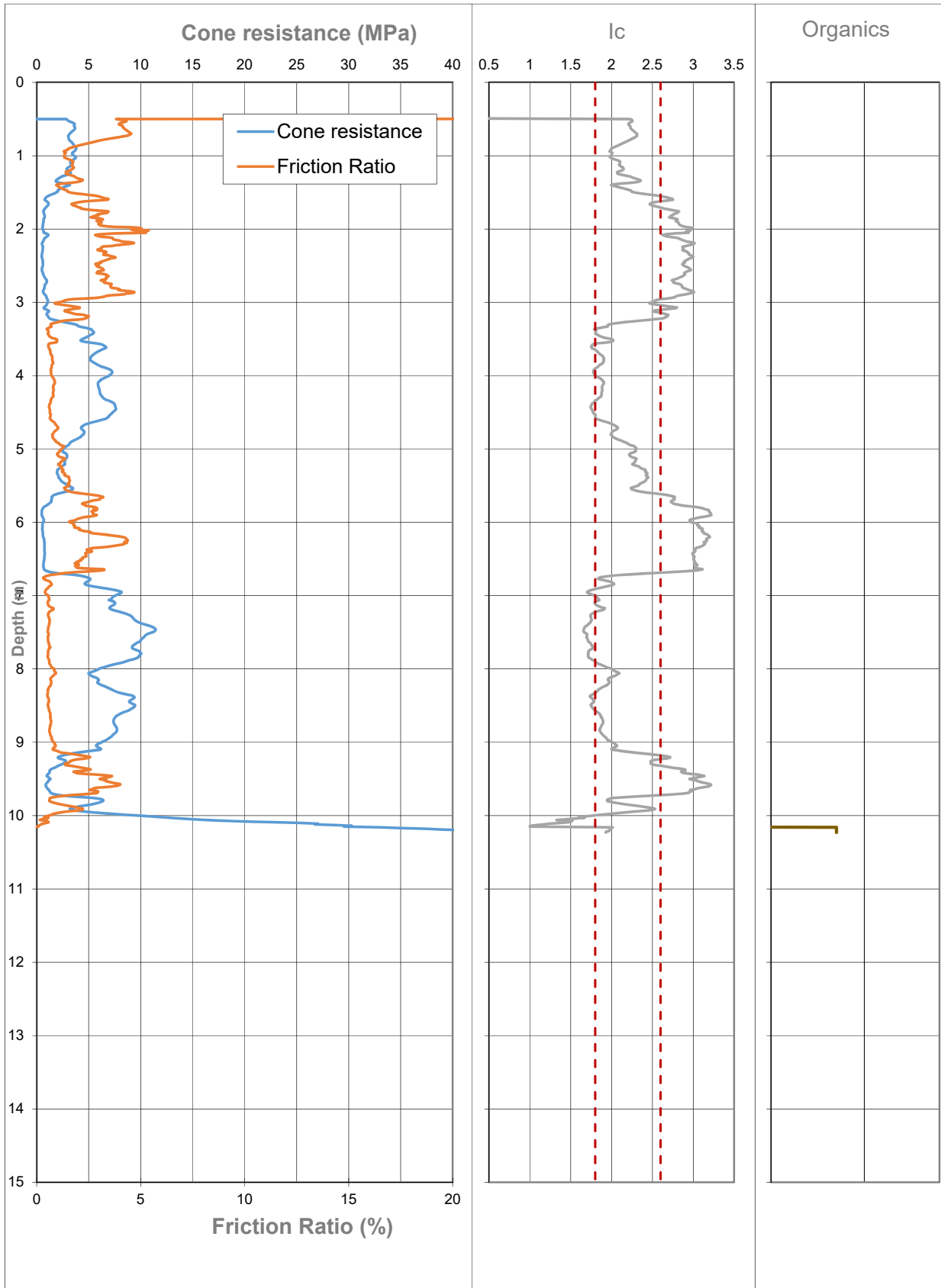
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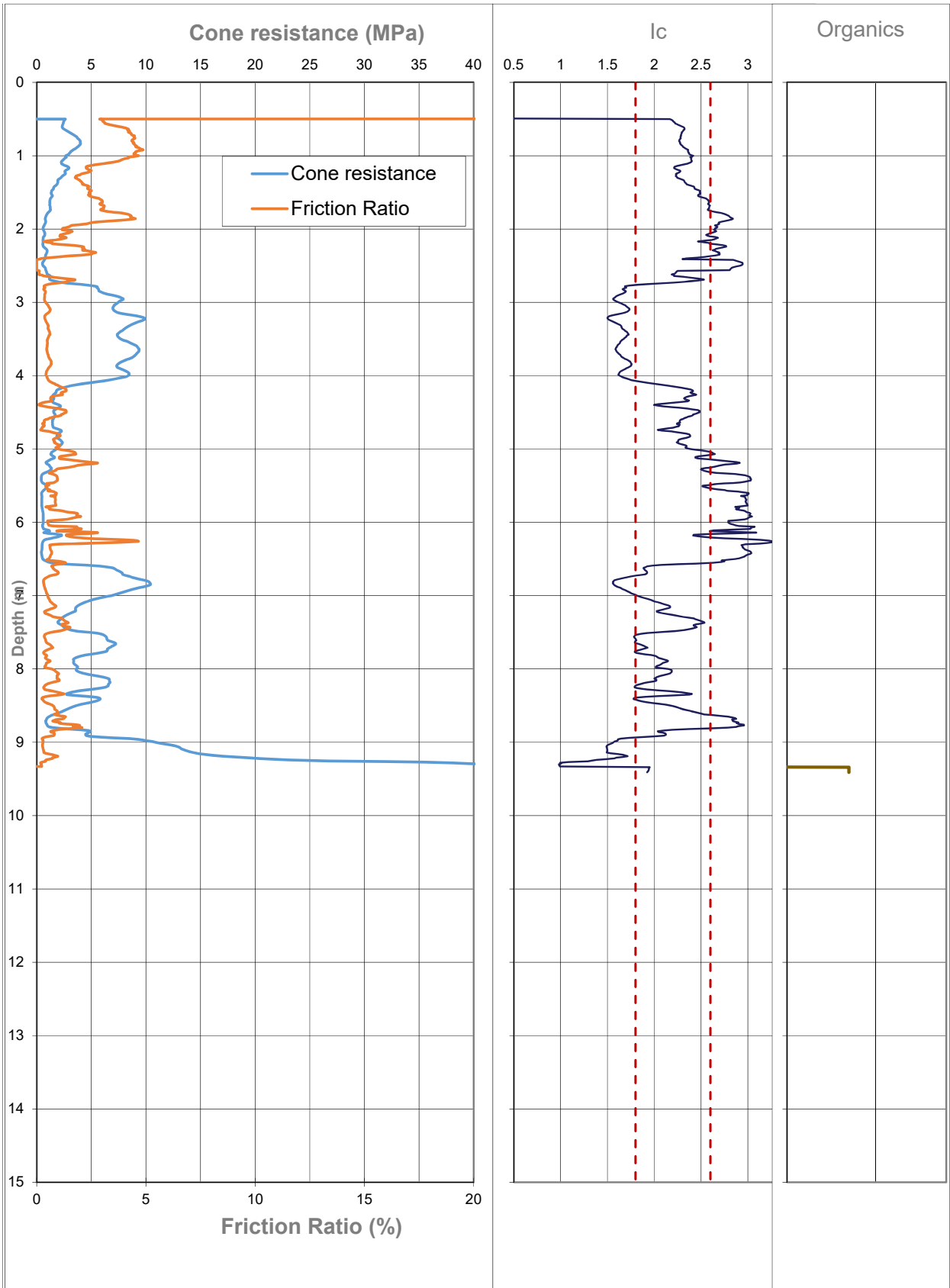
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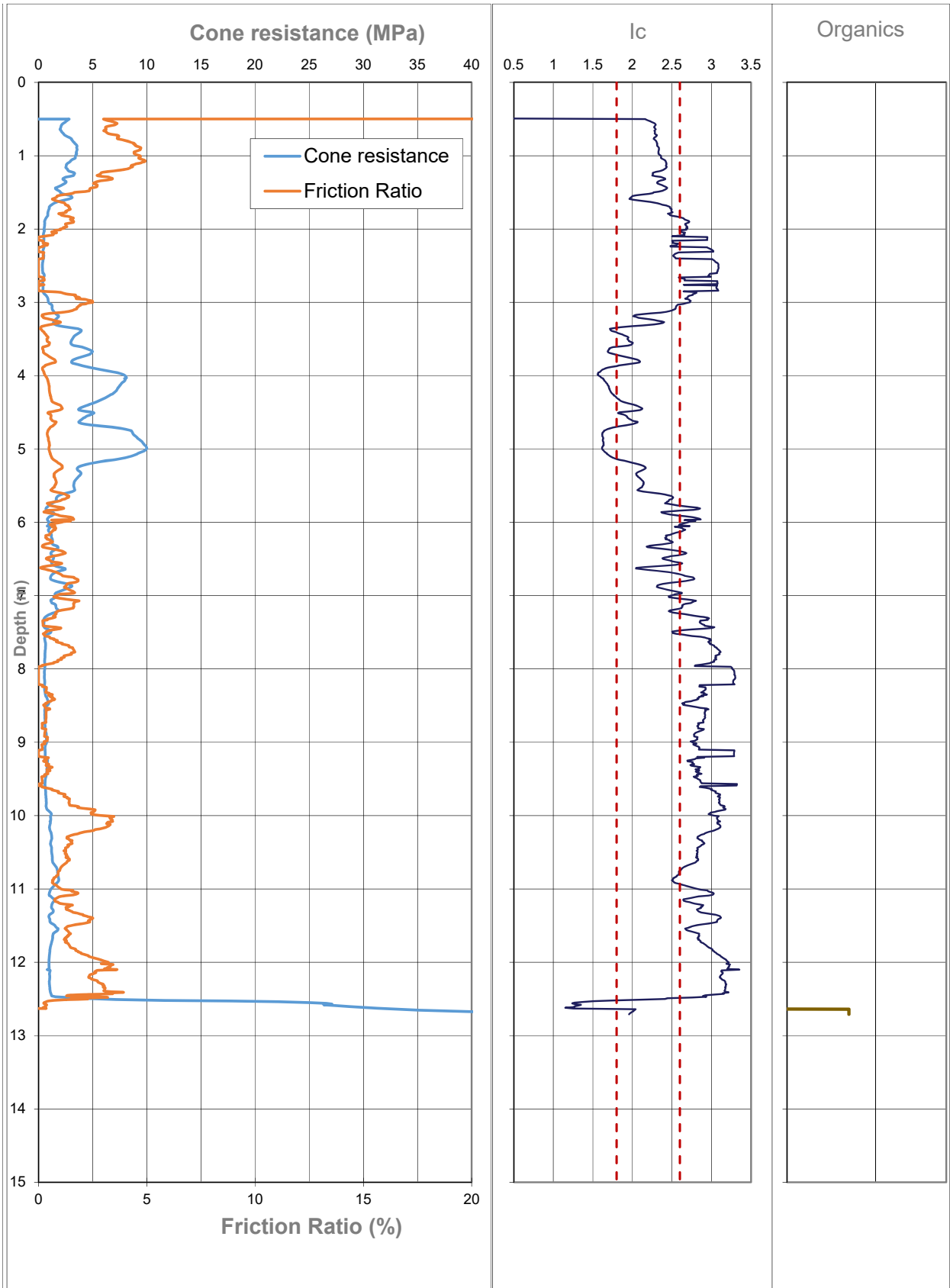
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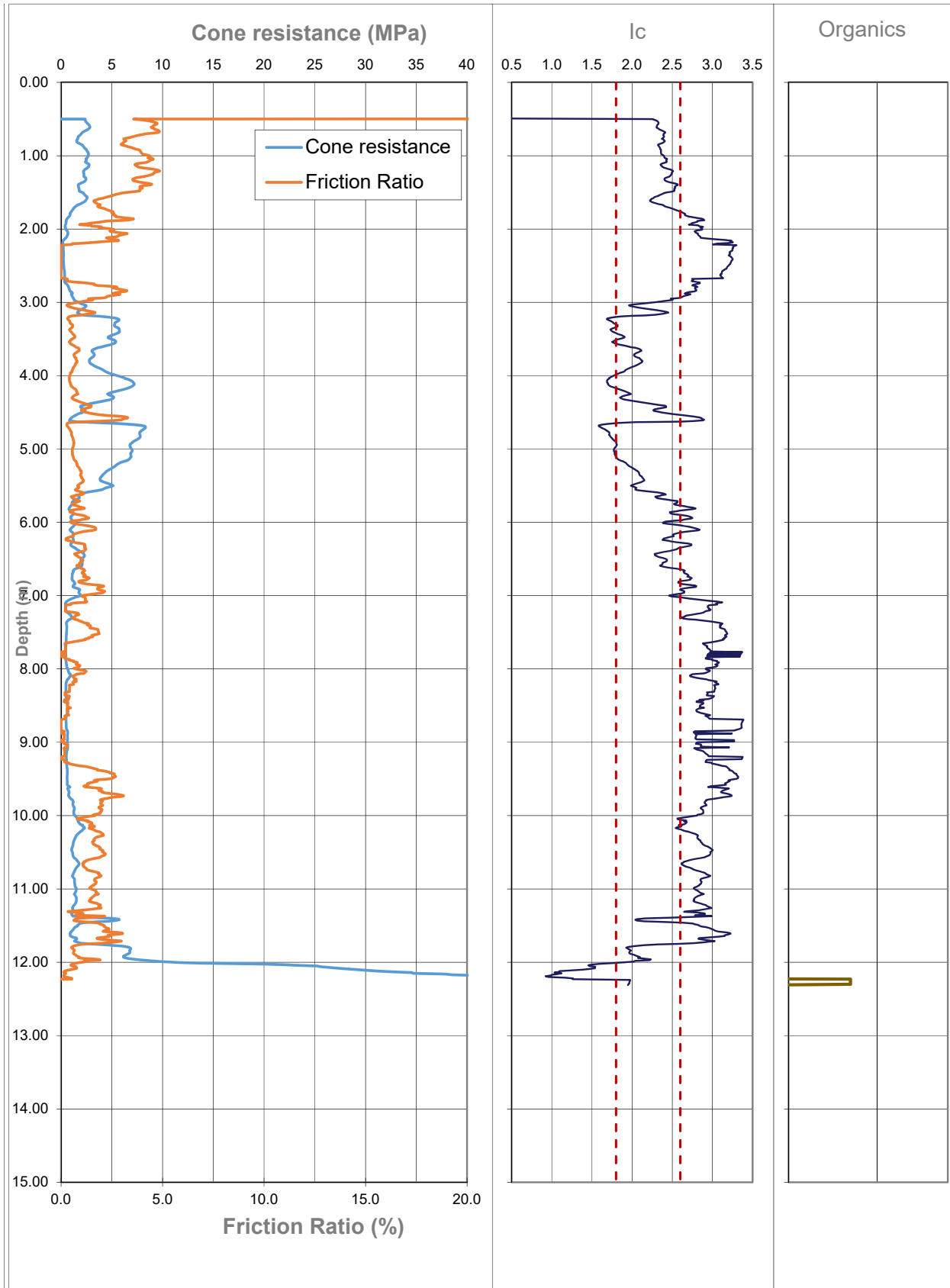
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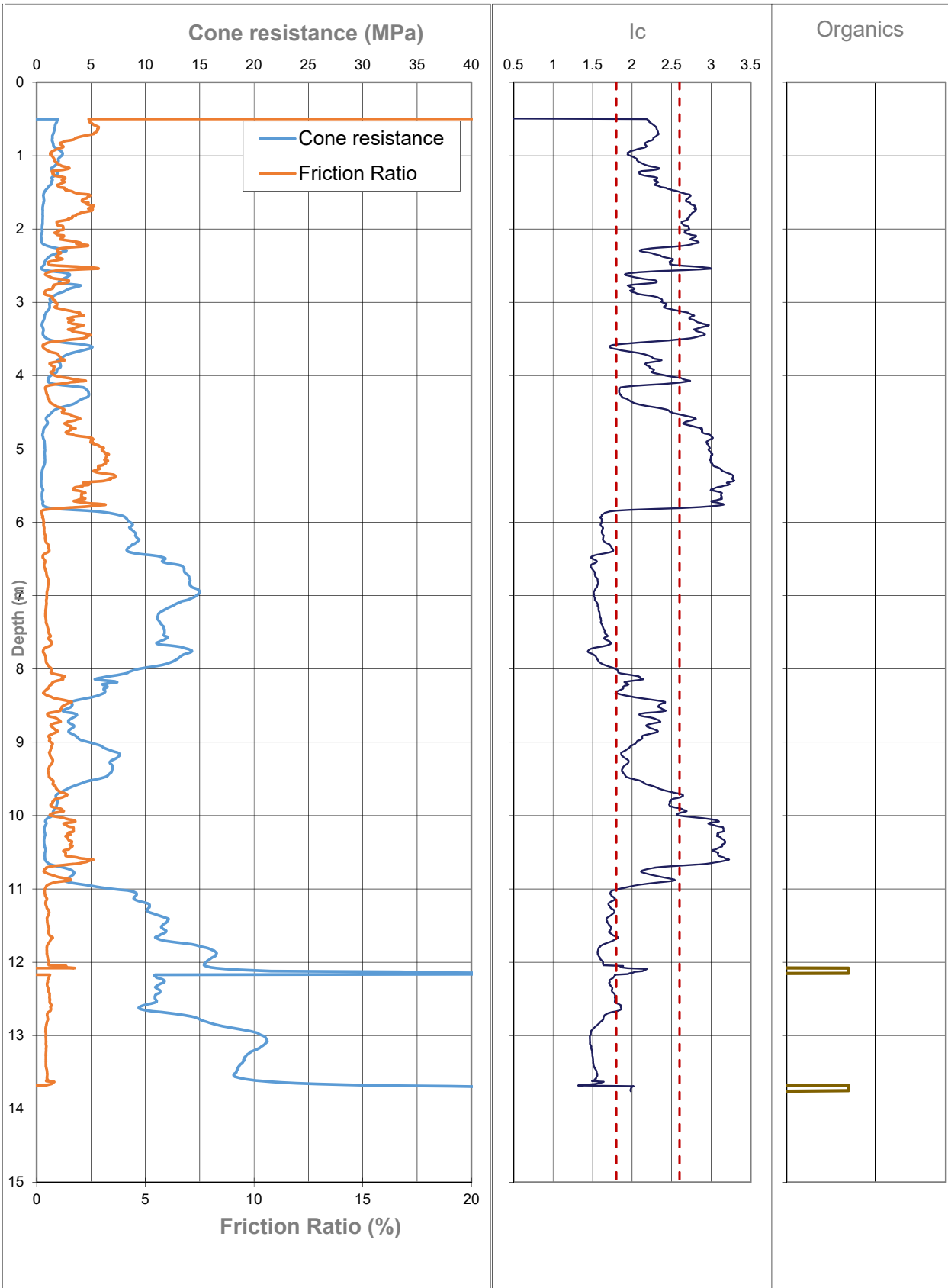
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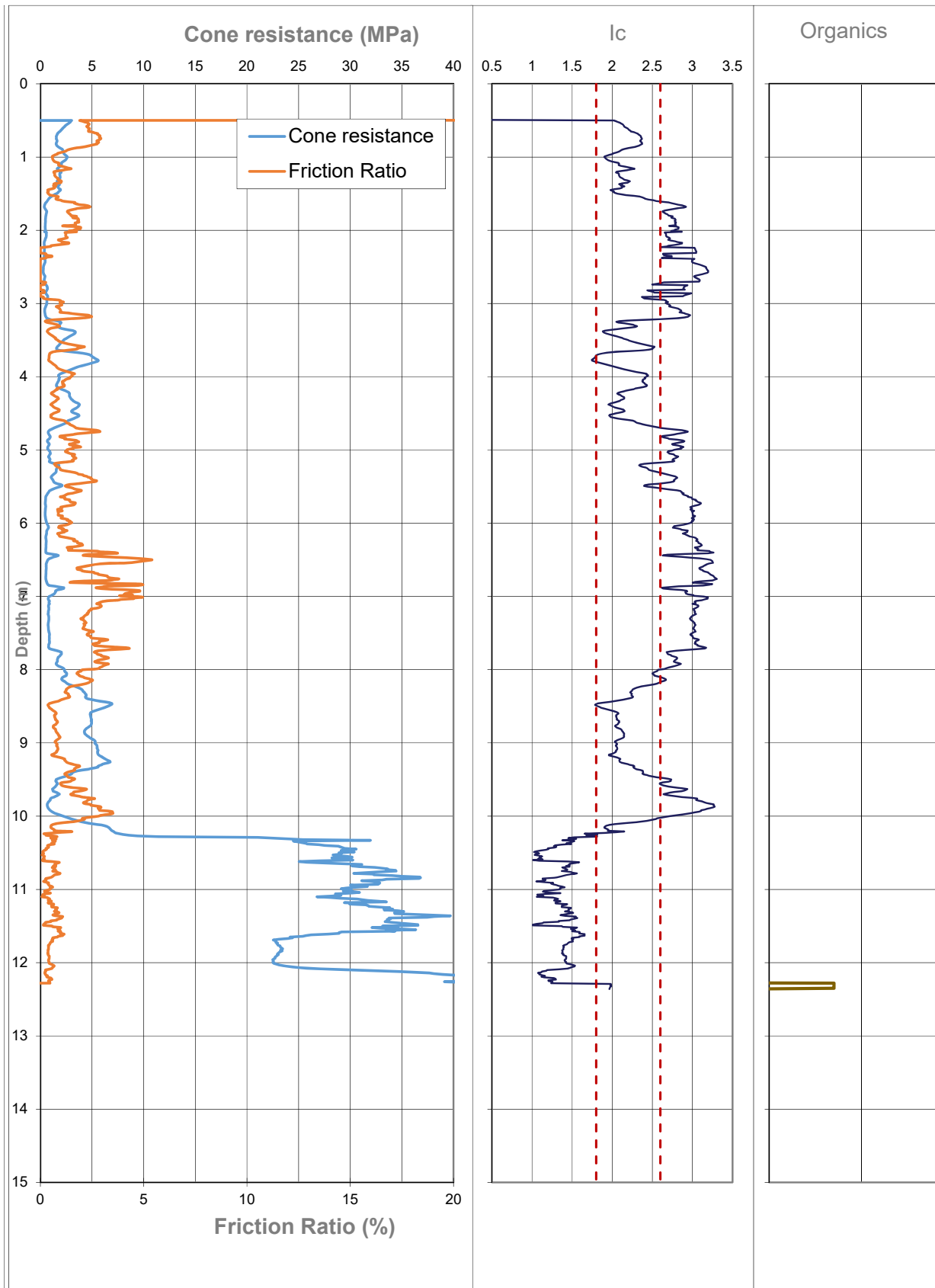
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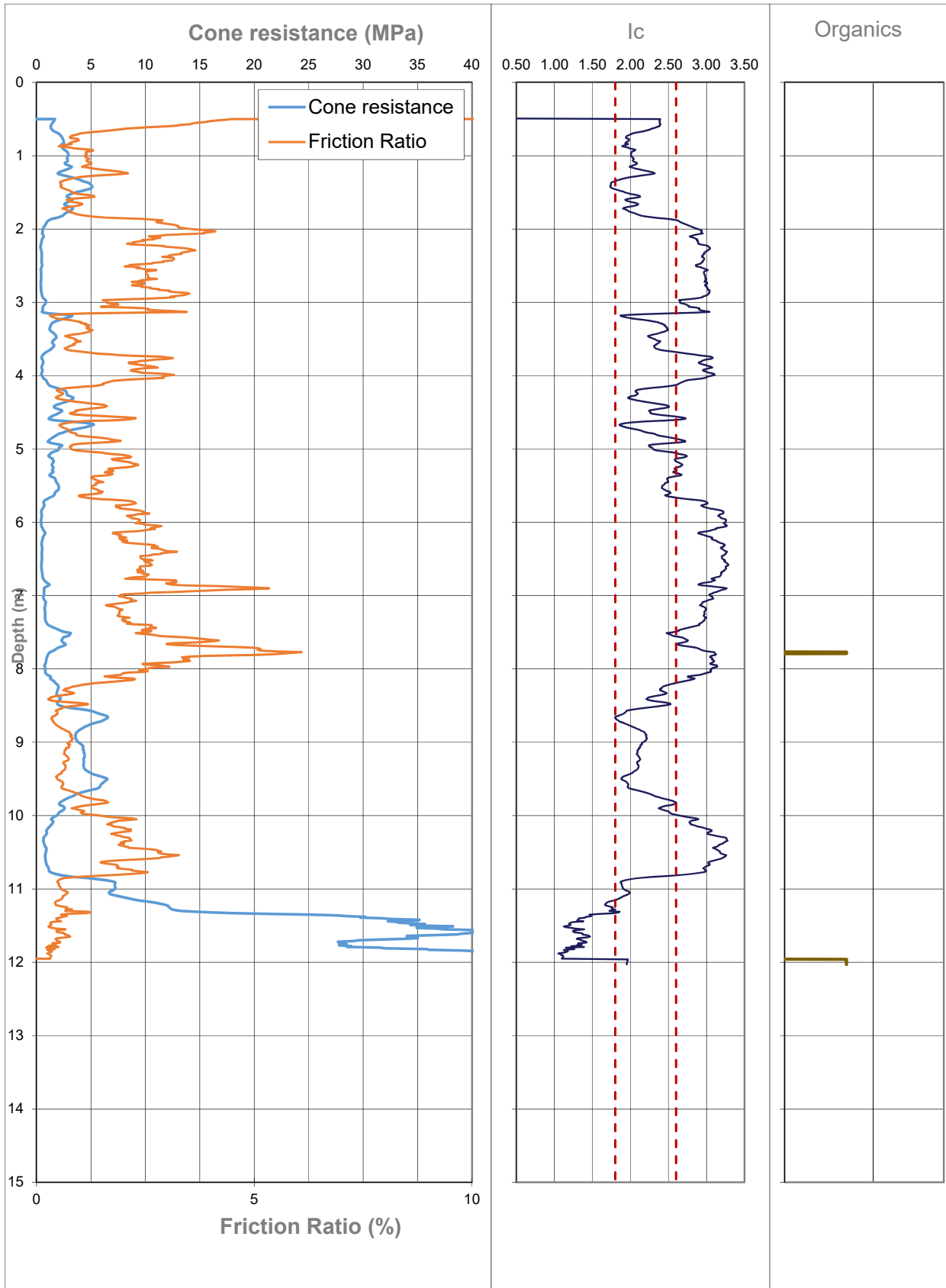
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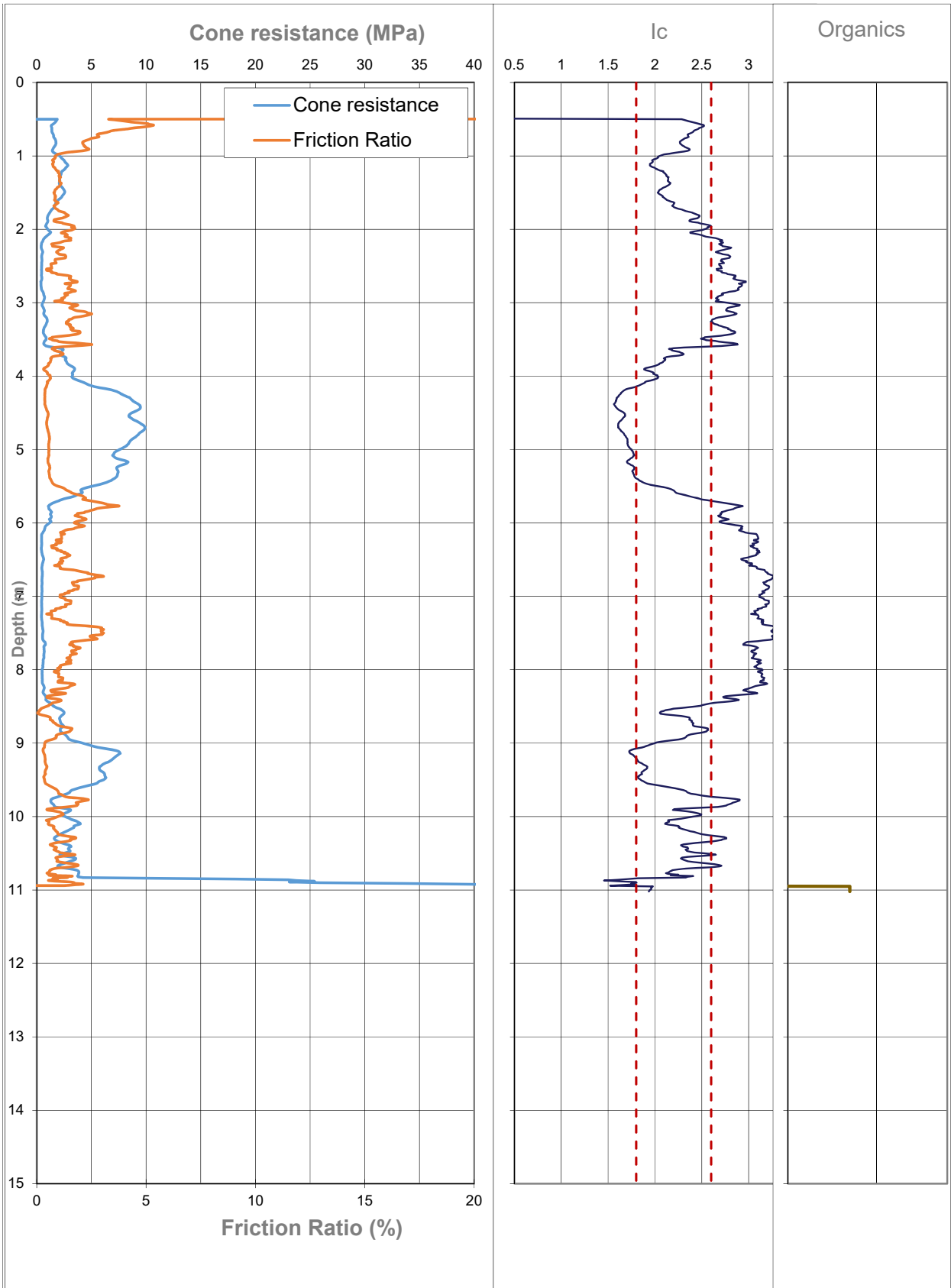
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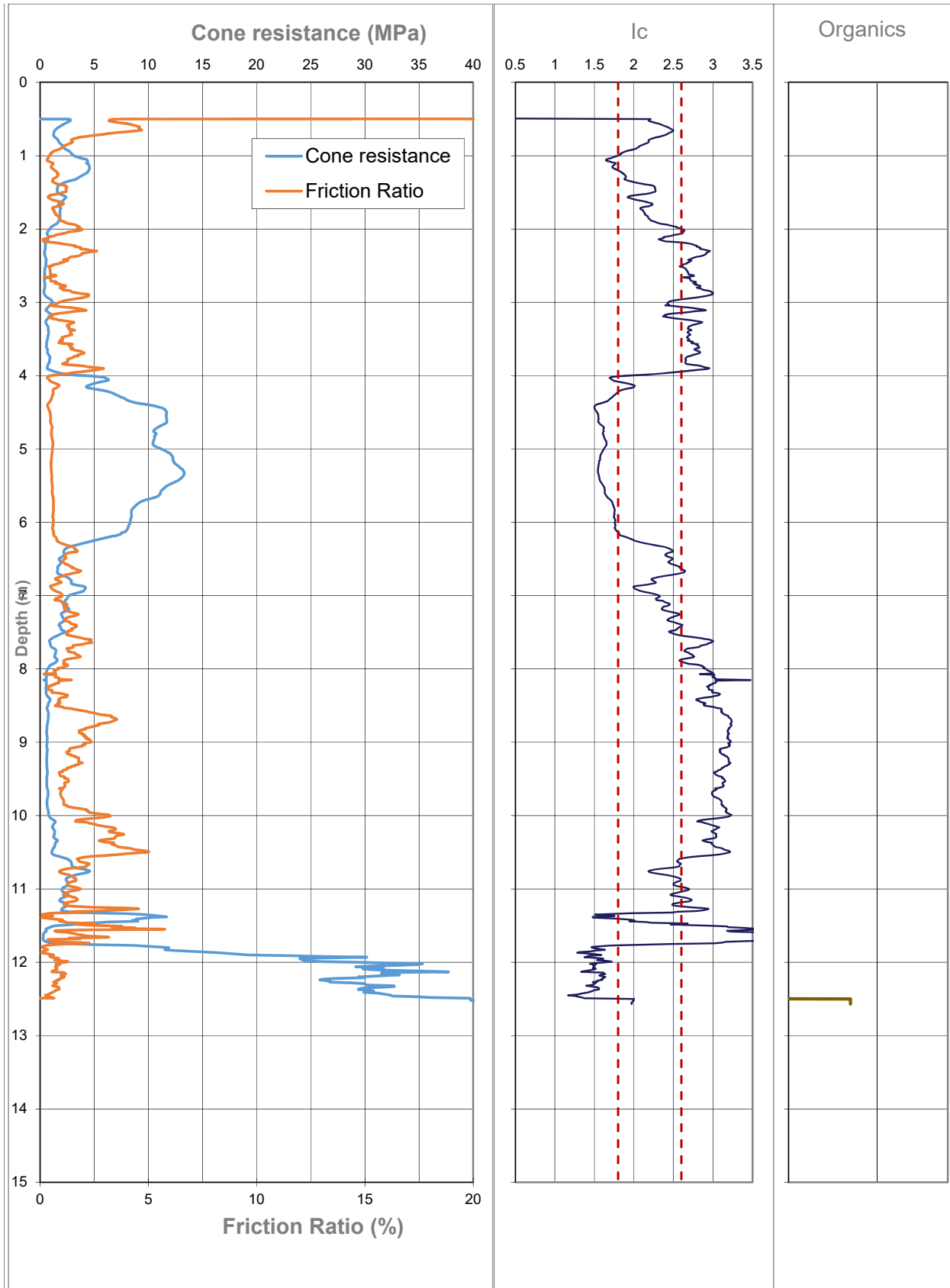
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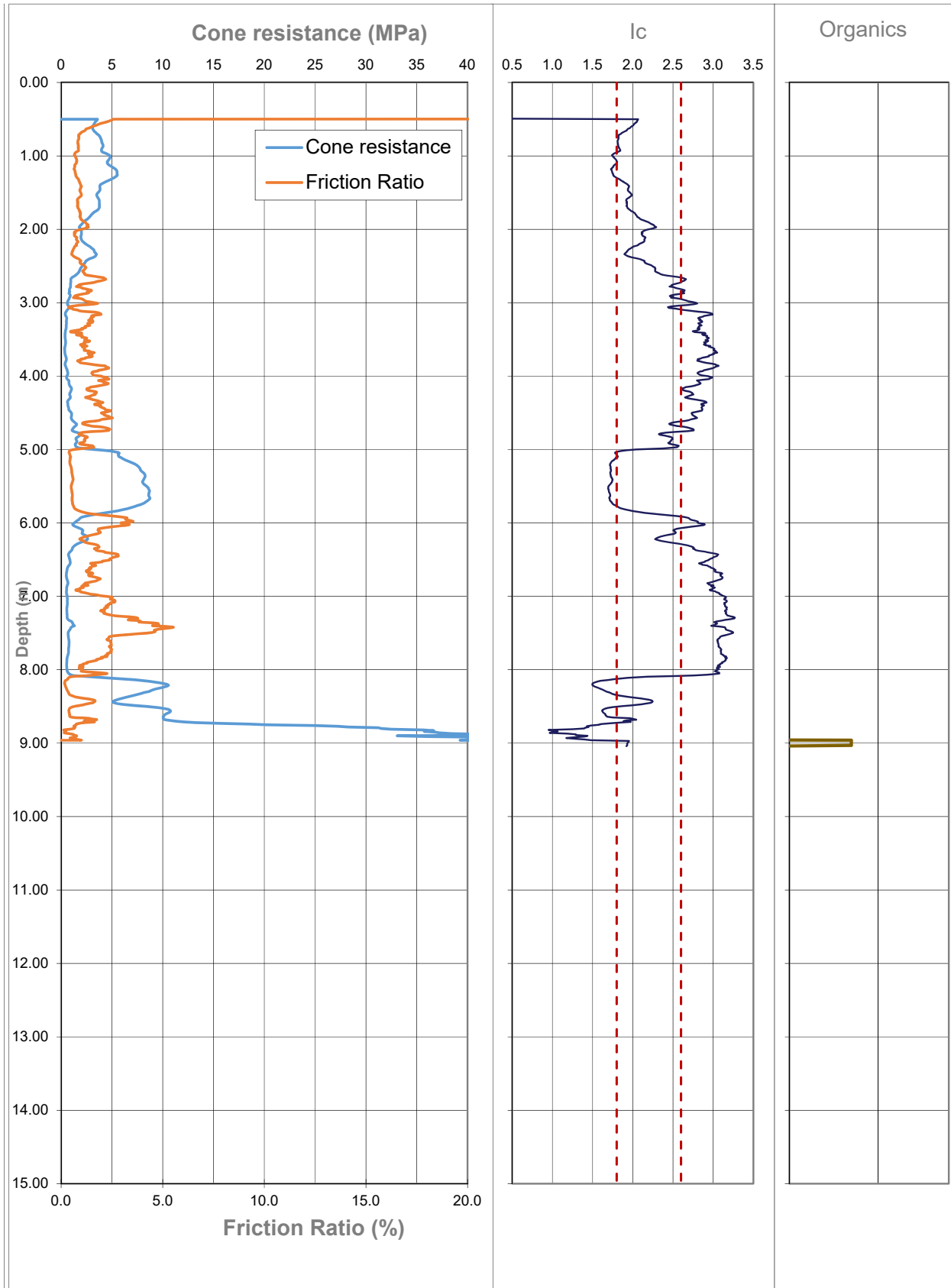
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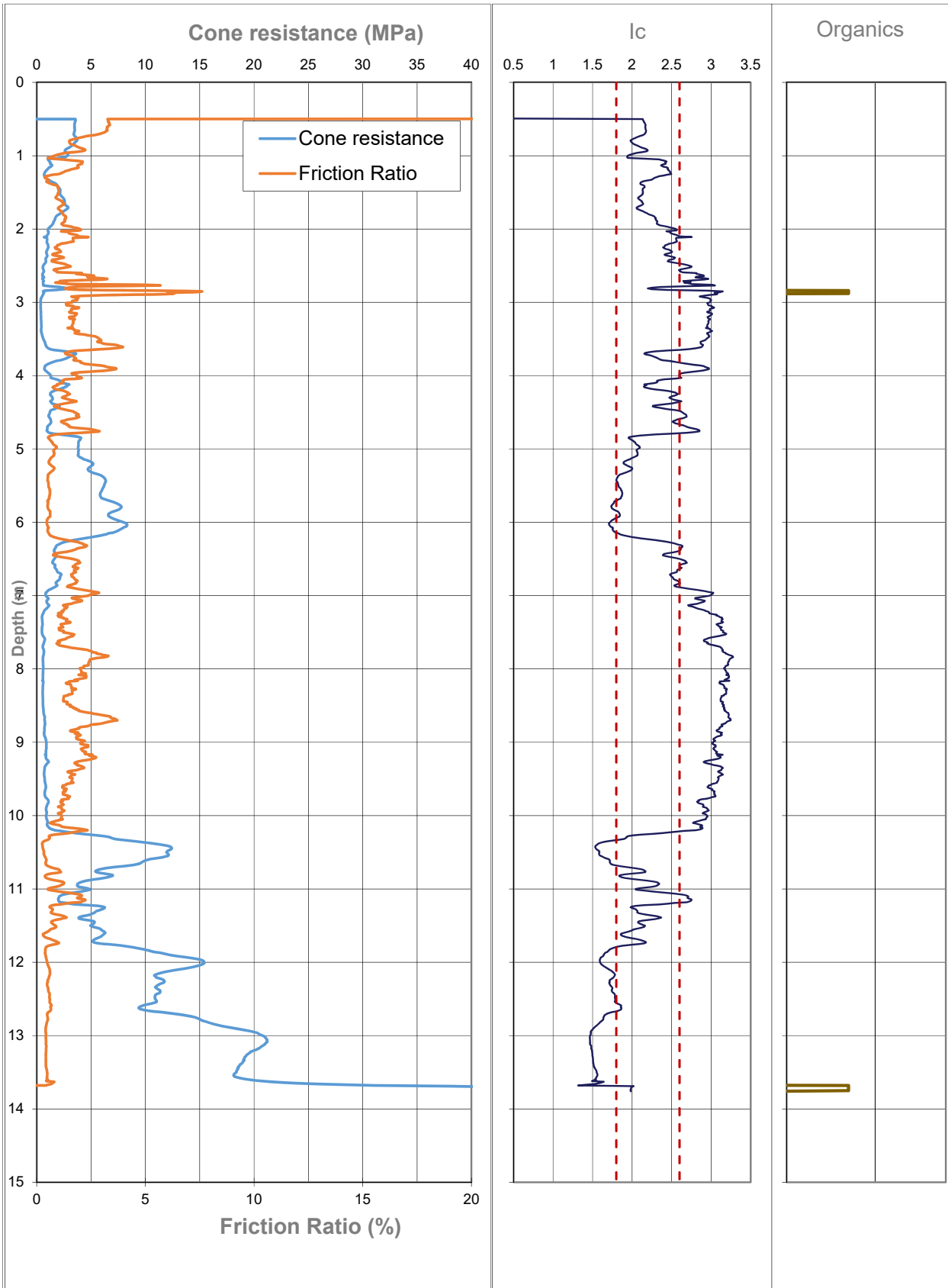
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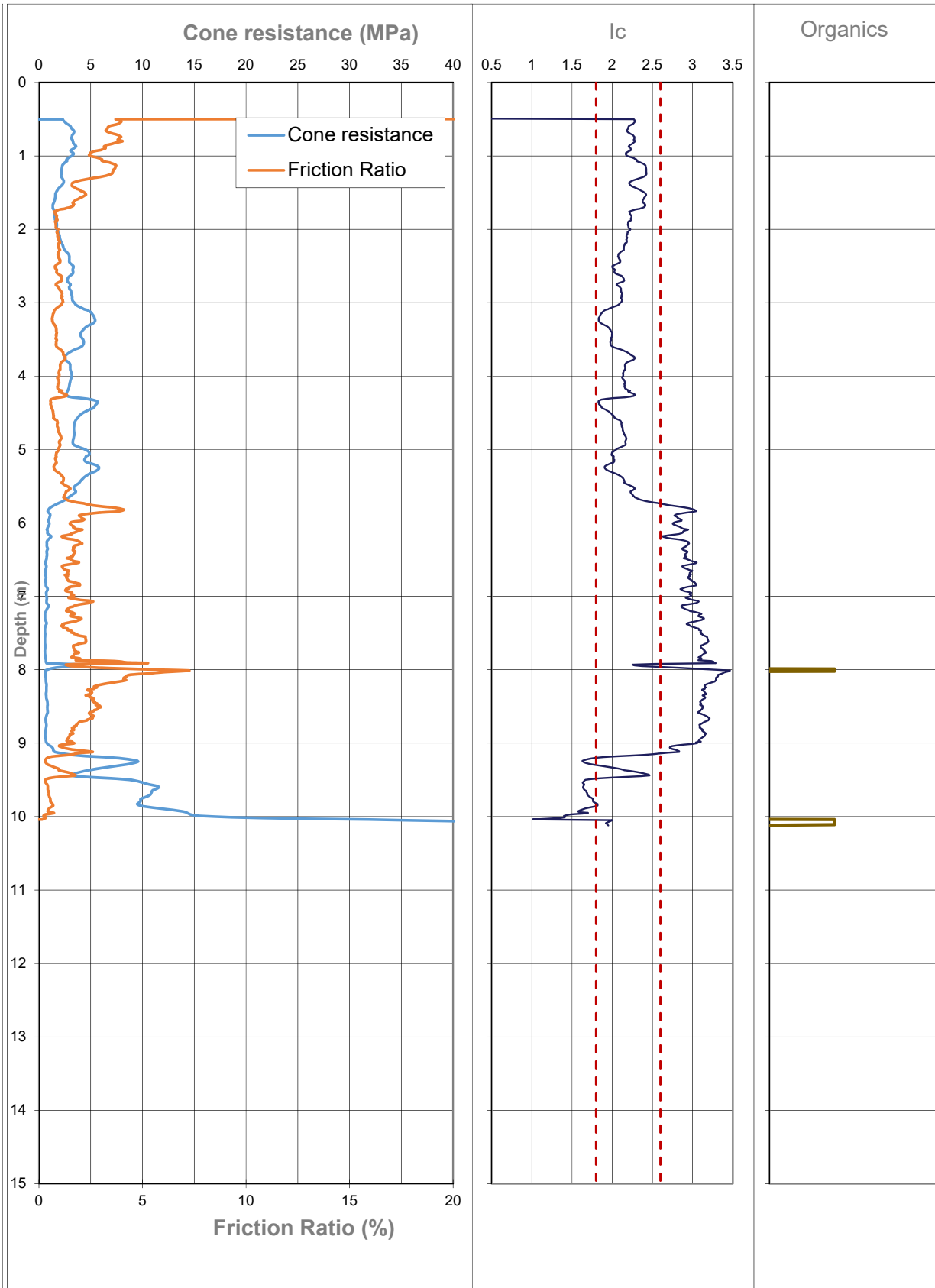
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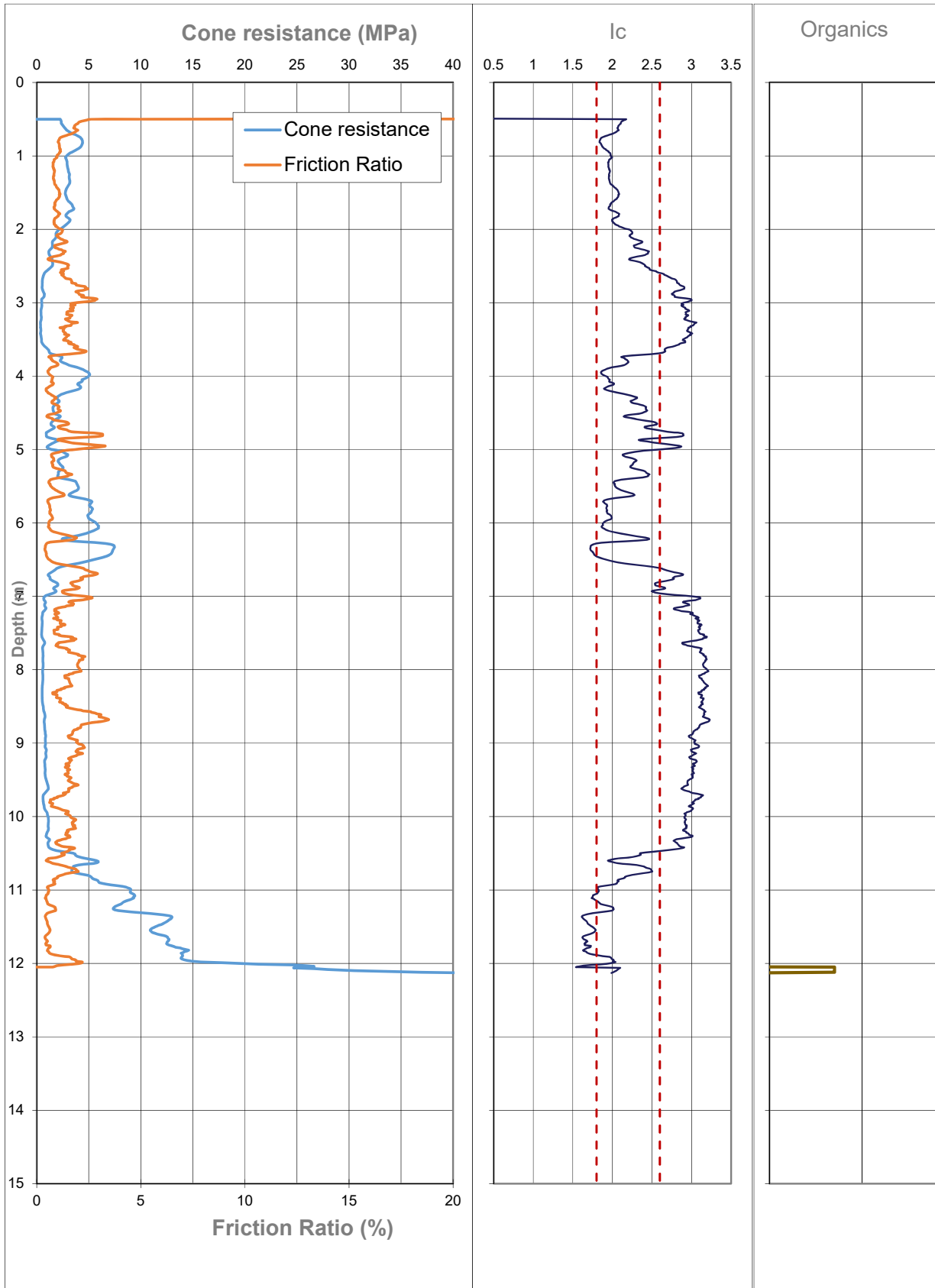
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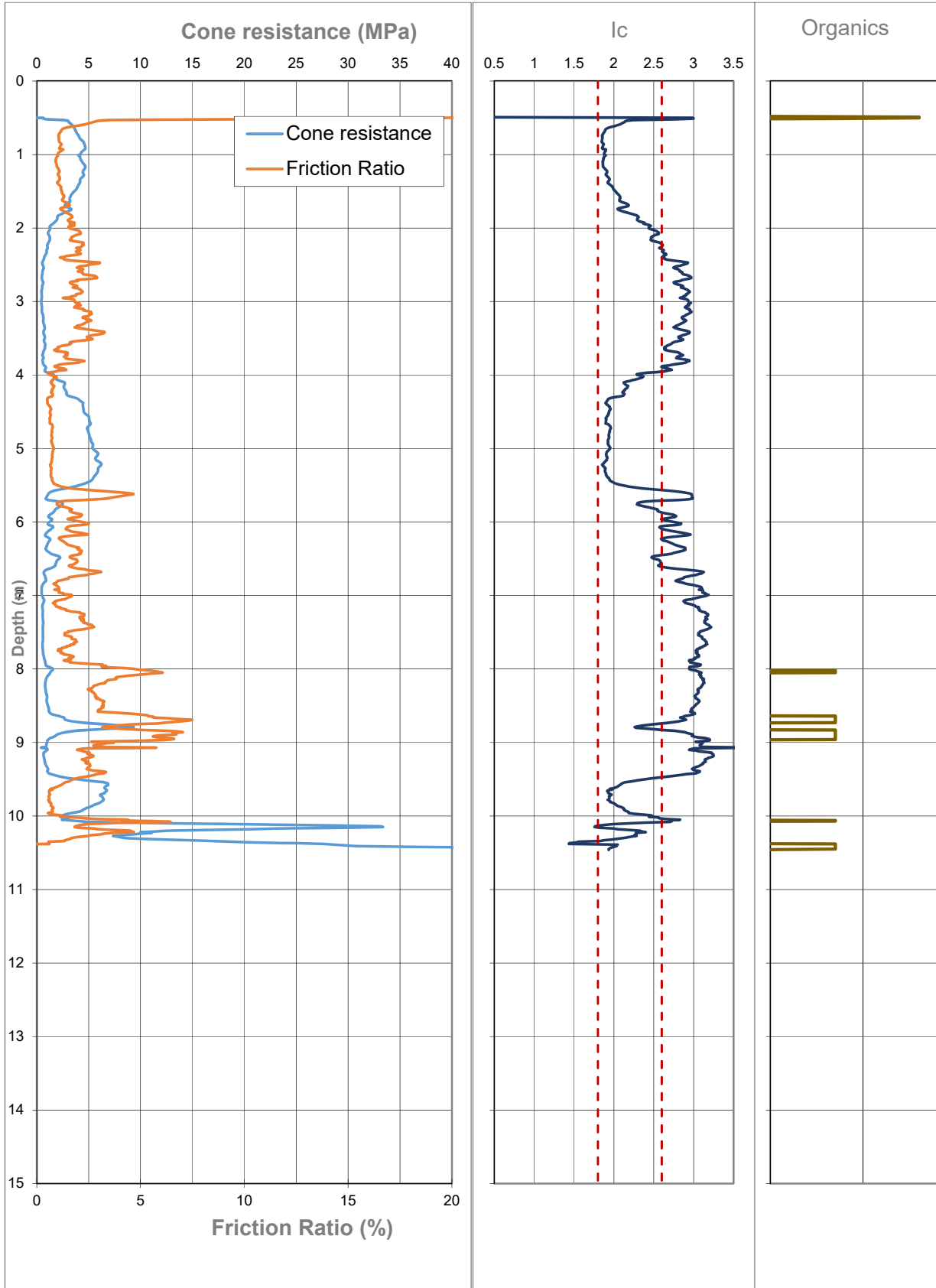
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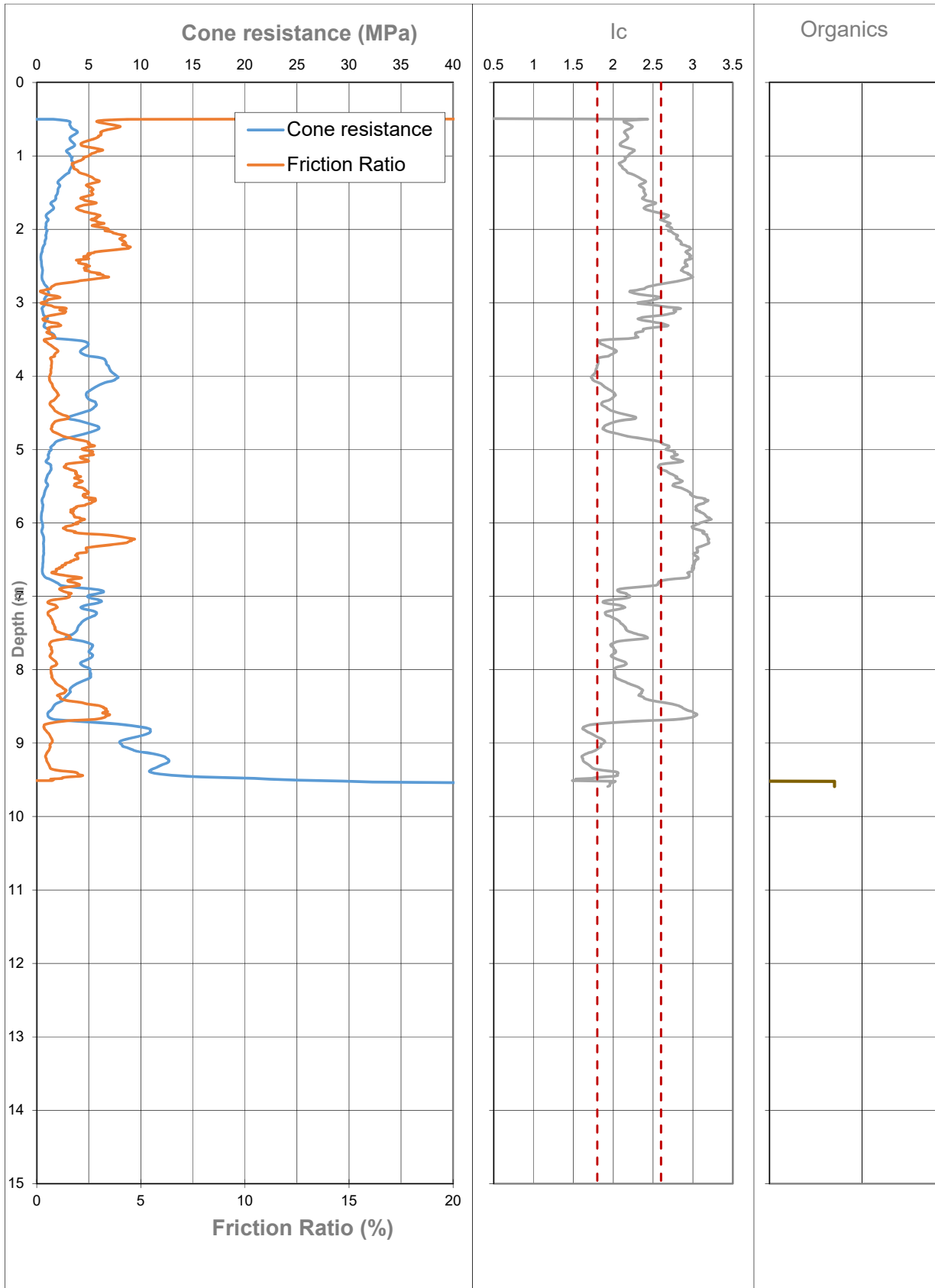
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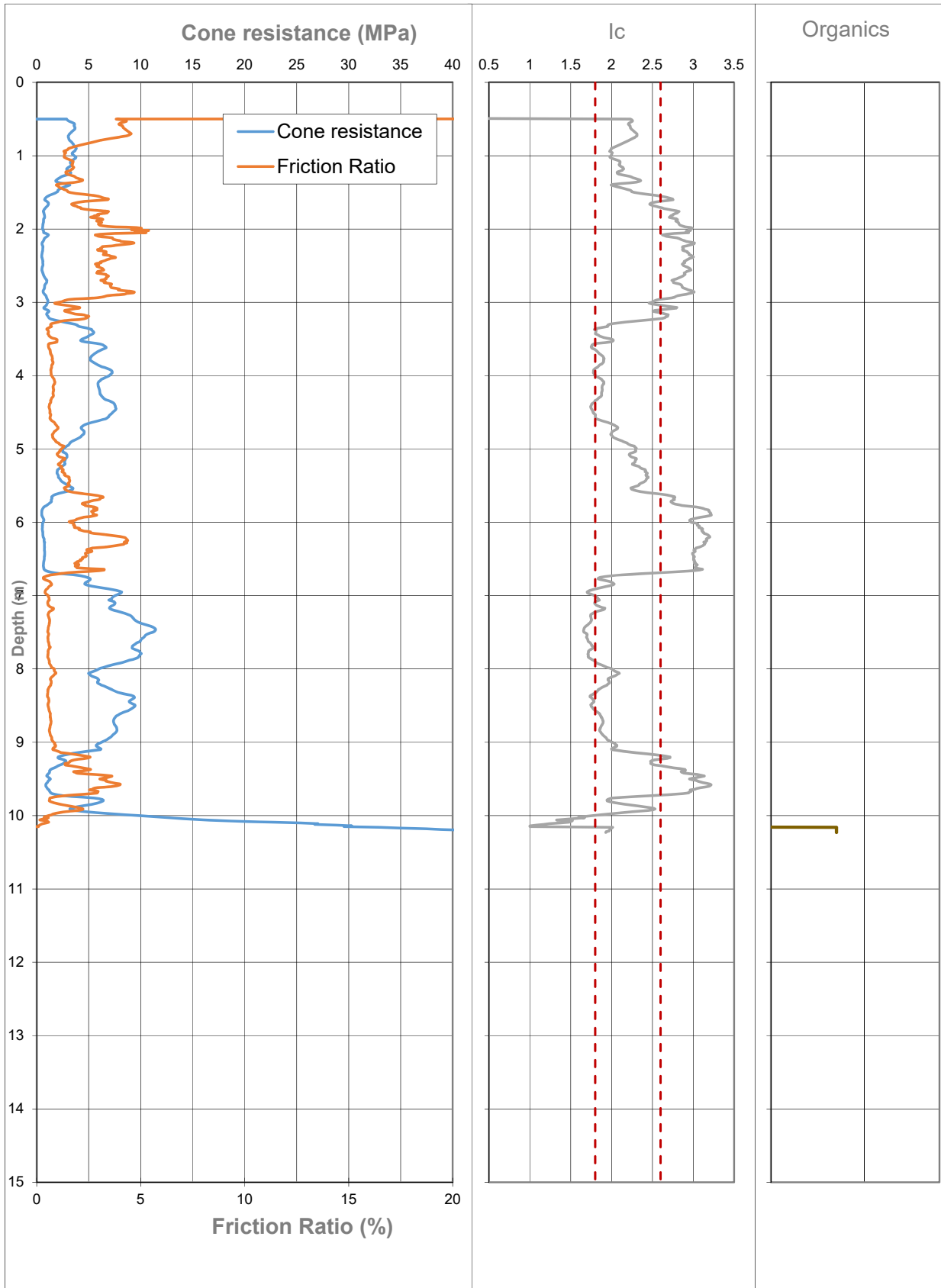
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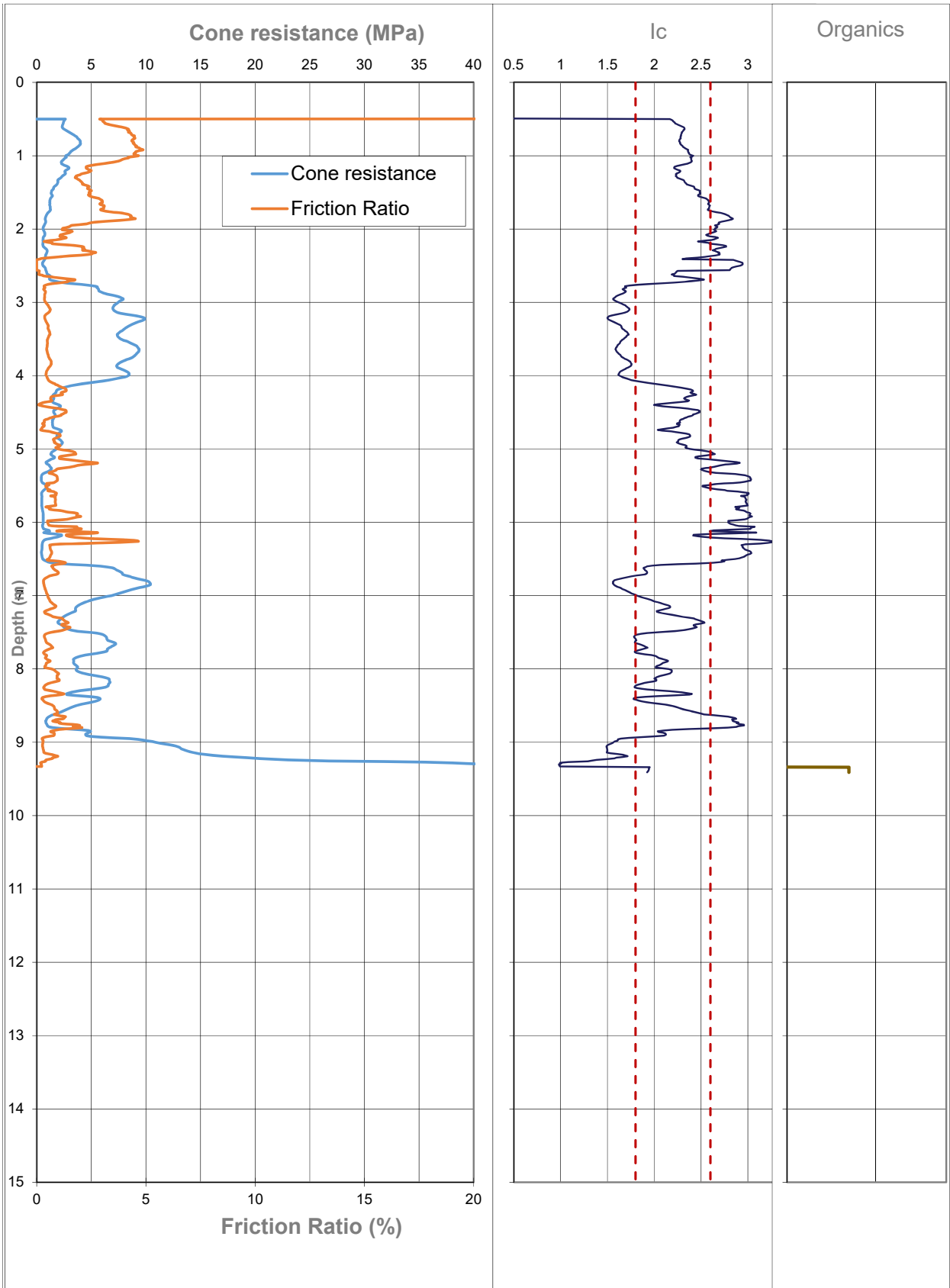
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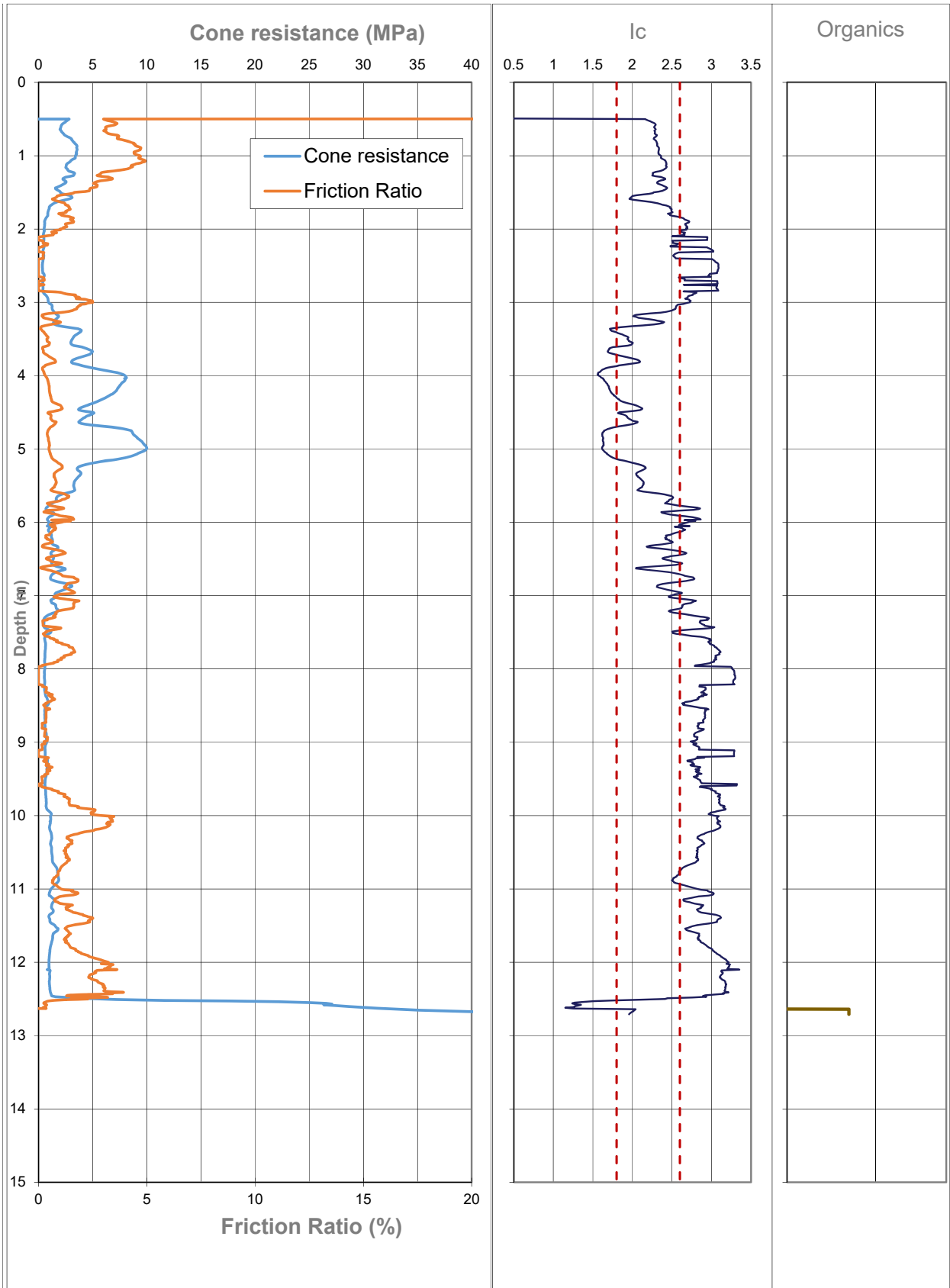
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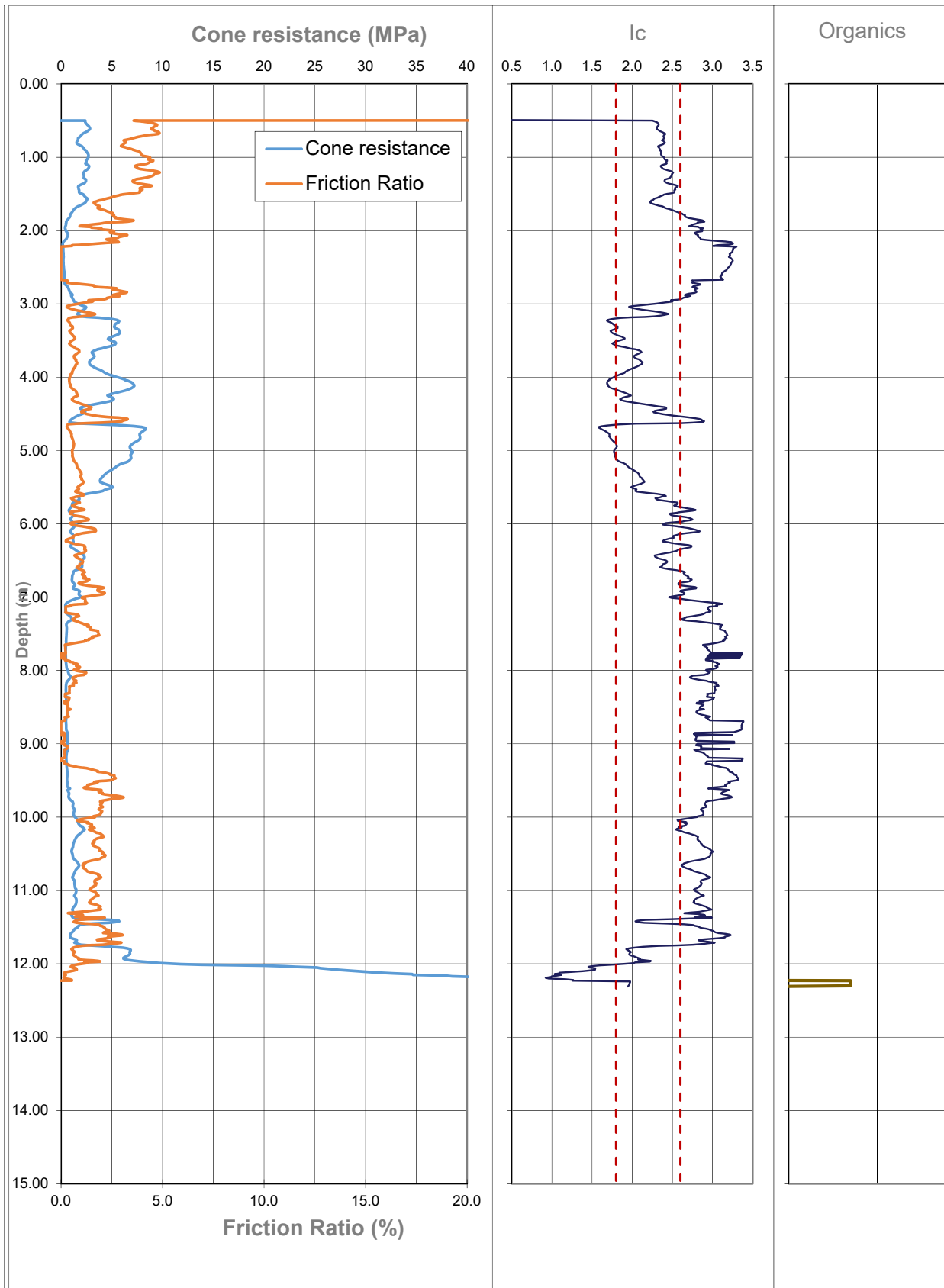
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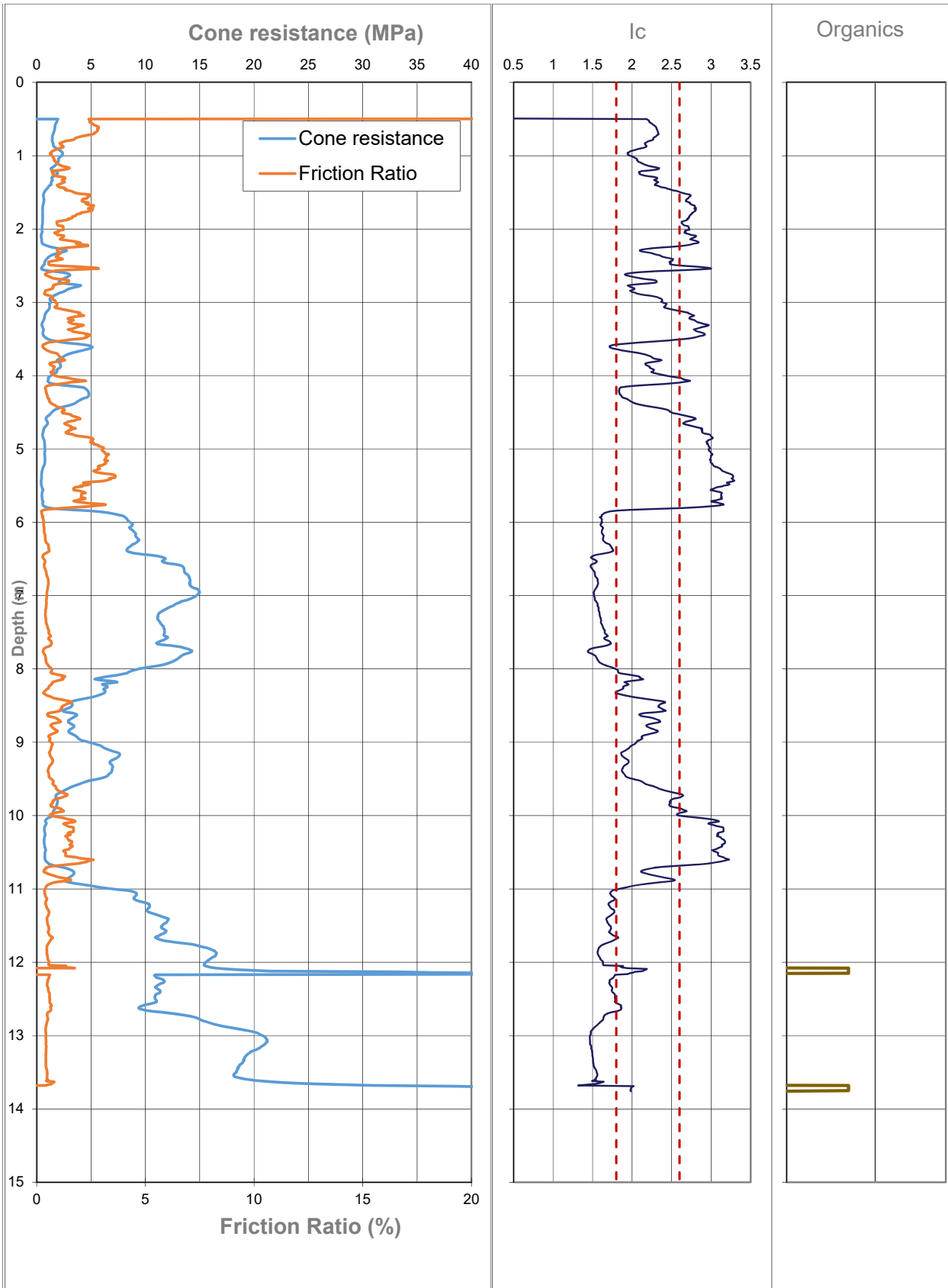
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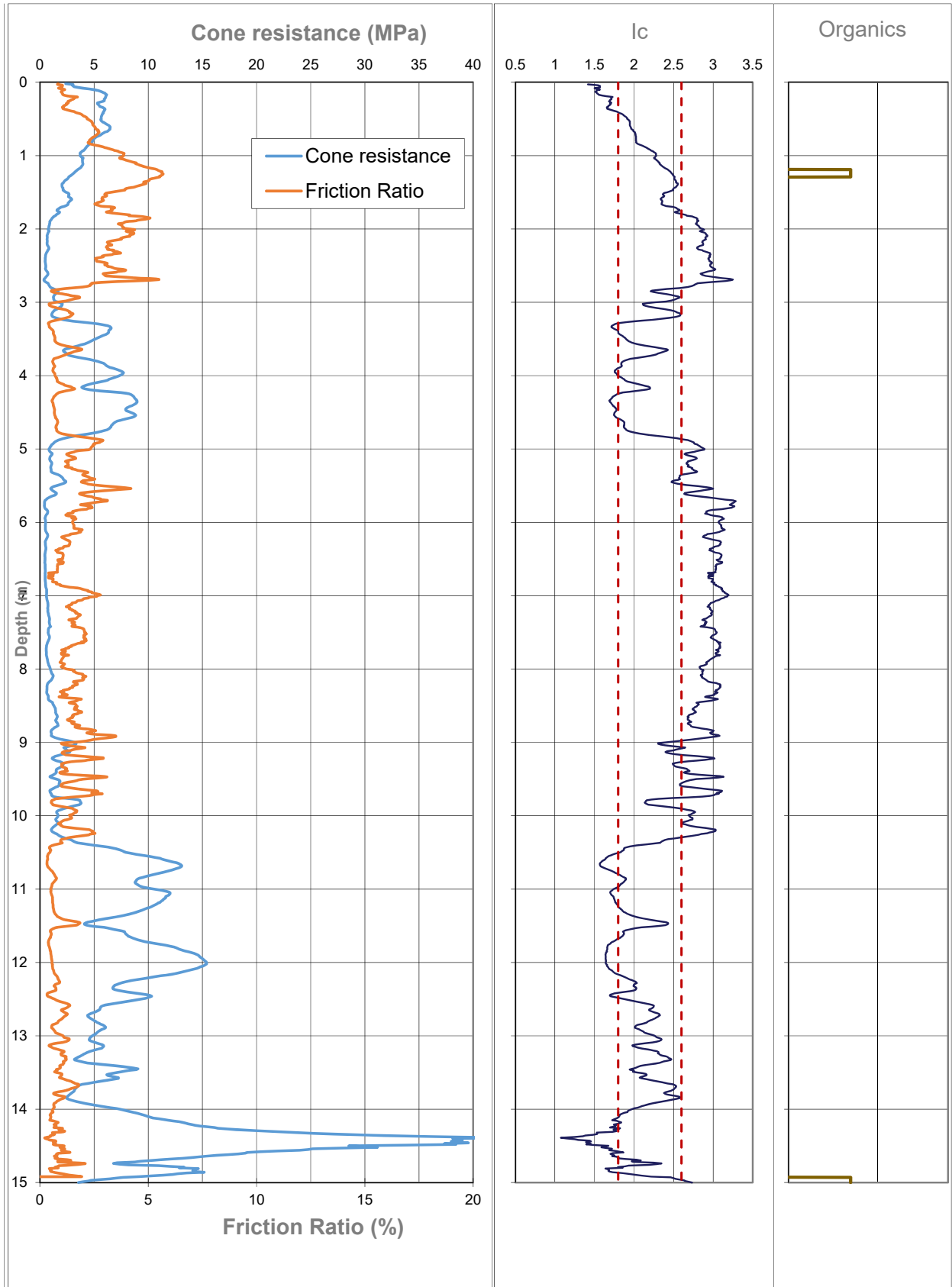
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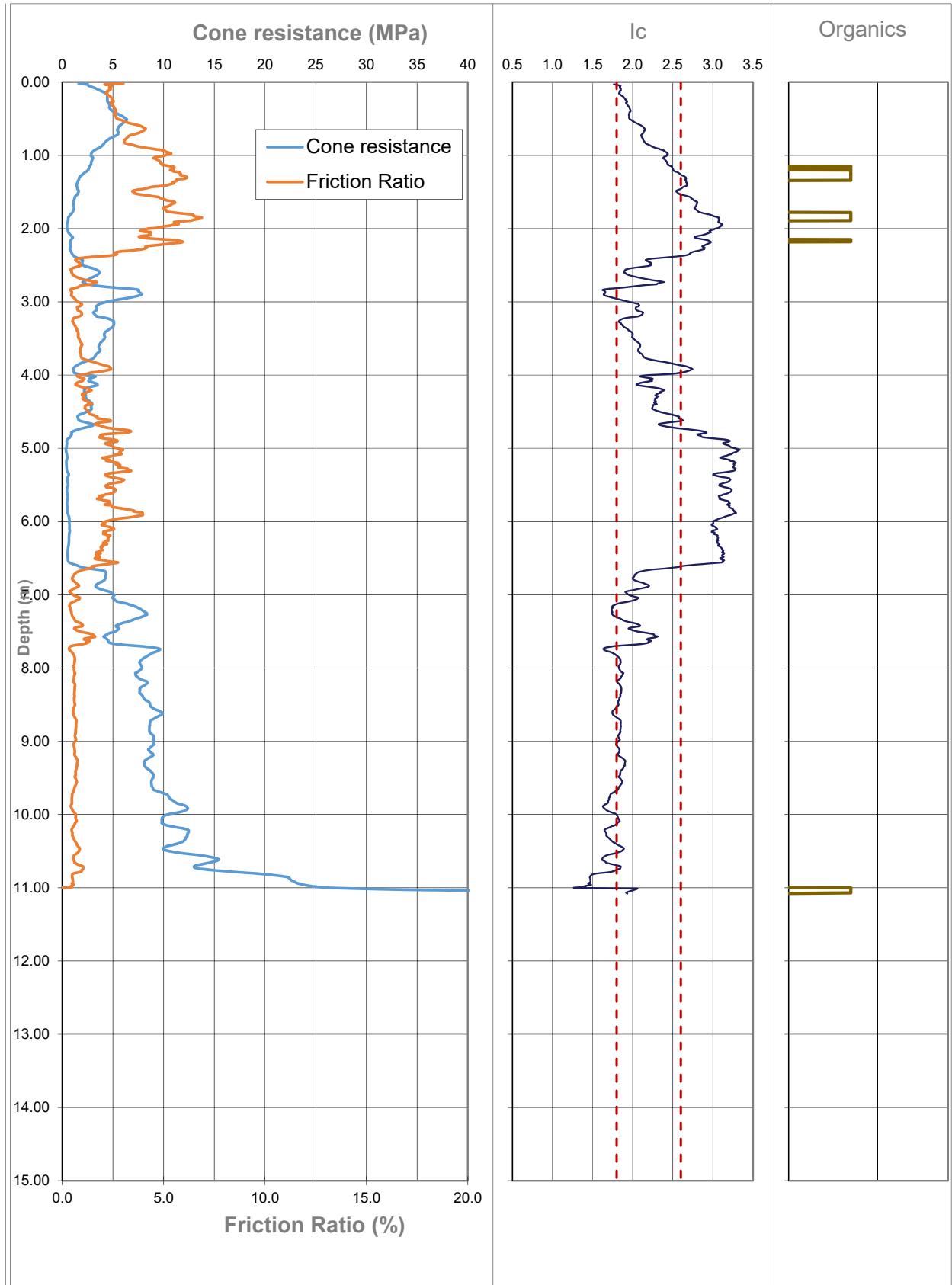
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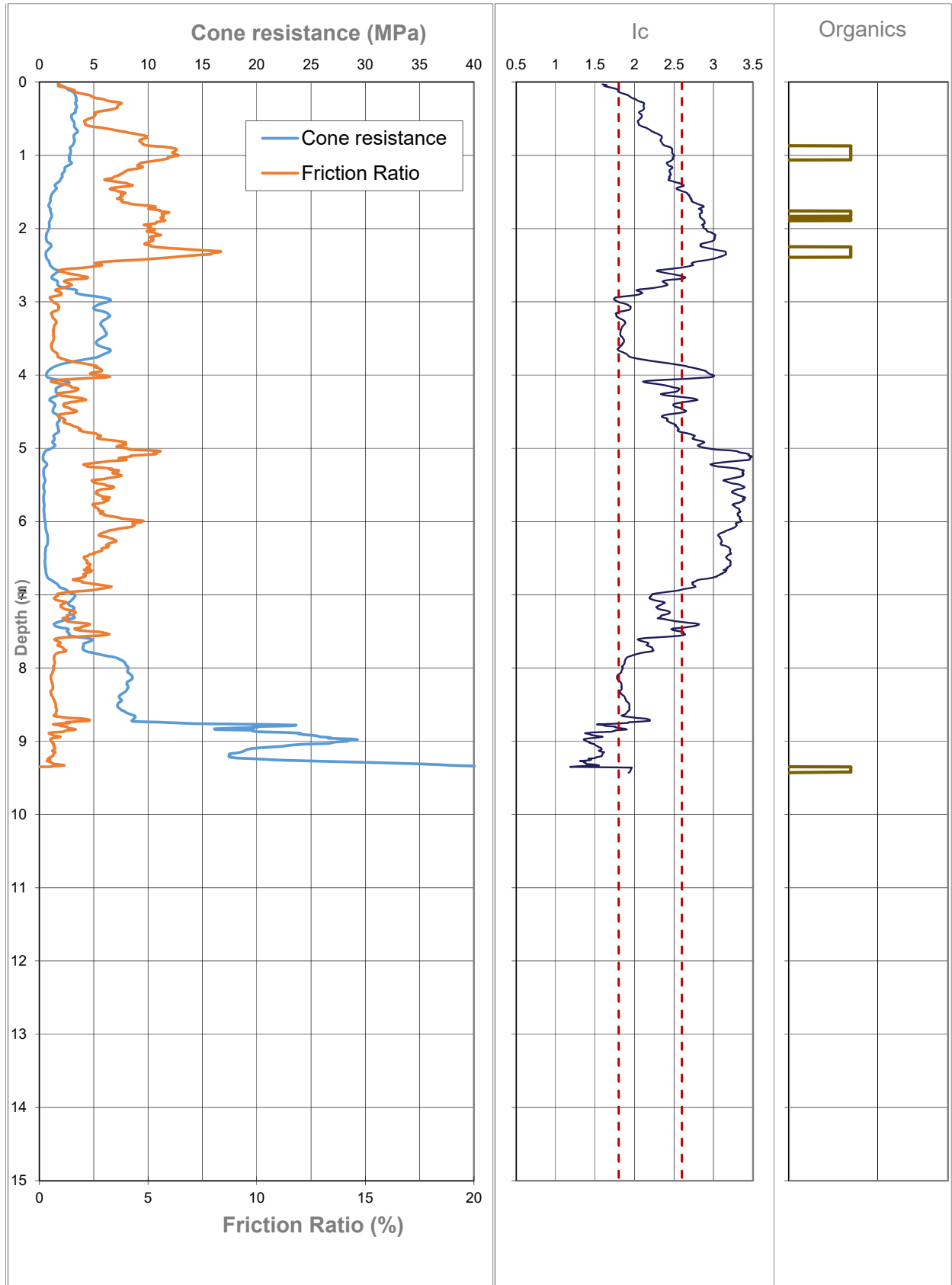
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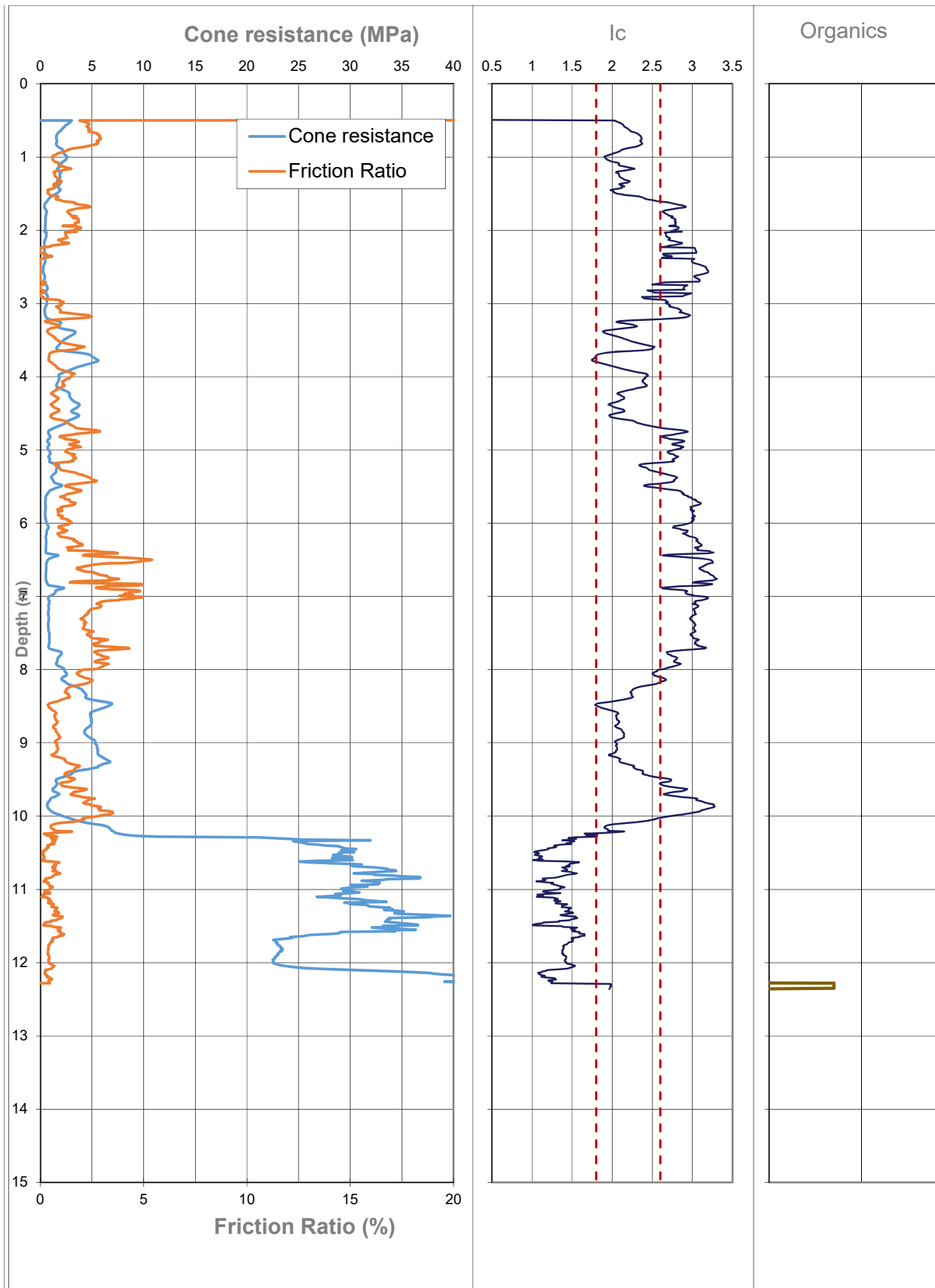
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	Client:	Cashmere Park Trust	Job No:	3933



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	Project:	Cashmere Fields Subdivision	Hole No:	CPT 27
	Client:	Cashmere Park Trust	Job No:	3933





DRILLHOLE BORELOG

Hole ID:	BH1
Sheet:	3 of 3
Date:	20/01/2012

Project No:	3933	Equipment:	8140LS (DT45)	G.L. R.L.:		Logged by:	PEW
Project:	Cashmere Fields Rezoning	Drilling Co:	McMillan	Max Depth:	21.4m	Checked by:	NJT
Client:	Cashmere Park Trust	Operator:	D. Keown	Location:	Refer to Site Plan		

Geological Formation	STRATA DESCRIPTION		Graphic Log	Depth	Piezo-meter and Water Levels	COMMENTS	Drill method	Samples	Tests	SPT blows/mm			
	SOIL DESCRIPTION Major colour, second colour, Subordinate fraction, minor fractions, - plasticity, bedding, moisture, structures	ROCK DESCRIPTION Colour, fabric, rock name								20	40	60	80
	Silty Sandy fine to coarse GRAVEL ; dark grey to yellow brown. Gravel, subrounded; Sand, coarse; dense. (continued)			20.0		-19.4 - 20.9m, 100% sample recovery.	Dual Tube Ø70mm		20.9 SPT	11	6	10	16/300mm
	NO SAMPLE			-21.0									
	21.4m E.O.H.												
				-22.0									
				-23.0									
				-24.0									
				-25.0			Dual Tube						
				-26.0									
				-27.0									
				-28.0									
				-29.0			Dual Tube						
				-30.0									



DRILLHOLE BORELOG

Hole ID:	BH 2
Sheet:	1 of 3
Date:	20/01/2012

Project No:	3933	Equipment:	8140LS (DT45)	G.L. R.L.:		Logged by:	PEW
Project:	Cashmere Fields Rezoning	Drilling Co:	McMillan	Max Depth:	21.4m	Checked by:	NJT
Client:	Cashmere Park Trust	Operator:	D. Keown	Location:	Refer to Site Plan		

Geological Formation	STRATA DESCRIPTION		Graphic Log	Depth	Piezo-meter and Water Levels	COMMENTS	Drill method	Samples	Tests	SPT blows/mm				
	SOIL DESCRIPTION Major colour, second colour, Subordinate fraction, minor fractions, - plasticity, bedding, moisture, structures	ROCK DESCRIPTION Colour, fabric, rock name								20	40	60	80	
	TOP SOIL ; dark brown, organic, wood fragments.			0.0		-0.0 - 1.2m, 90% sample recovery.	Dual Tube Ø70mm							
	SAND with minor Silt ; dark brown with yellow-brown mottling; fine to medium grained. -1.2m, dark grey. -1.4, very fine to fine sand. -1.7m, increase in Silt content.			1.0	W.T. 1.1m	-1.2 - 2.7m, 100% sample recovery.								
	Silty very fine to fine SAND ; grey-brown with yellow-brown mottling. -2.7m, dark grey, very fine.			3.0		-2.7 - 4.2m, 100% sample recovery.								
	SILT with minor very fine grained Sand ; dark grey with yellow-brown mottle. High plasticity. Silty very fine SAND ; dark grey.			4.0		-4.2 - 5.7m, 100% sample recovery.	Dual Tube							
	SAND ; dark grey, very fine to fine grained; trace of Silt. -4.7m, fine to medium sand. -5.0m, fine to coarse sand.			5.0		-5.7 - 7.2m, 100% sample recovery.								
	Silty very fine to fine SAND ; dark grey. SAND ; dark grey, medium to coarse grained. -4.7m, coarse			6.0		-7.2 - 8.2m, 100% sample recovery.								
	Silty very fine to fine SAND ; dark grey.			7.0		-8.2 - 10.2m, 100% sample recovery.	Dual Tube							
	SILT ; dark grey. High plasticity; trace of very fine Sand. Peaty SILT ; dark grey. SILT ; dark grey. High plasticity; trace of very fine Sand. NO SAMPLE SILT ; dark grey. High plasticity; trace of very fine Sand.			8.0		-8.2 - 10.2m, 100% sample recovery.								
	Peaty SILT ; dark grey. Trace of very fine Sand and wood fragments. Sandy SILT ; dark grey. High plasticity, fine Sand. Sandy medium to coarse GRAVEL ; dark grey. Subrounded; Sand, fine to coarse. SAND ; dark grey; Medium to coarse.			9.0										
	Gravelly medium to coarse SAND ; dark grey. Gravel, subrounded, medium to coarse. SAND with minor fine to coarse GRAVEL ; dark grey. Sand, fine to coarse; Gravel, subrounded.			10.0										

16.4
SPT
4
6
10
16/300mm



TONKIN & TAYLOR LTD

BOREHOLE LOG

BOREHOLE No:S33_BH-Sc
 Hole Location: 200 Cashmere Road
 SHEET 2 OF 2

PROJECT: Silty Soil Liquefaction Guidance LOCATION: 200 Cashmere Road JOB No: 53399.000
 CO-ORDINATES: 5175519.77 mN DRILL TYPE: Fraste Multidrill - XL HOLE STARTED: 21/2/14
 1568352.4 mE DRILL METHOD: Sonic, 95.2% efficiency HOLE FINISHED: 21/2/14
 R.L.: DRILLED BY: Prodrill - Cam
 DATUM: DRILL FLUID: Drill pro LOGGED BY: JXXM CHECKED: DAA

GEOLOGICAL		ENGINEERING DESCRIPTION																				
GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION.	FLUID LOSS	WATER	CORE RECOVERY (%)	METHOD	CASING	TESTS	SAMPLES	R.L. (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MOISTURE / WEATHERING CONDITION	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa)			COMPRESSIVE STRENGTH (MPa)			DEFECT SPACING (mm)	SOIL DESCRIPTION Soil type, minor components, plasticity or particle size, colour. ROCK DESCRIPTION Substance: Rock type, particle size, colour, minor components. Defects: Type, inclination, thickness, roughness, filling.	
														10	25	100	200	50	100			2000
Yaldhurst Member of the Springston Formation			100	Sonic							SM	W									Silty fine SAND; grey.	
						*PI; PSD & WC @5.5 - 5.6m		5.5			ML		F								SILT, with some sand and trace organics; grey. Non-plastic, quick; sand, fine; organics, fibrous. 5.50m: Grades to sandy. 5.65m: Grades to some sand. 5.75m: Grades to trace sand. Becomes low plasticity, slow.	
						*PI & WC @5.9 - 6.0m		6.0					S								6.05m: Becomes quick.	
								6.5					VS								6.30m: Grades to sand and organics absent. Becomes low to moderate plasticity, slow.	
				100	Sonic				7.0													7.05m: Grades to trace fibrous organics.
									7.5					S								7.60m: Becomes very slow.
							*PI; PSD & WC @7.4 - 7.5m		7.5					F								7.75m: Becomes moderate plasticity.
									8.0					S								8.00m: Becomes low to moderate plasticity. 8.10m: Grades to minor organics.
				100	Sonic				8.5													8.50m: Grades to trace fine sand. 8.80m: Grades to trace organics.
									9.0					F								8.95m: Grades to sandy. Becomes non-plastic, quick.
								9.5			SM		Pt								Silty fine SAND, with trace organics and silt laminations; grey. Organics, fibrous. Fibrous WOOD; brown.	
								9.5			SM										Silty fine SAND, with trace organics; grey. Organics, fibrous. 9.50m: Grades to silt laminations absent.	
								10													End of Borehole at 10.00m bgl. Target Depth Reached.	

T-T DATATEMPLATE.GDT actv



Project No: 53399 Site: 200 Cashmere Road

BH No: Site 33 Box No: 1 of 4 Depth From: 0.0 m to 3.0 m

Date: 13 03 2014

0 100 200 300 400 500

www.tonkin.co.nz Scale: mm 600



SOIL BORING LOG

Project Number
n/aBoring Number
DM-2General
Comments:Dames & Moore Continuous Sampling
(This is a simplified log. Detailed logging will be provided.)

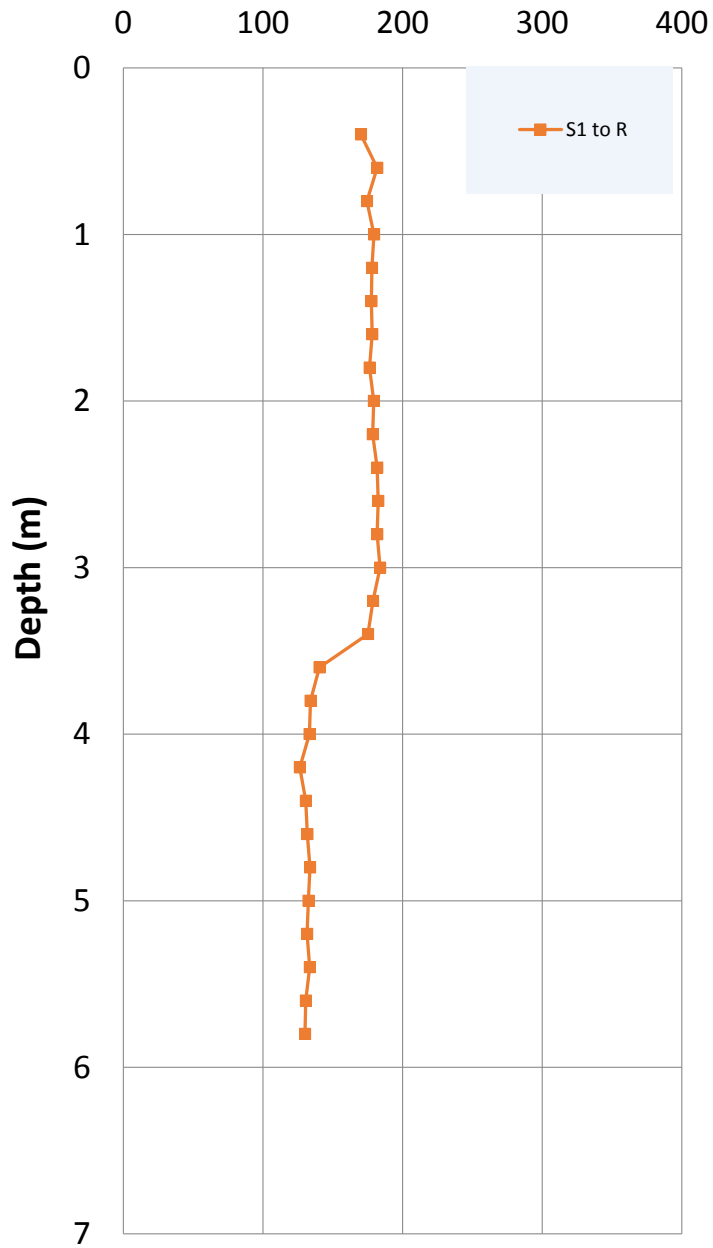
Project Name: Mini-Cone/Continuous D&M	Location: 200 Cashmere Road ("Site 33"), Christchurch, New Zealand
Elevation: ---	Drilling Contractor: McMillan Drilling Services
Drilling Method and Equipment: Mud-rotary, Track rig (Geoprobe 8140LS)	
Mud Level: Above ground surface (7 June 2016, 8:30AM)	Start/Finish: 3 June 2016 (Friday) - 7 June 2016 (Tuesday)
Logger: Christine Z. Beyzaei (UC Berkeley)	

Depth below Surface (m)	Sample			D&M Sampling Pressure	Soil Description	Comments
	Interval	Number and Type	Recovery (%)	(psi)	Soil Name, Color, Moisture Content, Relative Density or Consistency, Soil Structure, Mineralogy, USCS Group Symbol	Depth of Casing, Drilling Rate, Drilling Fluid Loss, Tests and Instrumentation
						<i>Hand-augered (0 - 0.5m)</i>
0.5-0.89 m	1U (DM)	100%	350-400 psi	Gray sandy silt	No casing. Sampler not fully advanced* (estimated advancement approx. 39 cm).	
1 0.95-1.40 m	2U (DM)	100%	200 psi	Gray sandy silt	No casing.	
1.40-1.85 m	3U (DM)	100%	100 psi	Gray sandy silt	Casing at 0.78 m.	
2 1.85-2.30 m	4U (DM)	99%	100 psi	Gray clayey silt	Casing at 0.78 m.	
2.30-2.75 m	5U (DM)	101%	100 psi	Gray clayey silt	Casing at 1.85 m.	
3 2.75-3.20 m	6U (DM)	101%	100 psi	Gray sandy silt to silty sand	Casing at 1.85 m.	
3.20-3.65 m	7U (DM)	100%	150-250 psi	Gray fine sand, some silt	Casing at 2.90 m.	
4 3.65-4.10 m	8U (DM)	101%	150-250 psi	Gray silty fine sand (silt/organic bands and laminations)	Casing at 2.90 m.	
4.10-4.55 m	9U (DM)	95%	75 psi	Gray fine sand, some silt & Gray silt with laminations	Casing at 3.80 m.	
5 4.55-5.00 m	10U (DM)	101%	75 psi	Gray silt & silty fine sand (organic/sand laminations and partings)	Casing at 4.25 m.	
5.00-5.45 m	11U (DM)	102%	50 psi	Layered silty sand and silt	Casing at 4.25 m.	
5.45-5.90 m	12U (DM)	98%	100 psi	Layered silty sand and silt	Casing at 4.25 m.	
6 5.90-6.35 m	13U (DM)	100%	50 psi	Layered silt	Casing at 5.34 m.	
6.35-6.80 m	14U (DM)	101%	75 psi	Layered silt	Casing at 5.34 m.	
7					<i>End of boring at 6.80 m</i>	

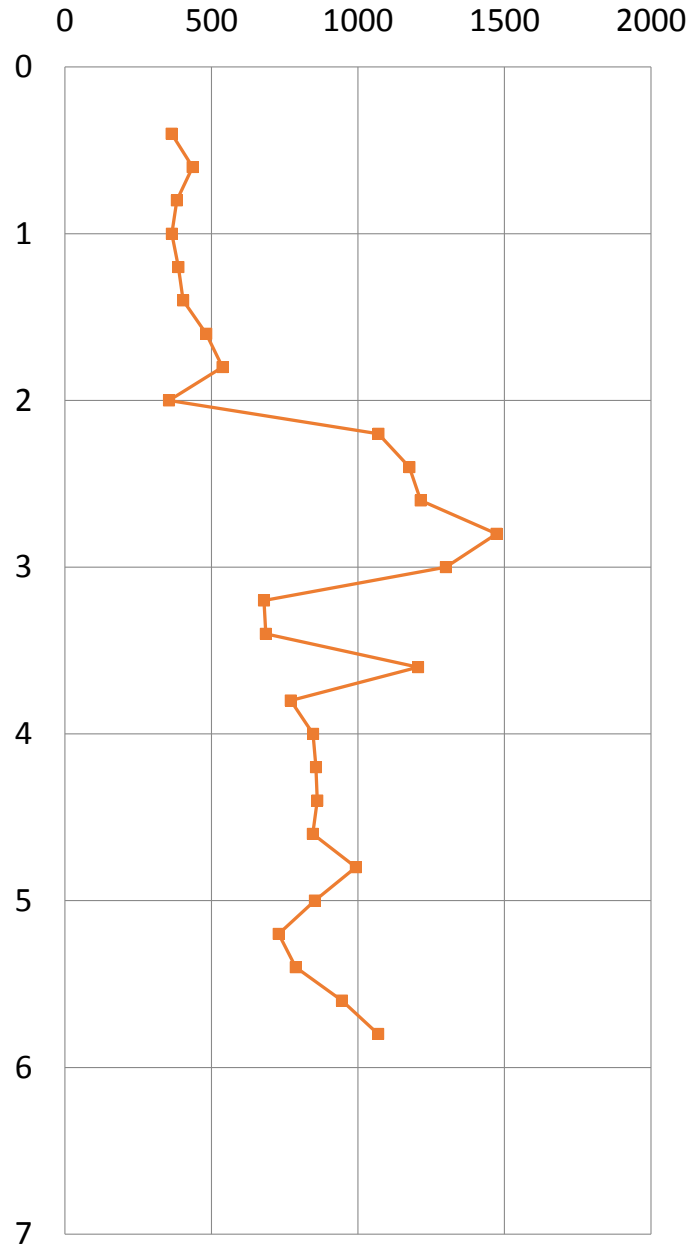
*Note: Full sampler advancement = 45 cm.

HNH-TCR01-XH01

S-Wave Velocity, Vs (m/s)



P-Wave Velocity, Vp (m/s)



Project:

T-Rex Ground Improvement Trials

Test Date: 6 December 2013

Suburb: Hoon Hay

Located By: Survey GPS

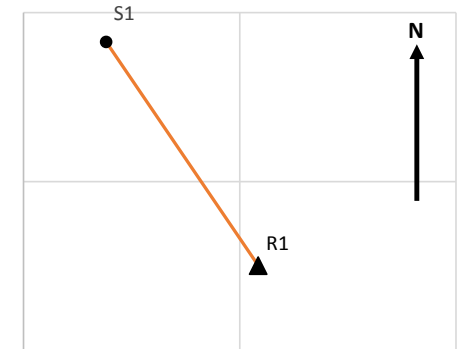
Coord System: NZTM

Vertical Datum: Lyttleton Vertical Datum 1937

Probe Positions:

Probe	Easting (mE)	Northing (mN)	Elevation (mRL)
R1	1568355.1	5175519.5	9.3
S1	1568354.4	5175520.8	9.3
S2	0.0	0.0	0.0

Indicative Location Plan



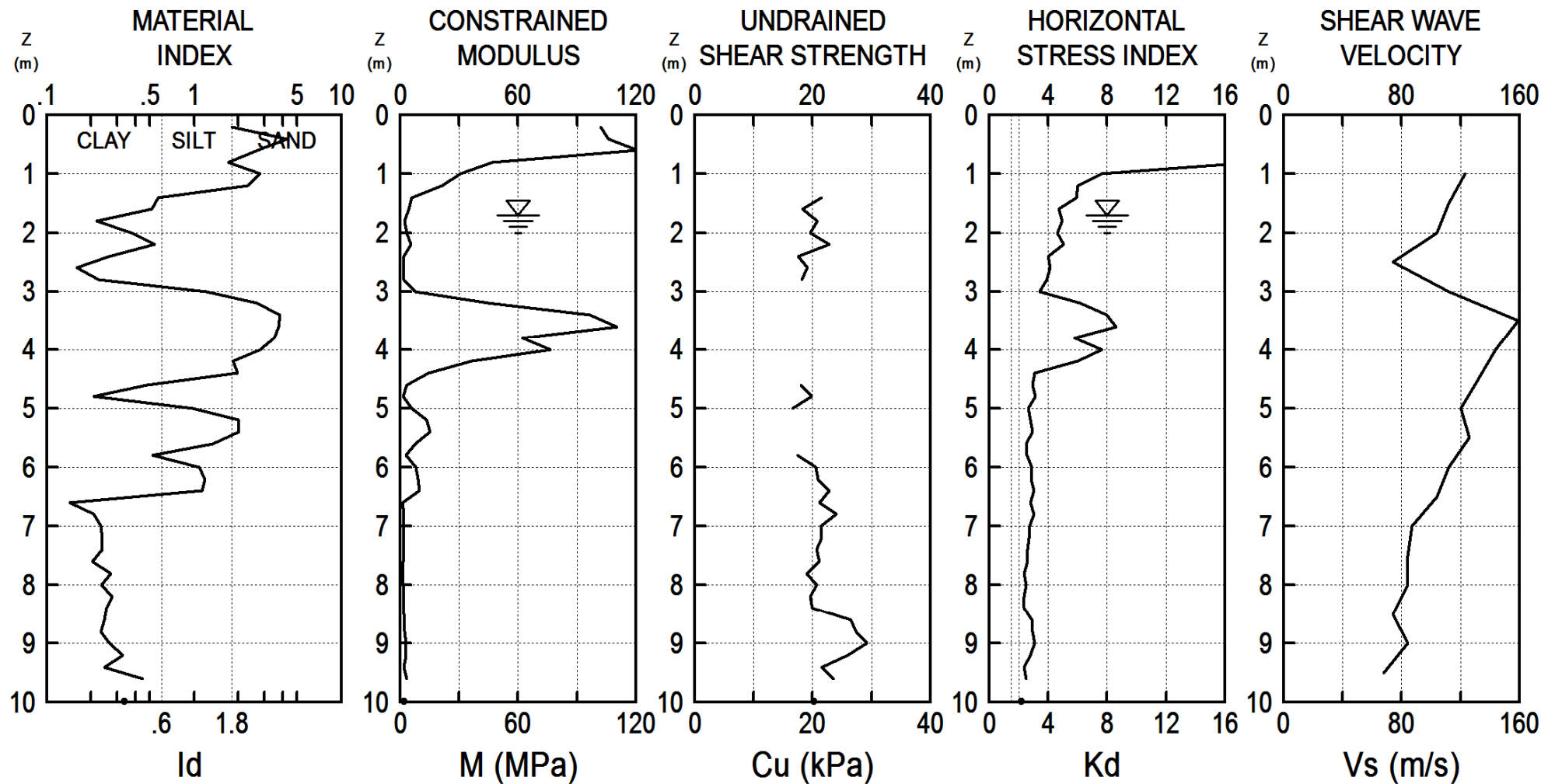
Comments:

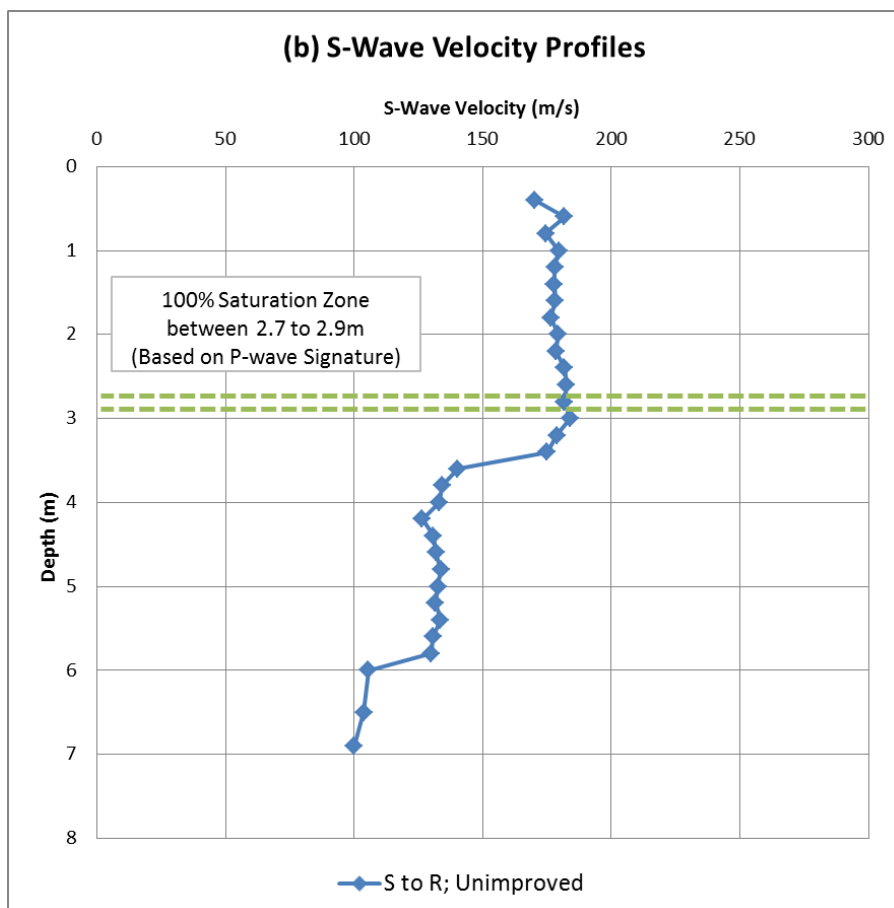
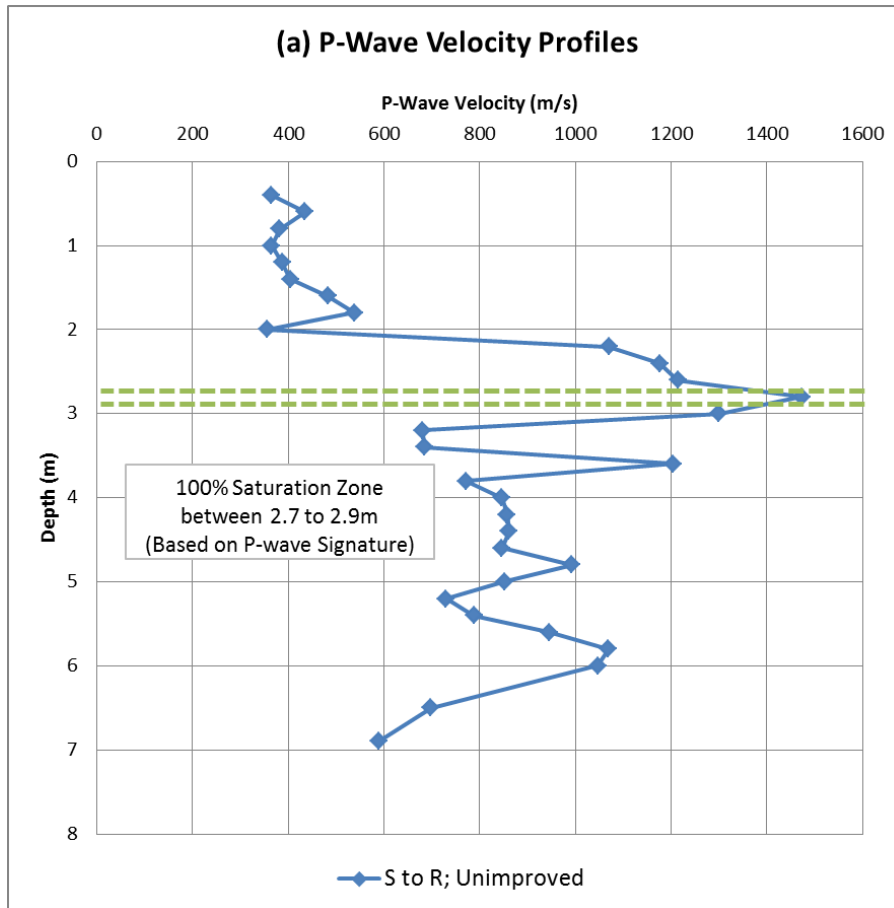
200 Cashmere Road: S1 to R; Unimproved ground.

Site 33
200 Cashmere Rd

Natural soil
Christchurch

TEST
SDMT1
14 DEC 2013





Appendix 3


Lab data and C_{FC} Analysis

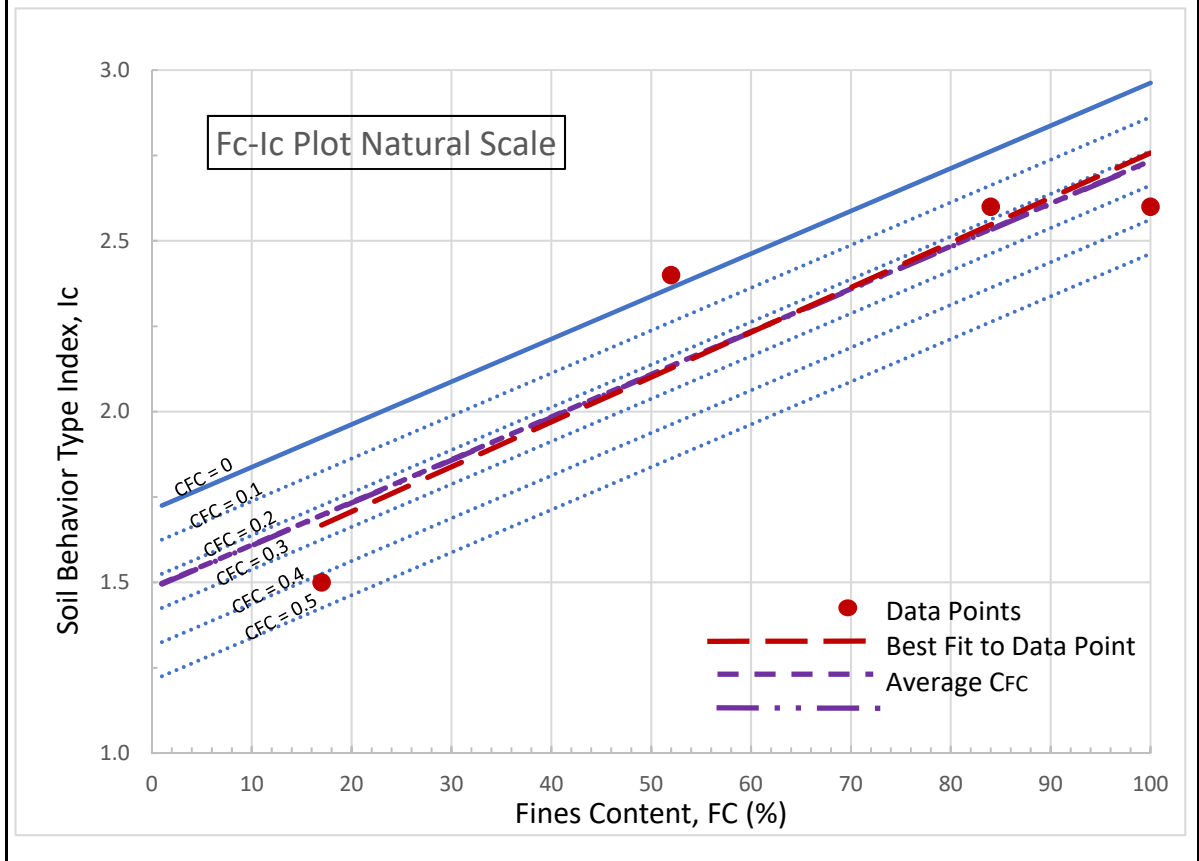
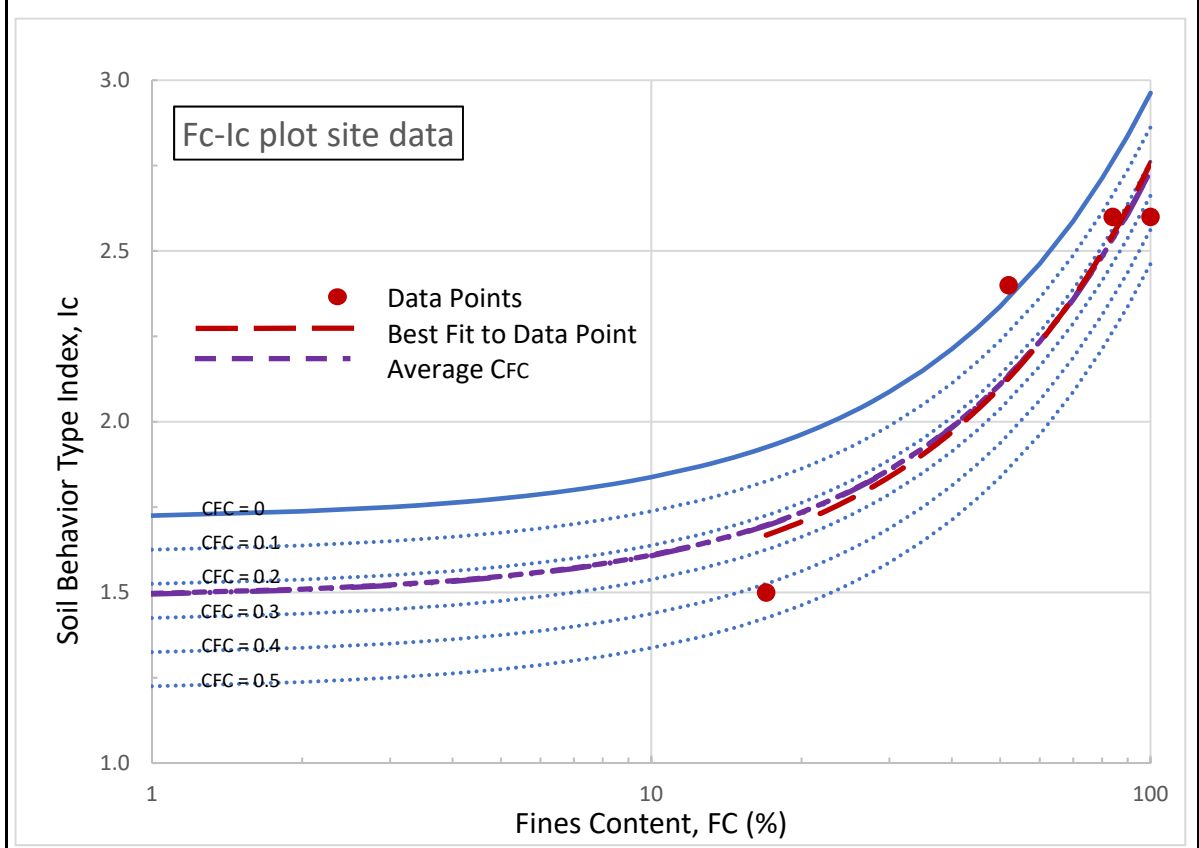
Research Project for Silty Soil Liquefaction Guidance - Lab Schedule


PI	Atterberg Limits
FC	Wet seive at 75µm and 63µm to provide fines content
WS	Wet seive particle size distribution
Hyd	Hydrometer particle size distribution
Full PSD	Wet seive plus hydrometer PSD
Vis Insp	Visual inspection has confirmed ~100% fines
WC	Water content on as-received sample
Zip Lock Core	Sample was bagged on site soon after drilling, so expected to be close to natural water content

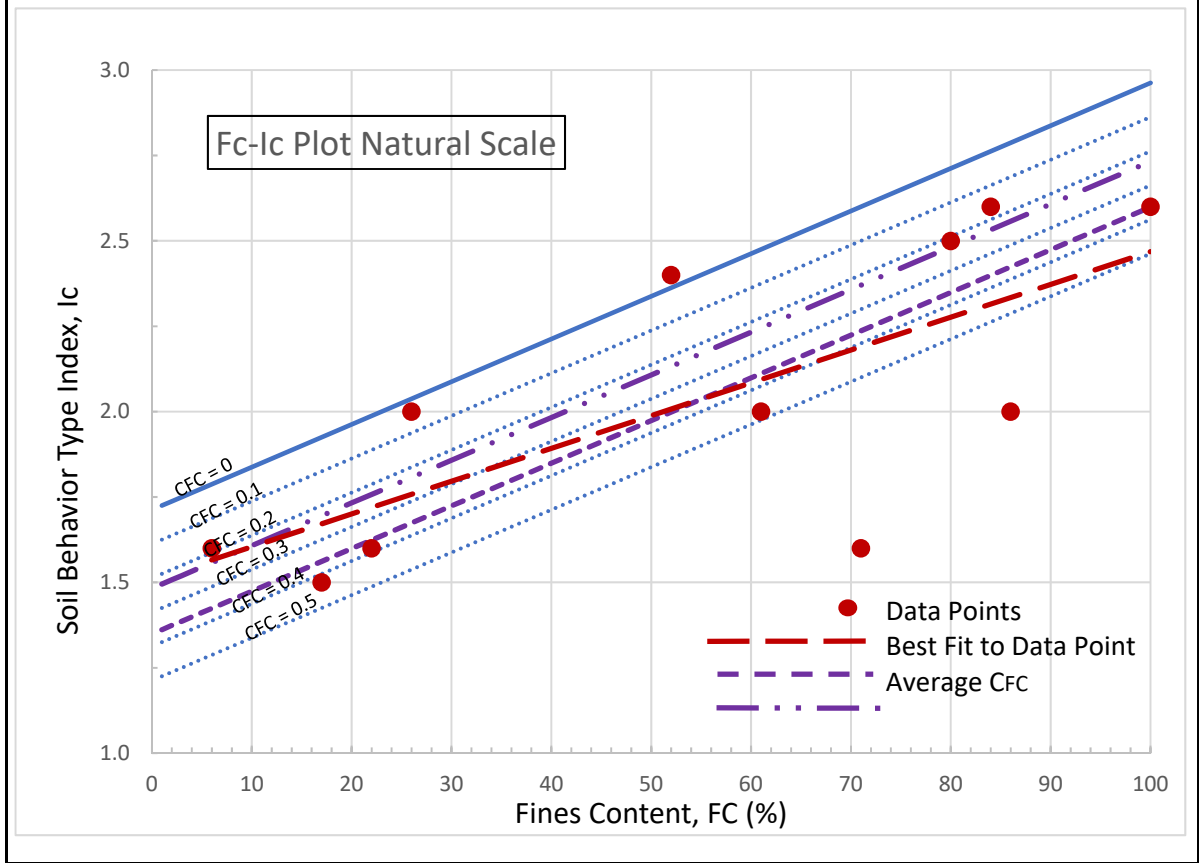
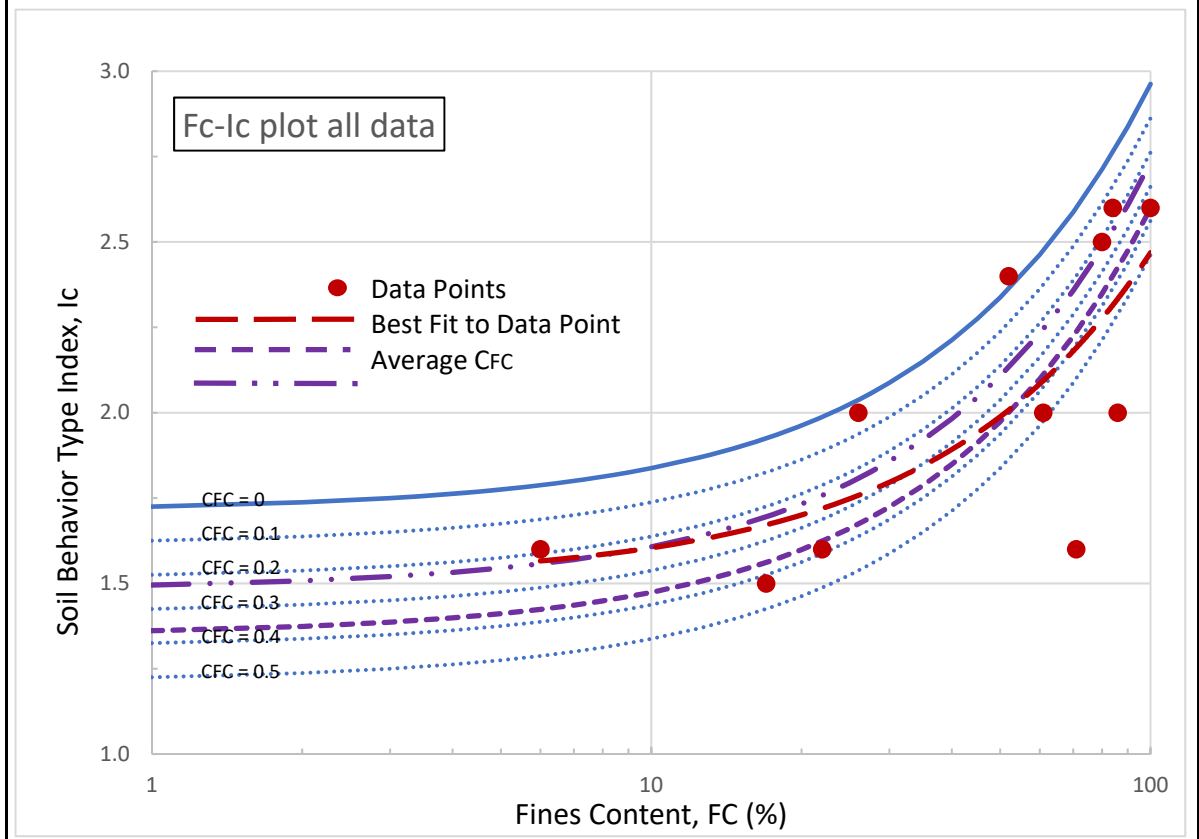
Site 33 - 200 Cashmere Road

Depth	Description	PI	FC	WS	Full PSD	WC	Hyd	Approx CPT I _c	Vis Insp	Zip Lock Core	Fines content results (75µm)	Lab
2.05 - 2.15m	Clayey SILT/Silty CLAY; minor cyclic softening	X			X	X		3.05			100%	Geotechnics
3.80 - 3.90m	SAND with some silt; classic liquefaction		X	X		X		1.50			17%	Geotechnics
4.05 - 4.15m	SILT, with minor sand; low plasticity, quick.	X	X			X		2.85		Yes	96%	Geotechnics
4.90 - 5.00m	Silty fine SAND; classic liquefaction, non-plastic			X		X		2.40			52%	Geotechnics
5.50 - 5.60m	Low plasticity, softening, without dilation	X			X	X		2.60		Yes	84%	Geotechnics
5.90 - 6.00m	Clayey SILT; low PI, cyclic softening, not much dilatancy, MH?, elastic silt?, ~100% fines	X				X		2.60	Yes		100%	Geotechnics
7.40 - 7.50m	Clayey SILT; low to moderate PI, minor cyclic softening, ~100% fines	X			X	X		3.30			99%	Geotechnics

 GEOTECH	Fines Content vs Ic Analysis GEOTECH CONSULTING LTD	
	Project: Cashmere Park Subdivision Client: Cashmere Park Trust	Borehole No: 38197 Job No: 3933



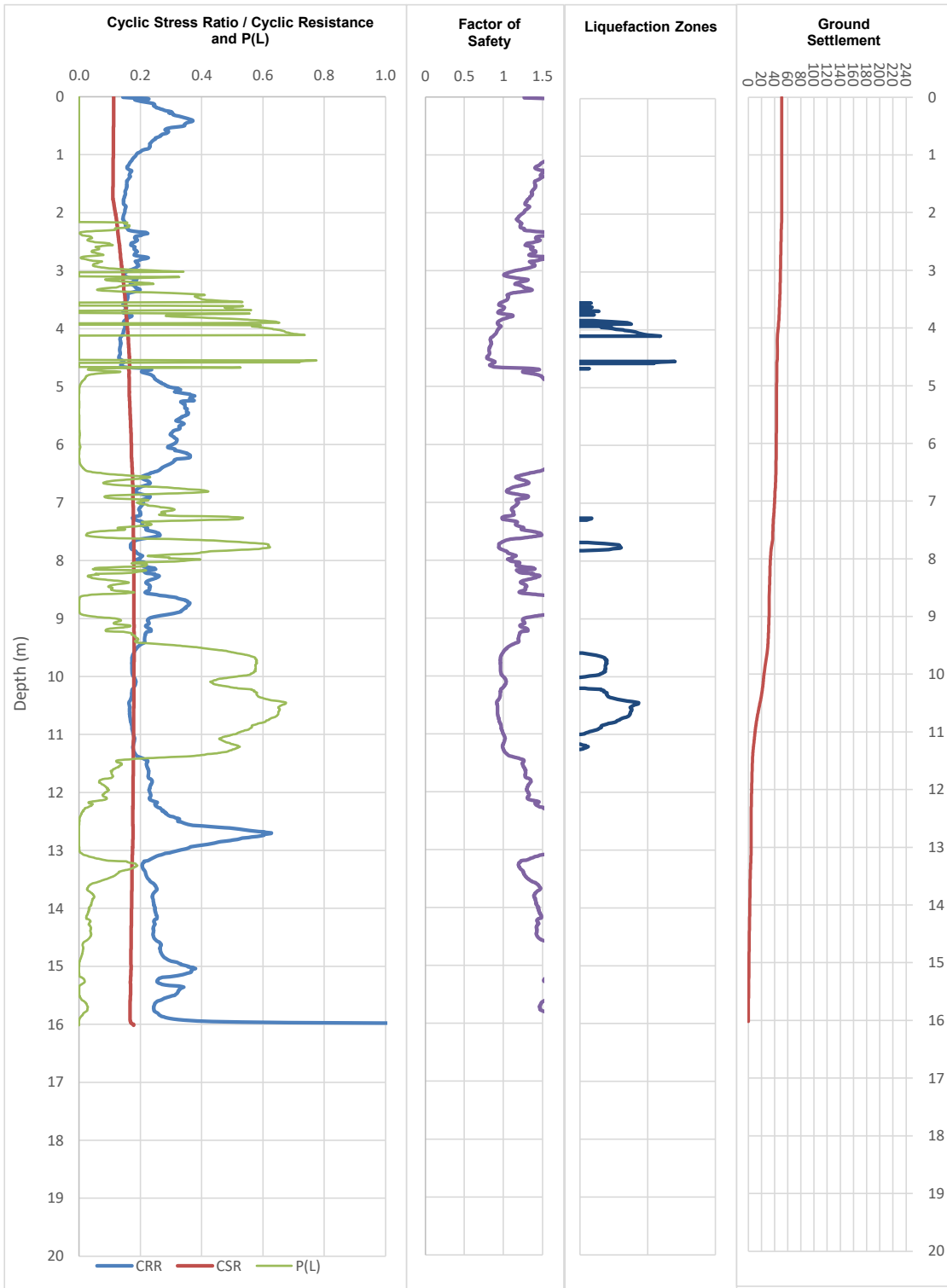
 GEOTECH	Fines Content vs Ic Analysis GEOTECH CONSULTING LTD	
	Project: Cashmere Park Subdivision Client: Cashmere Park Trust	Borehole No: All Job No: 3933



Appendix 4

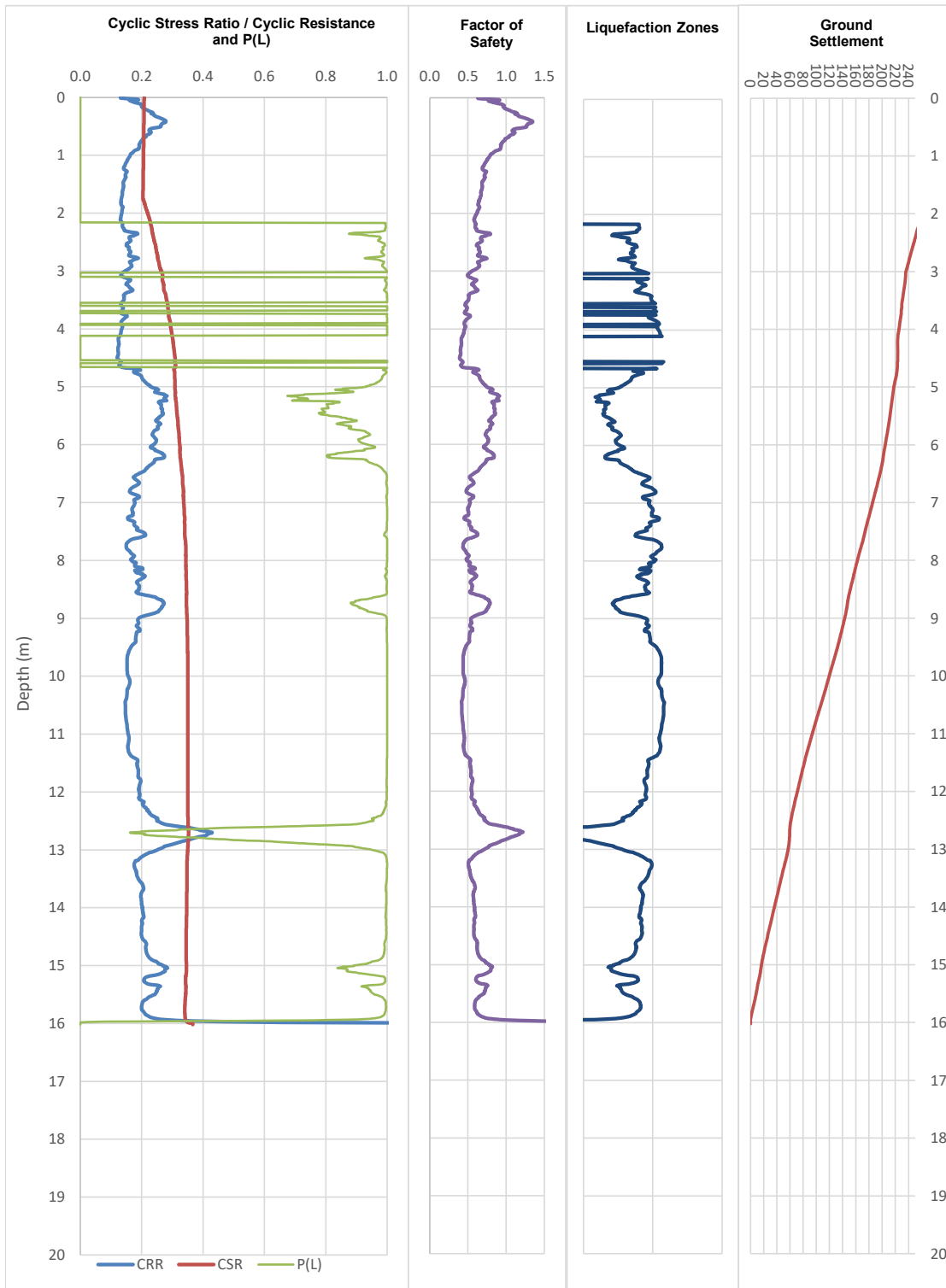
Liquefaction Profiles

 GEOTECH	Liquefaction Potential Analysis		
	GEOTECH CONSULTING LTD		
	Project:	Cashmere Fields Rezoning	Hole No:
Client:	W Lewis	Job No:	3933



Based on Idriss & Boulanger (2014) and Zhang (2002) **SLS 25yr**
 $a(g) = 0.19$ M 6

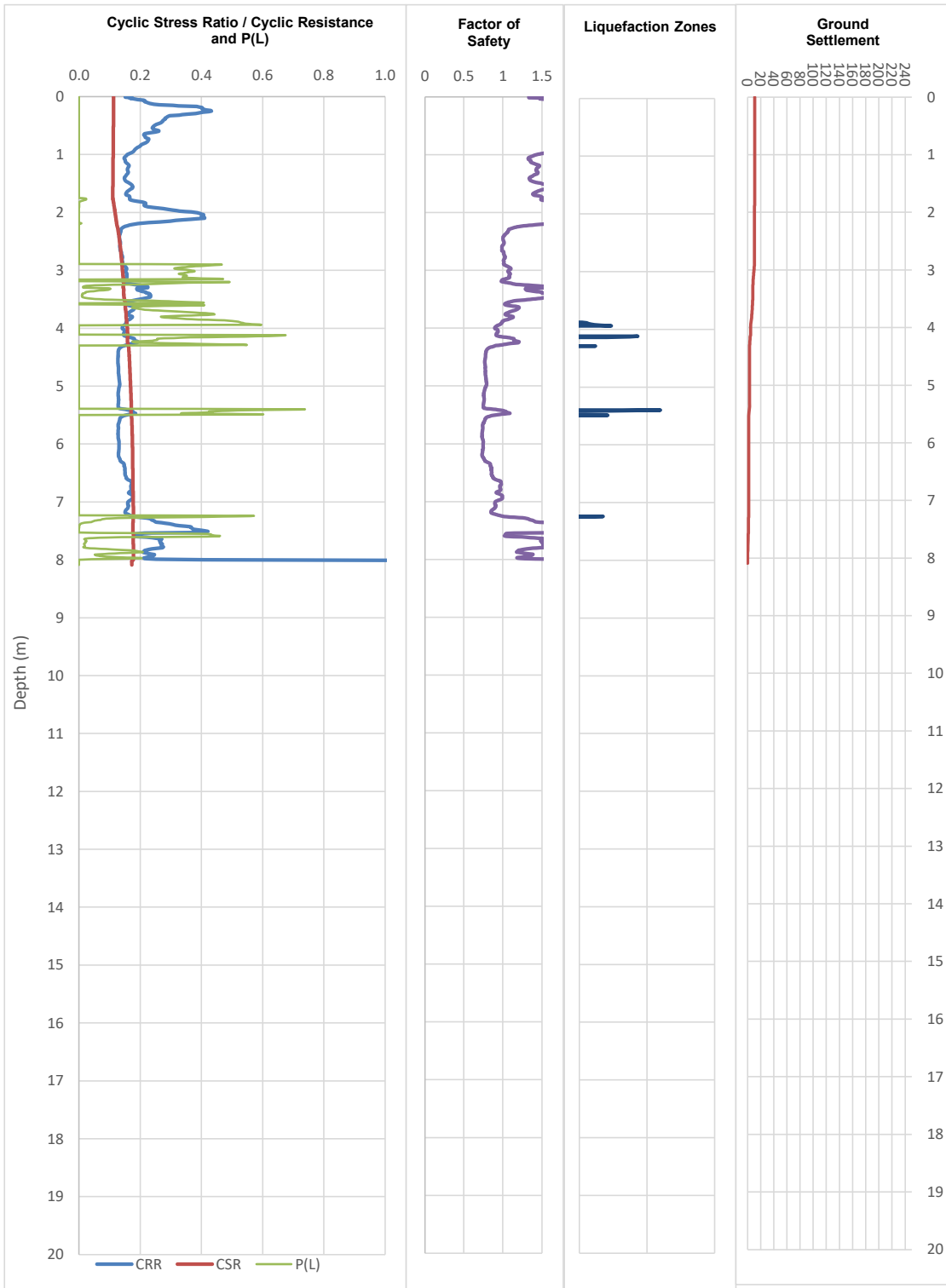
	Liquefaction Potential Analysis		
	GEOTECH CONSULTING LTD		
	Project:	Cashmere Fields Rezoning	Hole No:
Client:	W Lewis	Job No:	3933



Based on Idriss & Boulanger (2014) and Zhang (2002) **ULS 500 yrs**
M 7.5

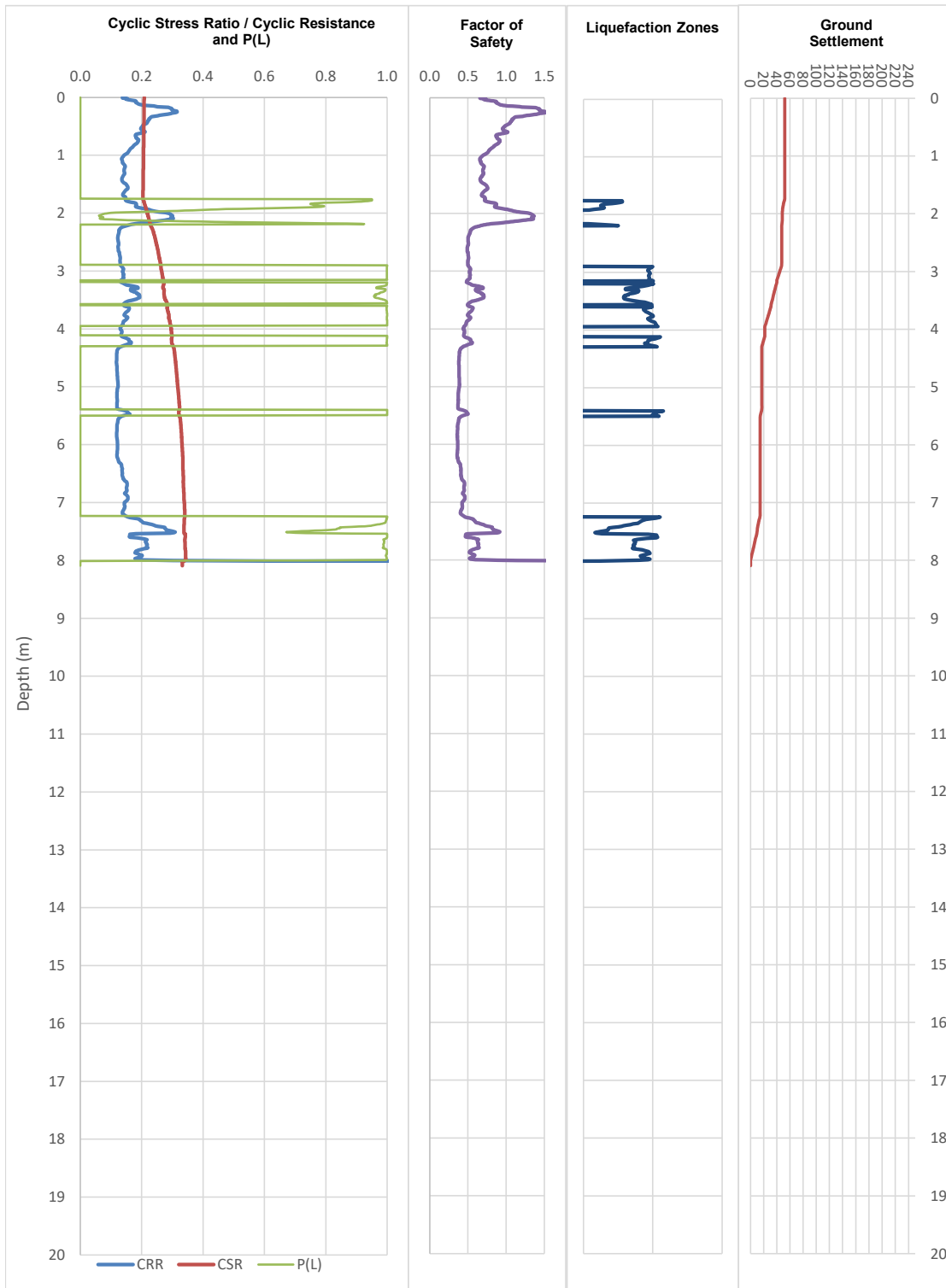
$a(g) = 0.35$

	Liquefaction Potential Analysis		
	GEOTECH CONSULTING LTD		
	Project:	Cashmere Fields Rezoning	Hole No:
Client:	W Lewis	Job No:	3933



Based on Idriss & Boulanger (2014) and Zhang (2002) SLS 25yr
 $a(g) = 0.19$ M 6

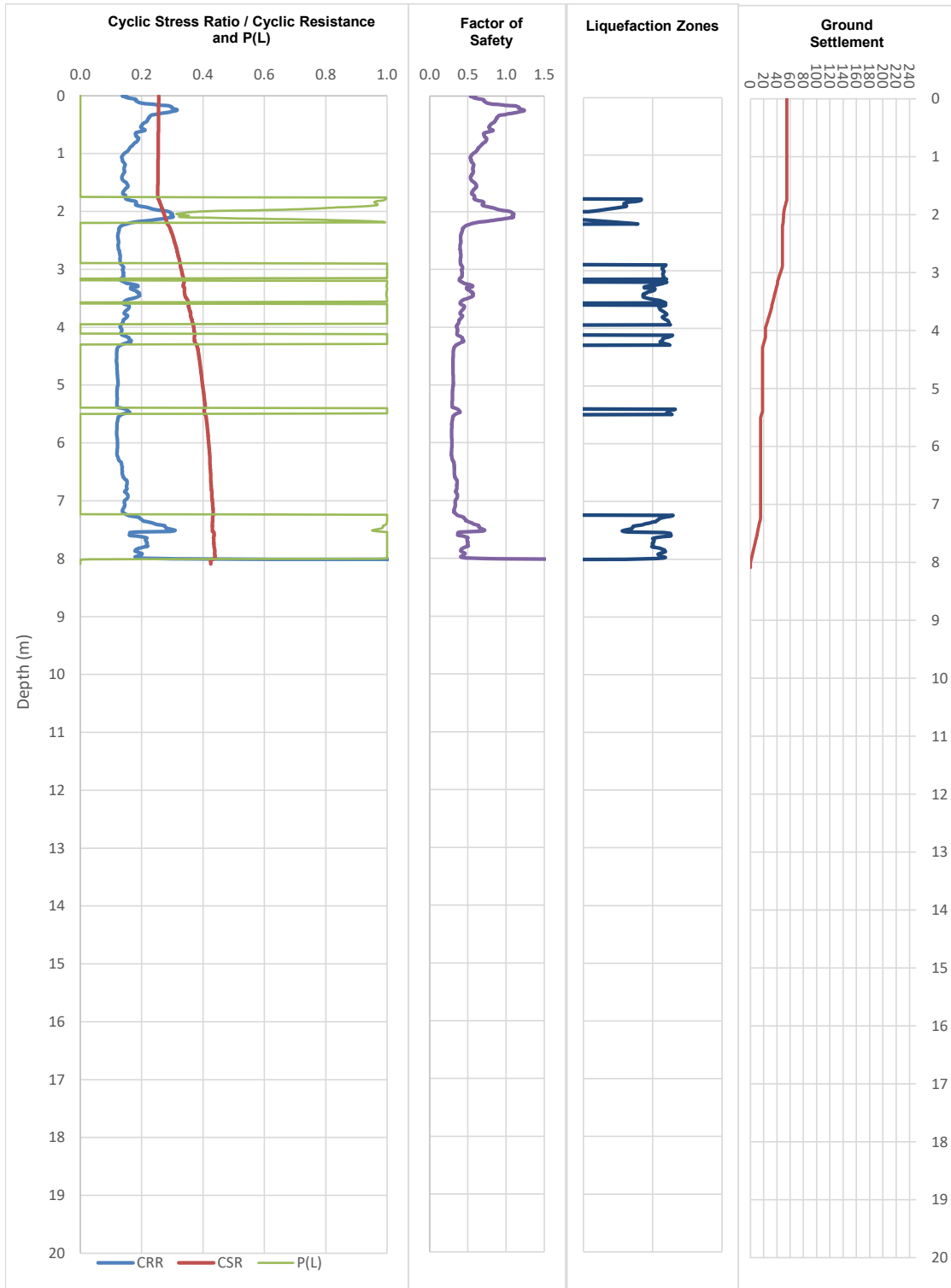
	Liquefaction Potential Analysis		
	GEOTECH CONSULTING LTD		
	Project:	Cashmere Fields Rezoning	Hole No:
Client:	W Lewis	Job No:	3933



Based on Idriss & Boulanger (2014) and Zhang (2002) **ULS 500 yrs**
M 7.5


$a(g) = 0.35$

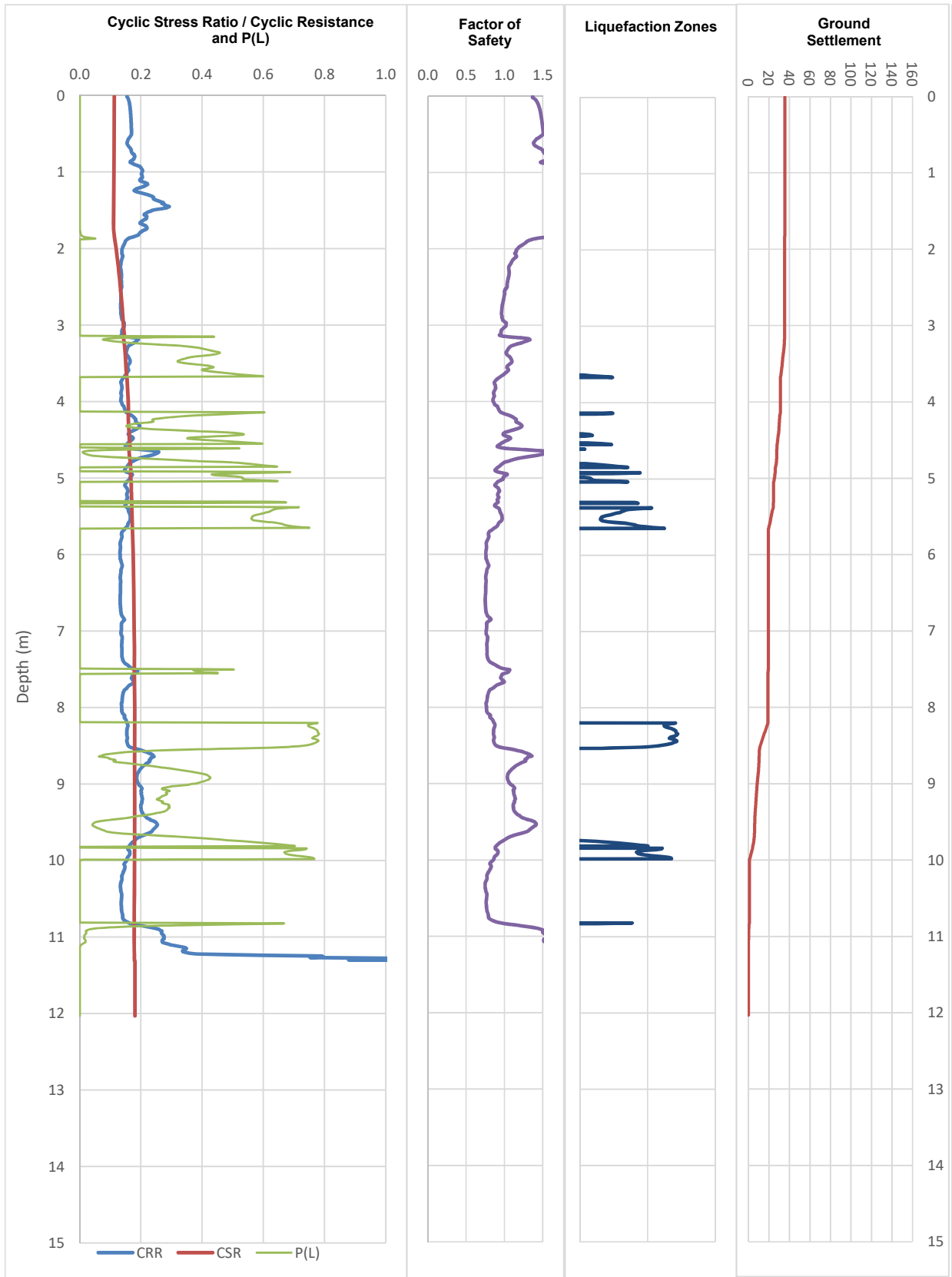
	Liquefaction Potential Analysis		
	GEOTECH CONSULTING LTD		
	Project:	Cashmere Fields Rezoning	Hole No: CPT 06
Client:	W Lewis	Job No: 3933	




Based on Idriss & Boulanger (2014) and Zhang (2002) **ILS 100 yrs**
M 7.5

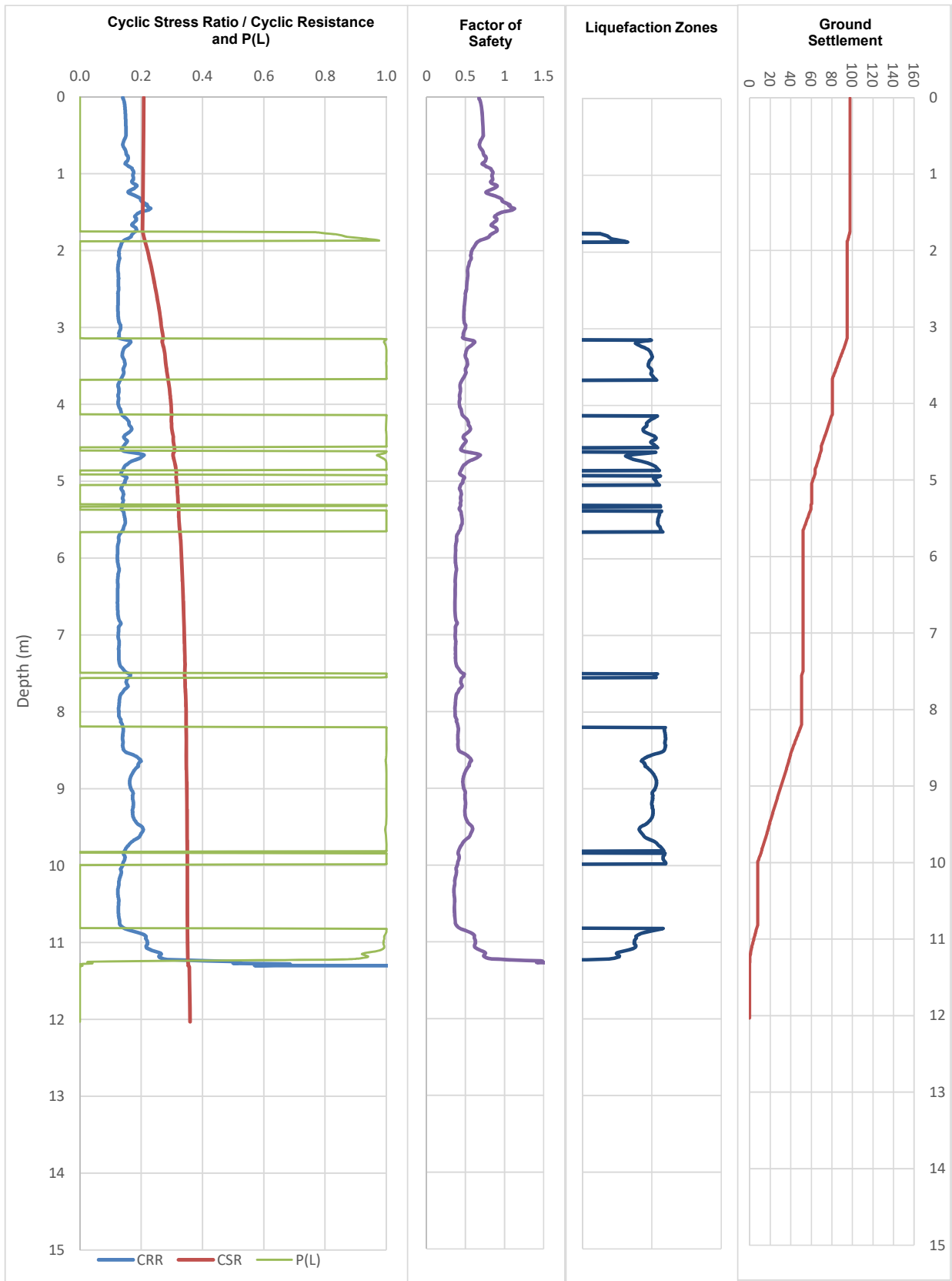
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	Liquefaction Potential Analysis			
	GEOTECH CONSULTING LTD			
	Project:	Cashmere Park Subdivision	Hole No:	CPT 10
	Client:	Cashmere Park Trust	Job No:	3933




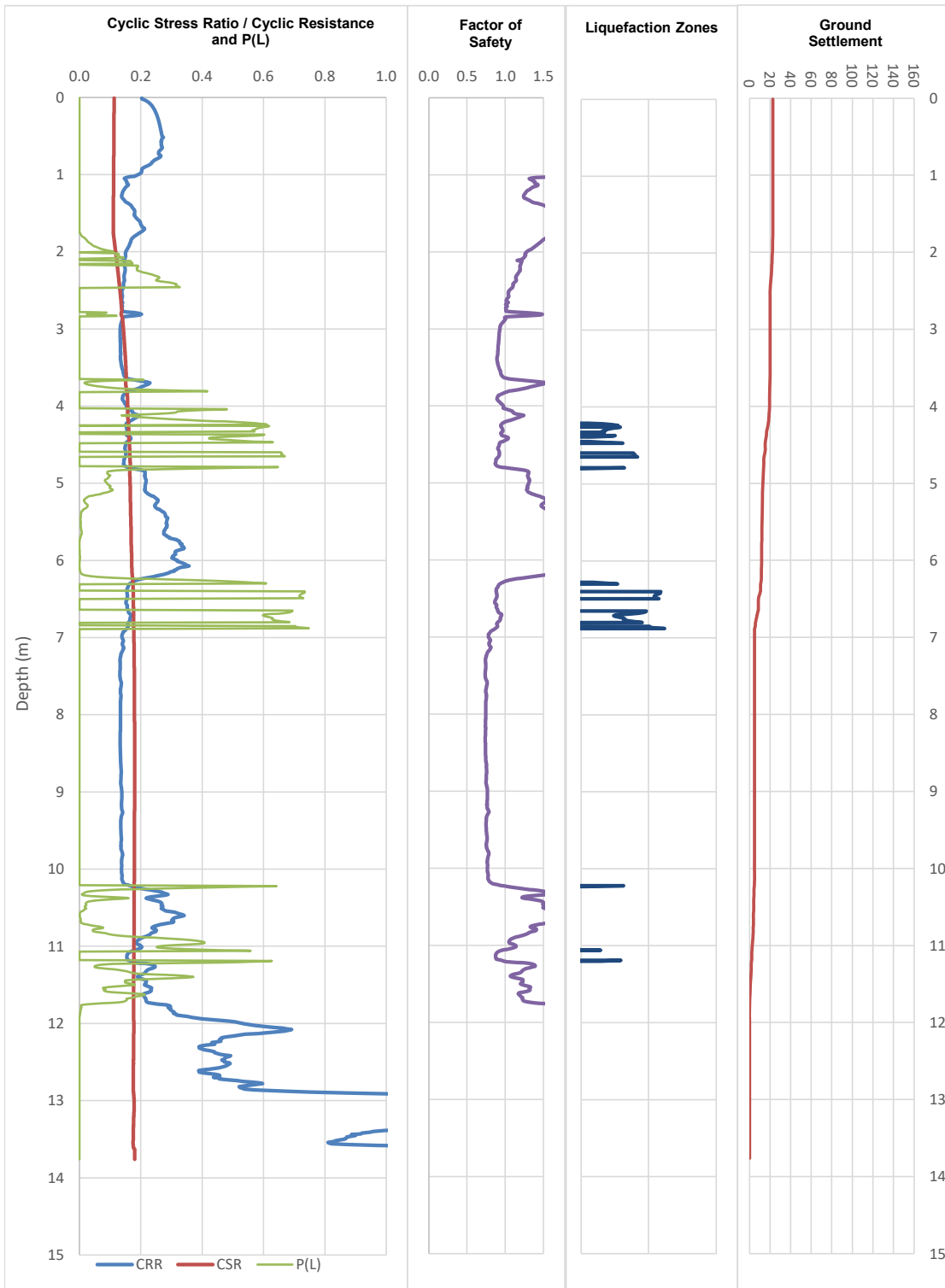
Based on Idriss & Boulanger (2014) and Zhang (2002) **SLS**
 $a(g) = 0.19$ M 6

	Liquefaction Potential Analysis		
	GEOTECH CONSULTING LTD		
	Project:	Cashmere Park Subdivision	Hole No:
Client:	Cashmere Park Trust	Job No:	3933



Based on Idriss & Boulanger (2014) and Zhang (2002) **ULS 1 in 500 yr**
 $a(g) = 0.35$ **M 7.5**

 GEOTECH	Liquefaction Potential Analysis		
	GEOTECH CONSULTING LTD		
	Project:	Cashmere Fields	Hole No: CPT 14
	Client:	Cashmere Park Trust	Job No: 3933




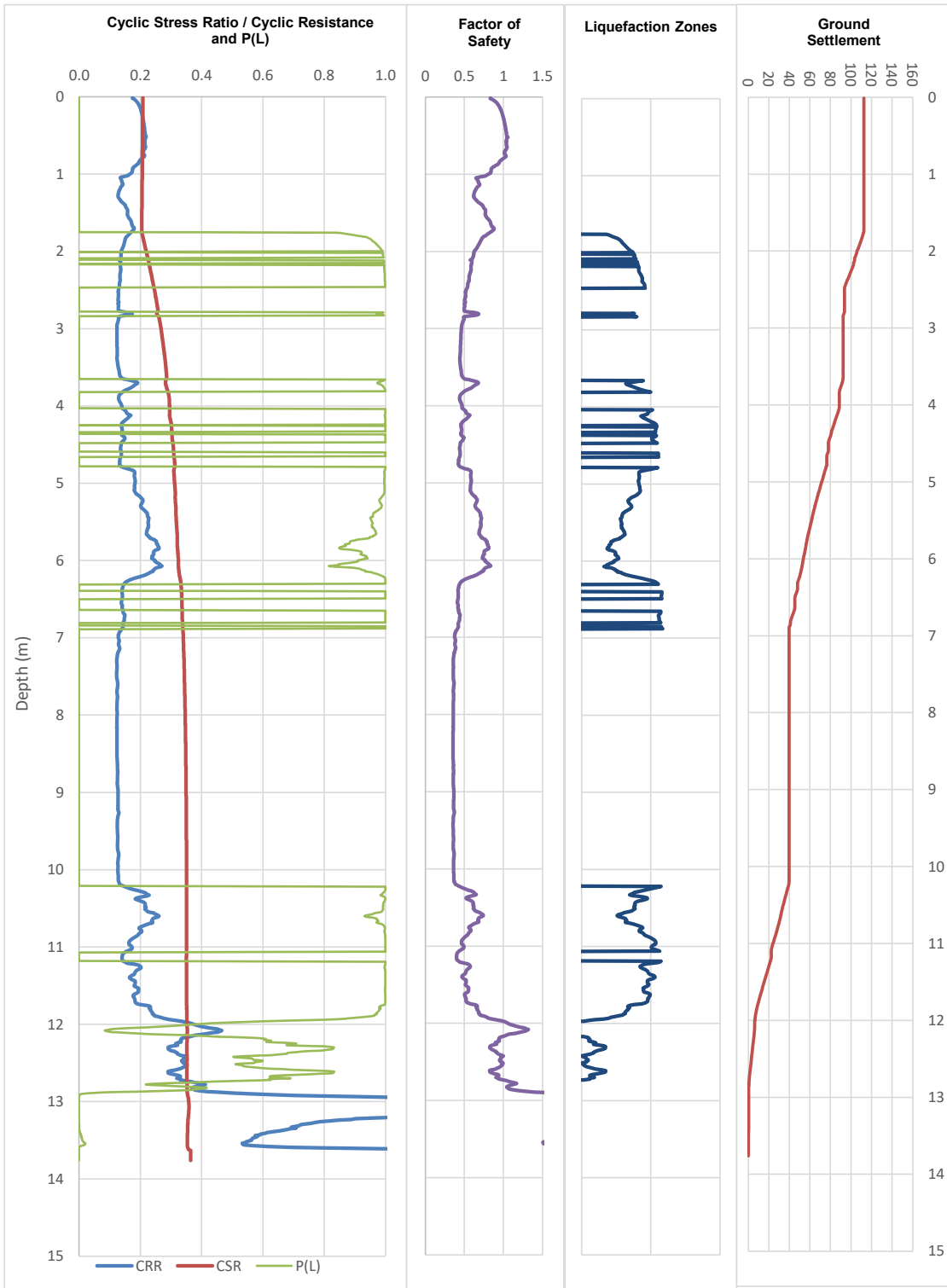
Based on Idriss & Boulanger (2014) and Zhang (2002)

a(g) = 0.19

SLS


M 6

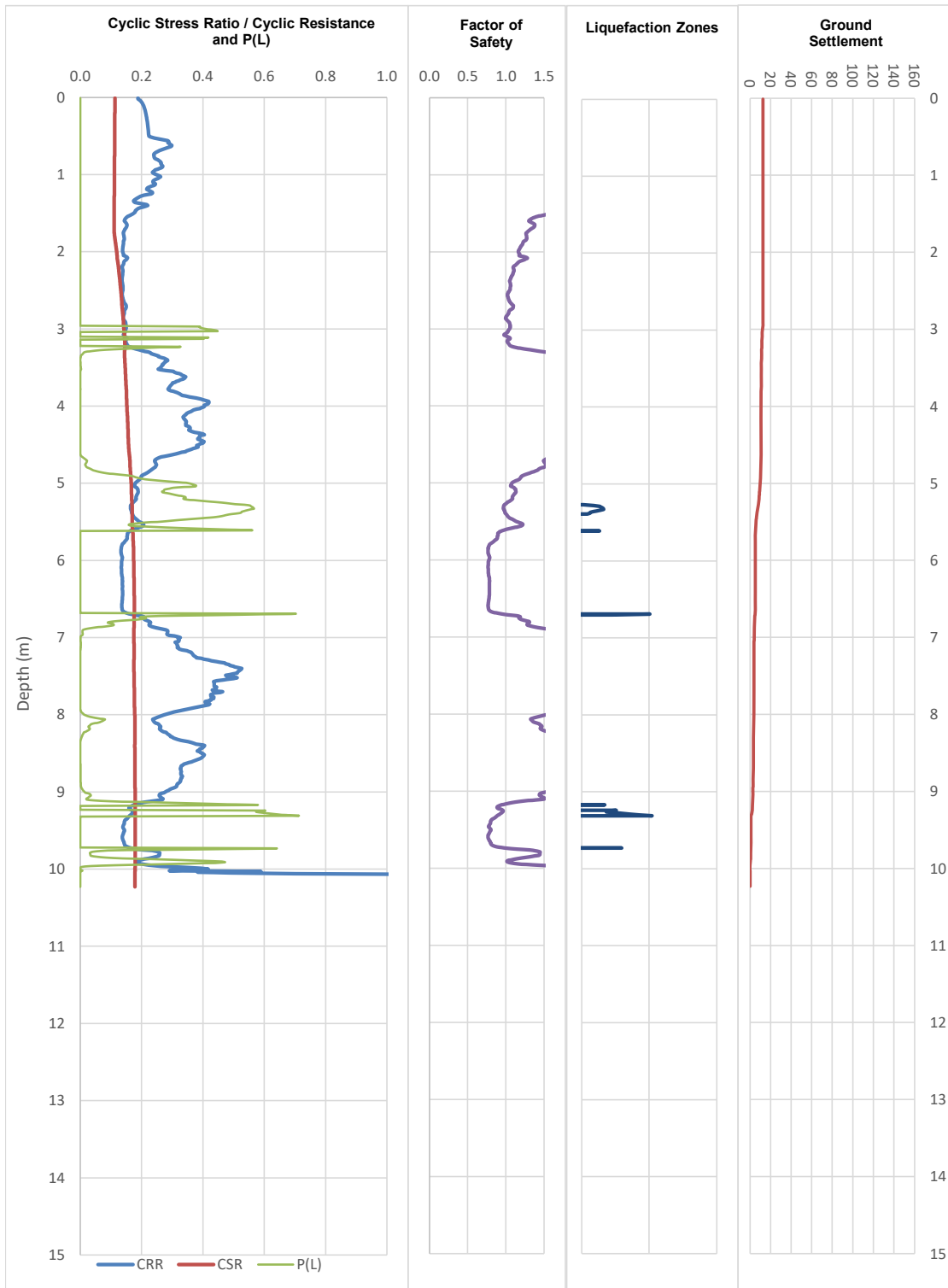
 GEOTECH	Liquefaction Potential Analysis		
	GEOTECH CONSULTING LTD		
	Project:	Cashmere Fields	Hole No: CPT 14
	Client:	Cashmere Park Trust	Job No: 3933




Based on Idriss & Boulanger (2014) and Zhang (2002) **ULS 1 in 500 yr**
M 7.5

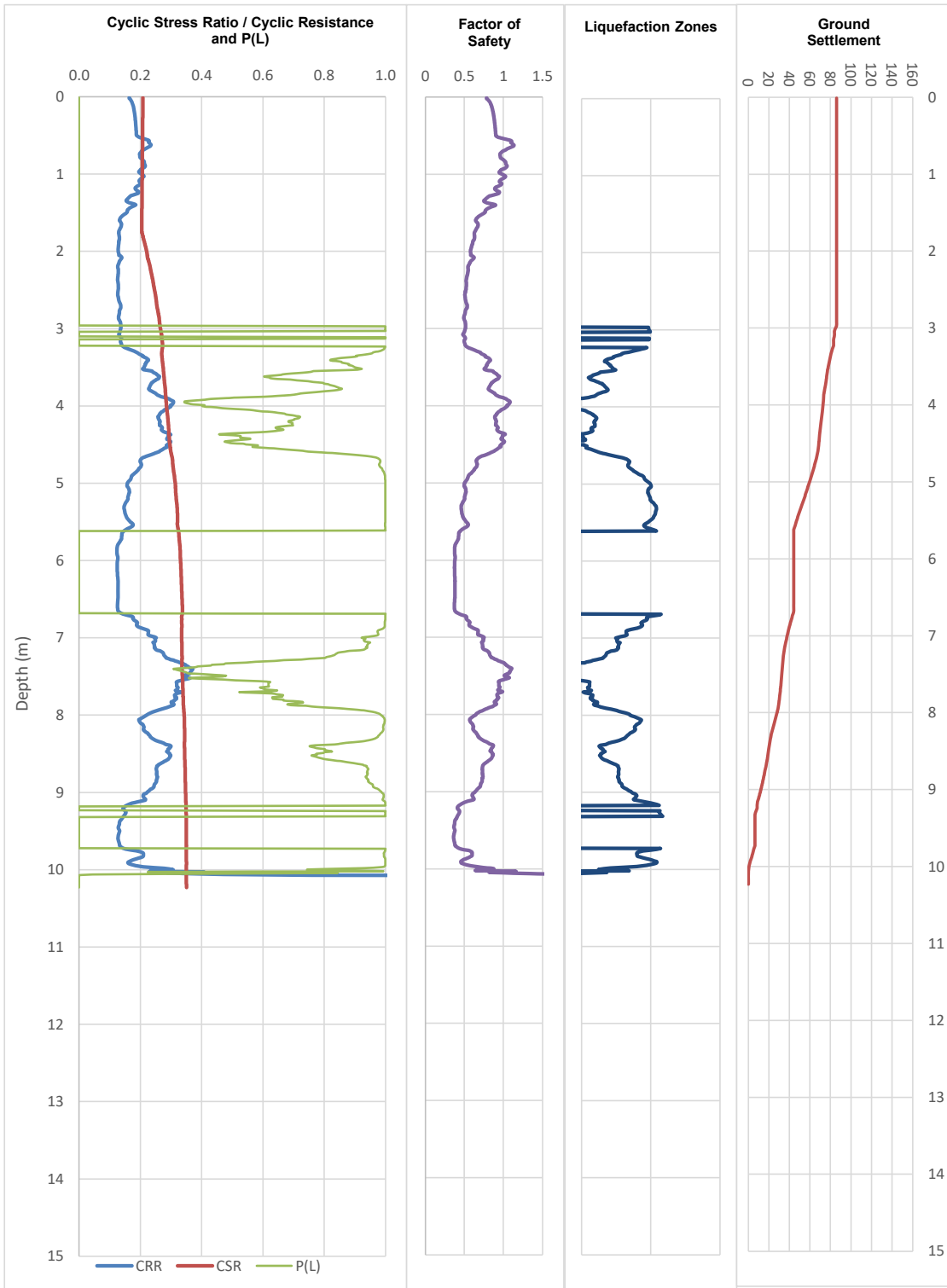
$a(g) = 0.35$

	Liquefaction Potential Analysis		
	GEOTECH CONSULTING LTD		
	Project:	Cashmere Fields Subdivision	Hole No:
Client:	Cashmere Park Trust	Job No:	3933




Based on Idriss & Boulanger (2014) and Zhang (2002) **SLS**
 $a(g) = 0.19$ M 6

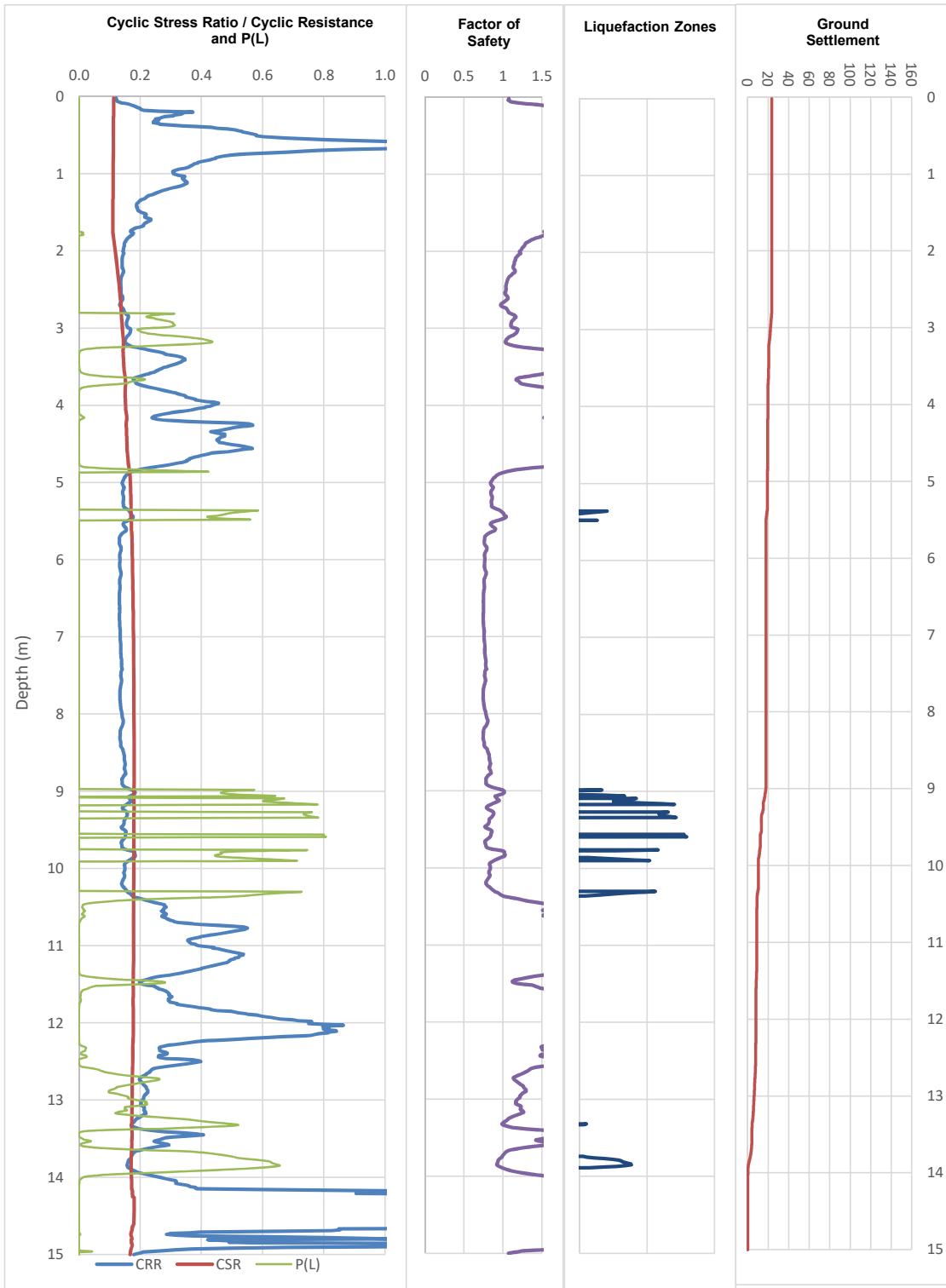
	Liquefaction Potential Analysis		
	GEOTECH CONSULTING LTD		
	Project:	Cashmere Fields Subdivision	Hole No:
Client:	Cashmere Park Trust	Job No:	3933




Based on Idriss & Boulanger (2014) and Zhang (2002) **ULS 1 in 500 yr**
M 7.5

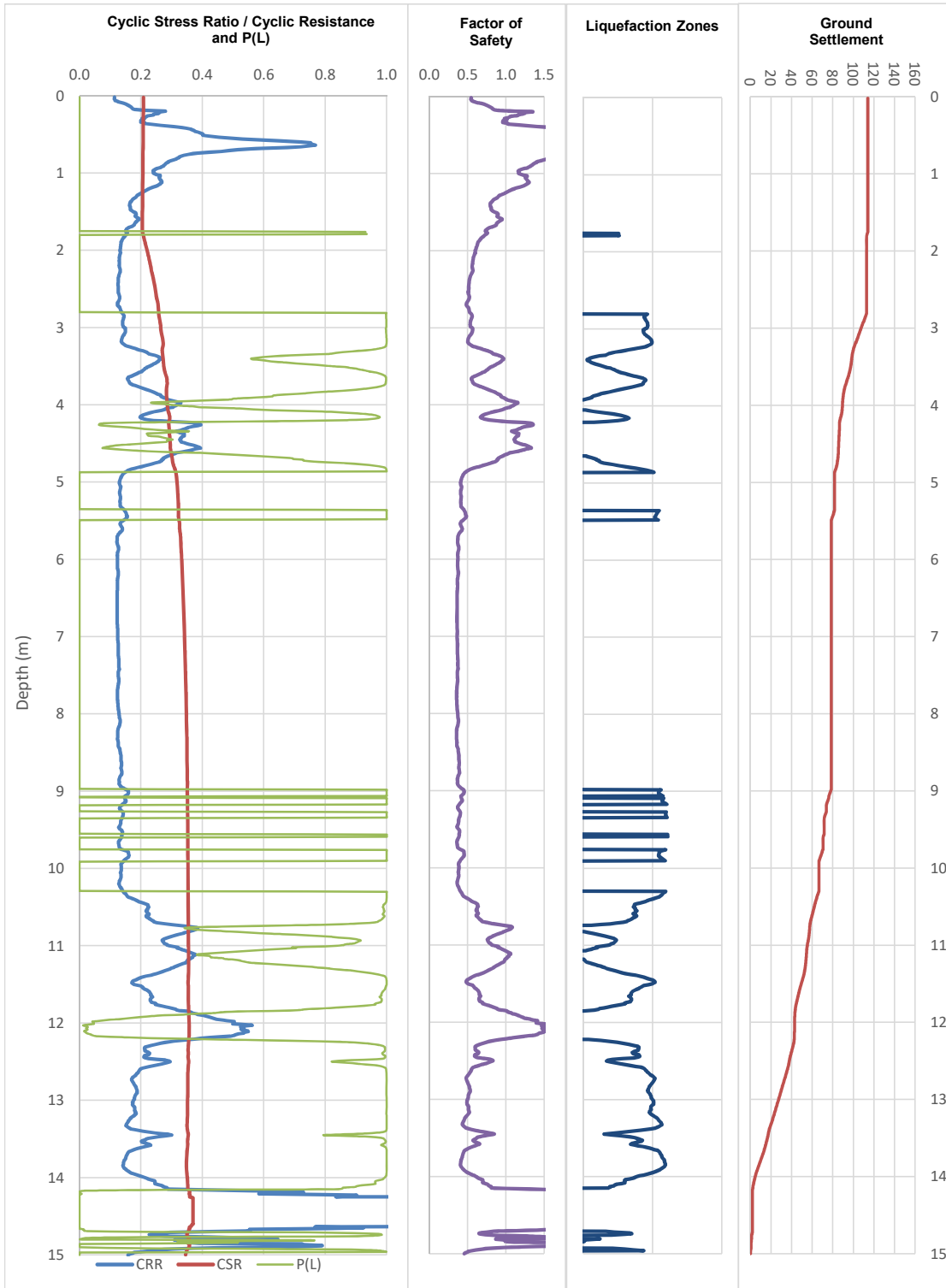
$a(g) = 0.35$

	Liquefaction Potential Analysis GEOTECH CONSULTING LTD		
	Project:	Cashmere Fields	Hole No: CPT 24
	Client:	Cashmere Park Trust	Job No: 3933



Based on Idriss & Boulanger (2014) and Zhang (2002) **25 years**
 $a(g) = 0.19$ M 6

	Liquefaction Potential Analysis		
	GEOTECH CONSULTING LTD		
	Project:	Cashmere Fields	Hole No: CPT 24
	Client:	Cashmere Park Trust	Job No: 3933



Based on Idriss & Boulanger (2014) and Zhang (2002) 500 yrs
 $a(g) = 0.35$ M 7.5

Appendix C. Stormwater Management Area Sizing Calculations

HIRDS RAINFALL DATA

Rainfall depths (mm) :: RCP8.5 for the period 2081-2100													
ARI	AEP	10m	20m	30m	1h	2h	6h	12h	24h	48h	72h	96h	120h
1.58	0.633	3.39	5.63	7.50	12.0	18.3	33.0	45.2	59.9	75.4	84.4	90.6	95.4
2	0.500	3.88	6.44	8.55	13.6	20.8	37.2	51.0	66.9	84.1	94.1	101	106
5	0.200	5.75	9.43	12.5	19.6	29.7	52.3	70.9	91.8	114	127	136	142
10	0.100	7.31	11.9	15.7	24.5	36.8	64.1	86.3	111	137	152	162	169
20	0.050	9.06	14.7	19.2	29.8	44.5	77.0	103	131	161	178	189	196
30	0.033	10.2	16.4	21.5	33.2	49.4	84.9	113	143	176	194	205	213
40	0.025	11.0	17.7	23.1	35.7	52.9	90.7	120	152	186	205	217	225
50	0.020	11.7	18.8	24.5	37.8	55.9	95.2	126	159	194	214	226	234
60	0.017	12.3	19.7	25.6	39.4	58.2	99.2	131	165	201	221	233	241
80	0.013	13.3	21.2	27.5	42.2	62.2	105	139	175	212	232	245	254
100	0.010	14.0	22.3	29.0	44.4	65.2	110	145	182	220	241	254	263
250	0.004	17.4	27.4	35.4	53.7	78.3	131	170	212	254	277	291	300

Rainfall Depths (mm) RCP8.5 (2081-2100)														
ARI	AEP	10m	20m	30m	1h	2h	6h	12	24	36	48	72h	96h	120h
1.58	0.633	3.39	5.63	7.5	12	18.3	33	45.2	59.9	67.7	75.4	84.4	90.6	95.4
2	0.5	3.88	6.44	8.55	13.6	20.8	37.2	51	66.9	75.5	84.1	94.1	101	106
5	0.2	5.75	9.43	12.5	19.6	29.7	52.3	70.9	91.8	102.9	114	127	136	142
10	0.1	7.31	11.9	15.7	24.5	36.8	64.1	86.3	111	124	137	152	162	169
20	0.05	9.06	14.7	19.2	29.8	44.5	77	103	131	146	161	178	189	196
30	0.033	10.2	16.4	21.5	33.2	49.4	84.9	113	143	159.5	176	194	205	213
40	0.025	11	17.7	23.1	35.7	52.9	90.7	120	152	169	186	205	217	225
50	0.02	11.7	18.8	24.5	37.8	55.9	95.2	126	159	176.5	194	214	226	234
60	0.017	12.3	19.7	25.6	39.4	58.2	99.2	131	165	183	201	221	233	241
80	0.013	13.3	21.2	27.5	42.2	62.2	105	139	175	193.5	212	232	245	254
100	0.01	14	22.3	29	44.4	65.2	110	145	182	201	220	241	254	263
250	0.004	17.4	27.4	35.4	53.7	78.3	131	170	212	233	254	277	291	300

FIRST FLUSH BASIN CALCULATIONS

SMA 1

FF Volume

Catchment (ha)	8.615
Runoff Coeff.	0.63
Rainfall Depth (mm)	25
Volume (m3)	1357

SMA 2

FF Volume

Catchment (ha)	4.373
Runoff Coeff.	0.63
Rainfall Depth (mm)	25
Volume (m3)	689

FF Basin (just a gauge of area required)

	Water Depth	Freeboard
Batter (m)	4	4
Depth (m)	1.00	0.20
Bottom Length (m)	26	34
Top Length (m)	34	36
Bottom Width (m)	40	48
Top Width (m)	48	50
Top Area (m2)	1632	1766
Bottom Area (m2)	1040	1632
Volume (m3)	1336	340

FF Basin (just a gauge of area required)

	Water Depth	Freeboard
Batter (m)	4	4
Depth (m)	1.00	0.20
Bottom Length (m)	20	28
Top Length (m)	28	30
Bottom Width (m)	24	32
Top Width (m)	32	34
Top Area (m2)	896	995
Bottom Area (m2)	480	896
Volume (m3)	688	189

Top Area with Buffer (m2) 2718

Top Area with Buffer (m2) 1727

SMA 3			SMA 3a		
FF Volume			FF Volume		
Catchment (ha)	3.5		Catchment (ha)	1.5	
Runoff Coeff.	0.63		Runoff Coeff.	0.63	
Rainfall Depth (mm)	25		Rainfall Depth (mm)	25	
Volume (m3)	551		Volume (m3)	236	
FF Basin (just a gauge of area required)			FF Basin (just a gauge of area required)		
	Water Depth	Freeboard		Water Depth	Freeboard
Batter (m)	4	4	Batter (m)	4	4
Depth (m)	1.00	0.20	Depth (m)	1.00	0.20
Bottom Length (m)	12	20	Bottom Length (m)	12	20
Top Length (m)	20	22	Top Length (m)	20	22
Bottom Width (m)	31	39	Bottom Width (m)	10	18
Top Width (m)	39	41	Top Width (m)	18	20
Top Area (m2)	780	877	Top Area (m2)	360	423
Bottom Area (m2)	372	780	Bottom Area (m2)	120	360
Volume (m3)	576	166	Volume (m3)	240	78
Top Area with Buffer (m2)	1599		Top Area with Buffer (m2)	935	

SMA 4		
FF Volume		
Catchment (ha)	0.717	
Runoff Coeff.	0.63	
Rainfall Depth (mm)	25	
Volume (m3)	113	
FF Basin (just a gauge of area required)		
	Water Depth	Freeboard
Batter (m)	4	4
Depth (m)	1.00	0.20
Bottom Length (m)	4	12
Top Length (m)	12	14
Bottom Width (m)	9	17
Top Width (m)	17	19
Top Area (m2)	204	253
Bottom Area (m2)	36	204
Volume (m3)	120	46
Top Area with Buffer (m2)	675	

WETLAND CALCULATIONS

SMA 1		SMA 2	
WWDG Wetland Design		WWDG Wetland Design	
First Flush Volume (m3)	1357	First Flush Volume (m3)	689
Release time from detention (days)	4	Release time from detention (days)	4
Flow through wetland (m3/day)	339.22	Flow through wetland (m3/day)	172.19
Wetland HRT (days)	2	Wetland HRT (days)	2
Operating water depth (m)	0.25	Operating water depth (m)	0.25
Vegetation porosity	0.75	Vegetation porosity	0.75
Wetland treatment area (m2)	3618	Wetland treatment area (m2)	1837
Wetland width (m)	19	Wetland width (m)	14
Wetland length (m)	190	Wetland length (m)	136
Wetland cross sectional area (m2)	3.57	Wetland cross sectional area (m2)	2.54
Top area with buffer (m2)	5811	Top area with buffer (m2)	3427

SMA 3		SMA 3a	
WWDG Wetland Design		WWDG Wetland Design	
First Flush Volume (m3)	551	First Flush Volume (m3)	236
Release time from detention (days)	4	Release time from detention (days)	4
Flow through wetland (m3/day)	137.81	Flow through wetland (m3/day)	59.06
Wetland HRT (days)	2	Wetland HRT (days)	2
Operating water depth (m)	0.25	Operating water depth (m)	0.25
Vegetation porosity	0.75	Vegetation porosity	0.75
Wetland treatment area (m2)	1470	Wetland treatment area (m2)	630
Wetland width (m)	12	Wetland width (m)	8
Wetland length (m)	121	Wetland length (m)	79
Wetland cross sectional area (m2)	2.27	Wetland cross sectional area (m2)	1.49
Top area with buffer (m2)	2904	Top area with buffer (m2)	1603

SMA 4	
WWDG Wetland Design	
First Flush Volume (m3)	113
Release time from detention (days)	4
Flow through wetland (m3/day)	28.23
Wetland HRT (days)	2
Operating water depth (m)	0.25
Vegetation porosity	0.75
Wetland treatment area (m2)	301
Wetland width (m)	5
Wetland length (m)	55
Wetland cross sectional area (m2)	1.03
Top area with buffer (m2)	1005

DETENTION BASIN CALCULATIONS

SMA 1			SMA 2		
Full Attenuation Volume			Full Attenuation Volume		
Catchment (ha)	8.615		Catchment (ha)	4.373	
Runoff Coefficient	0.72		Runoff Coefficient	0.72	
Rainfall (mm)	176.5		Rainfall (mm)	176.5	
Volume (m3)	10948		Volume (m3)	5557	
Outfall Flow per day (m3/day)	2737		Outfall Flow per day (m3/day)	1389	
Outfall Flow per hour (m3/hour)	114		Outfall Flow per hour (m3/hour)	58	
Outfall over 36 hours (m3/36 hours)	4105		Outfall over 36 hours (m3/36 hours)	2084	
Detention Requirement (m3)	6842		Detention Requirement (m3)	3473	
	Water Depth	Freeboard		Water Depth	Freeboard
Batter (m)	4	4	Batter (m)	4	4
Depth (m)	1.00	0.20	Depth (m)	1.00	0.20
Bottom Length (m)	70	78	Bottom Length (m)	40	48
Top Length (m)	78	80	Top Length (m)	48	50
Bottom Width (m)	90	98	Bottom Width (m)	75	83
Top Width (m)	98	100	Top Width (m)	83	85
Top Area (m2)	7644	7928	Top Area (m2)	3984	4196
Bottom Area (m2)	6300	7644	Bottom Area (m2)	3000	3984
Volume (m3)	6972	1557	Volume (m3)	3492	818
Top area with buffer (m2)	9820		Top area with buffer (m2)	5638	

SMA 3			SMA 3a		
Full Attenuation Volume			Full Attenuation Volume		
Catchment (ha)	3.5		Catchment (ha)	1.5	
Runoff Coefficient	0.72		Runoff Coefficient	0.72	
Rainfall (mm)	176.5		Rainfall (mm)	176.5	
Volume (m3)	4448		Volume (m3)	1906	
Outfall Flow per day (m3/day)	1112		Outfall Flow per day (m3/day)	477	
Outfall Flow per hour (m3/hour)	46		Outfall Flow per hour (m3/hour)	20	
Outfall over 36 hours (m3/36 hours)	1668		Outfall over 36 hours (m3/36 hours)	715	
Detention Requirement (m3)	2780		Detention Requirement (m3)	1191	
	Water Depth	Freeboard		Water Depth	Freeboard
Batter (m)	4	4	Batter (m)	4	4
Depth (m)	1.00	0.20	Depth (m)	1.00	0.20
Bottom Length (m)	34	42	Bottom Length (m)	20	28
Top Length (m)	42	44	Top Length (m)	28	30
Bottom Width (m)	69	77	Bottom Width (m)	45	53
Top Width (m)	77	79	Top Width (m)	53	55
Top Area (m2)	3234	3427	Top Area (m2)	1484	1616
Bottom Area (m2)	2346	3234	Bottom Area (m2)	900	1484
Volume (m3)	2790	666	Volume (m3)	1192	310
Top area with buffer (m2)	4749		Top area with buffer (m2)	2558	

SMA 4		
Full Attenuation Volume		
Catchment (ha)	0.6807	
Runoff Coefficient	0.72	
Rainfall (mm)	176.5	
Volume (m3)	865	
Outfall Flow per day (m3/day)	216	
Outfall Flow per hour (m3/hour)	9	
Outfall over 36 hours (m3/36 hours)	324	
Detention Requirement (m3)	541	
	Water Depth	Freeboard
Batter (m)	4	4
Depth (m)	1.00	0.20
Bottom Length (m)	15	23
Top Length (m)	23	25
Bottom Width (m)	24	32
Top Width (m)	32	34
Top Area (m2)	736	827
Bottom Area (m2)	360	736
Volume (m3)	548	156
Top area with buffer (m2)	1509	

A white topographic map with contour lines is overlaid on a solid red background. The map shows a complex, mountainous terrain with many closely spaced contour lines, indicating steep slopes. The map is positioned in the upper half of the page, with its bottom edge meeting a white rectangular area that contains the title and project information.

Water Supply Design Report

Cashmere/Hendersons Plan Change

Prepared for Cashmere Park Ltd, G. Ward & R.

Brown

511270

**eliot
sinclair**

Water Supply Design Report

Cashmere/Hendersons Plan Change

Prepared for Cashmere Park Ltd, G. Ward & R. Brown

511270

Quality Control Certificate

Eliot Sinclair & Partners Limited

eliotsinclair.co.nz

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Status:	B		
Release date:	28 April 2023		
Distributed to:	Cashmere Park Ltd, G. Ward & R. Brown Christchurch City Council		

Version History

Status	Description	Author	Release Date
A	First issue of document		15 December 2022
B	Additional allotments	S Pandrea	28 April 2023

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Appendix A. EPA NET Model Output Plans

Appendix B. Pipe Information

1. Introduction

Eliot Sinclair (ES) has been engaged by Cashmere Park Limited, Geoff Ward and Robert Brown to prepare a preliminary potable water supply model in support of a Plan Change Application, located within the Cashmere Stream and Hendersons Basin catchments, as shown in Figure 1.



Figure 1. Plan Change Zone Boundary

The purpose of this report is to present the hydraulic modelling results for the conceptual water supply design to show that the proposed plan change area can be serviced by the existing water supply network.

The conceptual water supply design has been modelled using the freeware water supply modelling software package EPA NET version 2. Modelling for both the residential and firefighting demand has been carried out.

Residential and firefighting supply pressures were supplied by the Christchurch City Council (CCC) for the water supply input to the model (reference CCC Final WS Rezone Source and Sprinkler Design Pressures Plan (2014)).

The following information is provided within the Appendices.

Appendix A provides the EPA NET model output plans.

Appendix B provides the modelled pipe information.

2. Water Supply Network

2.1. Catchment Area

The area included within the conceptual water supply model comprised of the following land parcels:

- Stages 1 & 2 of the Cashmere Park residential subdivision (already zoned residential).
- The approximate 23 ha plan change area (part of which is already zoned residential).
- The approximate 4.17 ha land neighbouring and to the west of the plan change area (already zoned residential).

The total number of allotments (lots) accounted for within the modelled area is 459.

Figure 2 Shows the land area included within the water supply network model.

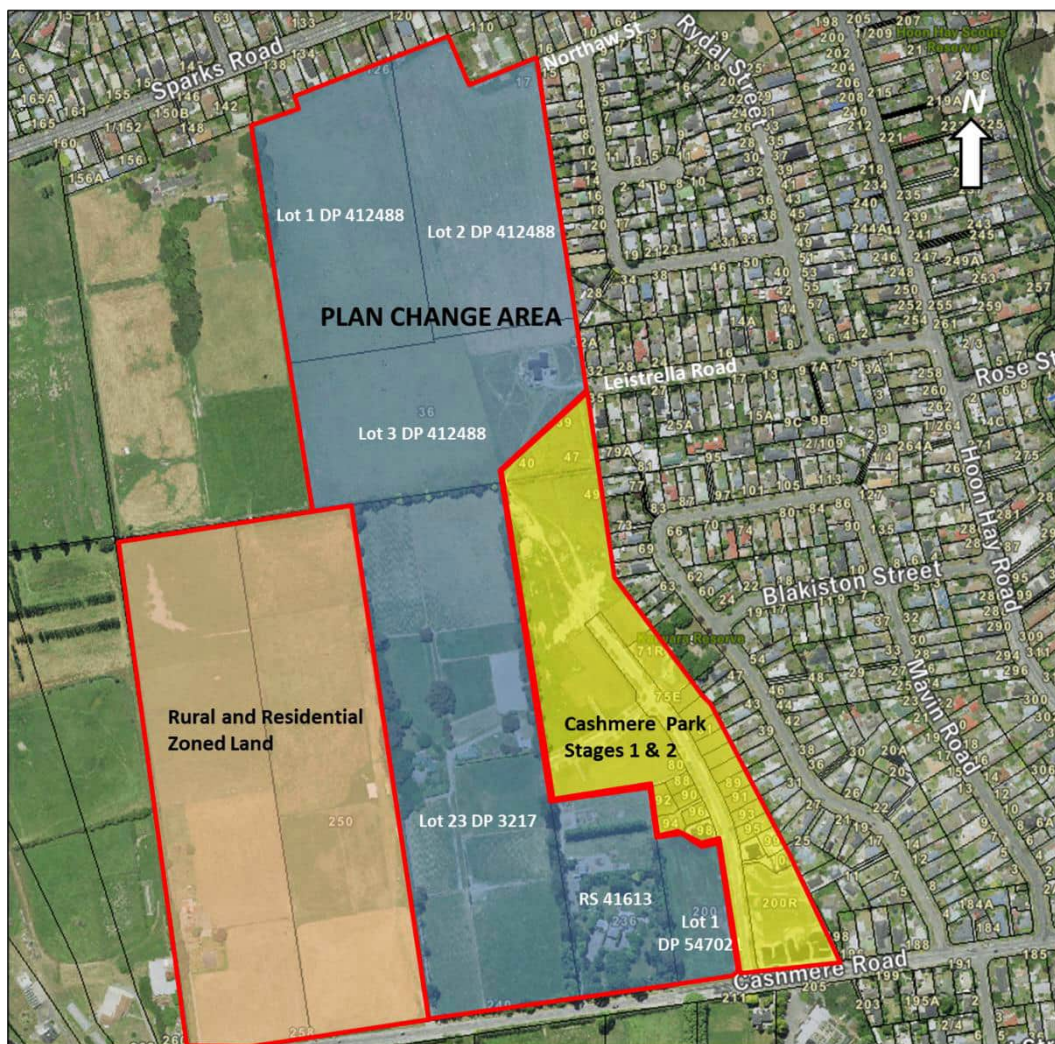


Figure 2. Residential Catchment Included Within The Water Supply Model

2.2. Peak Flow Demand

With a diversity factor applied, in accordance with Chart 1 of the CCC Infrastructure Design Standard (IDS) Part 7 Section 7.5.1, the peak design flow per lot is approximately 0.15 L/s; as shown in Figure 3.

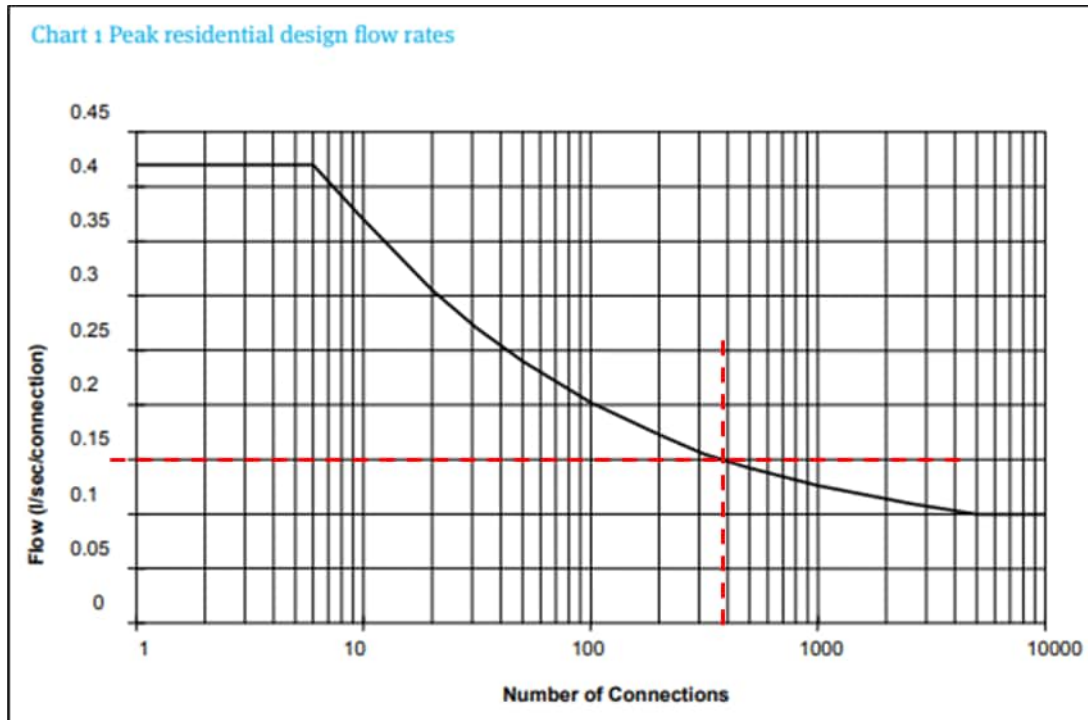


Figure 3. IDS Chart 1 Residential Design Flow Rates

2.3. Points of Supply

The plan change area is located on the boundary between the Central and Sutherlands Water Supply Zones. During the development of Stage 1 of the Cashmere Park residential subdivision, the zone boundary valve was moved to the west down Cashmere Road, to allow the entire Cashmere Park Stages 1, 2 & 3 to fall within the Central Water Supply Zone. The hydraulic water supply model is based on the current boundary valve location and allows for the entire plan change area to be supplied with water from the Central Zone. The undeveloped residential zoned land to the west of the plan change area that has been included within the model may require the zone boundary valve to be moved further to the west, however this potential requirement has not been accounted for within the modelling.

The modelled points of supply are the DN100 water main within Cashmere Road (two points of supply have been taken off this main), the DN100 main within Leistrella Road and the DN200 main within Sparks Road. The CCC Source and Sprinkler Design Pressures Map indicate a sprinkler pressure of 400 kPa for the Central Zone and this minimum residual pressure was used as the basis for modelling.

2.4. Firefighting

Modelling was carried out using two hydrants with the discharge flow at each hydrant set to 12.5 L/s (25 L/s total) and the residential demand set to 60% of the peak load. The hydrants tested were located at the furthest end of the supply main.

2.5. Pipe Sizes

All mains included within the model are DN180 OD PE100.

63 OD MDPE submains and crossovers will provide points of connection to individual residential lots.

3. EPA NET Model Assumption

	Value	Units
Friction factors used		
Plastic pipes, includes fitting losses	0.15	mm
Fire hydrants used	2	
Flow per hydrant	12.5	l/s

Domestic Subdivision check sheet

Fire service Zone	FW2	
Hydrants required	2	
Flow per hydrant	12.5	l/s
Required fire flows and pressures met	Yes	
Number of Lots in model	459	
Flow per Lot (See Chart 1 of IDS Part 7)	0.15	l/s
Can lots be subdivided further hence increase demand	n/a	
Possible ultimate number of lots	Taken account of in model	
Is significant surge expected at the site	No	
Predicted surge pressure	-	kPa
Lowest Residual Mains Pressure	400	kPa
Hence minimum house site pressure (at building site not boundary)	200	kPa
See Table 1 of IDS Part 7		
Minimum calculated pressure at building site	350	kPa
Maximum calculated pressure in system	394	kPa

Does this exceed the PN rating of the associated pipe and fittings	No
Unit headloss less than 0.01 m/m in mains (When firefighting flows not included)	Yes
Operating temperature expected to exceed 20 degrees Reduction factor in strength for temperature - See manufacture data	No -
Is the Ground Contaminated Pipe material required for contaminated ground	No -
Valve spacing and location allows isolation	Yes
Likelihood of contamination or Stagnation	No
Suitable connections provided for future subdivision	Yes
Capacity provided for future subdivision	Yes

4. EPA NET Version 2 Model Outputs

Appendix A provides plans showing the pressures at the nodes according to the colour coded pressure legend in metres of head. The plans also show the unit headloss in the mains according to the colour coded unit headloss legend. The colours on these legends represent the range of pressures and losses.

Information on the demand and the location of the hydrants tested for firefighting flows has been noted on the output plans.

Appendix B provides full pipe information for the modelled residential demands showing internal diameter, length, pressure ratings, flows, velocity and unit head loss. Full pipe information for the fire flow scenarios has not been included as it would be duplication.

5. Disclaimer

This report has been prepared by Eliot Sinclair & Partners Limited ("Eliot Sinclair") only for the intended purpose as technical supporting documentation in support of a Plan Change Application.

The report is based on:

- Information supplied by the Christchurch City Council for the Stage 1 design of the Cashmere Park residential subdivision.
- Christchurch City Council Infrastructure Design Guideline.
- New Zealand Firefighting Code of Practise SNZ PAS 4509:2008.
- Christchurch City Council services maps.

Where data supplied by Cashmere Park Ltd, G. Ward & R. Brown or other external sources, including previous site investigation reports, have been relied upon, it has been assumed that the information is correct unless otherwise stated. No responsibility is accepted by Eliot Sinclair for incomplete or inaccurate data supplied by other parties.

Whilst every care has been taken during our investigation and interpretation of describe conditions to ensure that the conclusions drawn, and the opinions and recommendations expressed are correct at the time of reporting, Eliot Sinclair has not performed an assessment of all possible conditions or circumstances that may exist at the site. Variations in conditions may occur between investigatory locations and there may be conditions that were not detected by the scope of the investigation that was carried out or have been covered over or obscured over time. Eliot Sinclair does not provide any warranty, either express or implied, that all conditions will conform exactly to the assessments contained in this report.

The exposure of conditions or materials that vary from those described in this report, may require a review of our recommendations. Eliot Sinclair should be contacted to confirm the validity of this report should any of these occur.

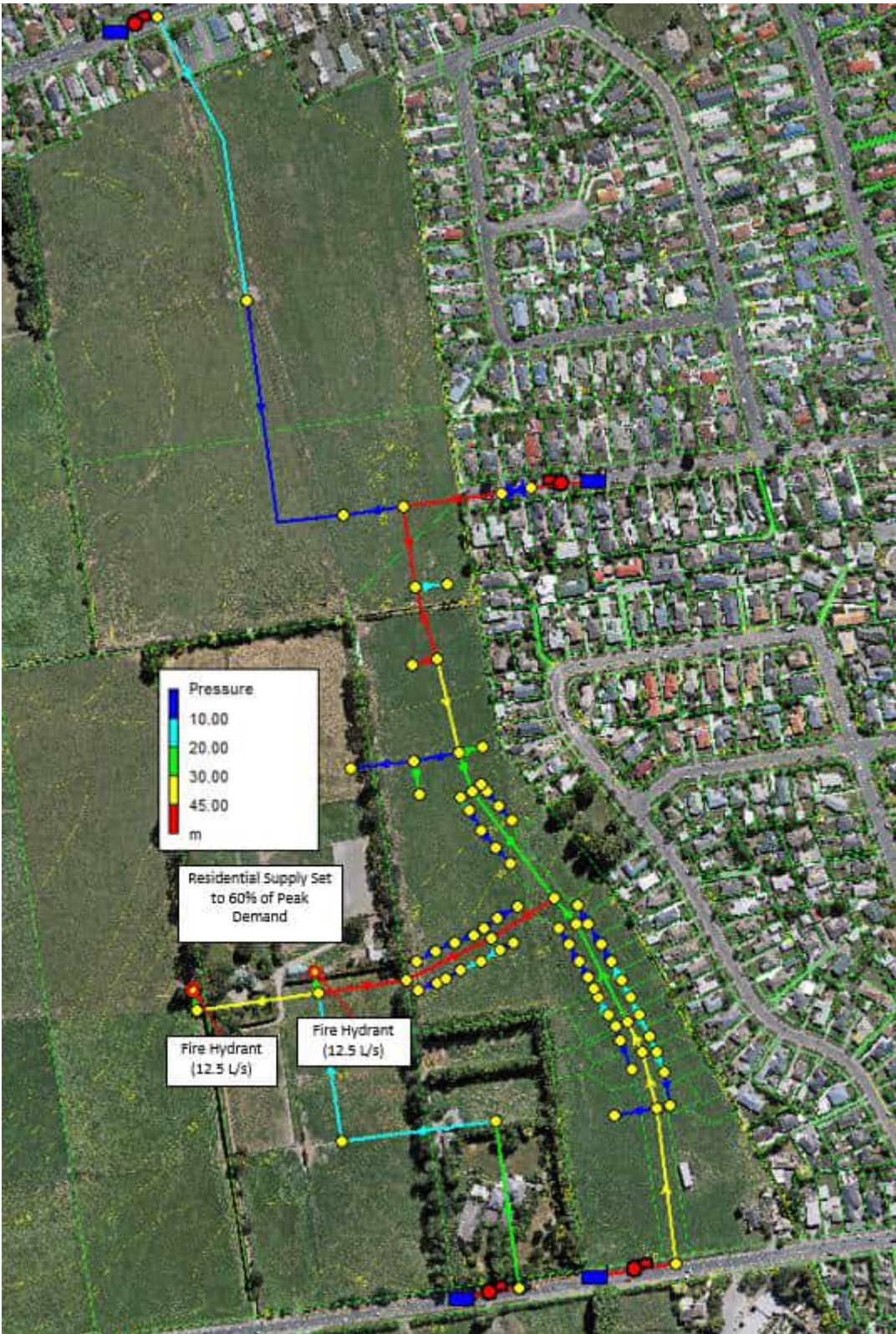
This report has been prepared for the benefit of Cashmere Park Ltd, G. Ward & R. Brown and the Christchurch City Council for the purposes as stated above. No liability is accepted by Eliot Sinclair or any of their employees with respect to the use of this report, in whole or in part, for any other purpose or by any other party.

Appendix A. EPA NET Model Output Plans

DOMESTIC PRESSURES AND HEADLOSSES



FIREFIGHTING PRESSURES





INTERNAL PIPE DIAMETERS



Appendix B. Pipe Information

Link ID	Length m	Diameter mm	Roughness mm	Flow LPS	Velocity m/s	Unit Headloss m/km
Pipe 3	121.82	152.7	0.15	19.49	1.06	8.10
Pipe 4	45.24	152.7	0.15	18.14	0.99	7.05
Pipe 5	26.50	152.7	0.15	18.14	0.99	7.05
Pipe 6	10.44	50.9	0.15	1.95	0.96	26.60
Pipe 7	18.62	50.9	0.15	0.90	0.44	6.14
Pipe 8	13.98	50.9	0.15	0.75	0.37	4.37
Pipe 9	16.96	50.9	0.15	0.60	0.29	2.90
Pipe 10	25.92	50.9	0.15	0.45	0.22	1.71
Pipe 11	10.41	50.9	0.15	1.65	0.81	19.32
Pipe 12	11.15	50.9	0.15	0.30	0.15	0.82
Pipe 13	24.08	50.9	0.15	0.15	0.07	0.23
Pipe 14	10.74	50.9	0.15	1.05	0.52	8.20
Pipe 15	15.79	50.9	0.15	0.90	0.44	6.14
Pipe 16	85.93	152.7	0.15	14.54	0.79	4.61
Pipe 17	25.63	152.7	0.15	14.54	0.79	4.61
Pipe 18	57.28	152.7	0.15	19.35	1.06	7.99
Pipe 19	73.38	152.7	0.15	16.95	0.93	6.19
Pipe 20	15.04	50.9	0.15	0.90	0.44	6.14
Pipe 21	14.69	50.9	0.15	0.75	0.37	4.37
Pipe 22	17.19	50.9	0.15	0.60	0.29	2.90
Pipe 23	14.69	50.9	0.15	0.45	0.22	1.71
Pipe 24	19.09	50.9	0.15	0.30	0.15	0.82
Pipe 25	16.48	50.9	0.15	0.15	0.07	0.23
Pipe 26	9.13	50.9	0.15	1.20	0.59	10.55
Pipe 27	13.03	50.9	0.15	0.30	0.15	0.82
Pipe 28	17.19	50.9	0.15	0.15	0.07	0.23
Pipe 29	10.03	50.9	0.15	0.60	0.29	2.90
Pipe 30	15.04	50.9	0.15	0.45	0.22	1.71
Pipe 31	16.50	50.9	0.15	0.30	0.15	0.82
Pipe 32	16.48	50.9	0.15	0.15	0.07	0.23
Pipe 33	11.54	50.9	0.15	1.05	0.52	8.20
Pipe 34	11.54	50.9	0.15	0.15	0.07	0.23
Pipe 35	16.89	50.9	0.15	0.75	0.37	4.37
Pipe 36	17.24	50.9	0.15	0.60	0.29	2.90
Pipe 37	12.91	50.9	0.15	0.45	0.22	1.71
Pipe 38	7.16	50.9	0.15	0.30	0.15	0.82
Pipe 39	15.77	50.9	0.15	0.15	0.07	0.23
Pipe 40	8.00	50.9	0.15	0.60	0.29	2.90
Pipe 41	7.38	50.9	0.15	0.45	0.22	1.71

Link ID	Length m	Diameter mm	Roughness mm	Flow LPS	Velocity m/s	Unit Headloss m/km
Pipe 41	7.38	50.9	0.15	0.45	0.22	1.71
Pipe 42	14.25	50.9	0.15	0.30	0.15	0.82
Pipe 43	15.29	50.9	0.15	0.15	0.07	0.23
Pipe 44	10.03	50.9	0.15	0.75	0.37	4.37
Pipe 45	12.22	50.9	0.15	0.60	0.29	2.90
Pipe 46	17.99	50.9	0.15	0.45	0.22	1.71
Pipe 47	17.13	50.9	0.15	0.30	0.15	0.82
Pipe 48	17.02	50.9	0.15	0.15	0.07	0.23
Pipe 49	104.54	152.7	0.15	-4.82	0.26	0.58
Pipe 51	31.39	152.7	0.15	-6.17	0.34	0.91
Pipe 52	74.58	152.7	0.15	-15.62	0.85	5.29
Pipe 53	58.73	152.7	0.15	-17.57	0.96	6.63
Pipe 54	63.55	152.7	0.15	-18.17	0.99	7.08
Pipe 55	25.56	50.9	0.15	0.60	0.29	2.90
Pipe 56	19.62	50.9	0.15	1.95	0.96	26.60
Pipe 57	19.03	50.9	0.15	1.20	0.59	10.55
Pipe 58	48.31	152.7	0.15	6.90	0.38	1.13
Pipe 59	7.55	50.9	0.15	0.75	0.37	4.37
Pipe 60	9.67	50.9	0.15	0.60	0.29	2.90
Pipe 61	14.69	50.9	0.15	0.45	0.22	1.71
Pipe 62	15.10	50.9	0.15	0.30	0.15	0.82
Pipe 63	14.00	50.9	0.15	0.15	0.07	0.23
Pipe 65	68.15	152.7	0.15	16.80	0.92	6.09
Pipe 67	93.57	152.7	0.15	9.45	0.52	2.03
Pipe 71	32.24	152.7	0.15	1.35	0.07	0.06
Pipe 72	75.27	152.7	0.15	21.00	1.15	9.36
Pipe 68	1000	152.7	0.15	10.35	0.57	2.41
Pipe 69	1000	152.7	0.15	5.85	0.32	0.83
Pipe 70	116.58	152.7	0.15	5.85	0.32	0.83
Pipe 73	26.68	50.9	0.15	-1.35	0.66	13.19
Pipe 74	35.11	152.7	0.15	-8.25	0.45	1.57
Pipe 76	110.11	152.7	0.15	19.07	1.04	7.77
Pipe 77	120.93	152.7	0.15	19.07	1.04	7.77
Pipe 78	178.52	152.7	0.15	0.32	0.02	0.00
Pipe 80	46.56	152.7	0.15	-0.32	0.02	0.00
Pipe 81	46.72	152.7	0.15	-2.83	0.15	0.22
Pump 2	#N/A	#N/A	#N/A	21.00	0.00	-40.20
Pump 64	#N/A	#N/A	#N/A	19.64	0.00	-40.20
Pump 50	#N/A	#N/A	#N/A	10.50	0.00	-40.20

Appendix E. DHI Flood Modelling Report

MEMO

To: Warren Lewis, Geoff Ward, Robert Brown

Cc: Bryan McGillan (ES)

From: Antoinette Tan (DHI)

Project 44801992

Date: 28th February 2023

Subject: Cashmere Park Extension modelling Jan 2023

This memo is to report on the modelling, of the Cashmere Park Extension, completed by DHI in February 2023. The modelling covers a group of proposed developments at the eastern edge of the Henderson's Basin, in Christchurch. The Heathcote City Wide model has been used to assess the flooding pre and post development. This modelling will support a private plan change application for the area.

Modelling

The Heathcote City Wide model version 22, also referred to as the Phase 2 model, was used in this investigation as the base. This model does not include additional updates currently being undertaken around Eastman's basin and does not have the finalised logic for the upper catchment basin control gates. The impact of this is that the final baseline flood levels in the area are subject to change. However, a comparative assessment of differences between the baseline and post development should still be reliable.

Base model

The base model reflects the catchment prior to the proposed development. The Heathcote Phase 2 model did not include the latest land developments in the area. These included the existing Cashmere Park Development and its stormwater ponds to the south. The base model was updated to include the ground levels of the existing Cashmere Park development using the 2021 LiDAR survey. CCC (Christchurch City Council) asset data also showed an additional stormwater pipe network for the development, however, this was not included in the current modelling, due to time constraints and given that the event being simulated is a 1 in 200 year event, which would quickly overwhelm the pipe system.

The following updates were completed for the base model for the existing cashmere park development, Figure 1.

- Added roads and basin outlines to the mesh
- Updated the 2D surface roughness definition
- Updated the infiltration and groundwater depth (based on new ground levels)
- Updated the mesh ground levels using the 2021 LiDAR
- Added a dummy outlet from the stormwater ponds into Luney Drain (southeast of basins), a 300mm diameter pipe with no backflow. No details were available in the CCC asset data for this outlet, so the values were estimated.
- Added 2D dike structures to represent basin overflow points



Figure 1: Modelled ground levels, base using LiDAR and development using design surface

Development model

The development model includes the proposed developments in the three areas adjacent to the existing Cashmere Park Development, Figure 2. A proposed surface for the development area was provided by Elliot Sinclair and used to define the areas in the model.



Figure 2: Development areas

The following updates were made to the development model, Figure 3.

- Used updated base model as a starting point
- Added new stream and diversion pipe from the north Stilwell's drain, used cross sections extracted from the development surface. Included backflow prevention on diversion pipe.
- Added pipe structures between the Cashmere Park Stream and the west wetland, and between the first flush basin and downstream pond.
- Blocked the North section of Stilwell's drain from taking flow south
- Updated cross sections along Stilwell's drain within the development area
- Updated mesh to include basin outlines and stream blackout
- Updated mesh levels to reflect the proposed design levels
- Added dummy outlet pipes from basins as indicated in Figure 3. Backflow prevention is included in all basin outflow pipes, except the inter basin pipes in the northwest wetland.
- Updated 2D surface roughness definition
- Updated infiltration based on land use type, area marked as residential development set to 50% of the base infiltration rate, road area set to 0 infiltration rate.
- Updated groundwater depth based on new levels.
- Added 2D dike structures to represent basin overflow levels

- Opened up the west embankment around the central pond directly south of Stillwells drain, allowing water to fill the pond from the western floodplain. Also, increased invert of this pond from the original design 16.8m RL to 17.4m RL.
- Added a culvert beneath Cashmere road to allow the southern floodplain water to enter into the large southern pond. This culvert is one way into the pond.
- Adjusted storage area slightly from DEM in Figure 3, to include storage on the left bank of Cashmere Park stream, and reduce storage at the top west of the DEM.



Figure 3: 1D features in the development model

Assumptions

The following assumptions and simplifications were made in the modelling to account for the limited data available at this stage of the design process and to allow for an efficient model build without compromising model accuracy.

1. The stormwater pipe network was not included for the proposed development area, as this has not yet been designed.
2. The stormwater pipe network was not included for the existing Cashmere Park area, as this would have limited capacity in the 200 year event. Note that this can be included in subsequent modelling, especially if lower ARI events modelling will be required.
3. Basin outlet sizes were all assumed; these were just included to allow the basins to drain and would need to be updated in the model once the actual design is known. The outlet from the south basin, on the Robert Brown site, was connected to Luney Drain further downstream to allow the basin to drain properly, as the basin invert level is lower than the nearest waterway.
4. Road, gutter/crest were not explicitly modelled in mesh ground levels within the existing Cashmere Park area. In the City Wide modelling methodology, the road levels are set to a minimum along the road gutter and at a maximum level along the crest. This allows for more efficient conveyance along the road corridor and allows water to enter into sumps more easily. As the pipe network is not included, this aspect is less important for this modelling stage, and the levels could be updated later when the pipe network is added.
5. Additional roads within the development areas were not included in the mesh structure
6. No bridge was included on Stillwells drain to represent the proposed road crossing. The road is currently modelled to be flush with the development levels, i.e. all levels at RL 19m, which means the road is not acting as an explicit overland flow path in the current surface design. This is less important because the water depth on the site is less than 50mm.

Model simulations

The model was simulated for the 1 in 200 year return period event, using the current climate conditions. The 24 hour duration storm was used, which reflects the critical duration in the area, based on previous modelling.

Results

The model results show that the proposed development has a minimal impact on the surrounding flood levels. Figure 4 and Figure 5 show the flood depth pre and post development, and Figure 6 and Figure 7 show the water level difference, Development minus Base model results. Aside from the local runoff, floodwaters enter into the north wetland via Henderson's basin from the west. In the south, water can cross Cashmere road and enter the larger basin via the culvert. Allowing flow to enter this basin from the south results in essentially no change in the south floodplain; if the flow was not able to enter, a slight increase in flood levels might be expected.

The diversion from the north Stilwell's drain into the new Cashmere Park Stream allows all flow to be diverted into this new stream. This indicates that the pipe size is sufficient for the 1 in 200 year flow.

The basin at the right bank of Stilwell's drain is helping to reduce the levels in the Henderson basin floodplain slightly. The levels here are reduced by around 10mm.

The impact of the development on surrounding levels is less than +5mm in almost all areas. There are minor areas with more than 100mm depth increase that can be addressed at detailed design. The flow into Luney's Drain is increased by 6l/s at the peak, while the flow into Stilwell's pipe (which exits into the Heathcote River) is increased by 50l/s.

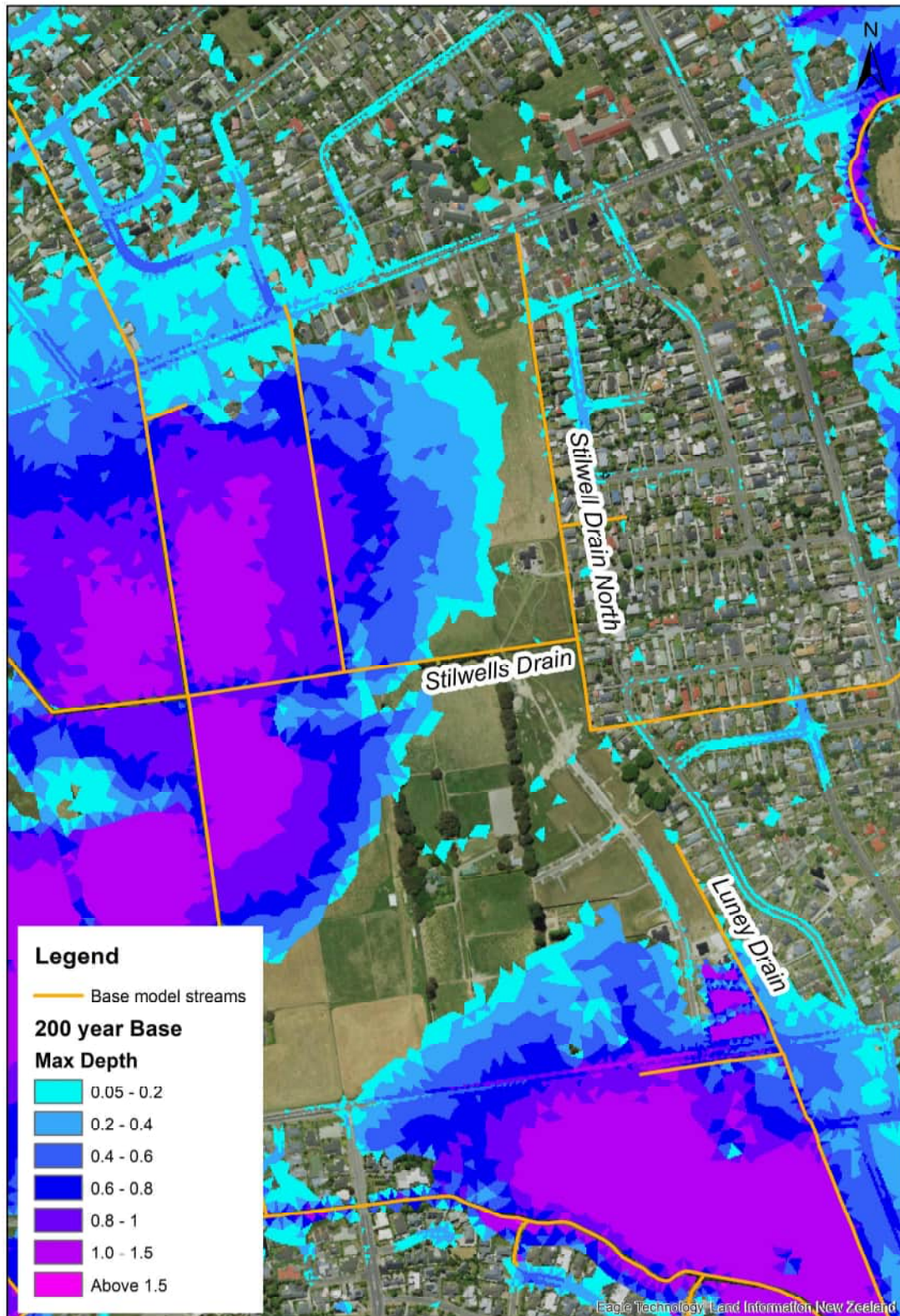


Figure 4: 200 year 24 hour, base model maximum depth

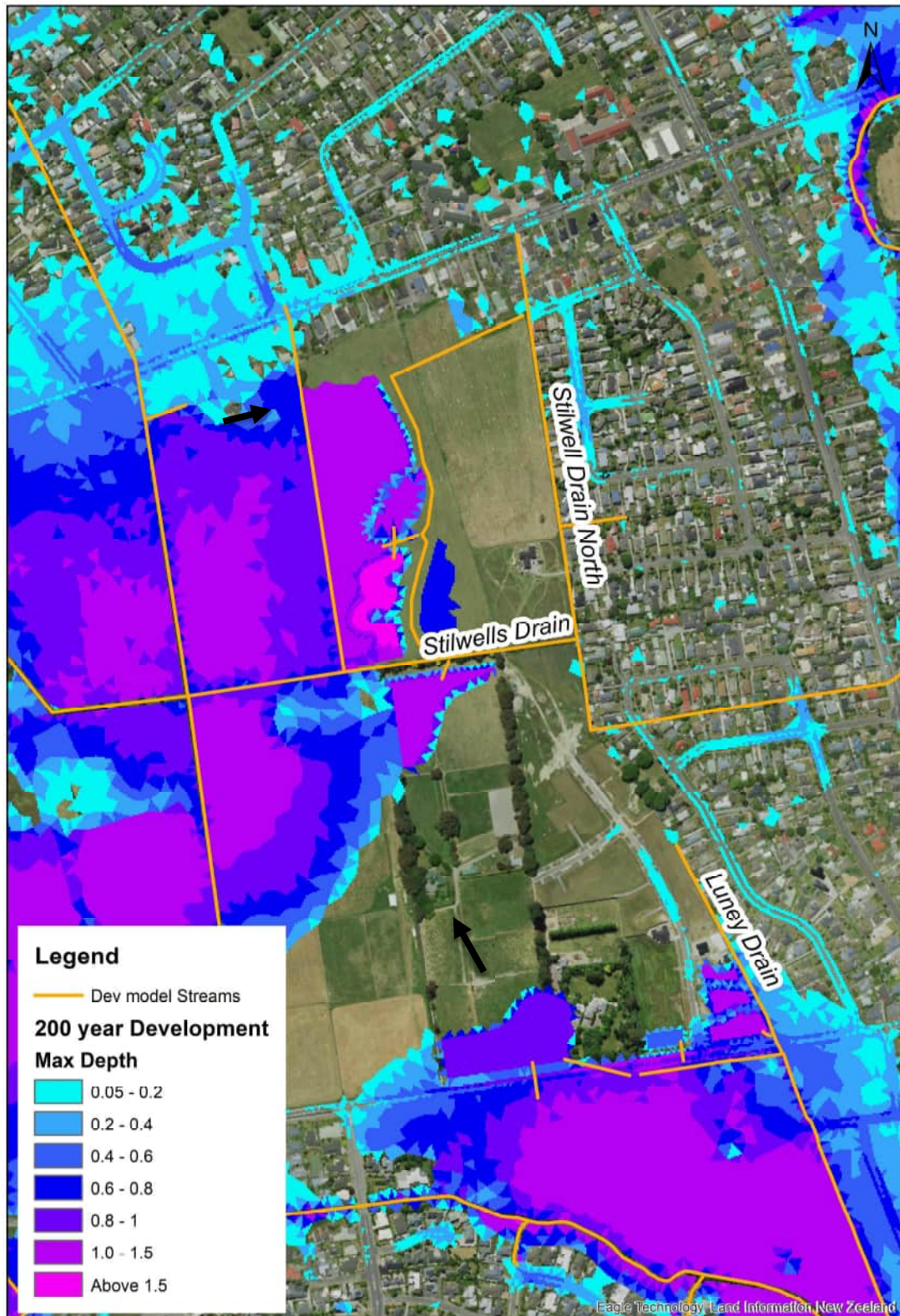


Figure 5: 200 year 24 hour development model maximum depth



Figure 6: Development - Base, Max Water Level Difference

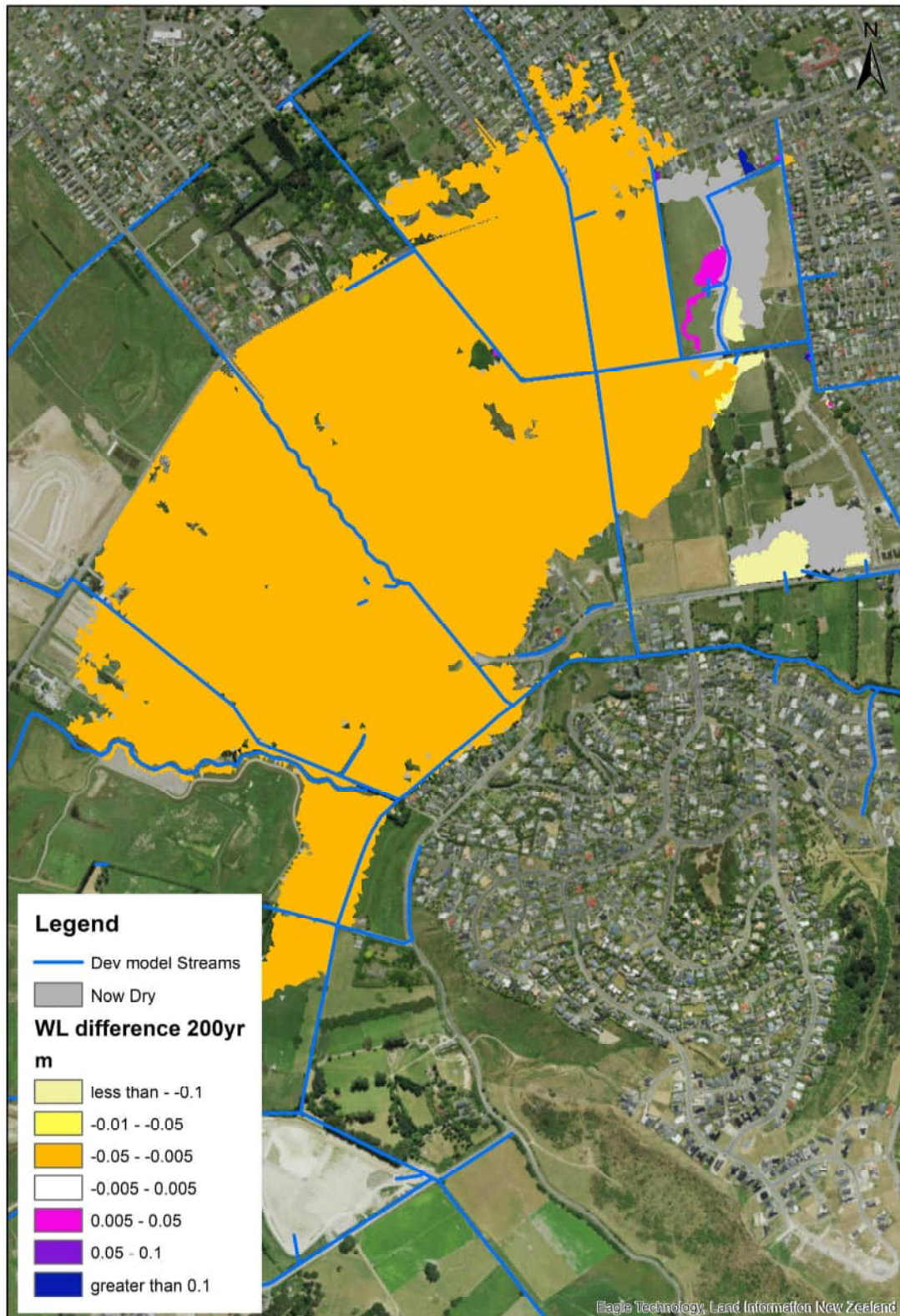


Figure 7: Development - Base, Max Water Level Difference – zoomed out

Appendix F. Stantec Traffic Impact Assessment

Hendersons East Rezoning

Integrated Transport Assessment

PREPARED FOR CASHMERE PARK LTD, HARTWARD INVESTMENT TRUST & R
BROWN | MAY 2023

We design with community in mind

This document was prepared by Stantec New Zealand (“Stantec”) for the account of Cashmere Park Ltd, Hartward Investment Trust & R Brown (the “Client”). The conclusions in the Report titled Hendersons East Rezoning Integrated Transport Assessment are Stantec’s professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient’s own risk.

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Quality statement

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Appendix A CAST Modelling Outputs

Appendix B Hoon Hay Road / Leistrella Road Intersection SIDRA Outputs



1 Introduction

Cashmere Park Limited, Hartward Investment Trust and R Brown propose a change to the Hendersons East Outline Development Plan through a submission on the Christchurch City Council Housing and Business Choice Plan Change 14 (PC14) process. The change would see approximately 20.3ha of land between Cashmere Road and Sparks Road currently zoned Rural Urban Fringe and Residential New Neighbourhood rezoned to Medium Density Residential. This could enable the development of an additional approximately 230 residential lots.

Development of the additional land would result in increased traffic volumes on surrounding existing and future local roads and a potential additional connection to the arterial road network is proposed.

This integrated transport assessment includes the following:

- Description of the site location and the existing transport environment;
- Description of the future environment in the vicinity of the site;
- Assessment of potential traffic generation and ability of the existing and planned road network to accommodate it;
- Assessment of the accessibility of the proposed additional residential land by active travel modes and public transport;
- Assessment of the proposed ODP; and
- Assessment of consistency with District Plan transport-related objectives and policies.

By way of summary, it is considered that the site is well located within the urban Christchurch transport network to accommodate additional housing. There is good access to a network of arterial roads that enable efficient movement to other parts of the city. The site is adjacent to the network of Major Cycleways and existing public transport services, and it is expected that existing public transport services can be built on to service the surrounding area.

2 Site Location

The land owned by Cashmere Park Limited, Hartward Investment Trust and R Brown (the subject site), outlined in **Figure 2-1**, is located in Hoon Hay, in the south-west of Christchurch.



Figure 2-1: Location of Subject Site in South-West of Christchurch (Aerial Image Source: Canterbury Maps)

Figure 2-2 shows the current District Plan zoning of the subject site. It is predominantly zoned Rural Urban Fringe with some Residential New Neighbourhood zoned land in its southern half. The Residential New Neighbourhood zone is subject to the Hendersons East Outline Development Plan (described in Section 6.1 of this report).

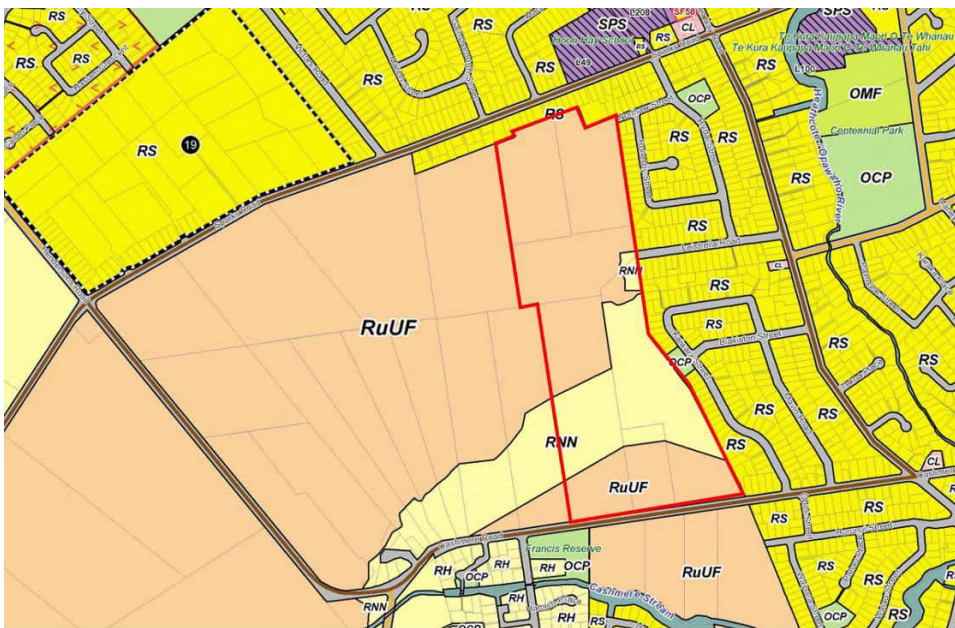


Figure 2-2: District Plan Zoning of Subject Site

Figure 2-3 shows the outline of the subject site in the local context. Most of the subject site is currently rural land, with some residential development recently developed in the south-eastern corner. There is well-established residential land to the east and north of the subject site.

Nearby activities include two primary schools on Sparks Road and Centennial Park / the Pioneer Recreation and Sport Centre to the east. Cashmere High School is on Rose Street approximately 700m east of Lyttelton Street.

The local context plan also shows the District Plan road hierarchy in the area. Sparks Road, Hoon Hay Road, Cashmere Road and Hendersons Road are all minor arterial roads in the area providing key links in the south-west of the city. Rose Street and Lyttelton Street are collector roads on the eastern side of Hoon Hay Road which provide local connections and access to the nearby recreational facilities and Cashmere High School.



Figure 2-3: Subject Site Outline in Local Context and Road Hierarchy (Aerial Image Source: Canterbury Maps)

Figure 2-4 shows the local road network at the southern end of the subject site. A length of Leistrella Road has been constructed off Cashmere Road to provide access to new residential development within the subject site. A short section of Emily Knowles Drive has recently been constructed to the west of Leistrella Road.



Figure 2-4: Existing Local Road Network- Southern End of Subject Site (Aerial Image Source: Canterbury Maps)

Figure 2-5 highlights local roads between the northern part of the subject site and the arterial road network. Leistrella Road currently runs west off Hoon Hay Road to the edge of the subject site. Rydal Street runs between Sparks Road and Leistrella Road, while Northhaw Street runs west from Rydal Street to the boundary of the subject site.



Figure 2-5: Existing Local Road Network- Northern End of Subject Site (Aerial Image Source: Canterbury Maps)

3 Existing Transport Network

3.1 Arterial Road Network

3.1.1 Sparks Road

Sparks Road is a minor arterial road linking Halswell to the inner southern suburbs of Christchurch. It runs east-west to the north of the subject site, separated by a row of existing residential properties. **Photograph 3-1** shows Sparks Road to the north of the subject site. The road is formed with a single traffic lane in each direction, a flush median, a parking lane on the northern side, a separated two-way cycleway on the southern side, and a footpath on both sides.



Photograph 3-1: Sparks Road, Looking West at Maryhill Avenue Intersection

Photograph 3-2 shows Sparks Road further east, in the vicinity of the Rydal Street intersection. There is a signalised pedestrian crossing outside the primary schools just to the west of the Rydal Street intersection.



Photograph 3-2: Sparks Road / Rydal Street Intersection and Signalised Pedestrian Crossing

3.1.2 Hoon Hay Road

Hoon Hay Road is a minor arterial road which runs generally north-south from Cashmere Road to Lincoln Road (and beyond to the Christchurch Southern Motorway as Curletts Road). It is approximately 300m east of the subject site, separated by existing residential neighbourhoods. **Photograph 3-3** shows Hoon Hay Road at the Leistrella Road intersection. It has a single wide traffic lane and a parking lane in each direction, and a footpath on both sides of the road.



Photograph 3-3: Hoon Hay Road, Looking South at Leistrella Road

Hoon Hay Road and Sparks Road meet at a signalised intersection.

3.1.3 Cashmere Road

Cashmere Road is a minor arterial road which runs along the foot of the Cashmere Hills, linking Christchurch's southern suburbs. It runs along the southern edge of the subject site. **Photograph 3-4** shows Cashmere Road at the Leistrella Road intersection. The road has a single traffic lane and cycle lane in each direction, with a right turn bay formed at the Leistrella Road intersection. The frontage of the existing Leistrella Road subdivision has been upgraded to an urban standard while further west, the road has more of a rural look and feel.



Photograph 3-4: Cashmere Road, Looking West at Leistrella Road

Cashmere Road and Hoon Hay Road meet at a signalised intersection.

3.2 Local Road Network

3.2.1 Leistrella Road (Hoon Hay)

The section of Leistrella Road running west off Hoon Hay Road is a local road providing access to the Leistrella Road / Rydal Street residential catchment of approximately 155 houses. It is one of two roads available for entry to this area (with Rydal Street accommodating left turn entry movements from Sparks Road), and the only road available for exit movements.

Photograph 3-5 shows Leistrella Road which is formed with a 9m wide carriageway and two footpaths within a 20m wide corridor.



Photograph 3-5: Leistrella Road, Looking West from Hoon Hay Road

Leistrella Road meets Hoon Hay Road at an uncontrolled T-intersection (visible in Photograph 3-3). There is no turning provision on Hoon Hay Road, with the parking lane on the eastern side of the road continuous past the intersection. There are large kerb radii at the intersection considering the residential nature of the road (approximately 12m), resulting in a relatively large intersection and a long crossing distance for pedestrians.

Photographs 3-6 and **3-7** show driver sightlines to the right and the left from Leistrella Road. Hoon Hay Road has a straight and flat alignment in this location so long sightlines are possible however these can be obstructed by parked vehicles.



Photograph 3-6: Leistrella Road Sightline South at Hoon Hay Road



Photograph 3-7: Leistrella Road Sightline North at Hoon Hay Road

3.2.2 Rydal Street

Rydal Street is a local residential road which runs from Sparks Road to Leistrella Road.

Left turn in movements are the only permitted movements at the Sparks Road / Rydal Street intersection shown earlier in Photograph 3-2.

The road has a 9m carriageway width and two footpaths within a 20m wide corridor. It has a mainly straight alignment but there are two curves in the vicinity of the Northaw Street intersection and the Rydal Reserve. **Photograph 3-8** shows Rydal Street looking north in this section of the road, with Northaw Street on the left, while **Photograph 3-9** shows the street in the other direction.



Photograph 3-8: Rydal Street, Looking North at Curves



Photograph 3-9: Rydal Street, Looking South at Curves

Rydal Street meets Leistrella Road at a basic, uncontrolled T-intersection, as shown in **Photograph 3-10**. 12m kerb radii have been adopted at the intersection.



Photograph 3-10: Leistrella Road / Rydal Street Intersection

3.2.3 Northaw Street

Northaw Street (**Photograph 3-11**) is a local residential road running from Rydal Street to the northern part of the subject site. It is also formed with a 9m wide carriageway and two footpaths but within a 16.5m wide corridor.



Photograph 3-11: Northaw Street, Looking West from Rydal Street

Northaw Street meets Rydal Street at an uncontrolled intersection, as shown earlier in Photograph 3-8. As shown in **Figure 3-1**, Northaw Street meets Rydal Street on the outside of a curve. A large kerb radius has been adopted on the southern side of the intersection resulting in somewhat of a Y-intersection rather than a T-intersection.



Figure 3-1: Rydal Street / Northaw Street Intersection

3.2.4 Leistrella Road (Cashmere)

The section of Leistrella Road off Cashmere Road has been constructed in recent years to serve new residential development in the south-eastern corner of the subject site. **Photograph 3-12** shows the road within the new residential area. It has been constructed with a 6m wide carriageway plus parking bays outside of that, and two footpaths.



Photograph 3-12: Leistrella Road Looking North

Leistrella Road meets Cashmere Road at an uncontrolled T-intersection (**Photograph 3-13**). There is a flush, paved threshold treatment on Leistrella Road at the intersection. As shown earlier in Photograph 3-4), a right turn bay has been formed on Cashmere Road.



Photograph 3-13: Cashmere Road / Leistrella Road Intersection

3.3 Public Transport Network

Figure 3-2 shows that there are three bus services within close proximity of the subject site; the Orbiter service, the 44 Shirley / Westmorland service and the 60 Hillmorton / Southshore service. The figure also indicates the locations of bus stops in the area.

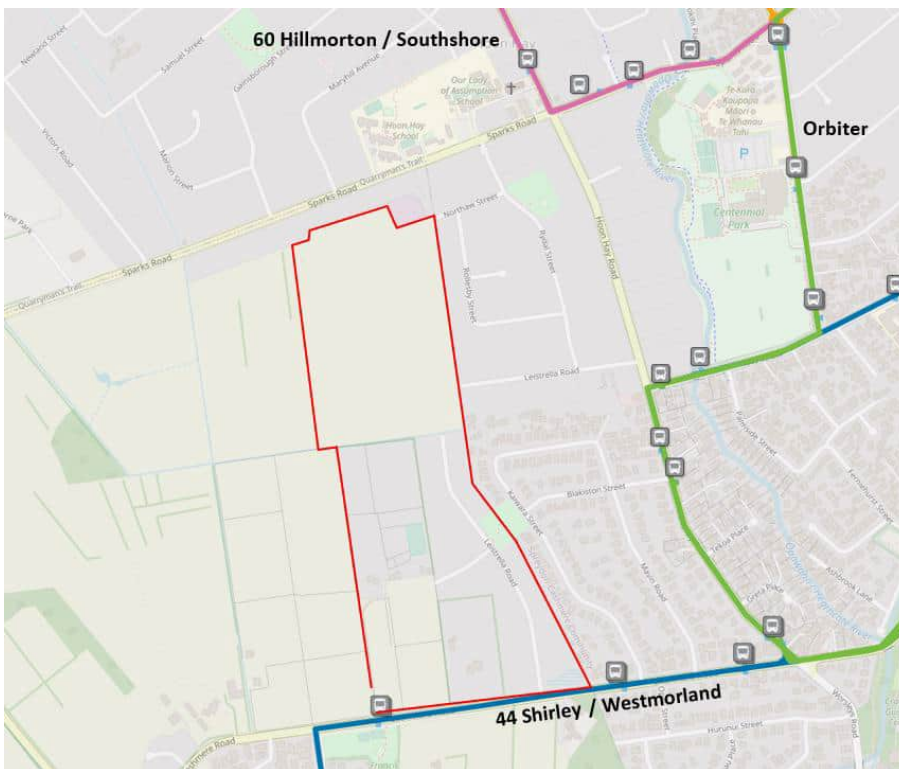


Figure 3-2: Bus Services in the Surrounding Area (Metroinfo)

The Orbiter service runs quarter-hourly in each direction on an orbital route between key destinations around the city, including the nearby Barrington Mall. The route runs along Hoon Hay Road (south of Rose Street), Rose Street and Lyttelton Street in the vicinity of the subject site.

The 44 Shirley / Westmorland service runs between Westmorland and Shirley via Cashmere Road and Hoon Hay Road in the vicinity of the subject site, Barrington Mall, the Sydenham shops and the City Centre. The 60 Hillmorton / Southshore service runs between Wigram / Hillmorton and Shirley / New Brighton via Hoon Hay Road and Sparks Road in the vicinity of the site, Barrington Mall, Christchurch Hospital and the City Centre. Both of these services run half-hourly in each direction, with more frequent services during peak times.



3.4 Cycle / Pedestrian Network

Figure 3-3 is the Christchurch Bike Map, which shows two off-road cycleways in the vicinity of the site. These are two of the Christchurch 'Major Cycleways', being the Quarryman's Trail Cycleway and the Nor'West Arc Cycleway. The Quarryman's Trail Cycleway is the separated two-way cycleway running along the southern side of Sparks Road. It runs from Halswell into the City Centre via Hoon Hay and Somerfield. The Nor'West Arc Cycleway runs through Centennial Park near the site and connects Cashmere to the University and other major cycleways.

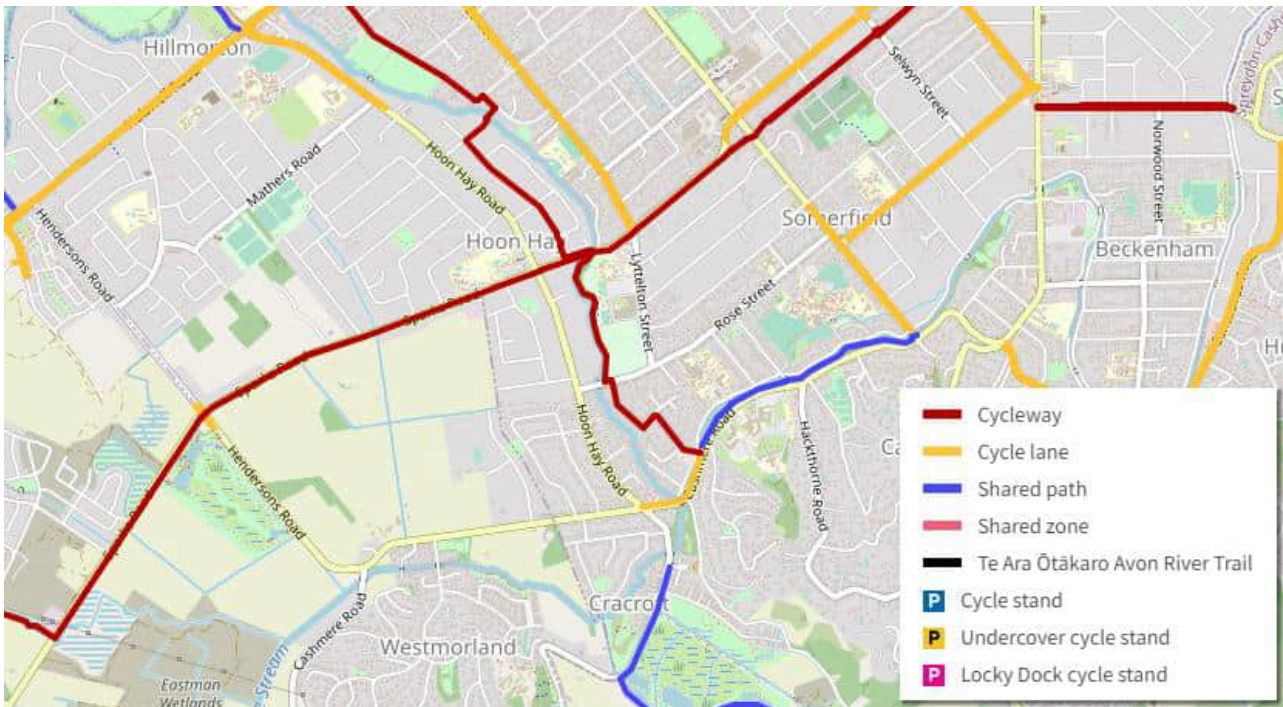


Figure 3-3: Christchurch Bike Map (CCC)

Cyclists on Cashmere Road and Hoon Hay Road are required to cycle on the road. Cycle lanes have been marked on Cashmere Road on the recently upgraded section of road at the Leistrella Road intersection.

Generally, there are two footpaths on all roads within the vicinity of the site. There is only a footpath on the southern side of Cashmere Road west of Leistrella Road, where the road still has a somewhat rural formation.

As described already, there is a signalised pedestrian crossing on Sparks Road outside the nearby primary schools. There is also a crossing point with a refuge island west of the Maryhill Avenue intersection (visible in Photograph 3-1).

There are no dedicated pedestrian crossing facilities on Hoon Hay Road in the vicinity of Leistrella Road, as shown in Photograph 3-3.

There is a pedestrian crossing point with a refuge island on Cashmere Road to the east of Leistrella Road, shown below in **Photograph 3-14**.



Photograph 3-14: Cashmere Road East of Leistrella Road

4 Existing Traffic Volumes

4.1 Daily Traffic Volumes

Table 1 contains daily traffic volumes for the three nearby arterial roads sourced from Christchurch City Council as well as an estimated daily traffic volume for Leistrella Road. While the arterial road traffic volumes do not correspond to sections of road immediately adjacent to the subject site, they give an indication that the three arterial roads carry high traffic volumes consistent with their statuses.

Table 1: Traffic Volume Increases on Leistrella Road (vph)

Road	Location	Count Date	Average Daily Traffic Volume
Sparks Road	East of Lyttelton Street	August 2019	13,250vpd
Hoon Hay Road	North of Sparks Road	September 2018	10,290vpd
Cashmere Road	East of Hoon Hay Road	September 2020	13,960vpd
Leistrella Road	West of Hoon Hay Road	March 2023 (Estimate)	1,000vpd

4.2 Peak Hour Traffic Volumes

4.2.1 Traffic Observations

As outlined above, Sparks Road, Hoon Hay Road and Cashmere Road are high volume arterial roads. During peak periods, there are relatively high levels of delay and queuing at the intersections of these roads. A morning peak period site visit was carried out on Thursday 30 March 2023 to observe the performance of the existing road network. Long eastbound queues on Sparks Road back from Hoon Hay Road (estimated to be longer than 500m) were observed throughout much of the morning peak period. The other legs of the intersection were operating efficiently from observations. It is understood that eastbound queues on Cashmere Road back from Hoon Hay Road can also extend a relatively long distance along Cashmere Road during the morning peak period however this was not observed on the day of the site visit.

It was decided to carry out peak hour traffic surveys at the three local road intersections on the arterial road network that will serve the subject site, being the Cashmere Road / Leistrella Road, Hoon Hay Road / Leistrella Road and Sparks Road / Rydal Street intersections. These surveys would allow the local road intersections and their ability to accommodate additional traffic as a result of the proposed rezoning to be assessed in detail. Given the high use of the arterial roads by wide area traffic, and the relatively small area of additional residential land proposed, it was considered appropriate to rely upon the Christchurch Assignment and Simulation Traffic model for assessing impacts of additional

traffic on the arterial road network intersections. The three intersection surveys were carried out on Thursday 30 March 2023 and are summarised in the following sections of the report.

4.2.2 Cashmere Road / Leistrella Road Intersection

The recorded traffic volumes for the morning and evening peak hours at the Cashmere Road / Leistrella Road intersection are shown below. Volumes displayed are traffic volumes and cyclist volumes.

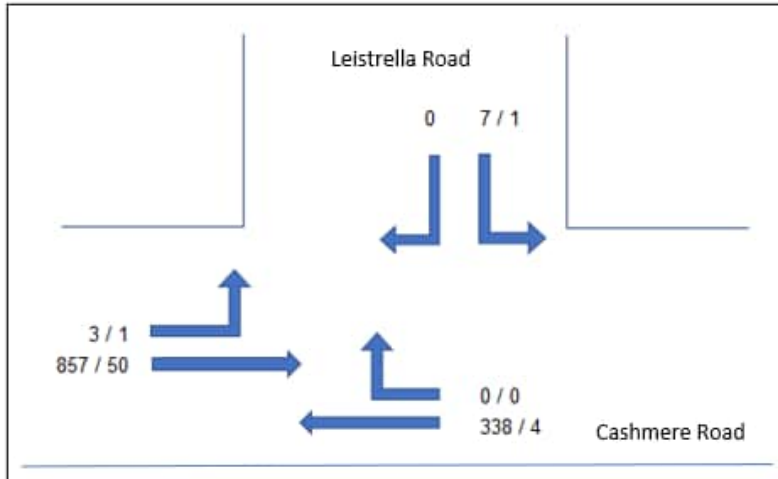


Figure 4-1: Cashmere Road / Leistrella Road Intersection Morning Peak Hour (7:45am-8:45am) Traffic Volumes / Cyclist Volumes

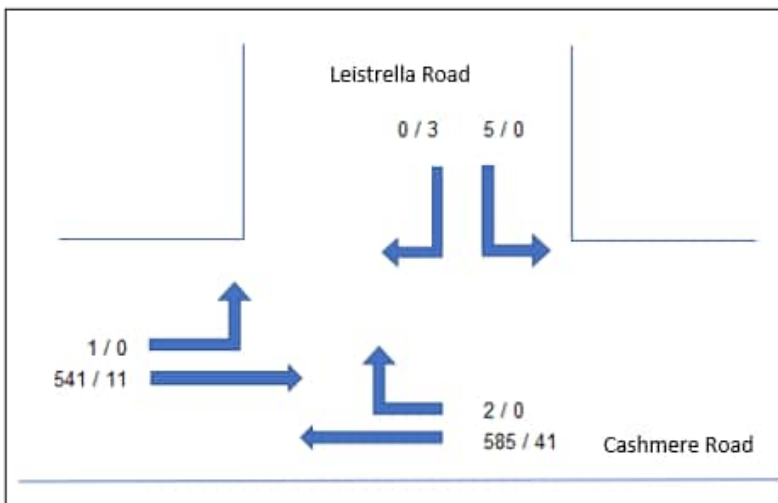


Figure 4-2: Cashmere Road / Leistrella Road Intersection Evening Peak Hour (4:30pm-5:30pm) Traffic Volumes / Cyclist Volumes

Cashmere Road carries approximately 1,200 vehicles per hour (vph) during the morning peak hour, of which 860vph plus 50 cyclists per hour (cph) are in the eastbound direction. Westbound traffic volumes during the same period are less than half those eastbound. During the evening peak hour, traffic volumes on Cashmere Road are still high at approximately 1,130vph, but relatively balanced with 540-585vph in each direction. The number of cyclists travelling westbound in the evening is of a similar scale to that eastbound in the morning.

Leistrella Road carries low traffic volumes of 8-10vph during the peak hours, reflective of the low level of development that it serves currently.

4.2.3 Hoon Hay Road / Leistrella Road Intersection

The recorded traffic volumes for the morning and evening peak hours at the Hoon Hay Road / Leistrella Road intersection are shown below. Volumes displayed are traffic volumes and cyclist volumes.

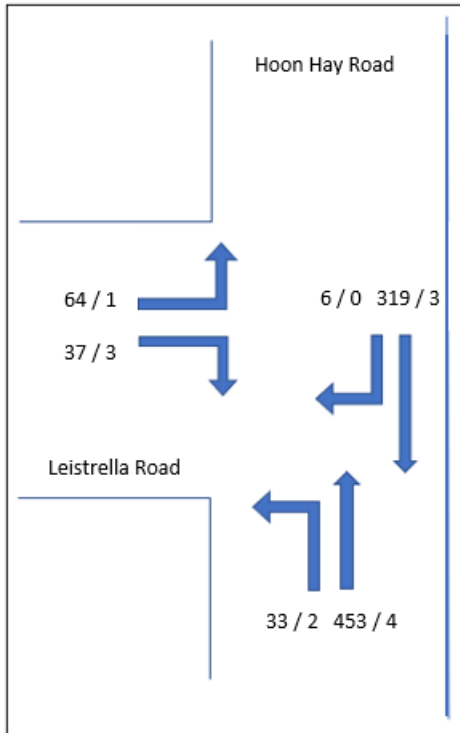


Figure 4-3: Hoon Hay Road / Leistrella Road Intersection Morning Peak Hour (7:45am-8:45am) Traffic Volumes / Cyclist Volumes

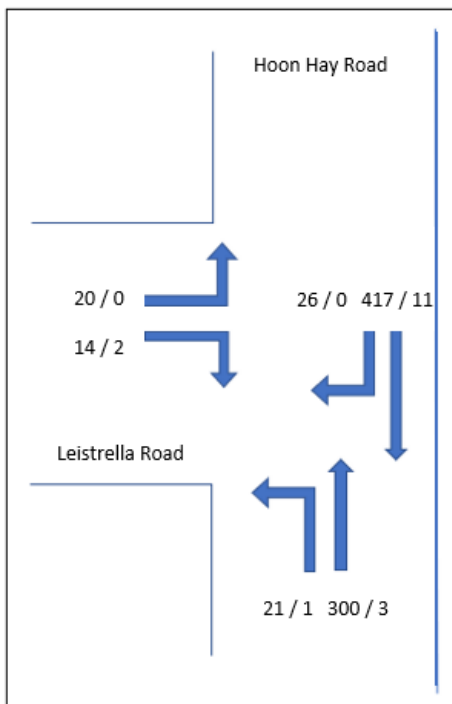


Figure 4-4: Hoon Hay Road / Leistrella Road Intersection Evening Peak Hour (4:30pm-5:30pm) Traffic Volumes / Cyclist Volumes

Hoon Hay Road carries lower traffic volumes than Cashmere Road of approximately 720-770vph. The volumes are relatively balanced by direction although there is a tidality towards the north in the morning and vice versa in the evening. Cyclist volumes on Hoon Hay Road are also lower with approximately 12-17cph to the south of Leistrella Road.

There are approximately 100vph out of Leistrella Road in the morning peak hour, with approximately two thirds turning left out towards the north. During the same hour there are approximately 40vph into Leistrella Road, with most being left turns in from the south. During the evening, volumes on Leistrella Road are lower, with those entering and exiting Leistrella Road and the directional splits being relatively even.

4.2.4 Sparks Road / Rydal Street Intersection

The figures below summarise the traffic and cyclist volumes recorded at the Sparks Road / Rydal Street intersection. The cyclist volumes presented were recorded on the separated cycleway but are shown with the corresponding traffic movement for simplicity.

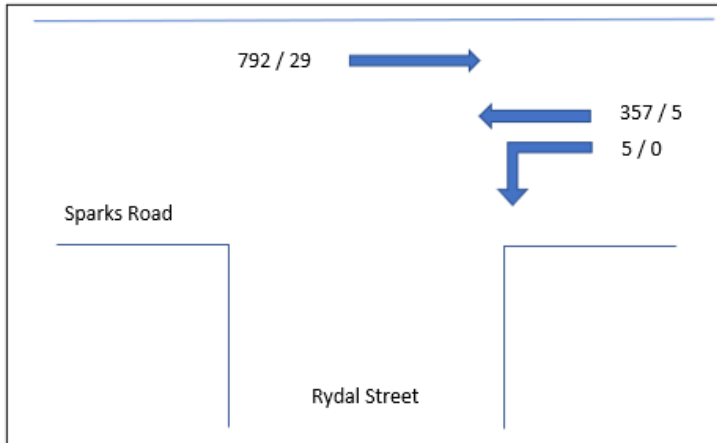


Figure 4-5: Sparks Road / Rydal Street Intersection Morning Peak Hour (7:15am-8:15am) Traffic Volumes / Cyclist Volumes

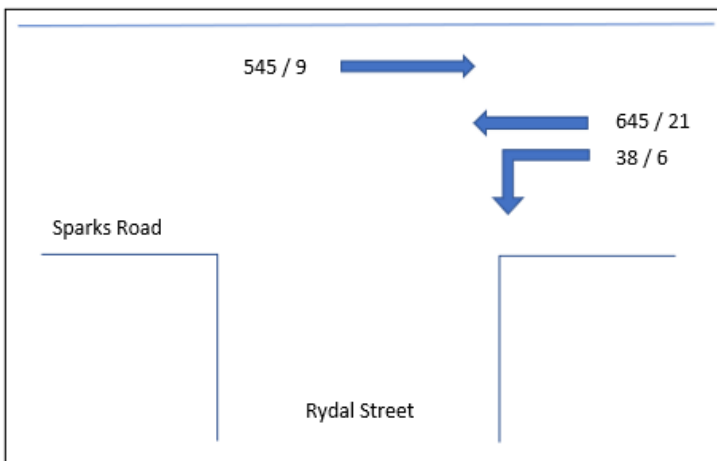


Figure 4-6: Sparks Road / Rydal Street Intersection Evening Peak Hour (4:30pm-5:30pm) Traffic Volumes / Cyclist Volumes

Sparks Road carries high traffic volumes of approximately 1,150-1,190vph past Rydal Street. Eastbound traffic volumes towards the city are approximately twice the westbound volumes during the morning peak, while the volumes are more balanced in the evening peak. Approximately 40vph were recorded entering the residential area via Rydal Street during the evening.

There are approximately 30cph on the separated cycleway during the peak hours.

5 Existing Road Safety

Waka Kotahi's Crash Analysis System has been used to review reported crashes in the vicinity of the subject site. The area analysed, shown below, included the existing local roads that will connect to the subject site (Leistrella Road, Rydal Street and Northaw Street) and their intersections on the arterial road network. The search area also included the Hoon Hay Road / Rose Street intersection given its proximity to the Hoon Hay Road / Leistrella Road intersection, and the Hoon Hay Road / Blakiston Street, Cashmere Road / Mavin Road, and Cashmere Road / Kaiwara Street intersections for an indication of any broader crash patterns.

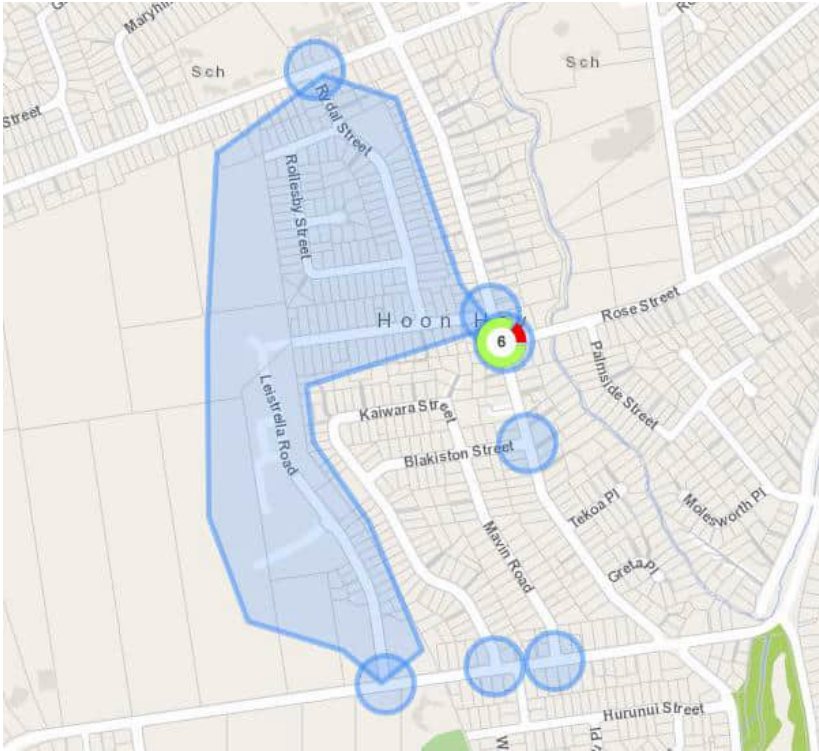


Figure 5-1: Extent of Crash Search

As indicated above, there were six crashes reported in the search area since the start of 2017 (as at 4 April 2023).

Five of these (one fatal and four non-injury) occurred at (or within 50m of) the Hoon Hay Road / Rose Street intersection. The fatal crash occurred when a northbound driver on Hoon Hay Road turned right into Rose Street and failed to notice a southbound cyclist on Hoon Hay Road. Two of the non-injury crashes were rear-end type crashes; one occurring on Hoon Hay Road when a northbound driver crashed into the rear of a stationary vehicle, and the other occurring on Rose Street when a queued driver mistakenly thought the driver in front had proceeded. The other two non-injury crashes occurred to the south of the Rose Street intersection and involved U-turns outside the nearby neighbourhood shops.

A single non-injury crash was reported at the Hoon Hay Road / Leistrella Road intersection. This involved a vehicle being pursued by police clipping another vehicle as it turned into Leistrella Road. This is not considered to reflect the normal operation of the intersection.

No crashes have been reported at the Sparks Road / Rydal Street intersection, at the Cashmere Road / Leistrella Road intersection or along the sections of local road searched.

In the wider area, there have also been no crashes reported at the Hoon Hay Road / Blakiston Street, Cashmere Road / Mavin Road, and Cashmere Road / Kaiwara Street intersections.

6 Proposed Future Environment

6.1 Hendersons East ODP

Figure 6-1 shows the existing Hendersons East Outline Development Plan (ODP) with the portion of the ODP area within the subject site outlined in black.

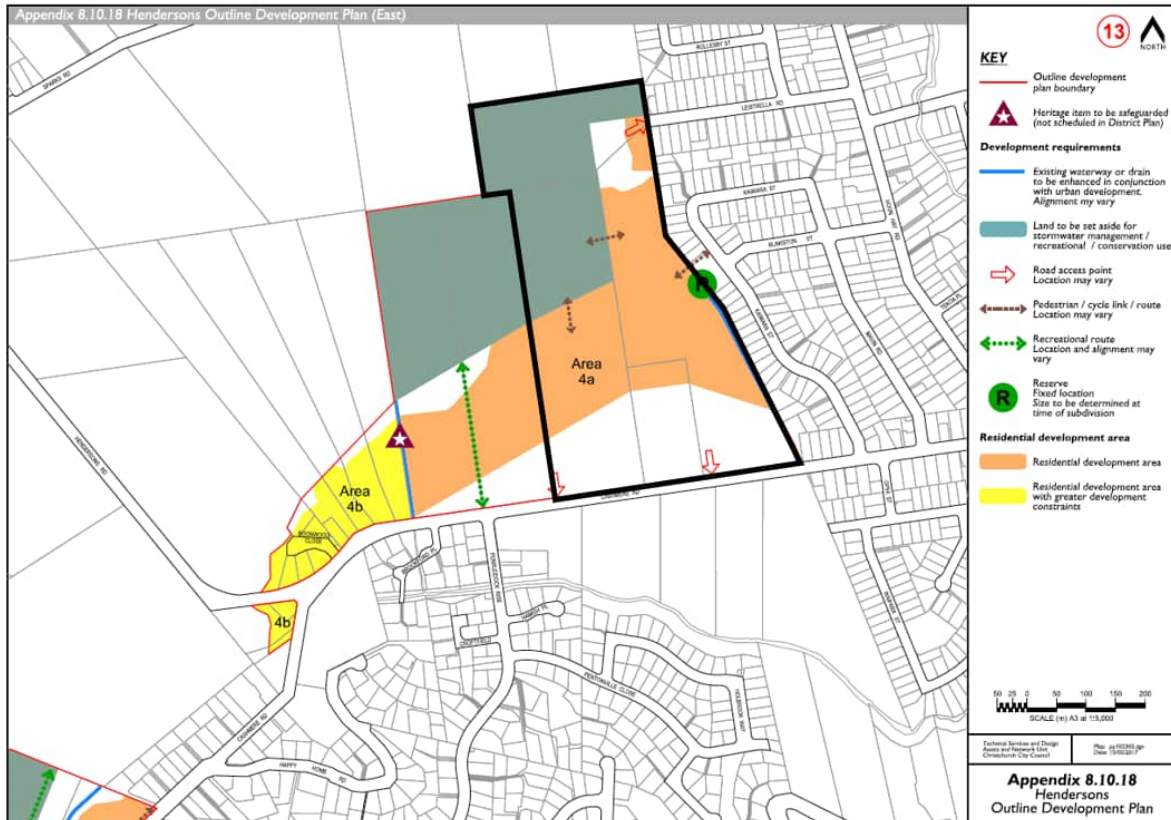


Figure 6-1: Existing Hendersons East ODP

The Hendersons East ODP provides for approximately 15.9ha of residential development area north of Cashmere Road (Areas 4a and 4b). It is understood that this could accommodate approximately 320 residential lots based on a development rate of 20 lots per hectare. Approximately 8.8ha (or 55%) of this residential development area is within the subject site.

Two road access points are indicatively shown on Cashmere Road. The eastern one has now been constructed as Leistrella Road and the western one is shown on the boundary of the subject site.

The ODP also shows a road connection to Leistrella Road, with it anticipated that the two sections of Leistrella Road would be connected through development of this ODP area.

It is understood that the shape of the residentially zoned land in the ODP was governed by flooding / stormwater considerations. **Figure 6-2** shows the District Plan 'High Flood Hazard Management Area' Natural Hazard Overlay, with this overlay covering much of the remaining undeveloped land west of the subject site and on the southern side of Cashmere Road.

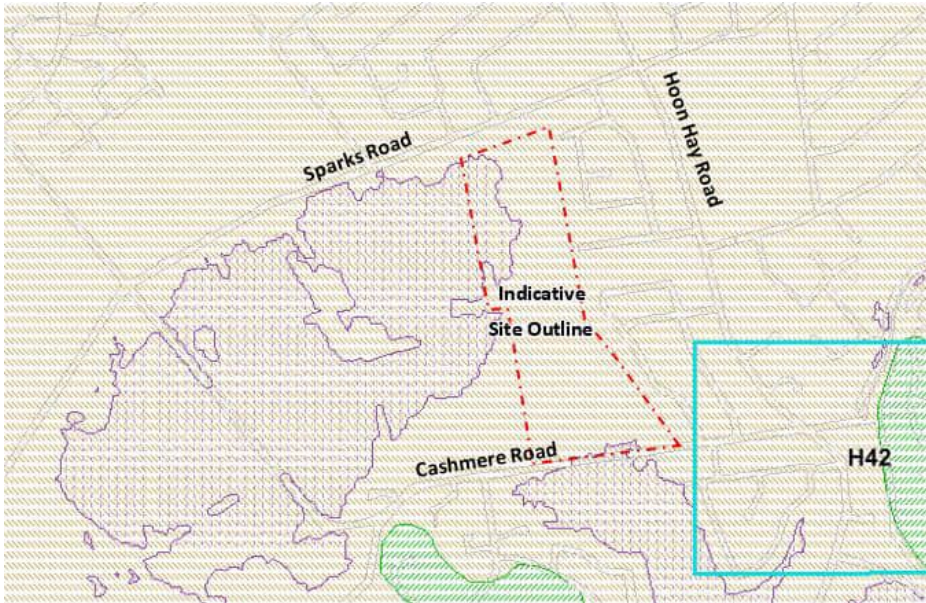


Figure 6-2: District Plan 'High Flood Hazard Management Area' Natural Hazard Overlay

6.2 Planned Changes to Transport Network

The Christchurch City Council Annual Plans and Long-Term Plan have been reviewed for relevant transport-related projects in the vicinity of the subject site. The following were identified as possibly occurring in the vicinity of the subject site but they are not considered likely to affect potential increased residential development of the subject site:

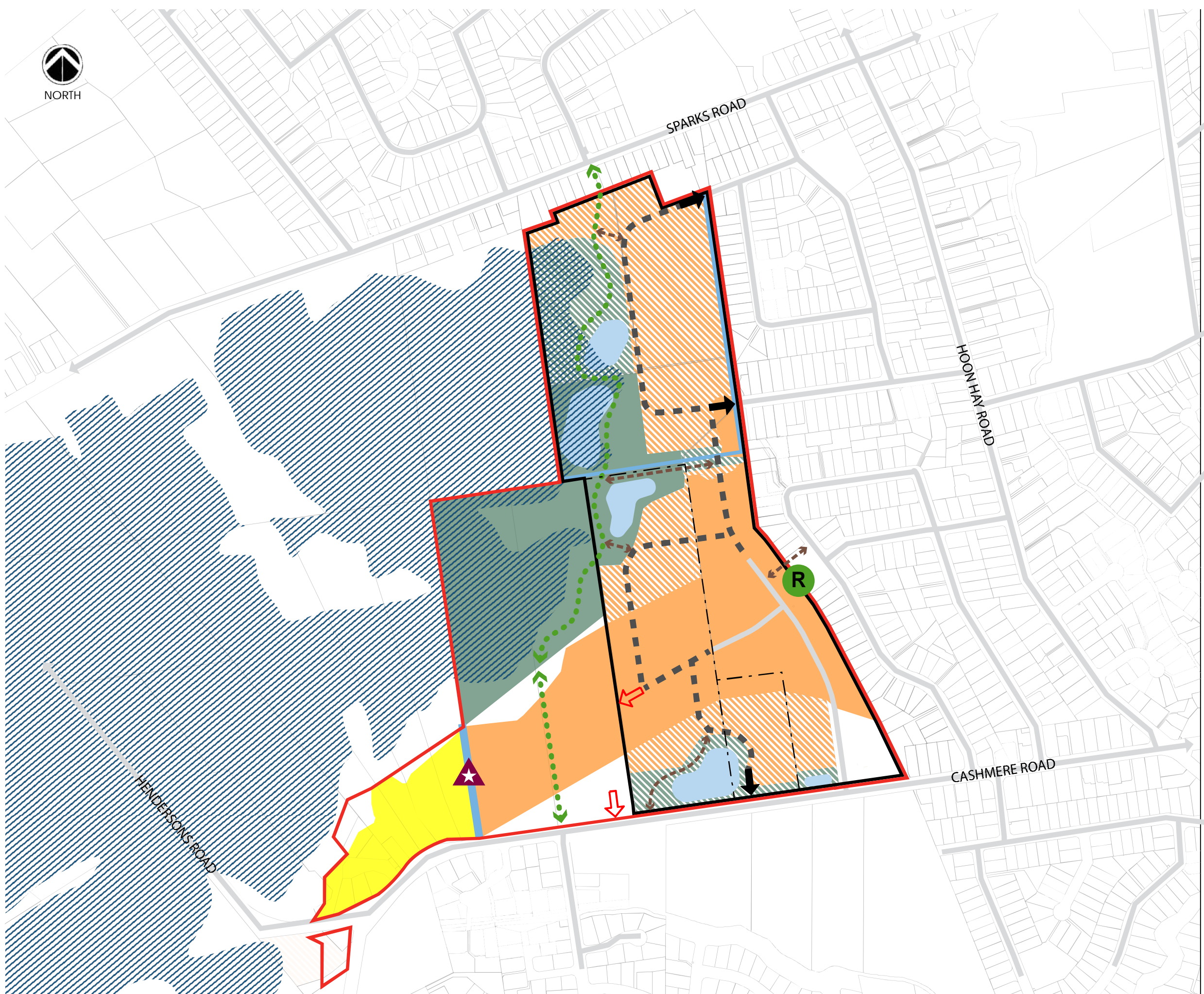
- Sparks Road Improvements, \$160,000, 2023/24 Draft Annual Plan; and
- Cashmere Road Bus Priority, \$45,000, 2022/23 Annual Plan and \$75,000, 2023/24 Draft Annual Plan.

7 Proposed Rezoning


7.1 Overview and ODP

Cashmere Park Limited, Hartward Investment Trust and R Brown propose a change to the Hendersons East Outline Development Plan through a submission on the Christchurch City Council Housing and Business Choice Plan Change 14 (PC14) process. The change would see approximately 20.3ha of land within the subject site currently zoned Rural Urban Fringe and Residential New Neighbourhood rezoned to Medium Density Residential. Approximately 11.5ha of this land is currently zoned Rural Urban Fringe and this additional residentially zoned land could accommodate an additional approximately 230 residential lots, representing an increase of approximately 70% of residential land in the Hendersons East ODP area.

Eliot Sinclair has developed an ODP, shown below in **Figure 7-1**, which is a modified version of the existing Hendersons East ODP. The additional residential land proposed is predominantly in the northern part of the subject site, while there is a smaller block centrally located and another fronting Cashmere Road.



Proposed Hendersons Outline Development Plan

-  Existing ODP Boundary [Appendix 8.10.18 Hendersons Outline Development Plan]
-  Application Site boundary [Proposed alternate ODP]
-  Internal landowner boundaries
-  Existing road network
-  Proposed road network
-  Fixed road access point
-  Indicative road access point [aligned with neighbouring subdivision plans recieved]
-  Rural/Urban fringe zone within ODP boundary
-  District Plan High floodplain hazard management area
-  Heritage stream to be safeguarded
-  Residential development area
-  Residential development area with greater constraints
-  Land set aside for stormwater management / recreational / conservation use
-  Existing box drain
-  Proposed recreational route Location and alignment may vary (including extension)
-  Existing Recreation Reserve
-  Proposed residential development area
-  Proposed Land to be set aside for stormwater management / recreational / conservation use
-  Proposed stormwater management area
-  Proposed pedestrian / cycle link (including extensions)

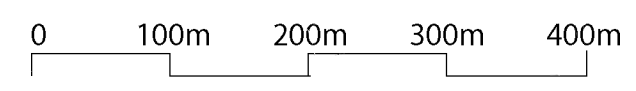


Figure 7-1

7.2 Proposed Access by Active Modes

The proposed ODP makes provision for an active mode connection to be made to Sparks Road. This is proposed in the location of the existing vehicle access leg to 126 Sparks Road (shown in **Photograph 7-1**), near Maryhill Avenue, which is only suitable for an active mode connection given its narrow width. The active mode connection will provide convenient access to the Quarryman's Trail cycleway on Sparks Road, as well as the Sparks Road footpath network (including the nearby signalised crossing).



Photograph 7-1: Existing Access Leg to 126 Sparks Road

Other pedestrian / cycle link routes and recreational routes are indicated on the proposed ODP connecting the residential areas and the stormwater reserve areas.

7.3 Proposed Vehicle Access

Generally, the proposed additional residential development areas are small additions to existing / planned residential areas and they will rely on the existing / planned local road network.

The northern portion of the subject site will connect to Northaw Street to provide local connectivity as well as the planned Leistrella Road route.

The central block of proposed additional residential land will connect to existing / planned local roads i.e. Leistrella Road and Emily Knowles Drive.

The southern additional development area is proposed with a new local road intersection on Cashmere Road, approximately 150m west of Leistrella Road. The location of the western Cashmere Road intersection is shown west of where it is in the existing ODP to reflect planned development of the land adjacent to the subject site.

8 Assessment of Accessibility for Non-Car Travel

8.1 Active Modes

The proposed active mode connection to Sparks Road will provide a convenient link to the Quarryman's Trail major cycleway for the subject site as well as potentially the wider area to the south and west. The connection via the existing vehicle access leg for 126 Sparks Road is considered to be an appropriate use of the existing access leg, providing a convenient route for cyclists as well as pedestrians. The nearby primary schools on Sparks Road are likely to generate pedestrian activity from the subject site and the connection to the Sparks Road footpaths (and the signalised crossing outside the schools) will offer a safe and convenient pedestrian route.

There is no pedestrian provision along the subject site frontage on Cashmere Road however this will be expected to be provided at the subdivision development stage, tying in with existing and future pedestrian infrastructure on Cashmere Road.



Between the northern portion of the subject site and Hoon Hay Road, pedestrians will be required to use the existing local road network. Leistrella Road, Rydal Street and Northaw Street all have two footpaths which will be suitable for increased pedestrian use. The local road intersections have large kerb radii which result in long crossing distances for pedestrians, increasing the time and distance over which pedestrians are exposed to turning traffic. It is considered that, with the future increased use of Leistrella Road by both pedestrians and traffic (forecast later), modifications to the Hoon Hay Road / Leistrella Road and Leistrella Road / Rydal Street intersections to provide shorter pedestrian crossing distances should be implemented. The Hoon Hay Road / Leistrella Road intersection is seen as more critical given the high traffic volumes and higher vehicle speeds on Hoon Hay Road. It is considered that kerb build outs and reduced kerb radii would be appropriate, but this could be considered further through adoption of an assessment matter at the subdivision stage related to pedestrian safety on the adjoining local road network.

There are several activities east of the subject site which are likely to generate pedestrian activity including Pioneer Sport and Recreation Centre and Cashmere High School. Development of particularly the northern portion of the subject site will increase the pedestrian crossing demand on Hoon Hay Road between Leistrella Road and Rose Street. Currently there is no pedestrian crossing provision on this section of Hoon Hay Road, and the carriageway is wide to cross at 13m in width. It is considered that a safe pedestrian crossing point should be provided between Leistrella Road and Rose Street and the design of this can be a matter to be considered at the subdivision stage. It is considered likely that a refuge island would be appropriate and localised car parking removal would be necessary to accommodate it.

Within the ODP area, a good level of connectivity for pedestrians and cyclists is proposed. Local roads will be expected to provide footpaths and be safe for shared use by cyclists in what should be designed to be a slow speed environment. There are also off-road routes proposed between the residential areas and connecting to the stormwater reserve areas.

8.2 Public Transport

The southern portion of additional residential land is very well located for public transport uptake, being within a short distance of Cashmere Road where there is the existing Westmorland / Shirley bus service. This service provides accessibility to key destinations including the City Centre as well as Barrington Mall and Sydenham. It will be necessary to ensure at the subdivision stage that pedestrian provision along Cashmere Road connecting to existing infrastructure is provided.

The central block of proposed additional residential land is similar to the surrounding zoned residential land in terms of accessibility for public transport. It is approximately 400m from Cashmere Road and 600m from Hoon Hay Road via the Kaiwara Street reserve and Blakiston Street. The Westmorland / Shirley route as well as the Orbiter route, which provides regular connectivity to key destinations around the city including Barrington Mall, run along Hoon Hay Road.

The northern block of proposed additional residential land is similar to the existing Leistrella Road / Rydal Street residential catchment in terms of accessibility for public transport. The northern part of the block will be approximately 600m from the Hoon Hay Road / Sparks Road intersection, through which the Hillmorton / Southshore bus service runs. This provides access to Barrington Mall, Christchurch Hospital and the City Centre among other destinations. The southern part of the block will be approximately 600m from Rose Street where both the Westmorland / Shirley and Orbiter bus services run. As outlined above, it is recommended that a pedestrian crossing point on Hoon Hay Road is provided between Leistrella Road and Rose Street and this will improve the accessibility of the Rose Street bus stops.

It is considered that the 600m-800m distances from the central and northern blocks to the nearest existing bus stops are acceptable. While they may be at the higher end of walking distances to bus stops that people are prepared to take, residents would have options of using other modes, e.g. bicycle or scooter, to connect to the bus routes. With three bus routes in the vicinity of the subject site, and all three connecting to the nearest major centre, being Barrington Mall, it is considered that development of the subject site will be relatively well served by public transport when compared to many parts of the city.

There have been a number of residential developments in the south and east of Halswell in recent years, with more planned along with the nearby North Halswell Key Activity Centre. It is expected that additional bus services will be provided in this part of the city, with Sparks Road a potential route towards the city. It is noted that the Christchurch City Council South-West Area Plan anticipated a bus route on Sparks Road to the west of the subject site. A bus service along Sparks Road would offer improved public transport accessibility to the subject site as well as existing residential areas north of Sparks Road.

The intention is that the additional residential areas are small areas connecting to the existing / zoned residential areas rather than new residential areas in their own right. The internal road network is intended to be an extension of the existing / planned local road network and therefore it would not be expected to accommodate a bus route.

9 Traffic Modelling Assessment

9.1 CAST Modelling Approach

The Christchurch Assignment and Simulation Traffic (CAST) Model has been utilised to assist with an assessment of the ability of the surrounding road network to accommodate the additional traffic that could be generated by the proposed residential areas.

A future year of 2038 has been adopted. The base model has been modified to include all development anticipated under the Hendersons East ODP. This included allowing for traffic that could be generated by the approximately 320 lots within the ODP area and a local road network including two intersections on Cashmere Road and the two sections of Leistrella Road being connected. Standard peak hour traffic generation rates of 0.9 vehicle movements per hour (vph) per residential lot and the traffic distribution of the existing zone in the CAST Model were adopted.

A second scenario allowing for the proposed additional residential development areas was also modelled. This allowed for the additional possible 230 residential lots split across the three areas as indicated in the proposed ODP. Additions to the local road network were made including a connection to Northaw Street at the northern end of the subject site.

9.2 CAST Modelling Outputs

Appendix A contains AM and PM peak hour traffic volume and delay plots for the 'base' and 'with rezoning' scenarios.

The base model outputs show that Leistrella Road to Hoon Hay Road could be an attractive route into and out of the ODP area for a large proportion of residents. With the two sections of Leistrella Road connected in the base model, there are peak hour traffic volume forecasts of 230-290vph on Leistrella Road (Hoon Hay). Traffic volumes forecast to use the two Cashmere Road intersections are low compared to the forecast volumes on Leistrella Road (Hoon Hay).

With the additional residential development that the proposed rezoning would allow, traffic volume forecasts on Leistrella Road (Hoon Hay) are approximately 310-420vph during peak hours, indicating an increasing movement function.

Minimal changes to overall delays at the signalised arterial road intersections in the area (Hoon Hay Road / Cashmere Road, Sparks Road / Hoon Hay Road and Sparks Road / Hendersons Road) are forecast with the additional development allowed for. Accordingly, the remainder of this assessment is focused on the suitability of the surrounding local roads to accommodate increases in traffic volumes and the safety and efficiency of access to the arterial road network.

10 Assessment of Suitability of Local Roads

10.1 Leistrella Road (Hoon Hay)

As outlined above, the traffic modelling carried out indicates that Leistrella Road to Hoon Hay Road could be an attractive route for a large proportion of residents within the ODP area.

The existing Hendersons East ODP requires: 'a road network which provides a connection between Cashmere Road and Hoon Hay but is designed to avoid traffic shortcutting between Westmorland and Hoon Hay'. It goes on to say that this is likely to be via Leistrella Road. It is possible that the traffic modelling over-estimates the future use of Leistrella Road (Hoon Hay) given this requirement to design it to discourage use. However, the traffic forecasts from the modelling have been adopted as a worst case in this assessment.

With Leistrella Road connected and full development of the existing ODP area, there could be peak hour traffic volumes of 230-290vph on the initial length of Leistrella Road off Hoon Hay Road. Traffic volumes would be reduced west of Rydal Street. With the additional development that would be possible with the proposed rezoning, these volumes could increase to 310-420vph east of Rydal Street. Using a standard rule of thumb for converting peak hour traffic volumes to daily traffic volumes¹, daily volumes on the eastern section of Leistrella Road could increase from approximately 2,600 vehicles per day (vpd) to 3,550vpd, representing a 35% increase.

¹ Daily volume = (AM peak volume + PM peak volume) x 5



Leistrella Road (Hoon Hay) has an existing carriageway width of 9m, with kerbside car parking permitted on both sides of the road. In practice, this carriageway width allows for two-way traffic movement where there is a parked vehicle on one side of the road but commonly only one-way movement where there is a vehicle parked on both sides of the road.

The Christchurch District Plan New Road Standards and NZS4404 Land Development and Subdivision standards have been reviewed for guidance on the assessment of the suitability of the existing carriageway width.

The District Plan standards outline that a 7m-9m carriageway width for a local road is a controlled activity, while the Council has more discretion over narrower or wider carriageways. The standards outline that a collector road carriageway should be 10m-14m wide with car parking to be outside of that.

According to NZS4404, a 5.5m movement lane would be appropriate for a local road (~2,000vpd) and an 8.4m movement lane would be appropriate for a collector road (~8,000vpd). Car parking should be outside of the movement lane given the road serves more than 100 lots.

As outlined earlier, it is intended that the additional residential areas would be relatively small extensions of existing / zoned residential areas rather than new residential areas. Accordingly, it is envisaged that the new areas would be served by extensions of the existing / planned local road network rather than any higher order roads (such as a new collector road). Retaining the existing 9m carriageway width of Leistrella Road and permitting kerbside car parking on both sides of the road, i.e. continuing to treat it as a local road, will help to encourage slow vehicle speeds and it may also help achieve the requirement to discourage its use by through traffic.

Traffic traveling along Leistrella Road to / from the ODP area (and further afield) will need to travel along the approximately 350m, straight length of Leistrella Road. Where there is no kerbside car parking present, the 9m carriageway width combined with the straight road alignment will not encourage slow vehicle speeds appropriate for the residential environment. Ensuring appropriate vehicle speeds will help ensure the road can be used safely by all users, including cyclists and pedestrians. It is considered that traffic calming measures should be adopted along the existing section of Leistrella Road at the time that the two sections of Leistrella Road are connected and this could be considered further through an assessment matter for the subdivision stage.

10.2 Leistrella Road (Cashmere)

Leistrella Road (Cashmere) has been constructed with a 6m carriageway width plus indented parking outside of that. This carriageway formation will be suitable to accommodate the small increases in use forecast as a result of development of the proposed rezoning. The design of the extension of this road to the north should incorporate traffic calming measures to ensure vehicle speeds remain appropriately slow for the residential setting and to ensure the safety of all road users, including cyclists. This will also help to achieve the requirement to design the road to discourage through traffic use.

10.3 Rydal Street / Northaw Street

The traffic modelling indicates that increases in use of Rydal Street and Northaw Street will be relatively modest, and this is to be expected based on the additional residential catchment that could be served by these roads. It is estimated that increases in use of Northaw Street and Rydal Street will be less than 60vph or an average of one vehicle movement per minute during peak times. During the morning, most additional movements would be out Northaw Street and right into Rydal Street. During the evening, the largest increase would be to the number of movements from Sparks Road left into Rydal Street and right into Northaw Street.

The traffic volumes on both Rydal Street and Northaw Street will remain relatively low with the increased use and there are no concerns from a traffic carrying capacity perspective.

Northaw Street and Rydal Street have the same 9m wide carriageway formation as Leistrella Road however with the shorter sections of straight road, along with curves in the alignment of Rydal Street and lower traffic volumes, mean there are not the same concerns with potentially higher than desirable vehicle speeds at this stage.

A concern with the existing Rydal Street / Northaw Street intersection was highlighted earlier, primarily resulting from the large kerb radius on the southern corner resulting in somewhat of a Y-intersection layout. The concern is that it may not be clear who has priority and the minor-leg right turn from Northaw Street to Rydal Street is the movement which will be increased the most at the intersection. It is considered that the intersection would benefit from the installation of Give Way signage / marking on Northaw Street but this could be considered further at the time of subdivision of the northern section of the subject site through adoption of a subdivision assessment matter. Other matters to consider in the vicinity of the intersection would be whether the existing pedestrian crossing provision should be improved and whether a dedicated crossing point to the Rydal Reserve would be warranted.

11 Access to Arterial Road Network

11.1 Hoon Hay Road / Leistrella Road Intersection

The Hoon Hay Road / Leistrella Road intersection is seen as the critical location for access to / from the arterial road network for development of the subject site based on the traffic modelling outputs. Accordingly, the performance of the intersection has been analysed in more detail than the CAST model provides. 2021, 2038 'Base' and 2038 'With Rezoning' CAST model volume plots for the Hoon Hay Road / Leistrella Road intersection are presented in **Appendix A.3**.

11.1.1 Comparison between 2021 CAST Forecasts and Counts

Table 2 shows a comparison of 2021 CAST model traffic forecasts with the recently recorded traffic counts.

Table 2: Comparison of Traffic Volumes on Hoon Hay Road and Leistrella Road, 2021 CAST Model vs 2023 Counts (vph)

Traffic Movement	Peak Hour	2021 CAST Model Forecast	2023 Count	Difference
Hoon Hay Road Through Traffic (Two-Way)	AM	715	772	+57
	PM	720	717	-3
Leistrella Road Traffic (Two-Way)	AM	93	140	+47
	PM	53	81	+28

The through traffic volumes on Hoon Hay Road past Leistrella Road recorded in 2023 were higher than the 2021 forecasts in the morning peak hour and matched the 2021 forecasts in the evening peak hour. Traffic volumes on Leistrella Road are higher than forecast during both peak periods.

11.1.2 Traffic Volumes for Analysis

The important thing to assess at the Hoon Hay Road / Leistrella Road intersection is the change in performance with the additional traffic resulting from the proposed rezoning.

The CAST model forecasts a reduction in through volumes on Hoon Hay Road from 2021 to 2038 and another reduction in through volumes with the additional land developed. For a conservative assessment, the recently recorded through volumes on Hoon Hay Road have been adopted in the analysis presented below.

Table 3 summarises the changes in traffic volume forecast on Leistrella Road, between the 2021 and 2038 'Base' models, and then between the 2038 'Base' model and the 2038 'With Rezoning' model.

Table 3: Traffic Volume Increases on Leistrella Road (vph)

Change in Landuse	Peak Hour	Extra Traffic In	Extra Traffic Out	Total Difference
2021 CAST to 2038 CAST 'Base'	AM	37	159	196
	PM	109	64	173
2038 CAST 'Base' to 2038 CAST 'With Rezoning'	AM	12	119	131
	PM	45	47	92

These volume changes have been adopted in analysis, with left turn / right turn distributions based on those recorded at the existing intersection. As the recent count volumes are higher than the 2021 forecasts, the first lot of traffic volume increases presented above have been applied to the count volumes to give a conservative '2038 base' scenario for analysis. The second lot of traffic volume increases were then applied to the base scenario to give a '2038 with rezoning' scenario.



11.1.3 Intersection Performance Forecast

The 2038 base and 2038 with rezoning scenarios have been modelled using SIDRA Intersection 9. The intersection has been modelled as a priority T-intersection with no right turn provision on the main road, and separate left and right turn lanes on the minor road (consistent with the existing intersection). Critical gap and follow up headway parameters of 5.5s and 3.2s have been adopted for the critical right turn out of Leistrella Road, in accordance with SIDRA User Guide guidance.

SIDRA modelling output summary tables are contained in **Appendix B**. The two tables below summarise the outputs of the analysis. Minimal changes in average delays and only small increases in queuing are forecast across both peak periods as a result of the additional traffic that could be generated by the additional residential development areas proposed.

Table 4: Summary of SIDRA Outputs- AM Peak

Period	Approach	Movement	Volume	Average Delay	95% Queue Length
2038 Base	Hoon Hay S	Left	64vph	5s / LOS A	-
		Through	453vph	-	-
	Hoon Hay N	Through	319vph	0s / LOS A	0.2veh
		Right	12vph	7s / LOS A	0.2veh
	Leistrella	Left	165vph	9s / LOS A	1.1veh
		Right	95vph	17s / LOS C	1.2veh
2038 With Rezoning	Hoon Hay S	Left	74vph	5s / LOS A	-
		Through	453vph	-	-
	Hoon Hay N	Through	319vph	0s / LOS A	0.2veh
		Right	14vph	8s / LOS A	0.2veh
	Leistrella	Left	240vph	9s / LOS A	1.9veh
		Right	139vph	19s / LOS C	2.1veh

Table 5: Summary of SIDRA Outputs- PM Peak

Period	Approach	Movement	Volume	Average Delay	95% Queue Length
2038 Base	Hoon Hay S	Left	70vph	5s / LOS A	-
		Through	300vph	-	-
	Hoon Hay N	Through	417vph	1s / LOS A	1.0veh
		Right	86vph	7s / LOS A	1.0veh
	Leistrella	Left	58vph	6s / LOS A	0.3veh
		Right	40vph	15s / LOS C	0.5veh
2038 With Rezoning	Hoon Hay S	Left	90vph	5s / LOS A	-
		Through	300vph	-	-
	Hoon Hay N	Through	417vph	1s / LOS A	1.3veh
		Right	111vph	7s / LOS A	1.3veh
	Leistrella	Left	85vph	7s / LOS A	0.4veh
		Right	60vph	17s / LOS C	0.8veh

11.1.4 Intersection Assessment

The analysis summarised above shows that the intersection will be expected to operate similarly without and with the additional residential development.

Delays representative of a level of service C on Leistrella Road during peak periods will remain acceptable for a local road intersection on an arterial road. Only a low level of queuing of 2-3 vehicles is anticipated. Drivers will safely be able to wait for appropriate gaps to safely turn into.

The volume of right turn movements from Hoon Hay Road is relatively high during the evening when people are returning home. While the opposing northbound through movement is the lower volume of the through movements, drivers will regularly face short delays when waiting to turn right into Leistrella Road. Currently with the parking lane opposite the intersection, there is no room for a southbound vehicle to pass a vehicle waiting to turn right, meaning any delays for the right turn movement could impact through vehicle movement. This is typical along corridors such as this, where drivers need to be ready to slow and potentially stop momentarily while a vehicle turns right. Generally, this arrangement results in slower vehicle speeds which is desirable in what is a residential environment. It is noted that the nearby Rose Street is a much higher volume road than Leistrella Road and it operates without right turn provision.

11.2 Cashmere Road / Leistrella Road Intersection

The Cashmere Road / Leistrella Road intersection has been built to a high standard with a right turn bay on Cashmere Road. It is expected that this intersection layout will remain appropriate with the small increases in traffic volume anticipated as a result of the proposed additional residential development.

11.3 New Cashmere Road Intersection

As outlined earlier, a new minor local road intersection is proposed on Cashmere Road approximately 150m west of Leistrella Road. This is to provide local access and connectivity within the new residential area.

The Christchurch City Council Infrastructure Design Standard specifies that arterial / local road intersections should be a minimum of 150m apart (centreline to centreline). Further to this, it states that this distance should be doubled for intersections on the same side of the road to allow for future intersections on the opposite side of the road. In this location, no future road is expected on the opposite side of Cashmere Road given the 'High Flood Hazard Management Area' Natural Hazard Overlay that exists on the land to the south.



It is considered that a 150m separation between local roads in an urban setting is adequate to ensure that vehicle movements at the intersections / conflict points are suitably separated. It is noted that Kaiwara Street and Mavin Road to the east of the subject site are only approximately 110m apart, with Opihi Street between them on the opposite side of Cashmere Road.

The design of the intersection and associated upgrades to Cashmere Road would be considered at the subdivision stage. The existing ODP anticipates road widening along the front of the subject site so that cycle lanes can be provided, as has been done past the Leistrella Road intersection.

It will be preferable that the new local road connects through to adjacent development, e.g. to Emily Knowles Drive, for local area connectivity and the ODP includes an indicative connection.

12 Consistency with District Plan Policy

Objective 7.2.1 'Integrated transport system for Christchurch District' is the relevant objective related to land use and the transport network. The objective is:

7.2.1 Objective - Integrated transport system for Christchurch District

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

Policies considered relevant to the proposed rezoning under this objective are copied below with comment on the consistency of the proposed rezoning with these following.

7.2.1.1 Policy - Establishment of a road classification system

- a. Identify a road network that connects people and places and recognises different access and movement functions for all people and transport modes, whilst:
 - i. supporting the safe and efficient operation of the transport network;
 - ii. providing for public places in accordance with the function of the road to enable community activities including opportunities for people to interact and spend time;
 - iii. providing space for utility services;
 - iv. reflecting neighbourhood identity and amenity values;
 - v. recognising cross-boundary connections with adjoining districts; and
 - vi. providing for the efficient and effective functioning of the strategic transport network, including for freight.

7.2.1.2 Policy - High trip generating activities

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



7.2.1.6 Policy - Promote public transport and active transport

- a. Promote public and active transport by:
- i. ensuring new, and upgrades to existing, road corridors provide sufficient space and facilities to promote safe walking, cycling and public transport, in accordance with the road classification where they contribute to the delivery of an integrated transport system;
 - ii. ensuring activities provide an adequate amount of safe, secure, and convenient cycle parking and, outside the Central City, associated end of trip facilities;
 - iii. encouraging the use of travel demand management options that help facilitate the use of public transport, cycling, walking and options to minimise the need to travel; and
 - iv. requiring new District Centres to provide opportunities for a public transport interchange.
 - v. encouraging the formation of new Central City lanes and upgrading of existing lanes in the Central City, where appropriate, to provide for walking and cycling linkages and public spaces.
 - vi. developing a core pedestrian area within the Central City which is compact, convenient and safe, with a wider comprehensive network of pedestrians and cycle linkages that are appropriately sized, direct, legible, prioritized, safe, have high amenity, ensure access for the mobility impaired and are free from encroachment.

As outlined, it is considered appropriate that the relatively small additional areas of residential development are treated as small extensions of the existing / zoned residential areas and they are served by extensions of the existing / planned local road network. It has been assessed that the additional traffic volumes that could be generated will be able to be accommodated on the existing / planned local road network, with some minor upgrade works recommended in the local road network between the subject site and Hoon Hay Road. Development of the additional residential areas, particularly that in the north of the subject site, will be able to integrate with the stormwater reserves to the west.

The subject site is well located for uptake of non-private vehicle travel modes. Development of the northern section of the subject site will allow a connection to be made for walking and cycling from Cashmere Road to Sparks Road and the Quarryman's Trail cycleway. Development of the subject site will also be well connected to existing residential areas to the east for walking and cycling towards destinations including Pioneer Centre and Cashmere High School. Recommendations have been made to improve the pedestrian provision along Leistrella Road and across Hoon Hay Road.

There are three bus routes in the area which all connect to the nearby Barrington Mall and beyond. The southern additional residential area will be well served by the bus route on Cashmere Road, while the central and northern areas will have similar accessibility to their nearest bus routes as the immediately adjacent existing / zoned residential areas.

It is considered that the proposed additional residential areas are logical extensions of the existing / zoned residential areas from a transport perspective. Allowing for the connection from Cashmere Road and the existing ODP area to the Quarryman's Trail cycleway will be a good outcome for the wider area enabled by the proposed ODP.

13 Conclusion

The proposed rezoning will allow an extra approximately 230 residential lots to be developed in three areas adjacent to zoned residential land within the Hendersons East ODP area.

A revised ODP has been prepared and includes:

- An active mode connection from the ODP area to Sparks Road and the Quarryman's Trail cycleway;
- A local road connection to Northaw Street; and
- An additional local road intersection on Cashmere Road 150m west of Leistrella Road.

It has been assessed that the proposed ODP provides a good level of connectivity between the subject site and the surrounding existing / zoned residential areas. The active mode connection to Sparks Road and the Quarryman's Trail cycleway is a positive outcome for the wider area, while good connectivity will be achieved to the existing neighbourhoods to the east. Improved pedestrian provision has been recommended along Leistrella Road and across Hoon Hay Road to allow safe and convenient access to destinations east of Hoon Hay Road.

Traffic modelling carried out indicates that traffic generated by the additional 230 lots will be readily accommodated on the wider arterial road network. The Hoon Hay Road / Leistrella Road intersection is seen as the critical intersection in terms of access to / from the arterial road network given the potential attractiveness of the Leistrella Road route for travel towards the north / east. Detailed analysis of the intersection suggests that it will continue to operate with acceptable delays and levels of service during peak periods. It has been assessed that the existing local roads adjacent to the subject site will be able to accommodate the additional traffic, with some minor recommendations relating to traffic management made.

It is concluded that the additional residential development areas that will be enabled by the proposed rezoning will be logical, well-connected, accessible extensions of the existing / zoned residential areas and the proposed rezoning can be supported from a transport perspective.



Appendices

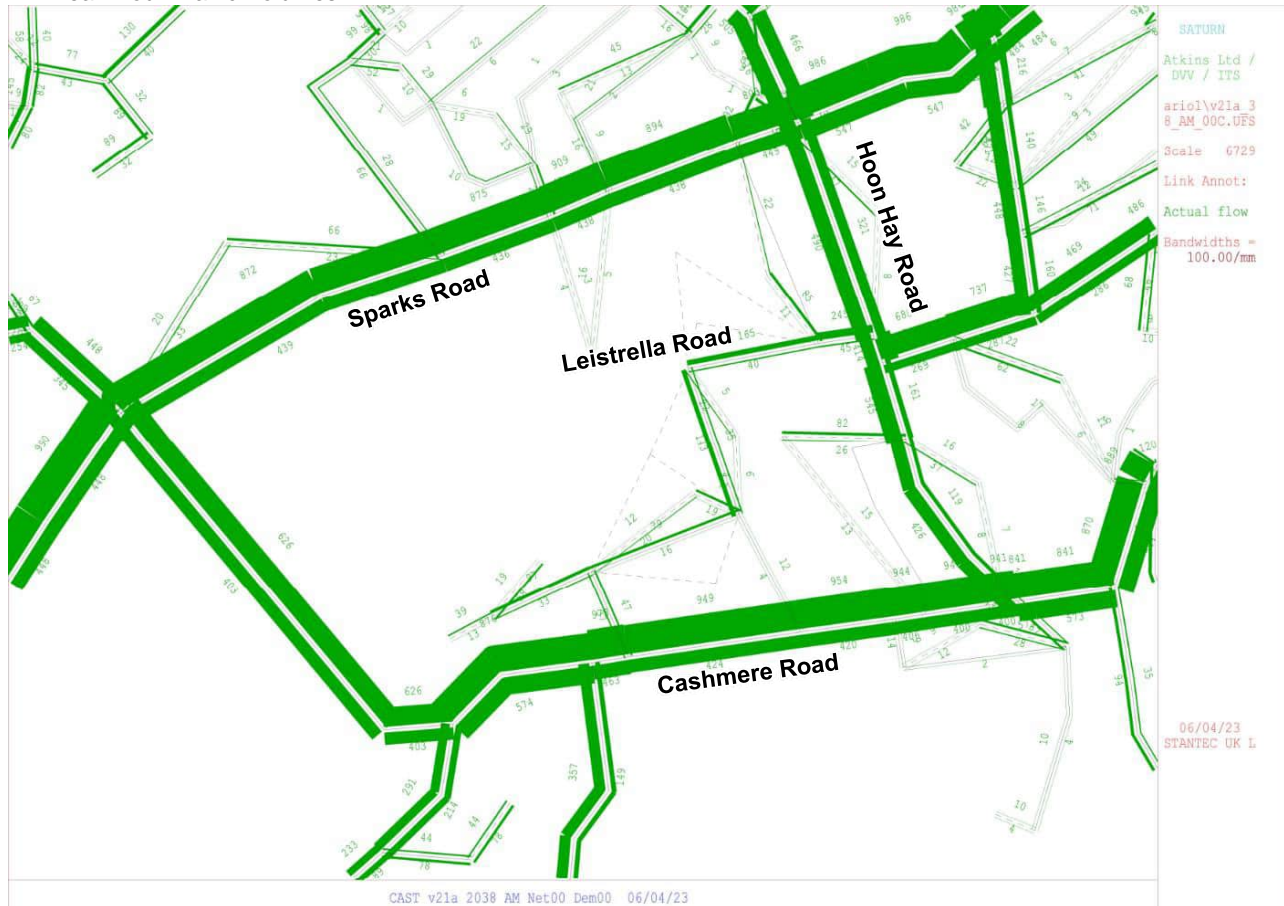
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Appendix A CAST Modelling Outputs

A.1 2038 'Base' Model Outputs

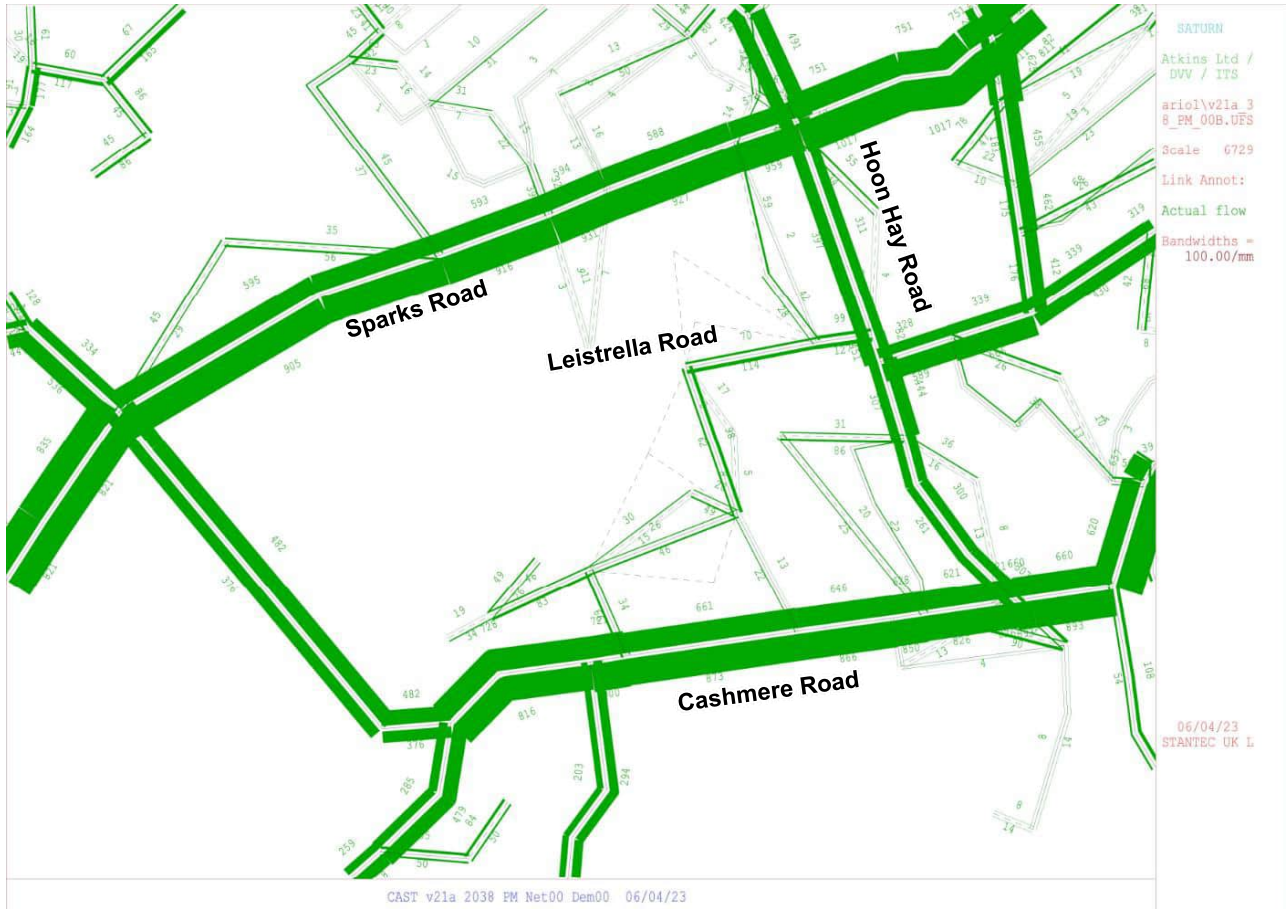
AM Peak Hour Traffic Volumes:



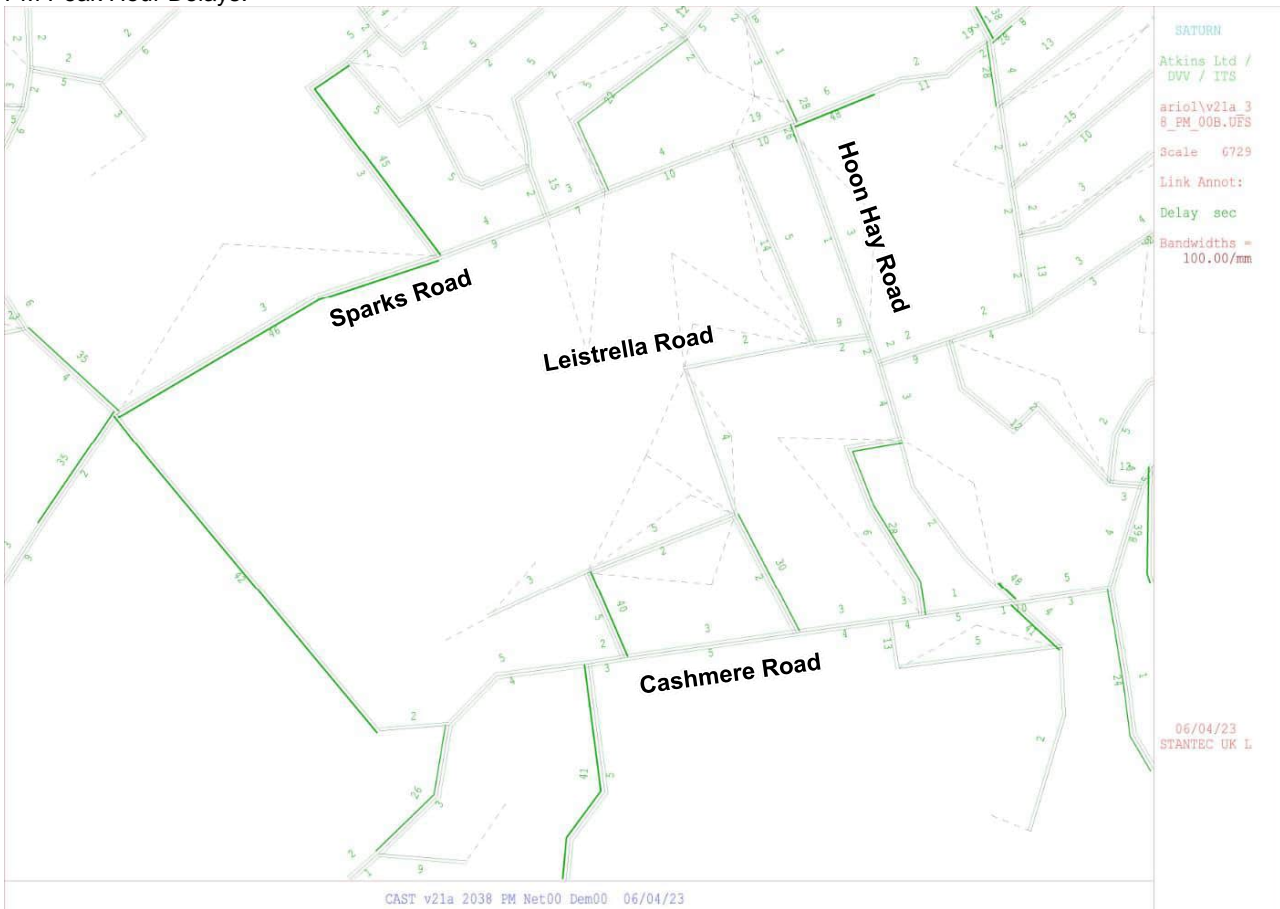
AM Peak Hour Delays:



PM Peak Hour Traffic Volumes:



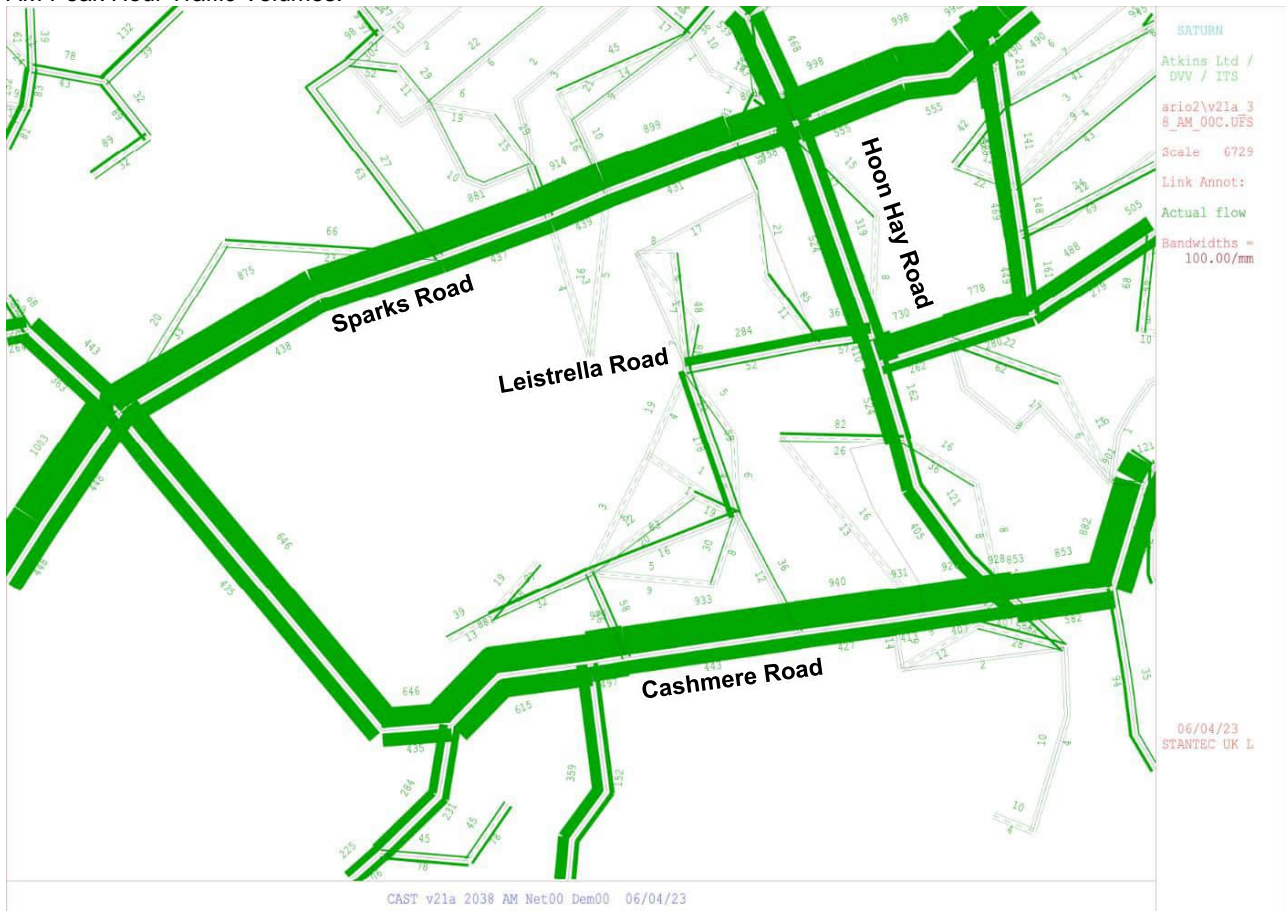
PM Peak Hour Delays:



A.2 2038 'With Rezoning' Model Outputs



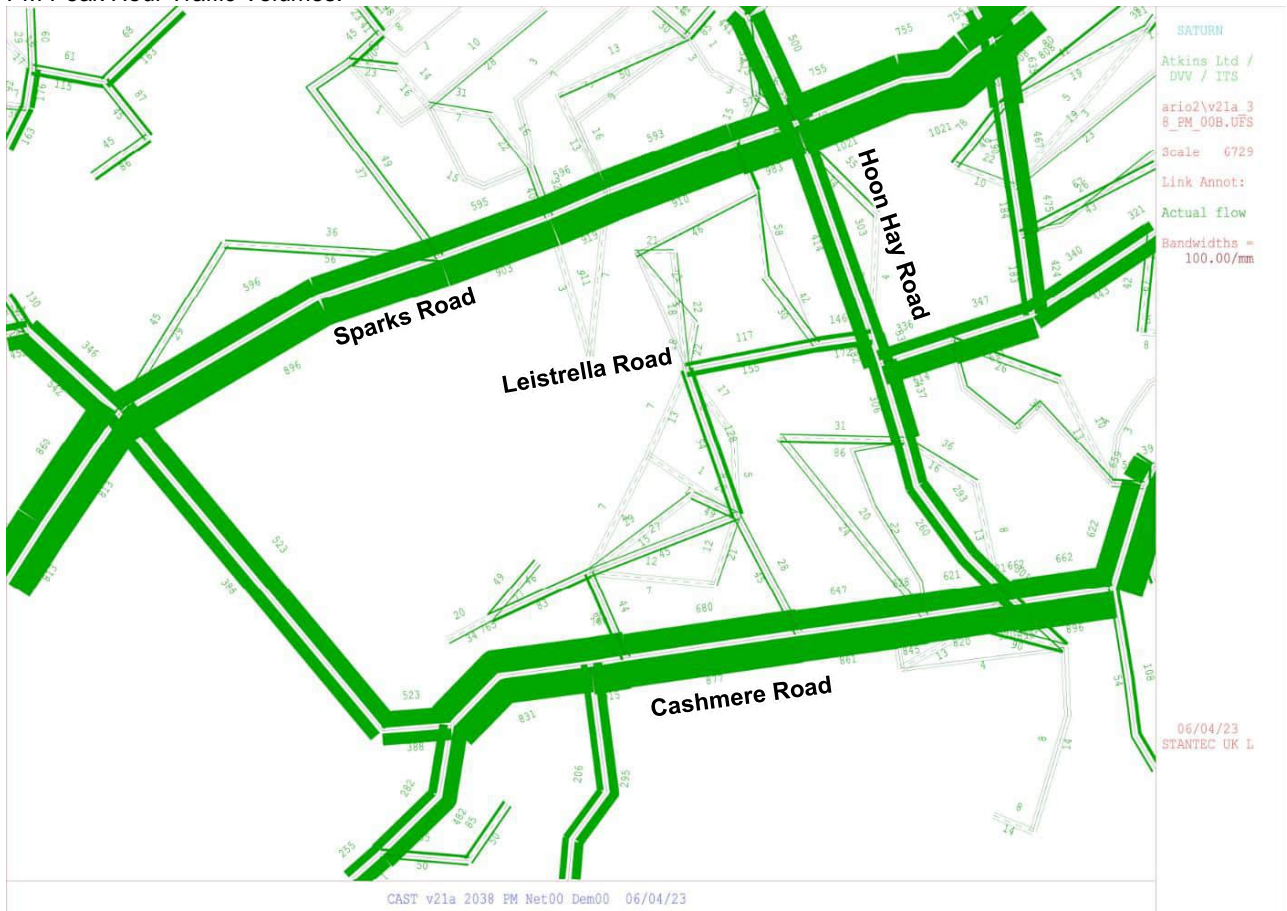
AM Peak Hour Traffic Volumes:



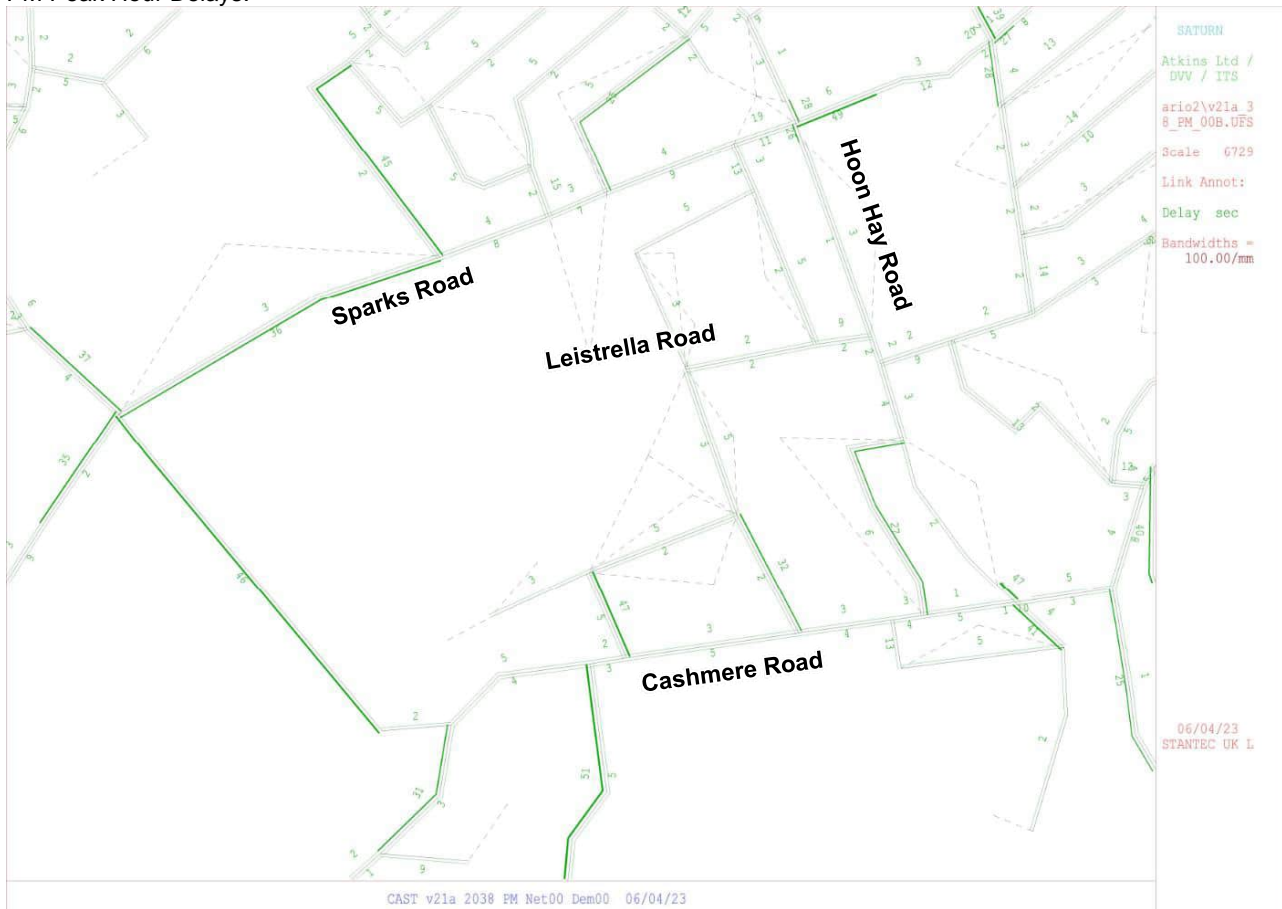
AM Peak Hour Delays:



PM Peak Hour Traffic Volumes:

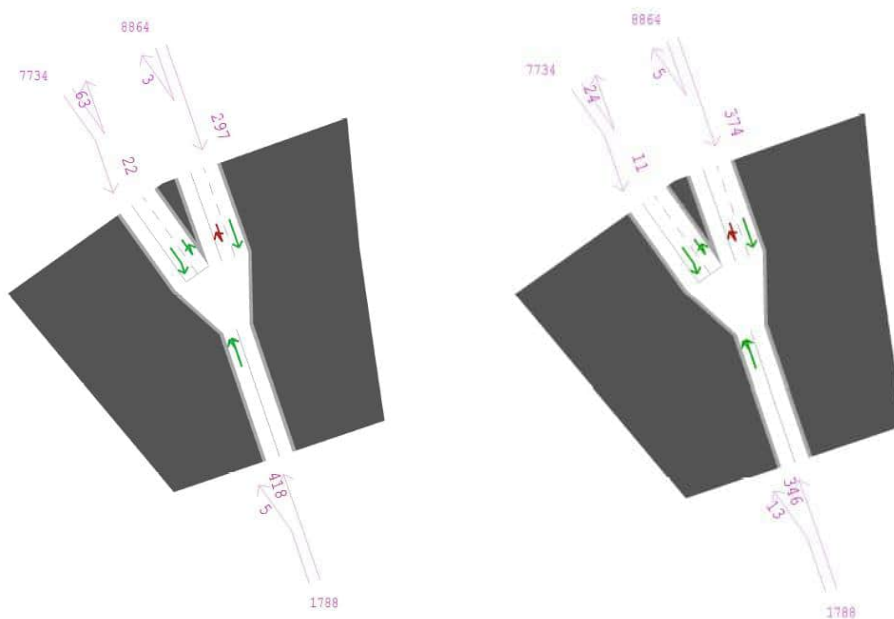


PM Peak Hour Delays:

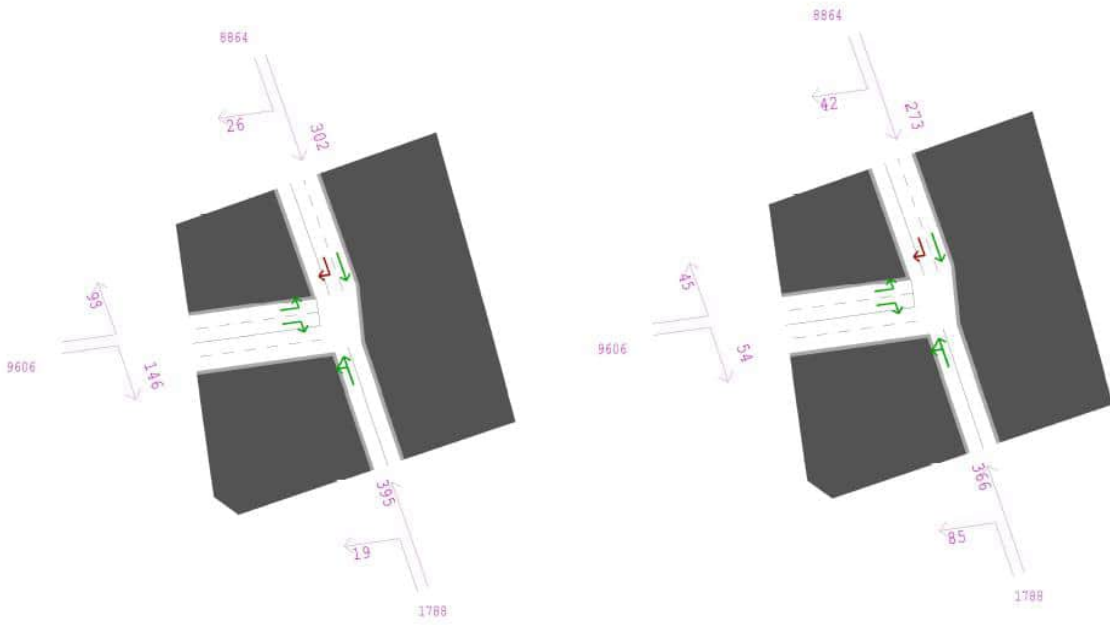


A.3 Hoon Hay Road / Leistrella Road Traffic Volume Plots

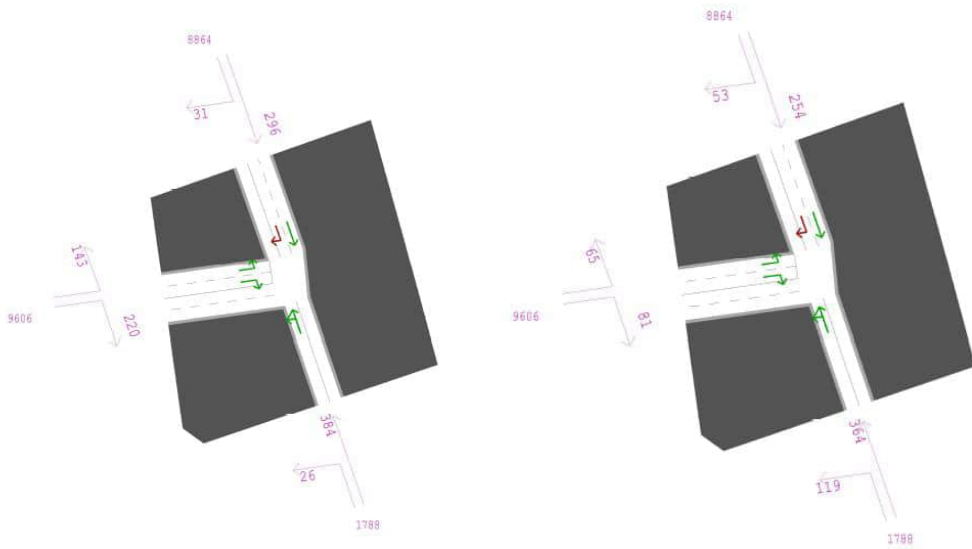
2021 CAST Model Volumes, AM (Left) and PM Peak (note acute angle between roads related to model representation and does not affect forecast T-intersection performance)



2038 CAST 'Base' Model Volumes, AM (Left) and PM Peak



2038 CAST 'With Rezoning' Model Volumes, AM (Left) and PM Peak



Appendix B Hoon Hay Road / Leistrella Road Intersection SIDRA Outputs

2038 Base AM Peak

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[Total veh/h]	HV] %	[Total veh/h]	HV] %				[Veh. veh]	[Dist] m				
South: Hoon Hay S														
1	L2	64	1.0	67	1.0	0.286	4.7	LOS A	0.0	0.0	0.00	0.07	0.00	49.0
2	T1	453	3.0	477	3.0	0.286	0.1	LOS A	0.0	0.0	0.00	0.07	0.00	49.5
Approach		517	2.8	544	2.8	0.286	0.7	NA	0.0	0.0	0.00	0.07	0.00	49.4
North: Hoon Hay N														
8	T1	319	3.0	336	3.0	0.188	0.2	LOS A	0.2	1.2	0.06	0.02	0.06	49.7
9	R2	12	1.0	13	1.0	0.188	7.4	LOS A	0.2	1.2	0.06	0.02	0.06	49.0
Approach		331	2.9	348	2.9	0.188	0.4	NA	0.2	1.2	0.06	0.02	0.06	49.7
West: Leistrella														
10	L2	165	1.0	174	1.0	0.263	8.5	LOS A	1.1	7.4	0.55	0.80	0.59	44.4
12	R2	95	1.0	100	1.0	0.312	16.8	LOS C	1.2	8.7	0.78	0.96	0.94	40.0
Approach		260	1.0	274	1.0	0.312	11.5	LOS B	1.2	8.7	0.64	0.86	0.72	42.7
All Vehicles		1108	2.4	1166	2.4	0.312	3.1	NA	1.2	8.7	0.17	0.24	0.19	47.7

2038 Base PM Peak

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[Total veh/h]	HV] %	[Total veh/h]	HV] %				[Veh. veh]	[Dist] m				
South: Hoon Hay S														
1	L2	70	1.0	74	1.0	0.205	4.6	LOS A	0.0	0.0	0.00	0.10	0.00	48.8
2	T1	300	3.0	316	3.0	0.205	0.1	LOS A	0.0	0.0	0.00	0.10	0.00	49.3
Approach		370	2.6	389	2.6	0.205	0.9	NA	0.0	0.0	0.00	0.10	0.00	49.2
North: Hoon Hay N														
8	T1	417	3.0	439	3.0	0.305	0.6	LOS A	1.0	6.8	0.23	0.11	0.23	48.8
9	R2	86	1.0	91	1.0	0.305	6.6	LOS A	1.0	6.8	0.23	0.11	0.23	48.1
Approach		503	2.7	529	2.7	0.305	1.6	NA	1.0	6.8	0.23	0.11	0.23	48.7
West: Leistrella														
10	L2	58	1.0	61	1.0	0.073	6.4	LOS A	0.3	1.8	0.40	0.62	0.40	45.6
12	R2	40	1.0	42	1.0	0.137	15.2	LOS C	0.5	3.2	0.75	0.89	0.75	40.7
Approach		98	1.0	103	1.0	0.137	10.0	LOS B	0.5	3.2	0.55	0.73	0.55	43.4
All Vehicles		971	2.5	1022	2.5	0.305	2.2	NA	1.0	6.8	0.17	0.17	0.17	48.3

2038 With Rezoning AM Peak

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[Total veh/h]	HV] %	[Total veh/h]	HV] %				[Veh. veh]	[Dist] m				
South: Hoon Hay S														
1	L2	74	1.0	78	1.0	0.292	4.7	LOS A	0.0	0.0	0.00	0.08	0.00	48.9
2	T1	453	3.0	477	3.0	0.292	0.1	LOS A	0.0	0.0	0.00	0.08	0.00	49.4
Approach		527	2.7	555	2.7	0.292	0.7	NA	0.0	0.0	0.00	0.08	0.00	49.4
North: Hoon Hay N														
8	T1	319	3.0	336	3.0	0.191	0.2	LOS A	0.2	1.4	0.07	0.02	0.07	49.6
9	R2	14	1.0	15	1.0	0.191	7.5	LOS A	0.2	1.4	0.07	0.02	0.07	48.9
Approach		333	2.9	351	2.9	0.191	0.5	NA	0.2	1.4	0.07	0.02	0.07	49.6
West: Leistrella														
10	L2	240	1.0	253	1.0	0.382	9.4	LOS A	1.9	13.4	0.59	0.87	0.76	43.9
12	R2	139	1.0	146	1.0	0.463	19.4	LOS C	2.1	14.8	0.83	1.03	1.18	38.8
Approach		379	1.0	399	1.0	0.463	13.1	LOS B	2.1	14.8	0.68	0.93	0.91	41.9
All Vehicles		1239	2.2	1304	2.2	0.463	4.5	NA	2.1	14.8	0.23	0.32	0.30	46.9



2038 With Rezoning PM Peak

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Sat'n	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Hoon Hay S														
1	L2	90	1.0	95	1.0	0.216	4.6	LOS A	0.0	0.0	0.00	0.13	0.00	48.7
2	T1	300	3.0	316	3.0	0.216	0.1	LOS A	0.0	0.0	0.00	0.13	0.00	49.2
Approach		390	2.5	411	2.5	0.216	1.1	NA	0.0	0.0	0.00	0.13	0.00	49.1
North: Hoon Hay N														
8	T1	417	3.0	439	3.0	0.330	0.8	LOS A	1.3	9.5	0.29	0.14	0.30	48.5
9	R2	111	1.0	117	1.0	0.330	6.8	LOS A	1.3	9.5	0.29	0.14	0.30	47.8
Approach		528	2.6	556	2.6	0.330	2.1	NA	1.3	9.5	0.29	0.14	0.30	48.4
West: Leistrella														
10	L2	85	1.0	89	1.0	0.107	6.5	LOS A	0.4	2.8	0.41	0.63	0.41	45.5
12	R2	60	1.0	63	1.0	0.221	17.2	LOS C	0.8	5.5	0.79	0.93	0.85	39.8
Approach		145	1.0	153	1.0	0.221	10.9	LOS B	0.8	5.5	0.57	0.75	0.59	43.0
All Vehicles		1063	2.3	1119	2.3	0.330	2.9	NA	1.3	9.5	0.22	0.22	0.23	47.8

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Appendix H. Economic Impact Assessment Report

Cashmere Road Plan Change

Economic impact assessment

Prepared for Cashmere Park Ltd, Robert Brown, and Hartward
Investment Trust

Final

1 May 2023

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1 Introduction

Formative Limited was commissioned by Cashmere Park Ltd, Robert Brown, and the Hartward Investment Trust (“the applicants”) to undertake an economics assessment of a proposed private plan change at Halswell, in Christchurch.

1.1 Background

The applicants own some 25.6ha of land that is located between Cashmere Road and Sparks Road, Hornby, Christchurch (“the Site”). The Site is zoned Residential New Neighbourhood (“RNN”) and Rural Urban Fringe (“RuUF”). The RNN zoned land allows for significant residential development and is adjacent to an area of RNN immediately east of the Site which is currently being developed for residential dwellings (the Cashmere Park subdivision). The minimum allotment size in the RuUF zone is 4ha.

Figure 1.1: Location of the Site



1.2 Report structure

This report is structured as follows:

- ❖ Section 2 summarises the existing and proposed uses of the Site.
- ❖ Section **Error! Reference source not found.** reviews literature commissioned by Christchurch City Council that is used to assess Council’s compliance with the National Policy Statement on Urban Development (“NPS-UD”).
- ❖ Section 4 assesses the sufficiency of dwelling supply within the locality around the Site.
- ❖ Section 5 assesses the economic costs and benefits of residential development of the Site.

- ❖ Section 6 draws together the findings from the previous sections to assess whether the proposed rezoning would be allowed under clause 3.6 of the National Policy Statement on Highly Productive land (“NPS-HPL”).
- ❖ Section 7 presents conclusions about the suitability of the proposed rezoning from an economics perspective.

2 Existing and proposed use of the Site

2.1 Existing rural activities

We understand that the Site is currently used for grazing a small number of cattle and horses. Due to the high ground water levels in the area stock numbers are very limited and cattle are removed during winter months.

A further constraint to productive agricultural use of the Site is the proximity to residential dwellings. The Site shares a boundary with some 50 residential dwellings, soon to be close to 70 once the consented Cashmere Park development to the south-east of the Site is completed. There is also an area of as yet undeveloped RNN zone through the middle of the Site, and many other dwellings nearby but not immediately adjacent. We understand that the close proximity of these properties causes difficulties with reverse sensitivity (particularly noise), and that disturbance of livestock, particularly due to wandering dogs, also limits agricultural use of the Site.

Both of these factors (high water levels and reverse sensitivity) mean that there are significant constraints to productive agricultural use of the Site.

2.2 Potential non-agricultural use of the Site

The high ground water levels in the area have been assessed by DHI,¹ which concluded that those levels, and flood hazards, are not a constraint to future urban development of most of the Site. We understand from that modelling that limited parts of the Site, including the north-west corner, and a small part of the south-west corner on Cashmere Road is not suitable for residential development, but the remainder is, and the District Plan flood overlays across parts of the Site are no longer applicable.

We understand that the parts that are not suitable for development would be used for open space or as a stormwater management area, and that parts of the Site would be raised to mitigate any remaining risk. Taking those constraints into account, there would remain about 16.8ha out of the Site's total area of 25.6ha that would be suitable to accommodate residential dwellings. That 16.8ha is currently zoned RuUF (11.4ha) and RNN (5.4ha). Indicatively that 16.8ha would be expected to accommodate an average of 20-25 dwellings/ha, based on recent developments in the area, and would at that development intensity yield somewhere between 336 and 420 dwellings. One potential development configuration is shown in Figure 2.1, which includes a range of densities.

¹ "Cashmere Park Extension modelling Jan 2023", DHI, 28 February 2023

Figure 2.1: Indicative site layout



3 NPS-UD research

Christchurch City Council has had a number of research reports and assessments completed in accordance with requirements under the NPS-UD. That research is relevant to this assessment, and to guide this assessment we have used and rely on the following documents:

- ❖ “Greater Christchurch Housing Development Capacity Assessment”, Greater Christchurch Partnership, 30 July 2021 (the “HDCA”)
- ❖ “Housing Demand and Need in Greater Christchurch”, Livingston and Associates Ltd, July 2021 (the “Housing Demand” report).
- ❖ “New Medium Density Residential Standards (MDRS) Assessment of Housing Enabled”, The Property Group, January 2022 (the “MDRS report”)²
- ❖ “Christchurch City Council Updated Housing Capacity Assessment”, Christchurch City Council, February 2023 (the “updated HCA”)³

This section provides a summary of the relevant parts of those documents, to guide the following assessment.

3.1 HDCA

The HDCA was published in 2021, relying on data and assessment from 2020 and earlier. The HDCA is now somewhat out of date with respect to supply-side (capacity) estimates, given the significant changes mandated by the Resource Management (Enabling Housing Supply and Other Matters) Amendment Act 2021 (“EHA”). The EHA is an amendment to the RMA that seeks to increase the density of housing in most residential zones (and some centre zones) in all Tier 1 urban areas.

The EHA requires two key changes which can be expected to increase the quantum of residential capacity in the urban areas of Christchurch. The first is the required introduction of the Medium Density Residential Standard (“MDRS”). The second is the requirement to develop an Intensification Planning Instrument (“IPI”) which expedites the intensification in Policy 3 of the NPSUD (in and around centre zones). In summary, this will mean that potential “plan enabled” capacity within the urban areas of Christchurch can be expected to increase and that this will occur in the coming years.

Christchurch City Council has recently (17 March 2023) notified the Housing and Business Choice Plan Change (“PC14”) to implement the MDRS. PC14 will implement an intensification policy that will result in much of the residential zones throughout Christchurch having increased medium density standard

² Appendix 38 of the section 32 reports for PC14

³ Appendix 1 of the section 32 reports for PC14

rules applied, and would increase the amount of plan enabled supply within the urban area by a considerable amount.

The HDCA provided no spatially detailed information about residential demand and supply, even if spatial detail may have been included in the underlying modelling, with information published in the report limited to territorial authority totals for Christchurch City, and Selwyn and Waimakariri Districts.

3.2 Housing Demand report

The Housing Demand report was released around the same time as the HDCA. While supply-side (capacity) estimates are now outdated as a result of the EHA's MDRS, and PC14, demand side estimates as are presented in the Housing Demand report remain relevant. The Housing Demand report contains the most recent household projections at a sub-City/subarea level that we are aware of, and was based on population projections provided by the Greater Christchurch Partnership.⁴ The HDCA did not present subarea demand projections, and nor does the updated HCA.

The household projections presented in the Housing Demand report were presented for 10 subareas covering Christchurch City,⁵ defined as groupings of Statistical Area 2 areas ("SA2").⁶ The two subareas most relevant to this assessment for defining a 'locality' (in terms of the NPS-HPL) are 'South West' and 'Port Hills'. We have included the parts of those subareas closest to the Site to be the locality applied for this assessment, using the following rationale:

- ❖ It is our opinion that not all of Port Hills is relevant because it is a very long subarea that extends nearly 20km along the northern base of the Port Hills, with its eastern-most parts being part of a distinct and separate locality from the western parts which are closer to the Site. For that reason we have split the Port Hills subarea into two, and retained the western part for this assessment (Figure 3.1).
- ❖ We have also split the large South West catchment to better reflect what we understand to be the 'locality' that the Site is within. The north-western parts of the catchment towards Hornby and Yaldhurst are somewhat distinct from the locality we have defined, being mostly north of the Southern Motorway, and located either side of the large Hornby industrial area. For that reason we have split the South West subarea into two, and retained the eastern part for this assessment.
- ❖ The locality defined is geographically large, and includes some 25% of Christchurch's developed urban area. A much larger catchment would lack the ability to present a

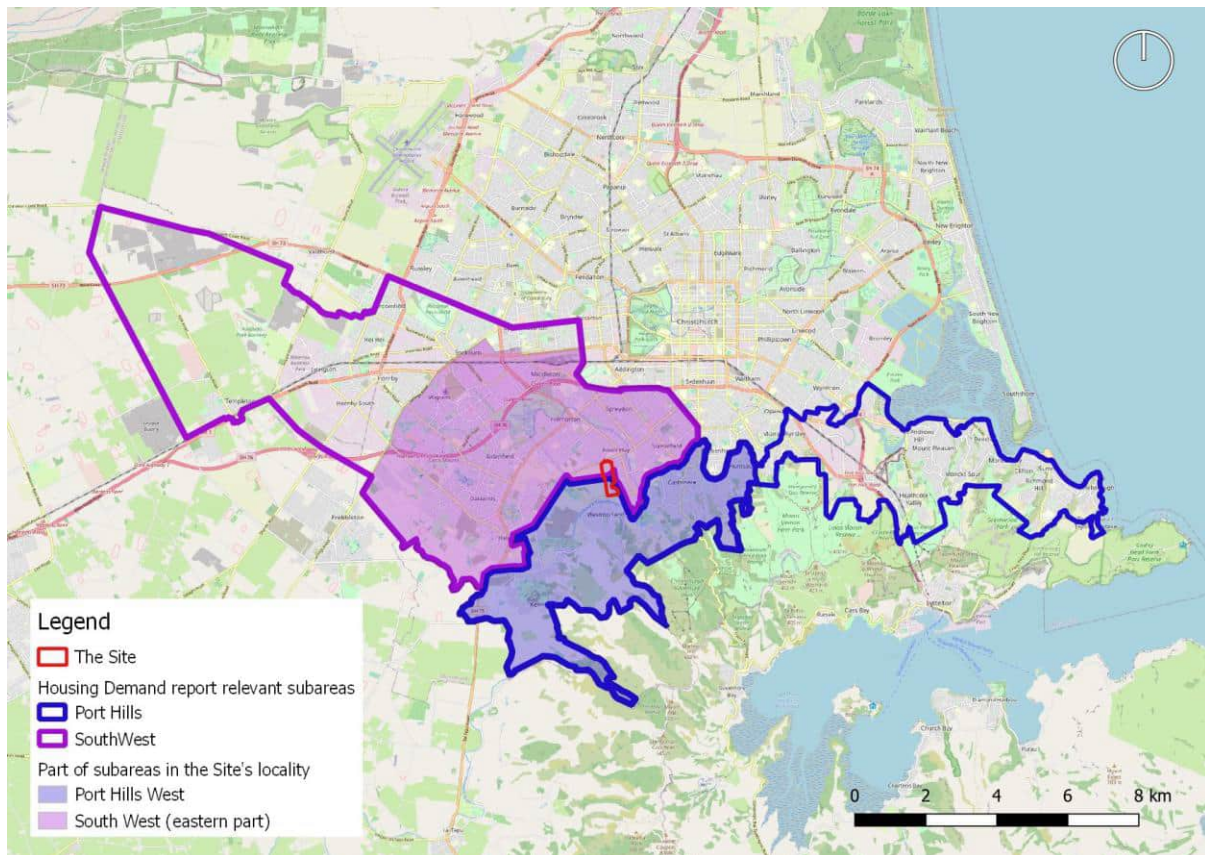
⁴ Housing Demand report, page 21

⁵ With a further six subareas in each of Waimakariri and Selwyn Districts

⁶ Spatial concordances are provided in Appendix 1 of the Housing Demand report

common sense of 'place', and would not be consistent with our understanding of what a 'locality' is intended to be in the NPS-HPL.⁷

Figure 3.1: Locality definition from Housing subareas



3.3 MDRS report

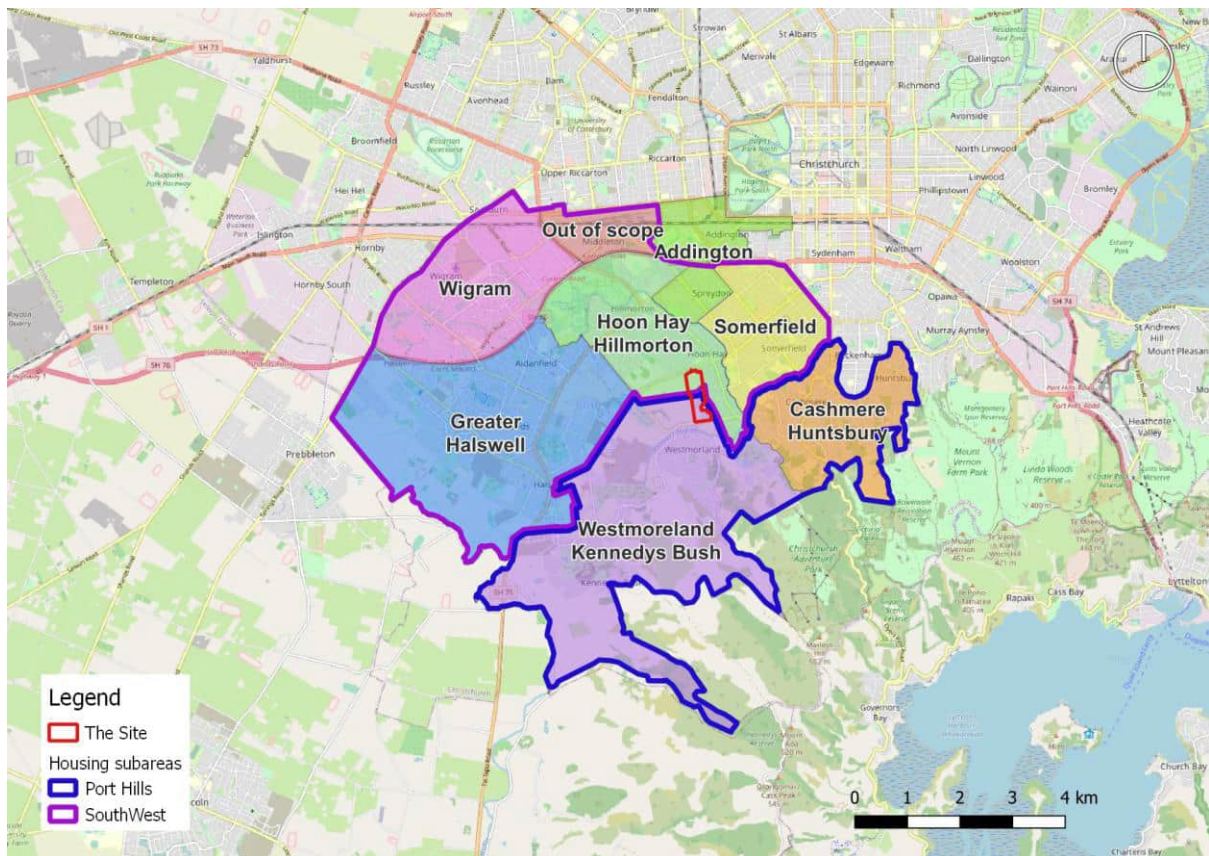
The MDRS report was commissioned by Council to analyse the potential yield of the MDRS in Christchurch, to serve as an evidence base for PC14. The total development capacity calculated in the report was plan enabled capacity of 222,478 dwellings across all of Christchurch City, reducing to 58,188 feasible dwellings.⁸

The report assessed plan enabled and feasible dwelling capacity for 26 catchments across Christchurch, of which in our opinion seven (27% by number, and around 25% of the land area of urban Christchurch) represent an approximation of the locality relevant to this assessment, as shown in Figure 3.1. Those seven catchments (Figure 3.2) represent a geographic area that has locational attributes similar to the Site, being in Christchurch's south-west, south-east of the railway and the Southern Motorway, north of the Port Hills, and predominantly urban.

⁷ For example, clause 3.6(3)(a) links locality to a location where demand for additional development capacity has been identified through a Housing and Business Assessment

⁸ MDRS report, table 9, page 32

Figure 3.2: Catchments in the locality of the Site



3.4 Updated HDCA

Like the 2021 HDCA, the updated HDCA provided no spatially detailed information about residential demand and supply, even if spatial detail may have been included in the underlying modelling, with information published in the report limited to territorial authority totals for Christchurch City, and Selwyn and Waimakariri Districts.

At a City level the updated HDCA concludes⁹ that there is plan enabled capacity for 875,000 additional dwellings, or 331,000-544,000 dwellings once the reduced capacity as a result of qualifying matters is accounted for. Feasible capacity is significantly less than plan enabled capacity, with around 85% of plan-enabled dwellings modelled to be not feasible to develop within the next ten years (the NPS-UD medium term). That provides feasible dwelling capacity estimates of 48,000-88,000 additional dwellings (plus a further 6,000 in undeveloped greenfield areas), depending on the qualifying matters applied. That range (48,000-88,000) is consistent with the capacity estimates presented at a more spatially detailed resolution in the MDRS report, as discussed above, which assessed capacity of 58,188 feasible dwellings within Christchurch City.

⁹ Updated HDCA, Table 2.1, page 4

The demand projections used in the updated HDCA are consistent (at a Greater Christchurch level) with those used in the Housing Demand report, as described above, being an increase of 77,100 households in the period 2021 to 2051.

The consistency of the updated HDCA with the Housing Demand report (on the demand side) and the MDRS report (on the supply side) at a Christchurch City level confirms that it is appropriate to use the spatially detailed data in those two reports as the basis for the following assessment in section 4.

4 Contribution to housing capacity

In this section we summarise residential dwelling demand and capacity estimates and projections, using data provided in Council reports, to estimate sufficiency of supply in the locality of the development (the area defined in Figure 3.1).

4.1 Locality demand

Household projections are taken from the Livingston and Associates Housing Demand report. In Figure 4.1 we show the projections from that report for all of Christchurch.

Figure 4.1: Christchurch subarea household growth projections¹⁰

	2021	2024	2031	2041	2051	2021-2051
Banks Peninsula	1,550	1,580	1,670	1,730	1,720	170
Central City	4,510	5,610	6,690	8,240	9,890	5,380
Inner East	12,960	13,230	13,770	14,270	14,440	1,480
Inner West	8,280	8,450	8,890	9,360	9,630	1,350
Lyttelton Harbour	2,670	2,720	2,840	2,940	2,930	260
NorthEast	31,280	32,090	33,990	36,200	37,730	6,450
NorthWest	34,310	35,200	37,270	39,670	41,310	7,000
Port Hills	12,150	12,380	12,900	13,330	13,350	1,200
SouthEast	14,930	15,150	15,610	15,940	15,960	1,030
SouthWest	34,390	35,980	38,850	42,470	45,670	11,280
Subareas' total	157,030	162,390	172,480	184,150	192,630	35,600

The locality defined in Figure 3.1 for use in this study takes in parts of the South West and Port Hills subarea. We have used Census information relating to the distribution of households within each of the two subareas to split each of the subarea totals into the part inside and outside the locality. We have also interpolated the Housing Demand report data to Census years, by assuming linear growth in each period.

From that we derive the household growth projections in Figure 4.2, which show that there are currently an estimated 16,900 households living in the locality. The part of the locality within the South West subarea is home to 11,900 households (70% of locality total), and the Port Hills part is home to 5,000 households (30%). Total locality households are projected to increase by 1,700 in the next ten years (the medium term in the NPS-UD), and 3,800 households in the next 30 years (long-term), with 65% of that growth (1,100 households) projected to be located in the South West subarea part of the locality, and 35% (600 households) in the Port Hills subarea part.

¹⁰ Livingston and Associates "Housing Demand" report, table 3.8, page 32

Figure 4.2: Locality household growth projections

	2023	2028	2033	2038	2043	2048	2053
Household projections							
South West	11,900	12,600	13,000	13,400	13,800	14,100	14,400
Port Hills	5,000	5,200	5,600	5,800	5,900	6,100	6,300
Locality total	16,900	17,800	18,600	19,200	19,700	20,200	20,700
Household growth since 2023							
South West		700	1,100	1,500	1,900	2,200	2,500
Port Hills		200	600	800	900	1,100	1,300
Locality total		900	1,700	2,300	2,800	3,300	3,800

The Housing Demand report's data¹¹ shows that demand for new housing in this locality is projected to be mostly focused on standalone dwellings (just over 80%), with a minority share of multi-unit dwellings (less than 20%). The locality is expected to account for approximately 30% of new standalone dwellings in Christchurch, so standalone dwellings are expected to be very important within the locality.

4.2 Locality supply

As for demand, we summarise in this section residential development capacity estimates for the Site's locality with reference to the recent supply-side assessment produced for Christchurch City Council. The Property Group's 2022 MDRS report presents estimates of capacity across Christchurch as an input into PC14. The capacity estimates are disaggregated as follows:

- ❖ 26 catchments covering Christchurch, with some areas considered to be out of scope, by virtue of having no urban residential zoned land, including areas to the north and west of the urban area, the Port Hills, Hagley Park, the red zoned areas in the eastern suburbs and the Middleton industrial area.
- ❖ Theoretical (plan-enabled) and feasible dwelling capacity. The former category considers total capacity to accommodate new dwellings, whether or not those dwellings would be economic to construct, given land and build costs. Feasible capacity takes those constraints into account, and therefore yields much lower estimates of available capacity than the theoretical maximum yields.
- ❖ Comprehensive and infill capacity. The former category is sites that could be comprehensively developed or redeveloped to accommodate many new residential dwellings, whereas infill refers to more ad hoc yield available from dividing existing parcels to yield a smaller number of additional lots.

¹¹ Livingston and Associates "Housing Demand" report, table 3.14, page 42. These numbers assessed using the share of dwellings in each subarea that are within the locality from Census data, as for the approach earlier in this subsection.

The dwelling capacity estimates in the MDRS report show that across all of Christchurch there is estimated to be capacity for over 220,000 additional dwellings in theory, but when constraints to redevelopment feasibility are accounted for that number falls to 58,000, or 26% of the theoretical capacity (Figure 4.1).

As discussed in section 3.4, the updated HDCA that is used for PC14¹² uses capacity numbers that are consistent with the MDRS report's estimates, but provides no spatial breakdown that enables the use of capacity estimates for the locality for this assessment. For the part of Christchurch not inside the study area locality there is estimated to be capacity for over 150,000 additional dwellings in theory, but when constraints to redevelopment feasibility are accounted for that number falls to under 54,000, or 36% of the theoretical capacity.

Those conversion rates are consistent with assessments in other jurisdictions which reflect the large share of theoretical plan-enabled capacity that is not expected to be able to be developed in practice, due to development costs and the inability to justify redeveloping sites with newer dwellings, or on lots with small amounts of bare land. We also note that the share of capacity that is feasible is higher for the inner suburbs, and lower for the outer suburbs (including the locality).

The rows in Figure 4.3 that are coloured orange are those within the locality of the Site, as defined in Figure 3.1, and the same as used for the demand assessment in section 4.1. In the locality of the Site the MDRS report estimates theoretical dwelling capacity for an additional 72,230 lots, but feasible capacity of only an additional 4,316 dwellings. That conversion rate between theoretical and feasible is very low for the locality (6%) compared to the rest of Christchurch (36%), indicating that the locality has a very high proportion of theoretical capacity that is unlikely to be feasible to develop to accommodate new dwellings. That low share of feasible capacity in the locality applies to both comprehensive (13%) and infill (4%) properties, indicating that development of additional capacity in the area will be much harder for the market to achieve than in other parts of Christchurch.

¹² Plan Change 14 Section 32: Part 1, Appendix 1, Table 2.1, page 4

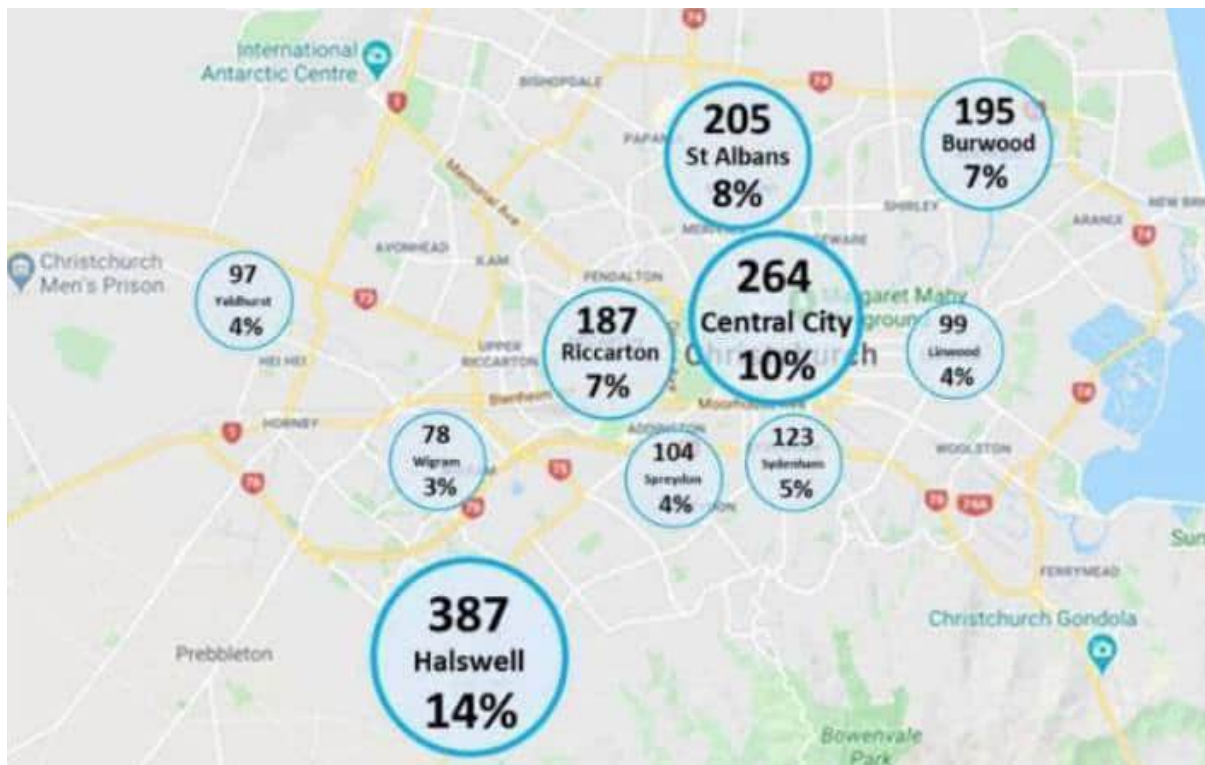
Figure 4.3: Christchurch catchment dwelling capacity estimates¹³

Catchment	Theoretical dwelling capacity			Feasible dwelling capacity		
	Comp.	Infill	Total	Comp.	Infill	Total
Addington	593	1,104	1,697	593	1,104	1,697
Avonhead/Ilam	2,063	2,943	5,006	16	19	35
Bishopdale	1,368	786	2,154	-	-	-
Burnside/Russley	2,115	2,148	4,263	31	169	200
Bush Inn/Ilam	1,933	976	2,909	6	5	11
Cashmere/Huntsbury	2,322	2,878	5,200	-	-	-
Fendalton/St Albans	4,905	10,902	15,807	4,905	10,902	15,807
Greater Halswell	3,758	27,386	31,144	-	6	6
Greater Hornby	2,330	5,155	7,485	2,330	5,155	7,485
Hoon Hay/Hillmorton	2,976	424	3,400	14	-	14
Linwood/Avonside	3,415	4,358	7,773	-	-	-
Lytelton	1,850	948	2,798	-	-	-
Mashlands/Waimairi Beach	4,055	27,744	31,799	-	-	-
New Brighton/Burwood	3,158	1,067	4,225	-	-	-
Northlands/Papanui	3,787	6,558	10,345	3,787	6,558	10,345
Northwood/Belfast	4,545	17,556	22,101	3	15	18
Riccarton Central	953	4,726	5,679	953	4,726	5,679
Shirley/Edgeware	4,141	4,082	8,223	4,141	4,082	8,223
Somerfield	1,507	1,090	2,597	1,507	1,090	2,597
St Martins/Waltham	2,009	1,607	3,616	2,009	1,607	3,616
Sumner/Mount Pleasant	3,218	8,354	11,572	-	14	14
Sydenham Central	450	1,989	2,439	450	1,989	2,439
Templeton	227	66	293	-	-	-
Westmoreland/Kennedys Bush	3,830	17,391	21,221	-	-	-
Wigram	1,139	5,832	6,971	2	-	2
Woolston/Heathcote	1,059	702	1,761	-	-	-
Total	63,706	158,772	222,478	20,747	37,441	58,188
Study area locality	16,125	56,105	72,230	2,116	2,200	4,316

That is the case notwithstanding, or possibly because of, observations in the MDRS report that indicate the Halswell area has recently been among the highest growth areas in Christchurch for new residential building consents (Figure 4.4). That recent buoyant construction economy in Halswell may have taken up much of the feasible capacity which previously existed, leaving the low amount identified to remain today. The recent popularity of the Halswell area, representative of the locality defined for this report, would indicate a likely ongoing attractiveness of the area, and that it would be appropriate to enable adequate supply to meet demand in the locality.

¹³ The Property Group's MDRS report, table 9, page 32

Figure 4.4: Location of new residential consents issued in 2020¹⁴



The latest information from Council suggests that there is currently remaining greenfield supply for 6,000 dwellings across all of Christchurch.¹⁵ There is no data provided on the location of this supply, although we consider that a large share will be either in the locality or to the north of the City.

4.3 Locality sufficiency of supply

We have not seen an assessment of sufficiency of supply at a sub-City level that is comparable to the locality defined for this assessment, so draw on the demand assessment for the locality presented in section 4.1, and the capacity assessment in section 4.2. Comparing those estimates indicates that there is expected to be a shortfall of feasible capacity in the locality of the Site (south-west Christchurch) within the next 10 years, once the required competitiveness margin prescribed in the NPS-UD is accounted for, as shown in Figure 4.5.

That data shows that demand in the locality is projected to increase at around 380-400 lots a year for the next 30 years (the NPS-UD long term). There is feasible dwelling capacity in the same locality for just over 4,300 additional dwellings, or enough to accommodate around 9.7 years of demand.

¹⁴ The Property Group's MDRS report, figure 6, page 20

¹⁵ Plan Change 14 Section 32: Part 1, Appendix 1, Table 2.1, page 4

Figure 4.5: Locality sufficiency of supply

	2023	2028	2033	2038	2043	2048	2053
Theoretical dwelling capacity							
Comprehensive	16,125	16,125	16,125	16,125	16,125	16,125	16,125
Infill	56,105	56,105	56,105	56,105	56,105	56,105	56,105
Total	72,230	72,230	72,230	72,230	72,230	72,230	72,230
Feasible dwelling capacity							
Comprehensive	2,116	2,116	2,116	2,116	2,116	2,116	2,116
Infill	2,200	2,200	2,200	2,200	2,200	2,200	2,200
Total	4,316	4,316	4,316	4,316	4,316	4,316	4,316
Demand							
SouthWest	23,500	25,000	26,600	28,000	29,300	30,700	32,100
Port Hills West	5,000	5,200	5,600	5,800	5,900	6,100	6,300
Total locality	28,500	30,200	32,200	33,800	35,200	36,800	38,400
Demand growth from 2023							
SouthWest	-	1,500	3,100	4,500	5,800	7,200	8,600
Port Hills West	-	200	600	800	900	1,100	1,300
Total locality	-	1,700	3,700	5,300	6,700	8,300	9,900
Demand plus NPS-UD competitiveness margin							
SouthWest	-	1,800	3,720	5,180	6,670	8,280	9,890
Port Hills West	-	240	720	920	1,040	1,270	1,500
Total locality	-	2,040	4,440	6,100	7,710	9,550	11,390
Capacity - demand							
Total locality	4,316	2,276	- 124	- 1,784	- 3,394	- 5,234	- 7,074

That is based on dwelling capacity that is feasible in the medium term, under current market conditions. The NPS-UD allows for modelled conditions to change in the long-term (beyond 10 years, i.e. post-2033), for example by changing assumptions about prices and costs, which tends to enable an increase of capacity in the NPS-UD long-term. Nevertheless, the medium term shortfall in available capacity remains in the locality, and no information about alternative (increased) capacity in the long-term is presented in the updated HDCA, so the magnitude of any effect of that on increasing demand is not clear and is not able to be accounted for in this assessment.

4.4 Significant supply

As assessed in section 4.2, there is estimated to be a total capacity for about an additional 4,300 dwellings in the Site's locality. That is made up of 2,100 dwellings that could be accommodated in comprehensive developments, and 2,200 dwellings that could be constructed as infill development. Inevitably not all of those 4,300 feasible dwellings will actually be developed within the near future, because many of those potential dwellings would need to locate on lots where current landowners are unwilling, unmotivated, or unable to advance the construction of new dwellings. That estimate of capacity for 4,300 additional dwellings into the long-term, as existing housing stock will have aged,

land values will have increased, and the replacement of existing dwellings will become more feasible. For now, however, that estimate of 4,300 additional dwellings is unlikely to be achieved.

The proposed residential use of the Site is estimated to be able to accommodate somewhere between 336 and 420 dwellings (per section 2.2), which represents 8-10% of total feasible capacity in the locality. The NPS-UD provides that in addition to feasible development, councils must in their Housing and Business Assessments assess the housing development capacity that is reasonably expected to be realised (“RER”). That RER reflects what is not only feasible to develop, but also likely to be developed. RER capacity is therefore a step down in capacity from feasible capacity, and may be only 25-50% of feasible capacity, from some estimates we have seen elsewhere.

We are not aware of any RER assessment in Christchurch, but if RER in the Site’s locality is 25-50% of feasible capacity, RER capacity would be in the order of 1,100 to 2,200 dwellings. The Site’s 336-420 dwellings would, if enabled, provide a significant increase in that RER capacity, of +16-19% (if RER is 2,200) or 31-39% (if RER is 1,100 dwellings).

The NPS-UD contains objective 6, which is that local authority decisions on urban development is responsive, particularly to proposals that would supply significant development capacity. In our opinion the proposed residential use of the Site would qualify as significant development capacity, being a large share of RER capacity, and equivalent to about 10% of the demand for new dwellings in the locality over the next decade.

Clause 3.8(2) of the NPS-UD directs that local authorities must, for plan changes that provide significant development capacity:

have particular regard to the development capacity provided by the plan change if that development capacity:

- (a) would contribute to a well-functioning urban environment; and*
- (b) is well-connected along transport corridors; and*
- (c) meets the criteria set out... [in the regional policy statement]*

‘Significant development capacity’ has not yet been established from criteria in the Canterbury Regional Policy Statement, but in our opinion the proposed development of the Site would be significant at:

- ❖ 10% of demand for new dwellings in the locality in the next decade
- ❖ Around 10% of existing feasible capacity
- ❖ Close to 20%, or possibly up to 40% of capacity that is reasonably expected to be realised in the locality.

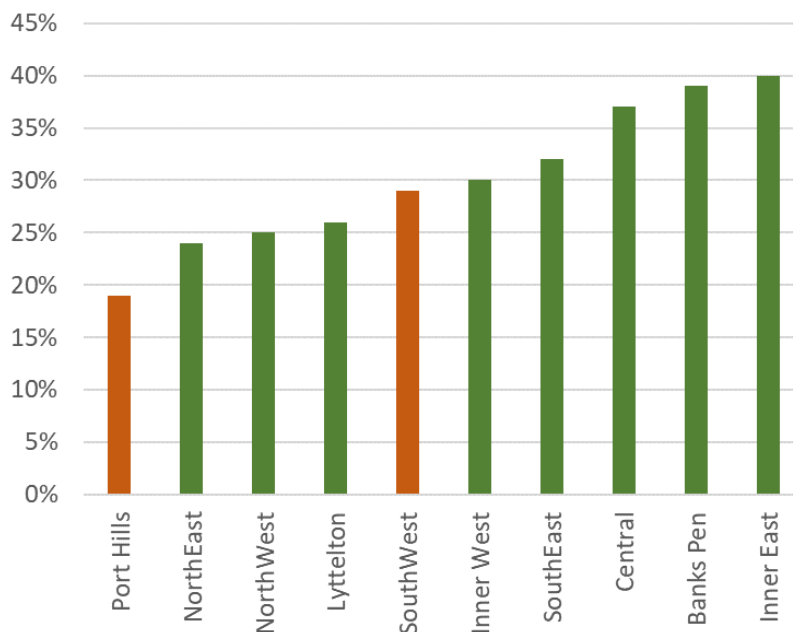
the proposed development of the Site would provide a large increase in residential capacity in a part of Christchurch where future additional residential supply is relatively limited.

5 Costs and benefits of residential development

5.1 Affordable housing

The Livingston and Associates Housing Demand report provides an assessment of affordable housing in Greater Christchurch, concluding that “with some exceptions, Christchurch City’s subareas are less affordable than Waimakariri and Selwyn’s subareas typically as a result of lower median household incomes”.¹⁶ That assessment finds that in 2020 (the most recent year for which data is reported on in that report) the South West and Port Hills subareas were two of the five most affordable subareas of Christchurch in which to live (out of ten subareas total) (Figure 5.1). Residential development of the Site is therefore likely on balance to create more, rather than less affordable dwellings.

Figure 5.1: Christchurch subareas’ median rent as a percentage of median household income¹⁷



We understand that development plans for the Site are yet to be finalised, however we are informed of an intention to provide some affordable housing on the Site, in the way of a retirement village offering freehold tenure in a higher density configuration. The higher density, and smaller dwelling sizes provided in that development would represent an affordable residential offering, in one of the more affordable parts of Christchurch. If an affordable housing area is intended to be provided on the

¹⁶ Page 48

¹⁷ Livingston and Associates “Housing Demand” report, table 4.5, page 48

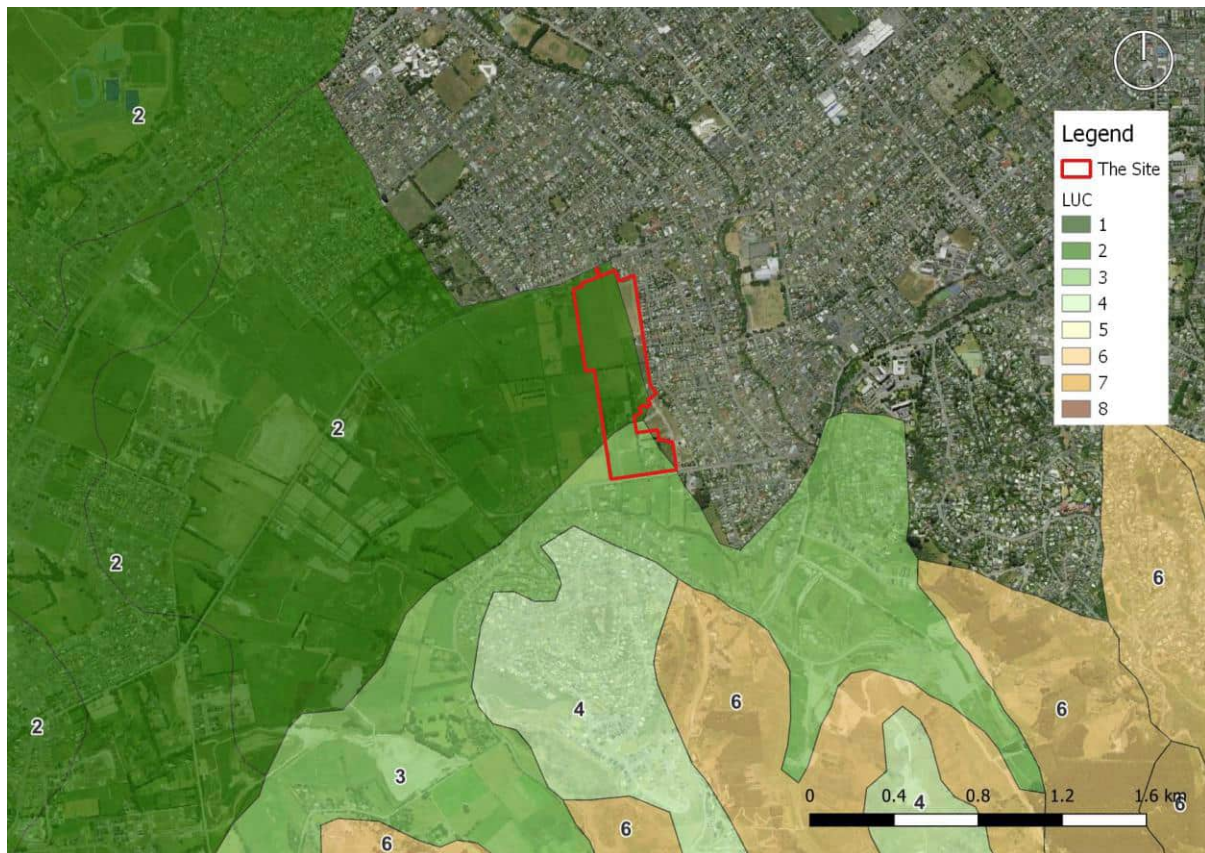
Site, and approval is contingent on its provision, it would be important for there to be conditions in the consent or some other method of ensuring the affordable housing actually eventuates, as opposed to traditional standalone housing not targeted at the affordable end of the market.

However, given the demand-supply balance, and expected shortfall of capacity in the locality within the next ten years, in our opinion the merits of the proposed development do not rest on there being an affordable component, and the contribution the development would make to additional capacity in an area where more supply is needed would alone justify the merits of the proposal. The fact that the Site is within a more affordable part of Christchurch is likely to mean that new dwellings constructed on the Site would be more rather than less affordable anyway.

5.2 Use of productive land

The NPS-HPL was approved in September 2022, and seeks to protect highly productive land use in land-based primary production, both now and for future generations. The NPS-HPL is relevant to this assessment because the Site is identified as having soils in land use classes (“LUC”) 2 and 3, with LUC 1, 2 and 3 being categorised as highly productive land (Figure 5.2).

Figure 5.2: Land use class in and around the Site



We have been advised by the applicants that they have received professional advice that the Site should not be considered to have highly productive land, due to constraints including high ground

water and reverse sensitivity due to proximity to residential zoned land (and residential zoned but undeveloped land running through the centre), as detailed in the section 32 report. The section 32 report also concludes that part of the Site is not HPL because it is zoned RNN, being an urban zoning. We provide an assessment against NPS-HPL criteria in section 6.

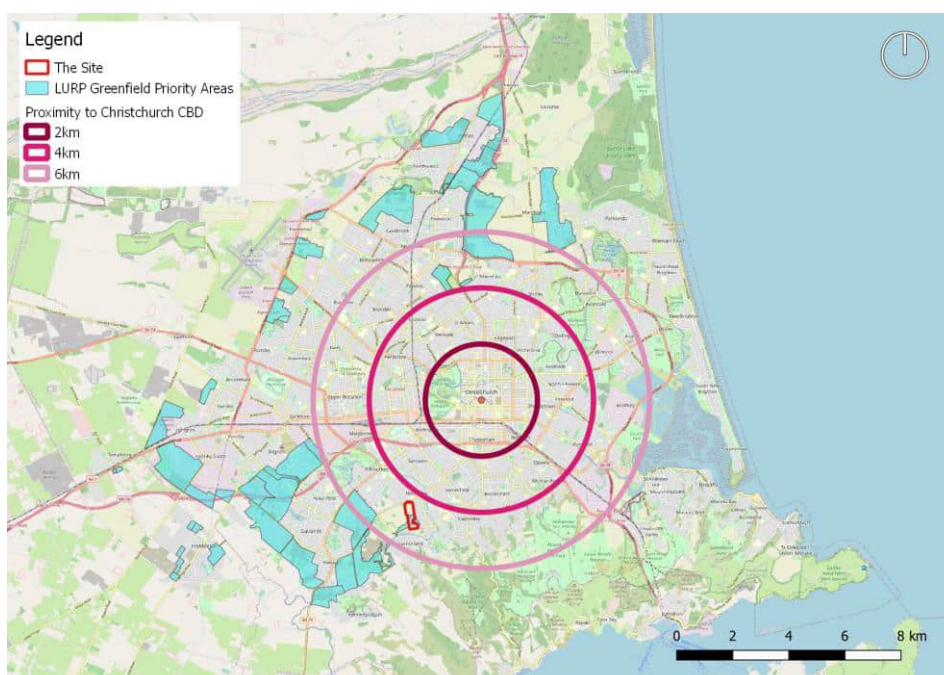
Whether or not the Site is highly productive land, its conversion to urban uses would result in the loss of some agricultural land, and the consequent loss of economic output associated with that. That loss is an economic cost that is relevant to assessing the merits of the application. However, as discussed in section 2.1 the physical characteristics of the Site significantly constrain its productivity, and economic output generated by the Site is very low.

We have not assessed the level of this output, because as with any proposal to convert rural use to urban uses, construction of even a small number of dwellings on formerly rural land will generate economic activity far in excess of what agriculture would generate. On a Site such as this, where hundreds of dwellings could be constructed on land (that we are informed is) poorly suited to agriculture, economic activity stimulated by residential development will always trump agricultural output, as assessed in section 6.4.

5.3 Location of the Site

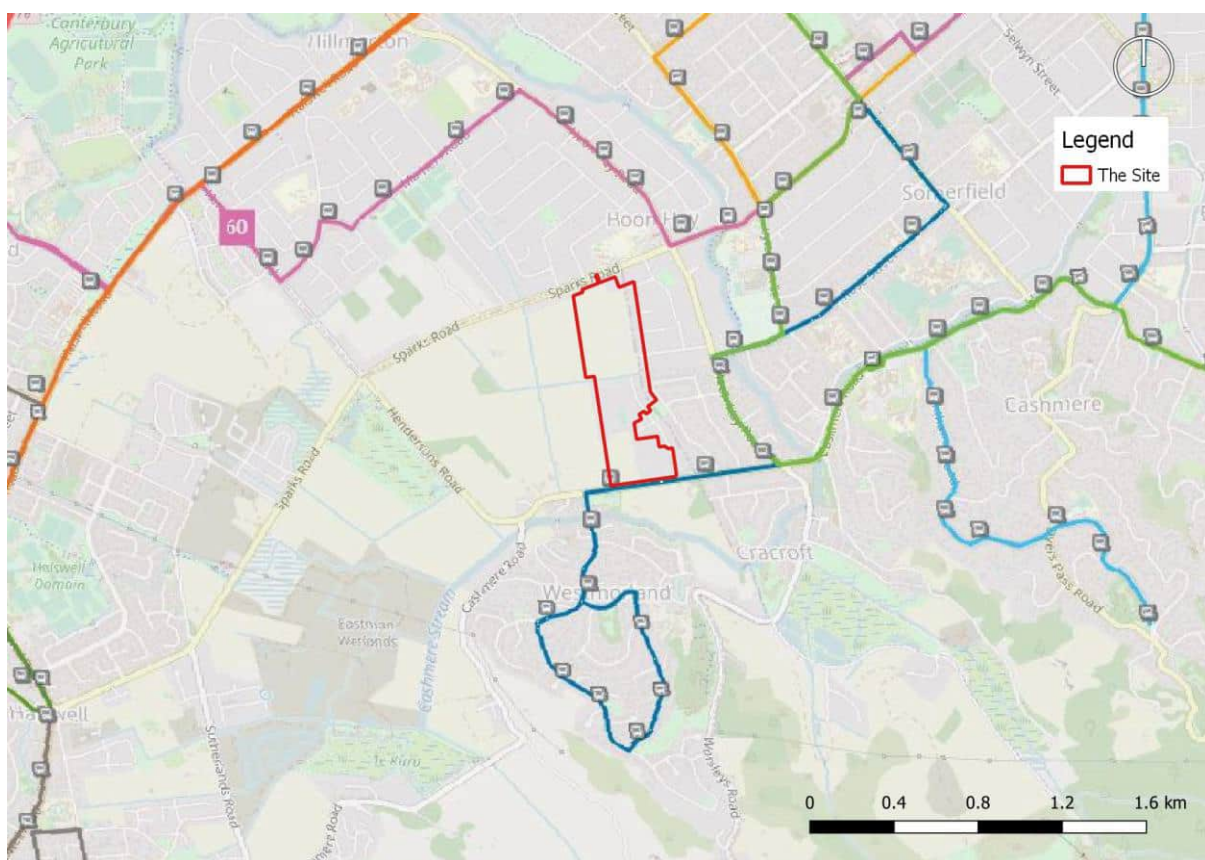
The Site is, in our opinion, well located to accommodate residential activity, and would contribute to a well-functioning urban environment. Part of the Site is identified as a greenfield priority area (“GPA”) in the LURP, and at just over 4km straight line distance from the centre of the CBD, it is the second closest GPA to the CBD, behind only Cranford Basin (Figure 5.3).

Figure 5.3: Proximity of Greenfield Priority Areas to Christchurch CBD



The Site is closer to the CBD (straight-line) than other GPAs in Halswell, Wigram, Marshland and Belfast. The Site has good road links to central Christchurch, is adjacent to existing residential areas, close to commercial centres,¹⁸ on or within 300m of three existing bus routes, within 800m of Centennial Park and the Pioneer Recreation Centre, and close to schools¹⁹ and employment areas.²⁰ In short, the Site is within an established residential area, with all the expected social and commercial fabric that entails. These locational attributes make the Site well placed to accommodate residential activity, and we would suggest better in many respects than other GPAs such as those in the Belfast/Northwood area. The locational attributes also suggest that development of the Site for urban residential activities would contribute to a well-functioning urban environment.

Figure 5.4: Bus network near the Site²¹



Part of the Site is a GPA, and development of that part would not be precluded by the NPS-HPL, despite it being classified as highly productive land. The parts that were not identified as Greenfield Priority Areas are those identified in the District Plan as those subject to flood ponding (Figure 5.5).

¹⁸ The northern entrance to the Site is 2km from Barrington Mall

¹⁹ Hoon Hay Primary school is on the opposite side of Sparks Road from the site's northern entrance, and Cashmere High School is 1.5km east of the Site

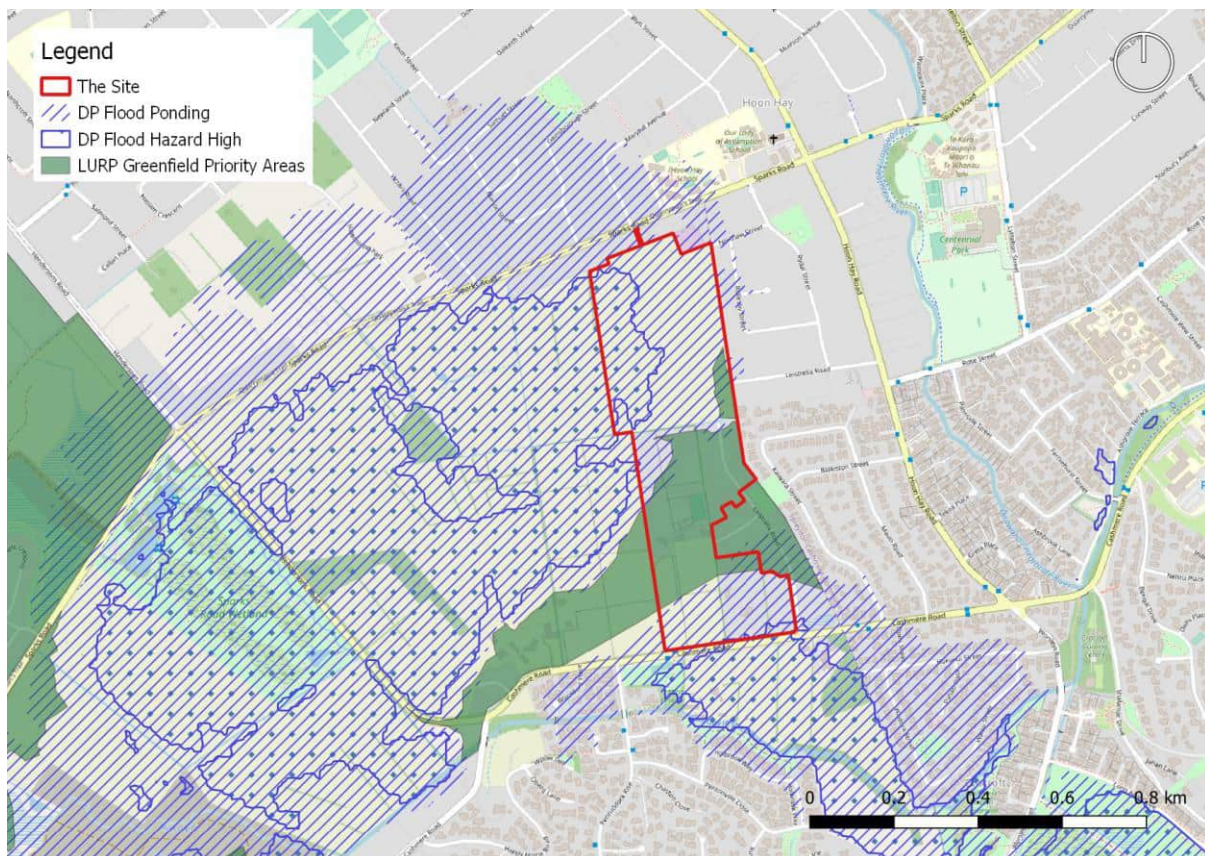
²⁰ Between 3-4km south of the large business areas at Middleton, Addington, and Sydenham

²¹ <https://go.metroinfo.co.nz/mtbp/en-gb/arrivals/content/routes>

Because the parts of the Site that are not at risk from flooding have been identified as being suitable to accommodate urban growth, it is reasonable to expect that the location of the Site in relation to urban Christchurch is not a constraint to being considered suitable for that growth. Instead, while we are not familiar with the rationale for defining the spatial extent of the GPA, a logical inference is that the flooding ponding hazard identified limited the extent of the GPA defined.

If the flood risk were able to be avoided on other parts of the Site, we expect that those other parts would also be suitable to accommodate urban growth from an accessibility and location point of view, and could be identified as a Greenfield Priority Area. We understand from a flood modelling assessment of the Site²² undertaken by CCC-endorsed consultants DHI that the Site is safe to accommodate residential development even in a 1 in 200 year flood event, and that there will be no adverse impact on surrounding properties or in respect of the Site. That being the case our interpretation is that those other (not at risk from flooding) parts of the Site would be equally suitable to be identified as GPA as is the part that is already GPA.

Figure 5.5: Greenfield priority areas on and around the Site



²² "Cashmere Park Extension modelling Jan 2023", DHI, 28 February 2023

6 HPL assessment

In this section we provide an assessment against NPS-HPL criteria, in case the applicant's position that the Site is not subject to the NPS-HPL is not accepted.

6.1 Policy framework

The policy framework that guides NPS-HPL assessments for proposals involving the urban rezoning of highly productive land is contained in the NPS-HPL clause 3.6. In that clause the NPS-HPL makes provision for the conversion of highly productive land to urban uses in clause 3.6(1), but only if:

- a) the urban rezoning is required to provide sufficient development capacity to meet demand for housing or business land to give effect to the National Policy Statement on Urban Development 2020; and
- b) there are no other reasonably practicable and feasible options for providing at least sufficient development capacity within the same locality and market while achieving a well-functioning urban environment; and
- c) the environmental, social, cultural and economic benefits of rezoning outweigh the long-term environmental, social, cultural and economic costs associated with the loss of highly productive land for land-based primary production, taking into account both tangible and intangible values.

Clause 3.10 allows territorial authorities to allow highly productive land to be converted to urban uses if:

- a) there are permanent or long-term constraints on the land that mean the use of the highly productive land for land-based primary production is not able to be economically viable for at least 30 years; and
- b) the subdivision, use, or development:
 - (i) avoids any significant loss (either individually or cumulatively) of productive capacity of highly productive land in the district; and
 - (ii) avoids the fragmentation of large and geographically cohesive areas of highly productive land; and
 - (ii) avoids if possible, or otherwise mitigates, any potential reverse sensitivity effects on surrounding land-based primary production from the subdivision, use, or development; and
- c) the environmental, social, cultural and economic benefits of the subdivision, use, or development outweigh the long-term environmental, social, cultural and economic

costs associated with the loss of highly productive land for land-based primary production, taking into account both tangible and intangible values.

If land has been identified by a council as being required to accommodate residential growth, that is considered to be justification for allowing the land to be converted to urban uses.

6.2 Clause 3.6(1)(a): required to provide capacity

The assessment above in section 4.3 concludes that demand in the locality is projected to increase at around 380-400 lots a year for the next 30 years, and there is feasible dwelling capacity in the same locality for just over 4,300 additional dwellings, or enough to accommodate around 9.7 years of demand. While feasible capacity may increase in the long-term as land values increase, those values are not able to be accounted for in medium-term sufficiency modelling under the NPS-UD, and there is a shortfall of dwelling capacity in the locality within the medium term.

We conclude that the urban rezoning of the Site is required to provide sufficient development capacity to meet demand for housing or business land to give effect to the NPS-UD, under clause 3.6(1)(a) of the NPS-HPL.

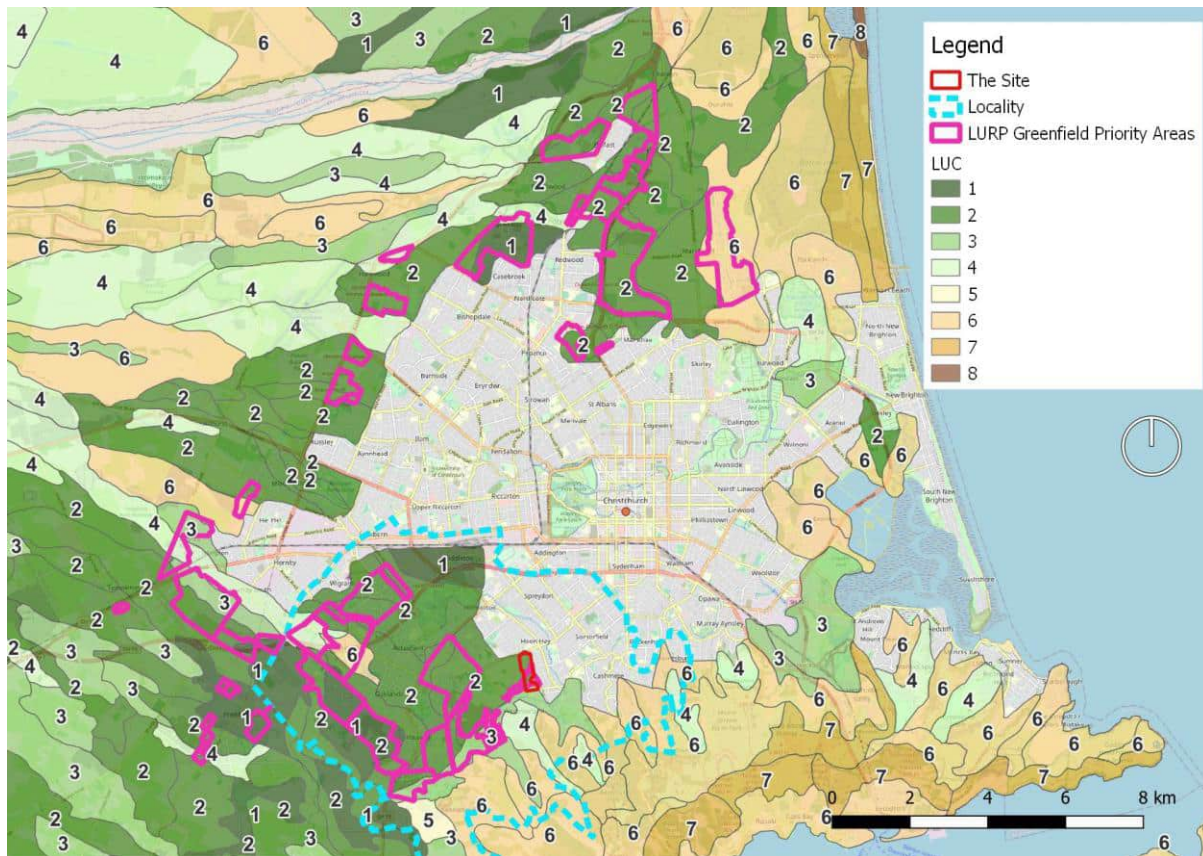
6.3 Clause 3.6(1)(b): no other options

The assessment in section 5 above concludes that the Site is well located to accommodate urban growth, supported by (among other factors) the identification of part of the Site as a GPA in the LURP, and proximity to the CBD and established social, commercial, community and physical infrastructure. Within the locality there are no other reasonably practicable and feasible options for providing at least sufficient development capacity within the same locality and market while achieving a well-functioning urban environment, because:

- ❖ Much of the locality has already been developed for urban activities, and has little or no remaining capacity to accommodate additional residential dwellings, particularly not in a cohesive, master-planned layout.
- ❖ Much of the locality that has not yet been developed is identified as being highly productive land (LUC 1-3, per Figure 6.1).
- ❖ While there exists some capacity to accommodate demand within existing urban areas, that capacity is inadequate to meet demand arising in the locality by itself, and requires additional capacity to be provided in a new location.
- ❖ Those parts of the locality that are not highly productive land are either in the less accessible parts of the locality in the Port Hills, or already substantially developed (an area of LUC4 at Westmorland, and an area of LUC6 west of Awatea Road).

We conclude that there are no other reasonably practicable and feasible options for providing at least sufficient development capacity within the same locality to give effect to the NPS-UD, under clause 3.6(1)(b) of the NPS-HPL.

Figure 6.1: Location of GPAs in relation to HPL



6.4 Clause 3.6(1)(c): benefits vs costs

As discussed in section 2.1, the Site is very constrained in its ability to accommodate productive rural uses, and therefore the economic benefits of the existing rural activities on the Site are very small, and would support a fraction of a full-time equivalent job. Development of the Site for somewhere between 336 and 420 dwellings (as discussed in section 2.2) would support well over 1,000 FTE years of employment.²³

The development of the Site would also be expected to positively impact local businesses, and contribute to the efficient functioning of the nearby centres and business areas. Residents of the Site would be expected to shop and visit businesses within the local area, which will improve the viability

²³ From comparable assessments we have completed, which have found that each dwelling in large greenfields developments generates on average 3.5 to 4.5 FTE years of employment, when all employment on-site and off-site is accounted for. This includes pre-development planning and professional works, site works and preparation, construction, off-site fabrication, and transport and storage of materials.

of existing business and also potentially attract more businesses and community services to the area. This additional activity can be expected to increase local employment in centres, and to improve the level of amenity in these centres, which will positively contribute to a well-functioning urban environment.

We acknowledge that if development of the Site did not proceed, that some of these benefits would be experienced elsewhere in Christchurch, and that some portion of the benefits is therefore a transfer effect, and would not stimulate new activity. However, because our assessment shows that there is an insufficient supply of dwelling capacity in the locality, much of the economic benefits would be net additional to the locality, and would be unlikely to occur in the locality without development of the Site being enabled. In any case, the proposed residential development on the Site would far exceed economic output able to be generated from the Site by agricultural uses, and for a period far exceeding the NPS-UD's long-term.

We understand from the DHI report that the Site is safe to develop even in a 1 in 200 year flood event, and therefore infer that there would be no economic costs associated with flooding hazards up to at least that magnitude.

The conclusion from that is that the economic benefits of rezoning the Site far outweigh the long-term economic costs associated with the loss of the Site's highly productive land for land-based primary production, under clause 3.6(1)(c) of the NPS-HPL.

7 Conclusion

This report shows that without the requested rezoning of the Site there is expected to be a shortfall of residential development capacity within the locality of the Site within the next ten years, and therefore additional capacity would be required to ensure that Council is able to provide at least sufficient development capacity in line with its obligations under the NPS-UD.

The Site is one potential option within the locality on which to provide additional capacity, and from our assessment there are no other reasonably practicable and feasible options for providing that capacity within the locality. Alternative options for additional supply on greenfields sites are either less accessible to central Christchurch or are located on higher class soils than the Site, and Council's assessment indicates that insufficient infill capacity is feasible, meaning greater intensification within existing urban areas will not be able to provide the required capacity.

The Site is well located to accommodate urban residential growth in Christchurch, and the GPA on part of the Site is the second closest GPA in the City to central Christchurch. The Site is located within an existing urban environment that is well serviced by a wide range of social, commercial and community facilities and employment options, and development of the Site would contribute to a well-functioning urban environment.

We conclude that urban rezoning of the Site would be consistent with clause 3.6 of the NPS-HPL, and would give effect to the NPS-UD's objective to provide at least sufficient development capacity, and that the economic benefits of the proposed rezoning would far outweigh the limited costs.

**Appendix I. National Policy Statement Urban Development 2020
Assessment**

Assessment Against the National Policy Statement for Urban Development (May 2022)

Provision	Text	Assessment
Objective 1	New Zealand has well-functioning urban environments that enable all people and communities to provide for their social, economic, and cultural wellbeing, and for their health and safety, now and into the future.	The proposal seeks to rezone land which is suitable for urban development and will be designed such that it provides a well-functioning urban environment. Additionally, the inclusion of an Outline Development Plan (ODP) provides further opportunity to ensure that positive development outcomes are achieved. This will enable people and communities to provide for their social, economic, and cultural wellbeing both now and into the future. The proposal is therefore consistent with Objective 1.
Objective 2	Planning decisions improve housing affordability by supporting competitive land and development markets.	A planning decision which enables the proposed plan change and ODP are considered to support competitive land and development markets by providing additional housing supply. As such, the rezoning of the site is considered to be consistent with Objective 2.
Objective 3	Regional policy statements and district plans enable more people to live in, and more businesses and community services to be located in, areas of an urban environment in which one or more of the following apply: <ul style="list-style-type: none"> (a) The area is in or near a centre zone or other area with many employment opportunities. (b) The area is well-serviced by existing or planned public transport. (c) There is high demand for housing or for business land in the area, relative to other areas within the urban environment. 	The proposed plan change is consistent with Objective 3. This is on the basis that: <ul style="list-style-type: none"> - The area is well serviced by existing (bus) public transport routes, specifically, bus routes 0c, 44, and 60. Additionally, further development within the area is likely to encourage the establishment of further public transport links. - Recent developments in the wider Halswell and Cracroft suburbs indicate that there is high demand for housing in the area.
Objective 4	New Zealand's urban environments, including their amenity values, develop and change over time in response to the diverse and changing needs of people, communities, and future generations.	The proposed plan change and ODP will enable a change in an existing urban environment which supports the changing needs for people, communities, and future generations, which relate the demand and supply of quality housing. The inclusion of an ODP will ensure that amenity is maintained or enhanced. As such, the proposal is considered to be consistent with Objective 4.

Provision	Text	Assessment
Objective 5	Planning decisions relating to urban environments, and FDSs, take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).	Section 104 requires that specific consideration be given to Part 2, Section 8 of the RMA 1991. Any decision on the proposed plan change and ODP will take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi). As sch, the proposal is considered to be consistent with Objective 5.
Objective 6	Local authority decisions on urban development that affect urban environments are: <ul style="list-style-type: none"> (a) Integrated with infrastructure planning and funding decisions; and (b) Strategic over the medium term and long term; and (c) Responsive, particularly in relation to proposals that would supply significant development capacity. 	The proposal is consistent with Objective 6. This is on the basis that: <ul style="list-style-type: none"> - The proposal will provide significant development capacity and increase housing supply within the Christchurch City urban boundary. - Housing would be supplied in an area which has already undergone significant residential development and is proposed to undergo further development. It is therefore considered that growth in this area is strategic over the medium term and long term.
Objective 7	Local authorities have robust and frequently updated information about their urban environments and use it to inform planning decisions	The proposal is consistent with Objective 7. This is on the basis that: <ul style="list-style-type: none"> - Housing would be provided within areas that are consistent with urban development that can help contribute towards the current housing supply shortage.
Objective 8	New Zealand's urban environments: <ul style="list-style-type: none"> (a) Support reductions in greenhouse gas emissions; and (b) Are resilient to the current and future effects of climate change. 	The proposed plan change and ODP seek to provide both low and medium density housing options within Christchurch City's existing urban boundary. This will ensure that distances travelled by private vehicle use are low compared with residential development further afield, and additionally, residents can utilise existing public transport links. Both of the above matters will support a low/lower emission travel. The proposal is therefore considered to be consistent with Objective 8.
Policy 1	Planning decisions contribute to well-functioning urban environments, which are urban environments that, as a minimum: <ul style="list-style-type: none"> (a) Have or enable a variety of homes that: <ul style="list-style-type: none"> (i) Meet the needs, in terms of type, price, and location, of different households; and 	The proposal is consistent with Policy 1 on the following basis: <ul style="list-style-type: none"> - The proposed ODP shows the present of low and medium density housing types with variation in size, bedrooms, and location which fill support variation in price and suitability to different households.

Provision	Text	Assessment
	<ul style="list-style-type: none"> (ii) Enable Māori to express their cultural traditions and norms; and (b) Have or enable a variety of sites that are suitable for different business sectors in terms of location and site size; and (c) Have good accessibility for all people between housing, jobs, community services, natural spaces, and open spaces, including by way of public or active transport; and (d) Support, and limit as much as possible adverse impacts on, the competitive operation of land and development markets; and (e) Support reductions in greenhouse gas emissions; and (f) Are resilient to the likely current and future effects of climate change. 	<ul style="list-style-type: none"> - The proposed ODP shows the presence a stormwater management/conversation/recreation use area as well as pedestrian and cycle link routes (active transport). - The proposal is within proximity to existing public transport links. Additionally, further development in the area may encourage the establishment of new transport routes. - The use of public transport and active transport nodes will support reductions in greenhouse gas emissions. Additionally, the location of the proposed plan change and residential development will provide lower emission trips when compared with development on the City's urban edge.
Policy 2	Tier 1, 2, and 3 local authorities, at all times, provide at least sufficient development capacity to meet expected demand for housing and for business land over the short term, medium term, and long term.	The proposal seeks to enable further residential development with a Tier 1 local authority boundary. This will assist in meeting expected demand for housing over particularly over the medium and long-term. The proposal is therefore considered to be consistent with Policy 2.
Policy 3	<p>In relation to tier 1 urban environments, regional policy statements and district plans enable:</p> <ul style="list-style-type: none"> (a) In city centre zones, building heights and density of urban form to realise as much development capacity as possible, to maximise benefits of intensification; and (b) In metropolitan centre zones, building heights and density of urban form to reflect demand for housing and business use in those locations, and in all cases building heights of at least 6 storeys; and (c) Building heights of at least 6 storeys within at least a walkable catchment of the following: <ul style="list-style-type: none"> (i) Existing and planned rapid transit stops. (ii) The edge of city centre zones. (iii) The edge of metropolitan centre zones; and (d) Within and adjacent to neighbourhood centre zones, local centre zones, and town centre zones (or equivalent), building heights and 	The site is located within the Christchurch metropolitan area and is considered a Tier 1 urban environment. As such, the ODP provides for a mixture of low density and medium density residential developments to reflect market demanded housing. The proposal is therefore considered to be consistent with Policy 3.

Provision	Text	Assessment
	densities of urban form commensurate with the level of commercial activity and community services.	
Policy 4	Regional policy statements and district plans applying to tier 1 urban environments modify the relevant building height or density requirements under Policy 3 only to the extent necessary (as specified in subpart 6) to accommodate a qualifying matter in that area.	Not Applicable – The proposal complies with Policy 3.
Policy 5	Regional policy statements and district plans applying to tier 2 and 3 urban environments enable heights and density of urban form commensurate with the greater of: (a) The level of accessibility by existing or planned active or public transport to a range of commercial activities and community services; or (b) Relative demand for housing and business use in that location.	Not Applicable – The proposal is a Tier 1 urban environment.
Policy 6	When making planning decisions that affect urban environments, decision-makers have particular regard to the following matters: (a) The planned urban built form anticipated by those RMA planning documents that have given effect to this National Policy Statement. (b) That the planned urban built form in those RMA planning documents may involve significant changes to an area, and those changes: (i) May detract from amenity values appreciated by some people but improve amenity values appreciated by other people, communities, and future generations, including by providing increased and varied housing densities and types; and (ii) Are not, of themselves, an adverse effect. (c) The benefits of urban development that are consistent with well-functioning urban environments (as described in Policy 1). (d) Any relevant contribution that will be made to meeting the requirements of this National Policy Statement to provide or realise development capacity.	The proposed plan change and ODP is consistent with Policy 6. This is on the basis that: <ul style="list-style-type: none"> - The proposed urban built form may involve significant change but will likely improve the local amenity for future landowners or occupants of residential dwellings to be constructed within the area. - The adverse effects arising from the plan change and ODP are likely less than minor and not an overall adverse effect. - The benefits of the urban development will likely be consistent with a well-functioning urban environment and the proposal is consistent with Policy 1.

Provision	Text	Assessment
Policy 7	<p>(e) The likely current and future effects of climate change.</p> <p>Tier 1 and 2 local authorities set housing bottom lines for the short-medium term and the long term in their regional policy statements and district plans.</p>	<p>The proposed plan change and ODP may contribute to reaching housing bottom lines for short-medium term and the long-term as provided within the Canterbury Regional Policy Statement and Christchurch District Plan. The proposal is therefore consistent with Policy 7.</p>
Policy 8	<p>Local authority decisions affecting urban environments are responsive to plan changes that would add significantly to development capacity and contribute to well-functioning urban environments, even if the development capacity is:</p> <ul style="list-style-type: none"> (a) Unanticipated by RMA planning documents; or (b) Out-of-sequence with planned land release. 	<p>The proposal seeks to undertake a plan change that would add to development capacity within the Christchurch City urban boundary and contribute to well-functioning urban environments (consistent with Policy 1) in a matter that is out-of-sequence to planned land release. The proposal is therefore consistent with Policy 8.</p>
Policy 9	<p>Local authorities, in taking account of the principles of the Treaty of Waitangi (Te Tiriti o Waitangi) in relation to urban environments, must:</p> <ul style="list-style-type: none"> (a) Involve hapū and iwi in the preparation of RMA planning documents and any FDSs by undertaking effective consultation that is early, meaningful and, as far as practicable, in accordance with tikanga Māori; and (b) When preparing RMA planning documents and FDSs, take into account the values and aspirations of hapū and iwi for urban development; and (c) Provide opportunities in appropriate circumstances for Māori involvement in decision-making on resource consents, designations, heritage orders, and water conservation orders, including in relation to sites of significance to Māori and issues of cultural significance; and (d) Operate in a way that is consistent with iwi participation legislation. 	<p>Not Applicable – the proposed plan change and ODP is not part of a FDS.</p>
Policy 10	<p>Tier 1, 2, and 3 local authorities:</p> <ul style="list-style-type: none"> (a) That share jurisdiction over urban environments work together when implementing this National Policy Statement; and 	<p>The proposed plan change and ODP plan has been undertaken in collaboration with development infrastructure providers (power, telecommunications, etc) to ensure integrated land-use and infrastructure planning occurs. The proposal is therefore consistent with Policy 10.</p>

Provision	Text	Assessment
	<p>(b) Engage with providers of development infrastructure and additional infrastructure to achieve integrated land use and infrastructure planning; and</p> <p>(c) Engage with the development sector to identify significant opportunities for urban development.</p>	
Policy 11	<p>In relation to car parking:</p> <p>(a) The district plans of tier 1, 2, and 3 territorial authorities do not set minimum car parking rate requirements, other than for accessible car parks; and</p> <p>(b) Tier 1, 2, and 3 local authorities are strongly encouraged to manage effects associated with the supply and demand of car parking through comprehensive parking management plans.</p>	<p>Not Applicable – Minimum car parking requirements have not been set. The market will determine car parking requirements as time on separate onsite development.</p>

**Appendix J. National Policy Statement Highly Productive Land (2022)
Assessment Infrastructure Servicing Report**

Assessment Against the National Policy Statement for Highly Productive Land 2022

Preface: The NPS-HPL requires that any land that is in a general rural zone or rural production zone, and is predominantly LUC 1, 2, or 3 land, and forms a large and geographically cohesive area to be mapped as highly productive land. For the purpose of this assessment, it is determined that the site while classified as highly productive land under the NPS, because the site does not form a large and geographically cohesive area it is not suitable to be used as highly productive land. Notwithstanding this, the following assessment against the objectives and policies of the NPS-HPL has been undertaken.

Provision	Text	Assessment
Objective 1	Highly productive land is protected for use in land-based primary production, both now and for future generations.	<p>The site is not currently used for land-based primary productive purposes. The site provides grazing for a low number of stock periodically throughout the year and does not contribute economically or socially to the wider productive capacity. Land-uses within the immediate surrounding environment are either already used for residential purposes or are currently undergoing residential development. As such, it is anticipated that the site will eventuate into residentially zoned land.</p> <p>Given the site's current use, and the size of the site, it is considered unlikely that it will be used for land-based productive purposes in the future. It is therefore considered acceptable to re-zone the land as there is not currently or anticipated primary productive use requiring protection.</p> <p>The proposal is therefore considered to be neither consistent nor inconsistent with Objective 1.</p>
Policy 1	Highly productive land is recognised as a resource with finite characteristics and long-term values for land-based primary production.	The site is not currently used for or anticipated to be used for land-based primary productive purposes in the future. This is on the basis that residential infill development is occurring on sites in immediate proximity to the site, and it is anticipated that this area will continue to undergo residential development.

Provision	Text	Assessment
Policy 2	The identification and management of highly productive land is undertaken in an integrated way that considers the interactions with freshwater management and urban development.	<p>While the site <u>may</u> have characteristics and long-term values for land-based primary production, the current land-use and expected future land-uses make it extremely unlikely this land will be used for land-based primary production. As such, the proposal is considered consistent with Policy 1, and it has recognised the characteristics while accounting for realised and future long-term values associated with this piece of land.</p> <p>The proposed plan change and ODP seeks to allow urban development on land which is underutilised and not currently used for land-based primary production. Given surrounding land-uses are primarily residential developments, it is expected that future use of the site will be limited to residential residences.</p> <p>Given the site is unlikely to be used for land-based primary production, the proposal is neither consistent nor inconsistent with Policy 2.</p>
Policy 3	Highly productive land is mapped and included in regional policy statements and district plans.	Not Applicable – The Canterbury Regional Policy Statement and Christchurch District Plan have not been updated to reflect mapping of highly productive land. This is due to recency of the NPS-HPL's commencement. Therefore, the proposal is considered neither consistent nor inconsistent with the Policy 3.
Policy 4	The use of highly productive land for land-based primary production is prioritised and supported.	<p>The site is not currently used for land-based primary production purposes. Rather the site is currently occupied by low density residential dwellings. Additionally, as the site is not being used for productive purposes, it's use as highly productive land is not currently prioritised and/or supported. It is likely that following the proposed plan change and ODP, the overall productive capacity of this specific piece of land will remain unchanged.</p> <p>For these reasons, the proposal is considered neither consistent nor inconsistent with Policy 4.</p>

Provision	Text	Assessment
Policy 5	The urban rezoning of highly productive land is avoided, except as provided in this National Policy Statement.	<p>The proposal is considered to be consistent with Policy 5. This is on the basis that the rezoning may be provided for within Clause 3.6 (1) (a) & (c) of the National Policy Statement.</p> <p>The proposed urban rezoning will contribute to provisions of sufficient development capacity to meet demand for housing giving effect to the NPS-UD.</p> <p>The site is not currently used for land-based primary production purposes. Therefore, it is possible that there will be no loss of highly productive land. Additionally, environmental, social, cultural, and economic benefits of rezoning will outweigh the cost of losing the underutilised highly productive land.</p>
Policy 6	The rezoning and development of highly productive land as rural lifestyle is avoided, except as provided in this National Policy Statement.	The proposal is therefore considered to be consistent with Policy 5.
Policy 7	The subdivision of highly productive land is avoided, except as provided in this National Policy Statement.	Not Applicable – The proposal does not seek to rezone any land as rural lifestyle.
Policy 8	Highly productive land is protected from inappropriate use and development.	<p>Not Applicable – The proposal is for a plan change and ODP only. No subdivision is proposed at this time.</p> <p>The site is not currently used for land-based primary production purposes. Therefore, it is possible that there will be no loss of highly productive land. Additionally, environmental, social, cultural, and economic benefits of rezoning will outweigh the cost of losing the underutilised highly productive land.</p>
Policy 9	Reverse sensitivity effects are managed so as not to constrain land-based primary production activities on highly productive land.	<p>The proposal is therefore considered to be consistent with Policy 8.</p> <p>The site to which the plan change and ODP applies is not currently used for land-based primary production activities. Therefore, any rezoning and subsequent development will not result in reverse sensitivity effects with</p>

Provision**Text****Assessment**

potential to constrain productive activities. The proposal is therefore considered to be consistent with Policy 9.

Appendix K. Preliminary Site Investigation Report

A topographic map with white contour lines on a red background, showing a hilly terrain. The map is partially obscured by a white rectangular area containing text.

Preliminary Site Investigation

**Cashmere Road - Sparks Road -
Northaw Street - Leistrella Road, Hoon
Hay, Christchurch**

Prepared for Cashmere Private Plan Change
(CPPC)
511270

Preliminary Site Investigation

Cashmere Road - Sparks Road - Northaw Street -
Leistrella Road, Hoon Hay, Christchurch

Prepared for Cashmere Private Plan Change
(CPPC)

511270

Quality Control Certificate

Eliot Sinclair & Partners Limited

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Appendix A. Historical Aerial Imagery

Appendix B. Site Photographs

Executive Summary

Site Address	Cashmere Road - Sparks Road - Northaw Street - Leistrella Road, Hoon Hay, Christchurch
Legal description	Lot 1 DP 412488; Lot 2 DP 412488; Lot 3 DP 412488; Lot 23 DP 3217; RS 41613; Lot 1 DP 547021
Site area	23.0061 ha
Local authority	Christchurch City Council
Proposed activity	Private plan change (PPC) to rezone land areas within the Henderson's and Cashmere Catchments.
Historical and current land uses	Historical: Rural Current: Rural Residential
Current zoning	Rural and Rural Residential
HAIL activities identified during our investigation	Based off our desktop investigation and site walkover, HAIL activities have historically and currently been carried out on the site (HAIL A8 , HAIL A10 , and HAIL E1 and HAIL I).
Conclusions	<p>It is concluded that:</p> <p>HAIL activities have historically and currently been carried out on the site. However, given the proposed activity being a plan change, which will involve no soil disturbance or immediate land use change, it is highly unlikely that it would create any risks to human health.</p> <p>However, Areas or Locations of Interest (LOI) have been outlined and would require to be further investigated should future projects intercept those areas/locations.</p>
Recommendations	Consequently, depending on the future land use/site development, there could be a risk to human health and a Detailed Site Investigation in terms of the Ministry for the Environment's Contaminated Land Management Guidelines to establish the nature, degree, and extent of contaminants distribution would be required under the NES.
NESCS activity status	NESCS does not apply to plan changes

1. Introduction

Eliot Sinclair & Partners Ltd was engaged by Cashmere Park Ltd, Hartward Investment Trust and Robert Brown collectively referred to within this document as Cashmere Private Plan Change (CPPC) to undertake a Preliminary Site Investigation (PSI) to support the submission of a private plan change (PPC) through Christchurch City Councils Plan Change 14 (PC14) process to rezone land areas within the Henderson and Cashmere Catchments (as shown in Figure 1).

The purpose of this PSI report is to determine whether activities potentially contaminating the soil have been or are currently carried on the site prior to the proposed plan change and evaluate whether those activities are or have been "more likely than not" generating risks for human health.

1.1. Investigation, Objectives, and Scope

The objective of the investigation was to prepare a PSI in general accordance with the Ministry for the Environment (MfE) Contaminated Land Management Guidelines (CLMG) No. 1¹ and No. 5², MfE National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health³ (NESCS), and BRANZ (2017) 'New Zealand Guidelines for Managing and Assessing Asbestos in Soil'.⁴

The scope comprises:

- Reviewing the Environment Canterbury (ECan) Hazardous Activities and Industries List⁵ (HAIL) database.
- Reviewing historical and recent aerial images of the site.
- Obtain and reviewing information on the property file held by the Christchurch City Council (CCC).
- Fieldwork including a site walkover and interview of owners/managers of the site.
- Preparation of a PSI report in accordance with NESCS, BRANZ, and the CLMG No. 1 and No. 5.

1.2. Site Identification

The site under consideration ("the site") for the proposed Plan Change consists of several Titles which total area is 23.0061 hectares. Details of the Titles constituting the site under consideration are presented in Table 1 below.

Site identification details are provided in Table 1. A current site layout and a locality map are presented in Figure 1 and Figure 2.

Table 1. Site identification

Legal Description	Owners	Address	Survey Area
Lot 1 DP 412488	Landsborough Trustee Services No 30 Limited Marianne Ruth Lewis	126 Sparks Road	4.0001 ha

¹ Ministry for the Environment (MfE) 2011. Contaminated Land Management Guidelines No. 1. Reporting on Contaminated Sites in New Zealand. Wellington: Ministry for the Environment (Revised 2021).

² Ministry for the Environment. (2021). Contaminated land management guidelines No 5: Site investigation and analysis of soils (Revised 2021). Wellington: Ministry for the Environment (Revised 2021).

³ Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 administered by the Ministry for the Environment

⁴ BRANZ, 2017. New Zealand Guidelines for Managing and Assessing Asbestos in Soil.

⁵ Ministry for the Environment. (2021). Hazardous Activities and Industries List (HAIL).

	Warren Richard Lewis		
Lot 2 DP 412488	Landsborough Trustee Services No 30 Limited, Marianne Ruth Lewis, Warren Richard Lewis	17 Northhaw Street	4.0004 ha
Lot 3 DP 412488	Landsborough Trustee Services No 30 Limited, Marianne Ruth Lewis, Warren Richard Lewis	36 Leistrella Road	4.0003 ha
Lot 23 DP 3217	Jeanette Katherine Brown Robert James Brown	240 Cashmere Road	8.0937 ha
RS 41613	Debra Down Hartnell-Ward, Geoffrey Peter Ward Young Hunter Trustees Limited	236 Cashmere Road	2.0234 ha
Lot 1 DP 547021	Cashmere Park Limited	200 Cashmere Road	0.8882 ha



Figure 1. Current site layout with the property boundaries indicated in red (Sourced: Canterbury Maps, 2023).

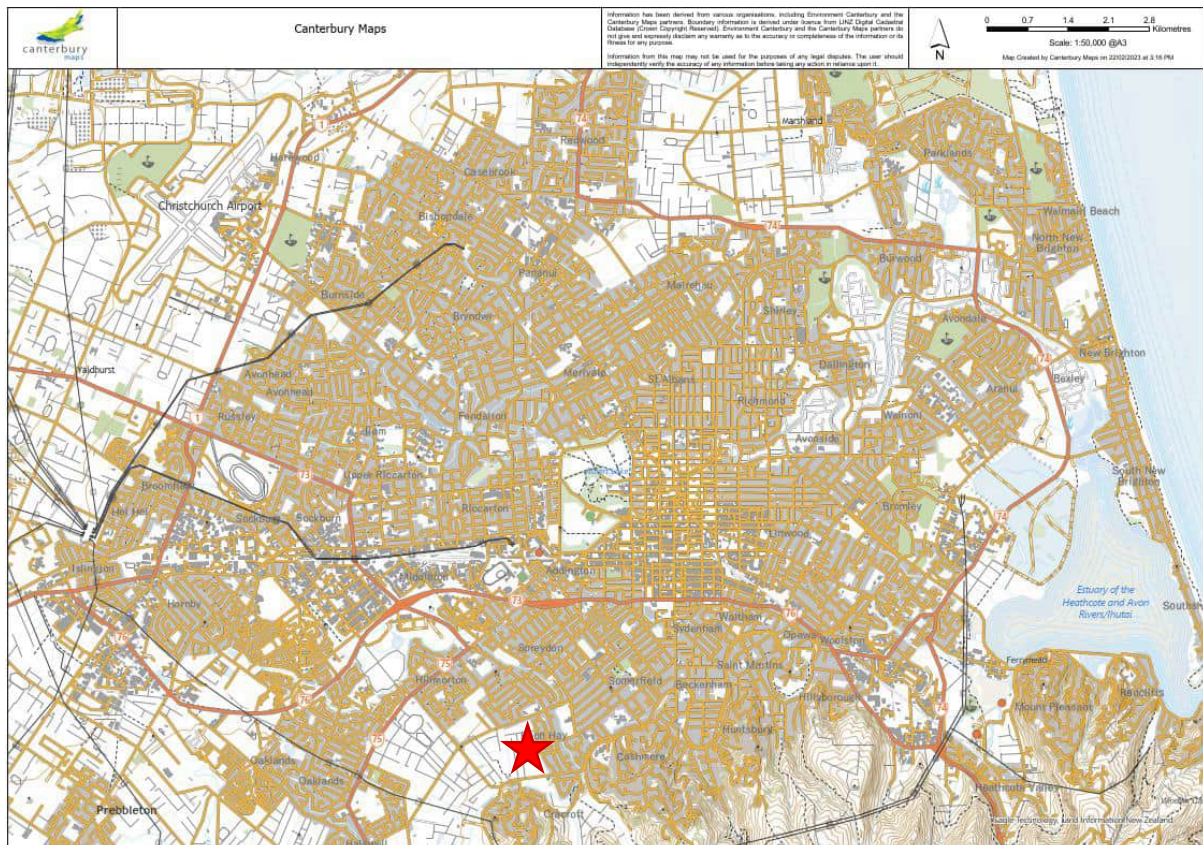


Figure 2. Locality Map (Sourced: Canterbury Maps, 2023).

1.3. Proposed Activity

The proposed activity is to submit a Private Plan Change request to Christchurch City Council through the PC14 process. Figure 3 shows the proposed development for the area. The proposed activity (plan change) will not include any soil disturbance or any immediate change in land use.

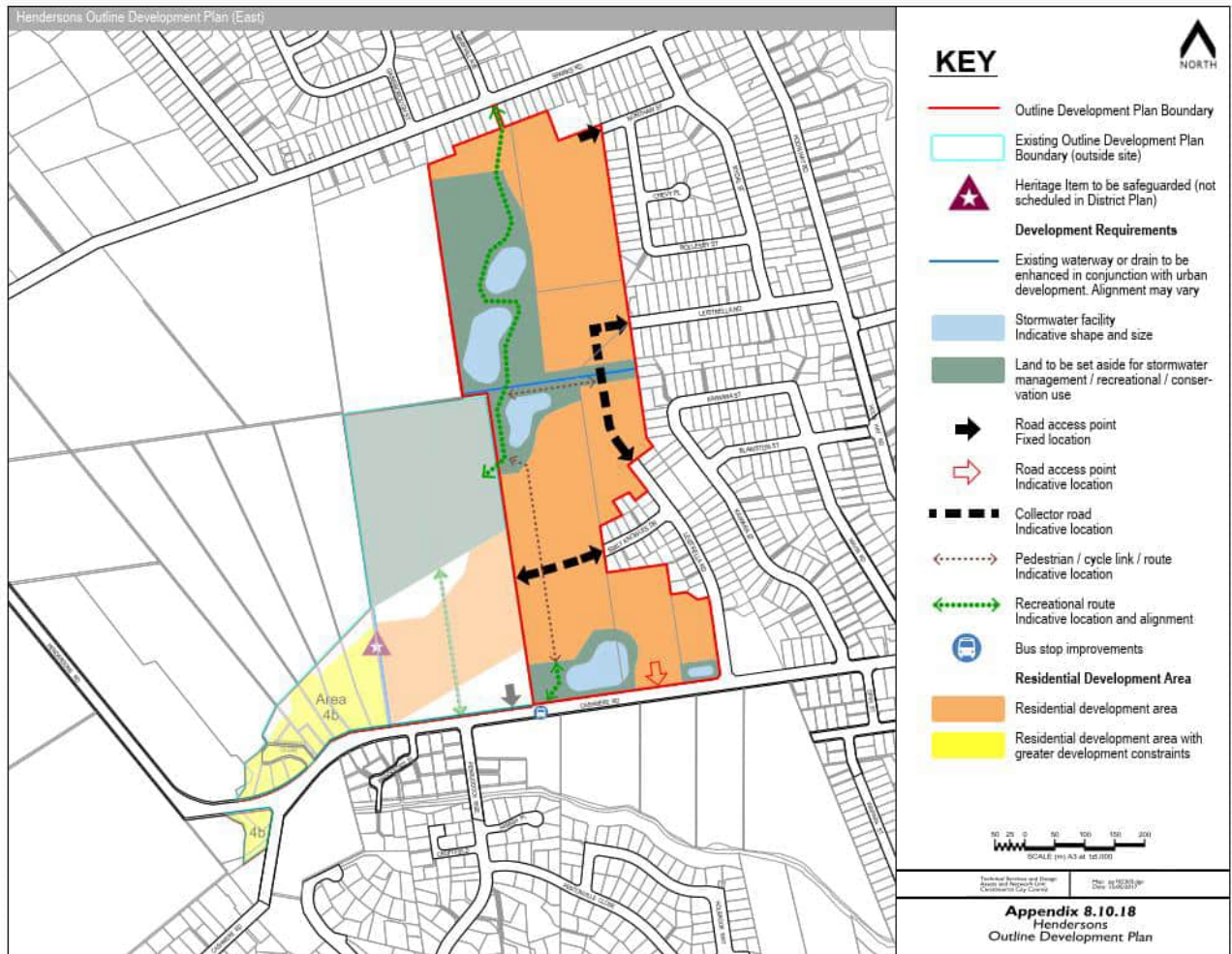


Figure 3. Proposed Outline Development Plan.

2. Site Description

Site description details are provided in Table 2.

Table 2. Site details including the environmental setting, district plan zoning, and land uses.

Site Name	Cashmere Road - Sparks Road - Northhaw Street - Leistrella Road
Neighbouring land use	Rural and Residential
District plan zoning	Rural Urban Fringe, Residential New Neighbourhood, Residential Suburban
Geology	GNS has mapped the area as 'Holocene River Deposits' OIS 1
Surface water	A wooden box drain runs across the northern boundary of 240 Cashmere Road/southern boundary of 36 Leistrella Road and flows from west to east. Another box drain runs down the eastern boundary of Northhaw Street and flows from north to south.
Groundwater	Estimated depth between 1m to 4.5m below ground (based off Wells and Bores data layer on Canterbury Maps).

Topography The properties are largely flat and vegetated with grass (for production). 126 Sparks Road has a natural water channel running through it.

3. Historical Site Use

3.1. Review of Council Information

3.1.1. CCC Property Files

The following property files of their respective property were available from the CCC eDocs:

Table 3. Property file review.

Property Address	Significant Information
126 Sparks Road	No significant documents or possible instances of contamination were identified within the property file.
17 Northaw Street	No significant documents or possible instances of contamination were identified within the property file.
36 Leistrella Road	No significant documents or possible instances of contamination were identified within the property file.
240 Cashmere Road	<ul style="list-style-type: none"> ■ Building Consent CON97001991 for proposed 'Stables/Demolish Existing Stables' (April 1997)
236 Cashmere Road	No significant documents or possible instances of contamination were identified within the property file.
200 Cashmere Road	<ul style="list-style-type: none"> ■ An application for a Drainage Permit for the current dwelling on the site, dated 1955. ■ Building permit to erect the hayshed that is currently on the site, dated 1971. ■ Correspondence from 1990 in relation to dwelling alterations. ■ An application for resource consent to subdivide that site, dated 2003. ■ Subdivision plans for the site, dated from 2006 (never completed). ■ RMA20181501 Approved consent document (June 2018) which included an Eliot Sinclair & Partners Ground Contamination Assessment PSI and DSI.

No HAIL activities were identified from the property files.

3.2. HAIL Registry

A search of Environment Canterbury's Listed Land Use Register (LLUR) has been undertaken. The LLUR is a database containing records of contaminated, potentially contaminated, and remediated (previously contaminated) sites in Canterbury. It is not an exhaustive database, i.e. an unregistered site does not confirm that there have never been any HAIL activities undertaken on the site in the past.

No LLUR records are recorded for any of the land parcels included in the site are recorded on the LLUR.

3.2.1. Previous Site Investigations

As found in the CCC property file review, the Approved consent document RMA20181501 (dated Aug 2018) included an Eliot Sinclair & Partners Ground Contamination Assessment Preliminary and Detailed Site Investigation (job #438642). The conclusion of this report has been reviewed and the outcome of that review is evaluated in the report.

Section 6.7 – owner interview:

- Eliot Sinclair interviewed Steve Lewis, the son of the owner of the site (Warren Lewis), on 19 May 2018 and subsequently on 22 June 2018. Stockpiled material noted in the 2004 historical aerial image was confirmed to be organic debris from trimming of trees and other vegetation from the hedgerow to the west. The stockpiles were left to decompose naturally and were never burnt. He stated that he was not aware of any HAIL activities that have been undertaken onsite.

Section 6.8 – summary of the reviewed information:

- Identified potential for HAIL activity A-10, persistent pesticide use, from the possible market gardens noted in historical aerial images taken between 1980 and 1989. Although given the relatively short time the land was used as a market garden, at the time of this report Eliot Sinclair concluded it highly unlikely that any contaminants would be present on the site in quantities that would affect human health.

Although this information is useful, it does not indicate whether the soil would meet cleanfill criteria at this time of investigation.

3.3. Review of Aerial Photographs

Aerial images from the Canterbury Maps, LINZ, and Google Earth were reviewed to identify previous land uses and potential HAIL activities between 1925 and 2022. A summary of information retrieved from this review is provided in Table 4 and the reviewed images along with a historical layout plan are presented in Appendix A. Several historical activities potentially contaminating the soil were identified during the review of historical aerial photos.



Figure 4. 126 Sparks Road between 1925-1929 (Canterbury Maps).

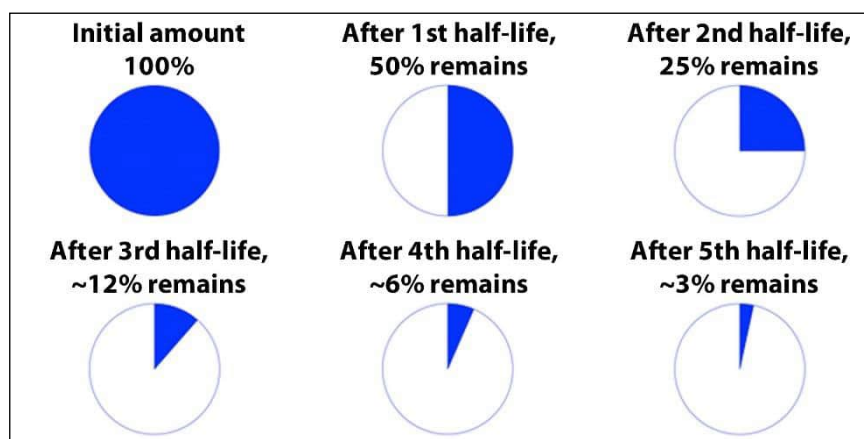
Figure 4 contains the first available aerial photo of the site, and shows the presence of a house on 126 Sparks Road. Given the house was constructed before 1925, the presence of contaminants like asbestos and lead-based paint cannot be ruled out. The later demolition of that building potentially released contaminants to the soil (**HAIL I**). The entire site seems to be used for agricultural/pastoral activities which potentially involved the use of persistent pesticides (**HAIL A10**).

Note:

From the mid-1940s until the 1970s some persistent organochlorine pesticides (including DDT, dieldrin) were used widely in New Zealand. The main areas of use were agriculture, horticulture, timber treatment and public health. **DDT** was used as a pasture insecticide to control grass grub (*Costelytra zealandia*) and porina (*Wiseana* sp.) caterpillars. Frequently mixed with fertiliser or lime and applied particularly to agriculture pastures, as well as lawns, market gardens and parks. Other organochlorines, like Lindane, were used as an insecticide in agriculture for the control of lice on cattle, ectoparasites (lice, keds and blowflies) in sheep and grass grub in pasture. Also used for insect control on vegetables and in orchards. Household use: flyspray, flea control and carpet moth. (<http://www.mfe.govt.nz/more/international-environmental-agreements/multilateral-environmental-agreements/key-multilatera-10>)

DDT is known for having a **half-life** ranging from **10 to 30** years in the soil (depending on the soil environment). The half-life of a pesticide in the soil gives the time it takes for the pesticide concentration to decrease to half of the initial concentration. This means that pesticide can still be largely present in the soils after that period of time as explained below.

*"A given pesticide's half-life is the time it takes for a certain amount of a pesticide to be reduced by half. This occurs as it dissipates or breaks down in the environment. In general, a pesticide will break down to 50% of the original amount after a single half-life. This means that after two half-lives, 25% will remain. About 12% will remain after three half-lives. This continues until the amount remaining is nearly zero. The half-life can help estimate whether or not a pesticide tends to build up in the environment. Pesticide half-lives can be lumped into three groups in order to estimate persistence. These are **low** (less than 16 day half-life), **moderate** (16 to 59 days), and **high** (over 60 days). Pesticides with shorter half-lives tend to build up less because they are much less likely to persist in the environment. In contrast, pesticides with longer half-lives are more likely to build up after repeated applications. This may increase the risk of contaminating nearby surface water, ground water, plants, and animals."* (Oregon National Pesticides Information Centre (NPIC)). This can be illustrated with **Figure 5.3.4** below.



Approximate amount of pesticide (shaded area) remaining at the application site over time (source: NPIC)



Figure 5. 240 Cashmere Road between 1940-1944 (Canterbury Maps).

Similarly, Figure 5 shows the first appearance of a house on 240 Cashmere Road. Due to the date of its construction – prior to 1944, the risks of soil contamination by asbestos (**HAIL E1**) and lead-based paint (**HAIL I**) exist. Although this cannot be confirmed, the likelihood of that building to have been a “shearing” shed or a building used for an activity related to sheep/cattle treatment cannot be ruled out, particularly the structure on the west side of the building which could have been part of a sheep dip. This activity would be related to **HAIL A8**: Livestock dip or spray race operations.



Figure 6. 126 Sparks Road between 1965-1969 (Canterbury Maps).

The house seen on 126 Sparks Road appears to have been removed in the historic aerial photograph displayed in Figure 6. The demolition of this house could be classified under **HAIL I**: "land subjected to accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment". The area remaining in and surrounding the house footprint, has potential for **heavy metal (lead-based paint)** and **asbestos** contamination.



Figure 7. Site 1990-1994 (Canterbury Maps).

Figure 7 shows the presence of new buildings located at both 236 and 240 Cashmere Road and the start of additional horticultural activities that may have involved the use of persistent pesticides.

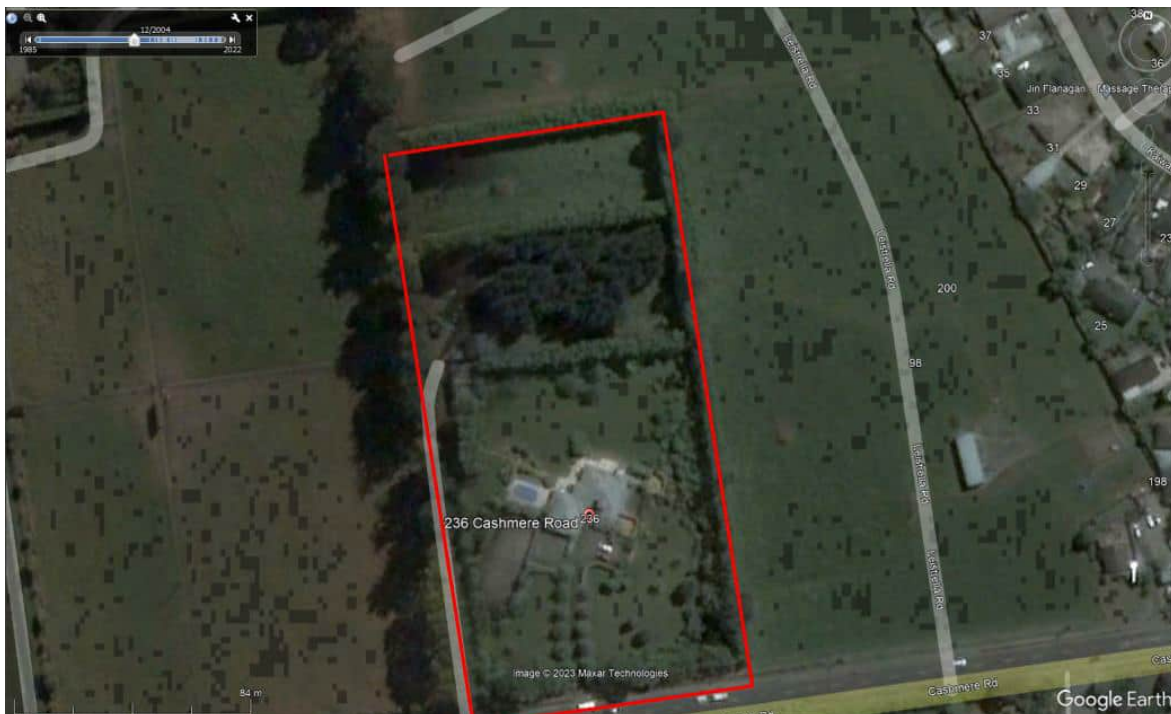


Figure 8. Site 2000-2004 (Google Earth Pro).

Figure 8 shows the presence of new or upgraded buildings at 236 Cashmere Road alongside continued horticultural activities that may have involved the use of persistent pesticides.

Table 4 below summarises the most relevant information collected from the review of historical aerial photos.

Table 4. Reviewed aerial images (ECan GIS: Canterbury Maps, Google Earth Pro 2023).

Date of photograph	Land use, site features, identified HAIL area(s)
1925 – 1929	Site appears to be undeveloped and in grass – used for grazing and/or cropping. Appearance of house on the northern corner of 126 Sparks Road (imagery only covers the northern part of the site blocking Cashmere Road properties from view). See Figure 4.
1940 – 1944	Appearance of house around halfway along the western property end of 240 Cashmere Road otherwise no significant change. See Figure 5.
1945 – 1949	Development of agricultural fencing and the building at 240 Cashmere Road appears to have undergone upgrades.
1955 – 1959	Shows a farm shed along the northwest boundary of 200 Cashmere Road. Majority of the remainder of the site appears to be used for grazing with animal tracks visible across the site with the heaviest activity in the southeast part of the site just north of the dwelling.
1965 – 1969	Further development for horticulture at 240 Cashmere Road, otherwise the site remains relatively unchanged.
1970 – 1974	Building at 126 Sparks Road appears to have been removed. See Figure 6.
1975 – 1979	No significant change to site.
1980 – 1984	Shows the farm shed along the northwest boundary of 200 Cashmere Road has been removed and two smaller structures are now in its place. Further development of horticulture across the site – particularly the allotment to the west of 200 Cashmere Road as it shows potential market gardens (HAIL A10). See Error! Reference source not found..
1985 – 1989	No significant change to site (poor image quality).
1990 – 1994	First appearance of two buildings and redevelopment for horticulture at 236 Cashmere Road. Further development for horticulture and appearance of another building at 240 Cashmere Road.
1995 – 1999	Market gardens to the west of 200 Cashmere Road are no longer visible.
2000 – 2004	Buildings on 236 Cashmere Road appear to have undergone upgrades and horticulture has undergone further development.
2010 – 2014	Appearance of what looks to be a court at 240 Cashmere Road. Further development of horticulture at 236 Cashmere Road. Livestock appears to now be present at 200 Cashmere Road.
2015 – 2019	Further development of agriculture at 200 Cashmere Road – site appear to now be used for grazing with animal tracks visible. Otherwise, the site appears relatively unchanged from previous aerial photography.
Latest	Appearance of house at 36 Leistrella Road. Further development of agriculture at 200 Cashmere Road

4. Eliot Sinclair's Site Walkover – 14 February 2023

Eliot Sinclair undertook a site walkover on the 14th February 2023 to assess the **current conditions** of the site. Photos taken during the various site visits are available in Appendix B.

During the site visit, Eliot Sinclair determined several areas to be considered as a "Locations of Interest" (LOI - i.e. location that are deemed potentially contaminated) given the current conditions of the site and the specific activities carried out there.

Note:

The determination of the "Locations of Interest" is solely based on the current conditions i.e. those encountered during the site visit. These locations come in addition or to support to those determined during the desktop investigation including (but not limited to) the historic aerial photos and property file documents which are addressed above.

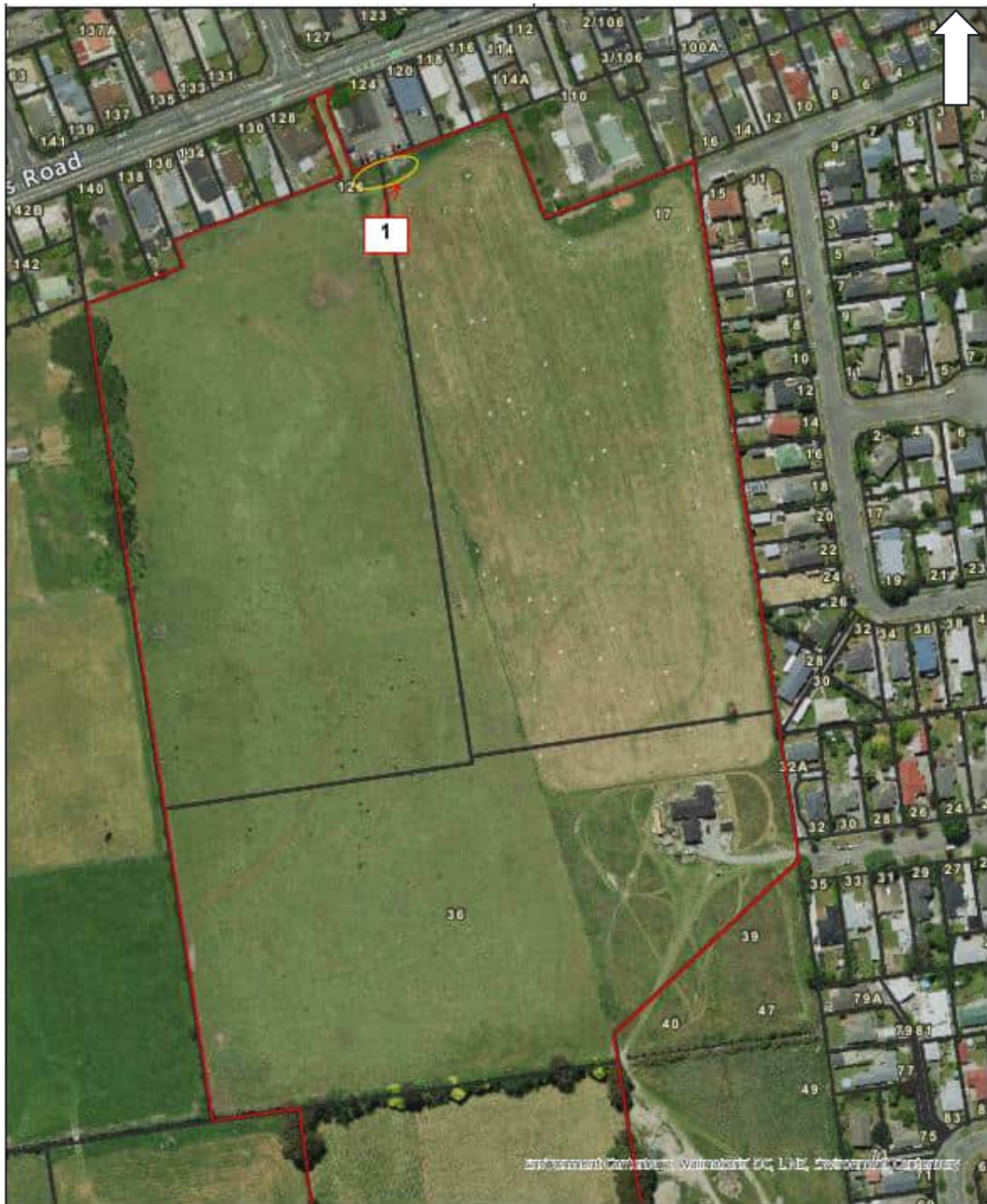


Figure 9. Locations of Interest at 126 Sparks Road, 17 Northaw Street and 36 Listrella Road (Canterbury Maps, 2023).



Figure 10. Locations of Interest at 200, 235 and 240 Cashmere Road (Canterbury Maps, 2023).

The LOIs are outlined on Figure 9 and Figure 10 and details are provided below with site images attached as Appendix B.

1. An old stock pen that borders the boundary. It cannot be ruled out that this was used as part of old dipping or spraying operations and therefore could result in contamination from such activities (**HAIL A8**).
2. A horse arena likely used for dressage and jumping. This arena is topped with a layer of crusher dust but traditionally they can be made of ash which can result in contamination in some cases (**HAIL I**).

3 and 3a. Farm sheds/workshops that contain a variety of commercial/industry grade products (herbicide/pesticides, oils, paints, etc). **HAIL I** and **HAIL A10** cannot be ruled out.

4 and 4a. Green waste stockpiles. While the organic material is unlikely to contain any contaminants, any additional items (e.g. timbers and plastics) that may have been placed in these piles could produce contamination if burnt (**HAIL I**). There was evidence during the site walkover that these locations could have previously been used for burning.

5. Vegetable garden with a variety of crops growing. This area could have been subject to pesticide use and therefore contaminants associated with **HAIL A10** cannot be ruled out.

6. Some rubble/foreign material identified on the driveway at 240 Cashmere Road suggests that the driveway could have been filled with uncontrolled fill such as demolition rubble. This material could contain building materials that could be a source of contamination (e.g. lead based paint or asbestos containing materials) (**HAIL E1** and **HAIL I**).

7. There were two glasshouses at this property with crops growing inside. The persistent use of pesticides cannot be ruled out (**HAIL A10**).

5. Contamination Assessment

5.1. HAIL Activities “More Likely Than Not” Carried Out Onsite

The information reviewed in this investigation and the evidence found during the site visit suggest that HAIL activities have been or are “more likely than not” to have occurred on the area under consideration.

A review of the HAIL includes the following listings which are relevant to the activities identified above:

HAIL A *Chemical manufacture, application and bulk storage*

8. Livestock dip or spray race operations

10. Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds

HAIL E *Mineral extraction, refining and reprocessing, storage and use*

1. Asbestos products manufacture or disposal including sites with buildings containing asbestos products known to be in a deteriorated condition.

HAIL I *Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment.*

5.2. Potential Contaminants Associated with Historical Use

Table 5 outlines the potential contaminants that could be present onsite due to its current and/or historical use.

Note:

The terms used below are directly taken from the HAIL contaminants list.

Table 5. Hazardous substances typically associated with selected HAIL activities.

HAIL Category	Activity or industry on the HAIL	Hazardous substances likely to be associated with that activity or industry
A8	Livestock dip or spray race operations	Arsenic, organochlorines (e.g aldrin, dieldrin, DDT, lindane) and organophosphates, carbamates and synthetic pyrethroids
A10	Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds.	Arsenic, lead, copper, mercury; wide range of organic compounds including, organophosphates, and organochlorines.
E1	Asbestos products manufacture or disposal including sites with buildings containing asbestos products known to be in a deteriorated condition.	Asbestos
I	Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment.	Dependant on contaminants associated with the accidental release (e.g. burn pad).

5.3. Preliminary Conceptual Site Model

A conceptual site model helps to identify whether or not a complete exposure pathway exists. An exposure pathway must include a contaminant source, a transport mechanism, and a receptor. If one of these components does not exist, or can be removed, then the exposure pathway is incomplete. If the exposure pathway is incomplete, then there is little risk to human health at the specified location.

The conceptual site model developed for the site is presented in Table 6.

Table 6. Conceptual site model

Contaminant Source(s)	Contaminant/s of concern	Transport Mechanism	Receptor	Pathway complete Y/N
<ul style="list-style-type: none"> ■ Livestock Dip (HAIL A8) 	<ul style="list-style-type: none"> ■ Heavy metals ■ Pesticides 	<ul style="list-style-type: none"> ■ Ingestion of soil and dust. ■ Home grown produce consumption. ■ Dermal contact with soil. 	<ul style="list-style-type: none"> a) Site occupiers and the surrounding environment b) Construction workers (or contractors) during development phases c) Future users of the site (post-development) 	Potentially
<ul style="list-style-type: none"> ■ Historical pesticide 	<ul style="list-style-type: none"> ■ Multi-residue Pesticides 	<ul style="list-style-type: none"> ■ Ingestion of soil and dust. 	<ul style="list-style-type: none"> a) Site occupiers and the 	Potentially

usage (HAIL A10)	<ul style="list-style-type: none"> ■ Acidic herbicides ■ Heavy metals 	<ul style="list-style-type: none"> ■ Home grown produce consumption. ■ Dermal contact with soil. 	<p>surrounding environment</p> <p>b) Construction workers (or contractors) during development phases</p> <p>c) Future users of the site (post-development)</p>	
■ Building Demolition (HAIL E1 - I)	<ul style="list-style-type: none"> ■ Asbestos ■ Heavy metals ■ Lead paint 	<ul style="list-style-type: none"> ■ Inhalation of fugitive dust. ■ Ingestion of soil and dust. ■ Home grown produce consumption. ■ Dermal contact with soil. 	<p>a) Site occupiers and the surrounding environment</p> <p>b) Construction workers (or contractors) during development phases</p> <p>c) Future users of the site (post-development)</p>	Potentially

The assessment of the proposed activity (a private plan change request) it is highly unlikely that it would create any risks to human health. However, any future development or land use changes within/on LOI outlined within this report would require a Detailed Site Investigation.

5.4. Determining resource consent requirements under the NESCS

As this is a Private Plan Change consideration, the NESCS does not apply. This is because there is no subdivision or land use change taking place. A DSI is required in order to complete this assessment.

Once the plan change review has been completed, a DSI can be undertaken and then an assessment against the NESCS can be made.

6. Conclusions and Recommendations

This PSI is based on a review of Christchurch City Council records, Environment Canterbury records, historical aerial images, and Eliot Sinclair's site walkover inspection on 14 February 2023. Our conclusions and recommendations are as follows:

- a) Based off our desktop investigation and site walkover, HAIL activities have historically and currently been carried out on the site (**HAIL A8**, **HAIL A10**, and **HAIL E1** and **HAIL I**). Depending on the future land use/site development there could a risk to human health.
- b) This land is suitable for re-zoning (as per the purpose of this report) under the assumption that all potential HAIL areas listed above are investigated further prior to subdivision and any earthworks taking place.
- c) **However**, we recommend that the areas outlined as potential HAIL areas undergo additional detailed site investigation (DSI) in terms of the Ministry for the Environments Contaminated Land Management Guidelines to establish the nature, degree, and extent of contaminants distribution.
- d) A further assessment against the NESCS can be completed once these areas have been investigated further. This will detail the impacts to human health.

7. Accidental Discovery Protocol

It is recommended that if any unusual or contaminated materials are encountered during any future site works within the site that the requirements of the Accidental Discovery Protocol provided are followed.

If any of the following materials are encountered during any future earthworks, such as:

- a) Stained or odorous soil (e.g., black, green, grey; or smells of rotting organic material, petroleum hydrocarbons or solvents)
- b) Slag, ash, charcoal
- c) Rubbish comprising putrescible waste, or hardfill, or treated timber, or agrichemicals, etc
- d) Potential asbestos containing-material (for example fragments from cement fibre sheets, or loose fibres from insulation, etc.)

Then we recommend:

- e) Excavation and earthworks cease, the site secured to stop people entering the area where potential contamination was encountered, and then:
- f) Contact a contaminated land specialist for further advice. If required, **Eliot Sinclair (03) 379 4014** can inspect the area, assess the material determine if it is contaminated or hazardous, and then determine a practical course of action.

This report does not relieve contractors of their responsibilities under the Health and Safety at Work Act 2015. Site conditions relevant to construction works should be assessed by contractors who can make their own interpretation of the factual data provided. They should perform any additional tests as necessary for their own purposes, at their own expense.

8. SQEP Certifying Statement

I, Philippe Dumont of Eliot Sinclair & Partners Limited ("Eliot Sinclair"), certify that:

1. This preliminary site investigation meets the requirements of the Resource Management (National Environmental Standard for assessing and managing contaminants in soil to protect human health) Regulations 2011 because it has been:

- a. done by a suitably qualified and experienced practitioner, and
- b. reported on in accordance with the current edition of Contaminated land management guidelines No 1 – Reporting on contaminated sites in New Zealand, and
- c. the report is certified by a suitably qualified and experienced practitioner.

For activities under R8(4) of the NESCS this preliminary site investigation concludes it is possible that there will be a risk to human health if the activity is done to the piece of land.

Evidence of the qualifications and experience of the suitably qualified and experienced practitioner(s) who have done this investigation and have certified this report is appended to the preliminary site investigation report.

9. Disclaimer

This report has been prepared by Eliot Sinclair & Partners Limited ("Eliot Sinclair") only for the intended purpose as a preliminary site investigation report (PSI) for the proposed soil disturbance relating to the dwelling construction.

The report is based on:

- a) Information shown on Environment Canterbury HAIL database.
- b) Historical aerial imagery source from Canterbury Maps and Google Earth.
- c) Information from the Christchurch City Council property file.
- d) Eliot Sinclair's site walkover on 14 February 2023.
- e) NESCS and MfE's CLMG no.1 and no.5.

Where data supplied by Cashmere Private Plan Change (CPPC) or other external sources, including previous site investigation reports, have been relied upon, it has been assumed that the information is correct unless otherwise stated. No responsibility is accepted by Eliot Sinclair for incomplete or inaccurate data supplied by other parties.

Whilst every care has been taken during our investigation and interpretation of soil conditions and available data to ensure that the conclusions drawn, and the opinions and recommendations expressed are correct at the time of reporting, Eliot Sinclair has not performed an assessment of all possible conditions or circumstances that may exist at the site. Variations in conditions may occur between investigatory locations and there may be conditions such as contaminant sources that were not detected by the scope of the investigation that was carried out or have been covered over or obscured over time. Eliot Sinclair does not provide any warranty, either express or implied, that all conditions will conform exactly to the assessments contained in this report.

The exposure of conditions or materials that vary from those described in this report, or any update to the NES SCS or CLMG guidelines may require a review of our recommendations. Eliot Sinclair should be contacted to confirm the validity of this report should any of these occur.

This report has been prepared for the benefit of Cashmere Private Plan Change (CPPC) and the Christchurch City Council for the purposes as stated above. No liability is accepted by Eliot Sinclair or any of their employees with respect to the use of this report, in whole or in part, for any other purpose or by any other party.

10. References

Institute of Geological and Nuclear Sciences Limited. (2022, October 20). *New Zealand Geology Web Map*. GNS Science, Te Pū Ao. Retrieved January 30, 2023, from <https://data.gns.cri.nz/geology/>

Ministry for the Environment, Contaminated Land Management Guidelines No. 1: Reporting on contaminated sites in New Zealand (2021). Wellington.

Ministry for the Environment, Contaminated Land Management Guidelines No. 5: Site Investigation and Analysis of Soils (2021). Wellington.

Ministry for the Environment, Hazardous Activities and Industries List (HAIL) (2021). Wellington.

Ministry for the Environment, Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations (2011). Wellington.

Appendix A. Historical Aerial Imagery

Appendix A. Historical Aerial Imagery



Aerial imagery of Cashmere properties in 1925-1929 (site boundary outlined in white).
Retrieved from Eliot Sinclair Desktop Study.



Aerial imagery of Cashmere properties in 1940-1944 (site boundary outlined in white).
Retrieved from Eliot Sinclair Desktop Study.



Aerial imagery of Cashmere properties in 1945-1949 (site boundary outlined in white).
Retrieved from Eliot Sinclair Desktop Study.



Aerial imagery of Cashmere properties in 1955-1959 (site boundary outlined in white).
Retrieved from Eliot Sinclair Desktop Study.



Aerial imagery of Cashmere properties in 1965-1969 (site boundary outlined in white).
Retrieved from Eliot Sinclair Desktop Study.



Aerial imagery of Cashmere properties in 1970-1974 (site boundary outlined in white).
Retrieved from Eliot Sinclair Desktop Study.



Aerial imagery of Cashmere properties in 1975 -1979 (site boundary outlined in white).
Retrieved from Eliot Sinclair Desktop Study.



Aerial imagery of Cashmere properties in 1980 -1984 (site boundary outlined in white).
Retrieved from Eliot Sinclair Desktop Study.



Aerial imagery of Cashmere properties in 1985 -1989 (site boundary outlined in white).
Retrieved from Eliot Sinclair Desktop Study.



Aerial imagery of Cashmere properties in 1990 -1994 (site boundary outlined in white).
Retrieved from Eliot Sinclair Desktop Study.



Aerial imagery of Cashmere properties in 1995 -1999 (site boundary outlined in white).
Retrieved from Eliot Sinclair Desktop Study.



Aerial imagery of Cashmere properties in 2000 -2004 (site boundary outlined in white).
Retrieved from Eliot Sinclair Desktop Study.



Aerial imagery of Cashmere properties in 2010 -2014 (site boundary outlined in white).
Retrieved from Eliot Sinclair Desktop Study.



Christchurch post-earthquake aerial imagery of Cashmere properties in 2011 (site boundary outlined in white). Retrieved from Eliot Sinclair Desktop Study.



Aerial imagery of Cashmere properties in 2015 -2019 (site boundary outlined in white).
Retrieved from Eliot Sinclair Desktop Study.



Aerial imagery of Cashmere properties in 2016 (site boundary outlined in white). Retrieved
from Eliot Sinclair Desktop Study.



Latest aerial imagery of Cashmere properties (site boundary outlined in white). Retrieved from Eliot Sinclair Desktop Study.

Appendix B. Site Photographs



A) 240 Cashmere Road looking northeast from the Cashmere Road entrance.



B) Driveway for 240 Cashmere Road that is possibly created with rubble material.



C) Green waste stockpile at 240 Cashmere Road.



D) Box drain at the northern boundary of 240 Cashmere Road



E) Horse Arena on the north-eastern boundary of 240 Cashmere Road.



F) Farm sheds at 240 Cashmere Road.



G) Horse stable at 240 Cashmere Road.



H) Farm workshop at 240 Cashmere Road.



I) Pole shed at 236A Cashmere Road



J) Glasshouses and stockpiles at 236A Cashmere Road.



K) Greenwaste stockpiles at 236A with vegetable garden in the background.



L) 200 Cashmere Road from the north western boundary.



M) 36 Listrella Road looking east from the western boundary.



N) 36 Listrella Road (foreground) and 126 Sparks Road (background) looking north from the eastern boundary of 36 Listrella Road.



O) 126 Sparks Road looking from the southwestern boundary.



P) The entrance to 126 Sparks Road and the stock pens on 17 Northaw Street.



Q) 17 Northaw Street from the north east boundary.

Appendix L. Canterbury Regional Policy Statement (2013) Assessment

Canterbury Regional Policy Statement 2013 Assessment

The Canterbury Regional Policy Statement sets out objectives, policies and methods to resolve resource management issues in Canterbury. Chapter 5 (Land Use and Infrastructure) and Chapter 6 (Recovery and Rebuilding of Greater Christchurch) are most relevant to this Submission.

Chapter 5 – Land Use and Infrastructure, address resource management issues associated with urban and rural-residential development across the entire Canterbury region. Within Chapter 5, the objectives and policies that include Greater Christchurch are notated as 'Entire Region' and those which are not relevant to Greater Christchurch are noted as 'Wider Region'. Chapter 6 – Recovery and Rebuilding of Greater Christchurch focuses on metropolitan areas of Greater Christchurch including Lincoln, Prebbleton, Rolleston, Kaiapoi, Rangiora and Woodend. The objectives, policies and methods in Chapter 6 take precedence within the Greater Christchurch area.

Chapter Summary

CRPS 2013 Chapters	Assessment of re-zoning for Cashmere/Henderson Private Plan Change
Chapter 1 - Introduction	Chapter 1 does not contain any objectives or policies
Chapter 2 - Issues of Resource Management Significance to Ngai Tahu	The proposal recognises that Te Runanga o Ngai Tahu is the iwi authority and Te Taumutu Runanga are recognised mana whenua of the Christchurch District. Relevant investigations as part of the submission have not identified that the proposal site contains wahi tapu and other taonga.
Chapter 3 - Resource Management Processes for Local Authorities	This chapter discusses the working relationship of the Canterbury Regional Council and the Christchurch District Council. The proposal does not undermine the ability for these matters to be achieved.
Chapter 4 - Provisions for Ngai Tahu and their relationship with resources	This chapter sets out the tools and processes that the Canterbury Regional Council will use to engage Ngai Tahu as tangata whenua in the management of natural and physical resources. The proposal does not undermine the ability for these matters to be achieved.
Chapter 5 - Land use and infrastructure	The submission will provide integration and cohesion with the existing residential areas of Hoon Hay to the east of the submission site. This will help

CRPS 2013 Chapters

Assessment of re-zoning for Cashmere/Henderson Private Plan Change

	<p>contribute towards residential growth and housing supply. The site is ideally located with surrounding transport and servicing infrastructure and will not have any adverse effects on the environment. A more detailed assessment of Chapter 5 is provided below.</p>
<p>Chapter 6 - Recovery and Rebuilding of Greater Christchurch</p>	<p>Chapter 6 of the CRPS relates to the purpose of providing a resource management framework for the recovery and rebuilding of Greater Christchurch following the Canterbury Earthquakes. It can now be considered that the recovery and rebuilding following the earthquakes has for the majority been completed and now the residential demand is stemming from population growth rather than being related to earthquake recovery.</p> <p>It is noted under Map A that the submission site is not included within the anticipated residential growth, so will not comply with one objective.</p> <p>The proposal is partially consistent with Chapter 6 because it will provide for a well-designed residential development that will have less than minor effects on the surrounding natural and built environment despite being located outside the expected residential growth area within Map A.</p> <p>The submission is therefore mostly consistent with this chapter.</p>
<p>Chapter 7 - Freshwater</p>	<p>The proposal will not impact water flow, groundwater levels or allocation regimes and does not impact on providing sufficient quantities of water in water bodies.</p> <p>The submission is consistent with this chapter.</p>
<p>Chapter 8 - The Coastal Environment</p>	<p>The submission site is not located within the coast environment and therefore this chapter isn't relevant.</p>
<p>Chapter 9 - Ecosystems and Indigenous Biodiversity</p>	<p>The submission site is not located within any ecosystem or indigenous biodiversity overlays under the Christchurch District Plan or within PC14. However, an existing tree which is not listed as significant or as a heritage item will be maintained and protected during the development of the site.</p>

CRPS 2013 Chapters**Assessment of re-zoning for Cashmere/Henderson Private Plan Change**

Chapter 10 - Beds of rivers, lakes and their riparian zones

The proposed ODP will include a stormwater management area to the west of the development along the boundary with the existing Rural Urban Fringe Zone. This will also include recreational and conservation reserves.

The submission is consistent with this chapter.

Chapter 11 - Natural Hazards

Natural hazards related to the submission site have been assessed within the Geotechnical Report supporting this application. The site is considered suitable for rezoning to residential from a geotechnical and natural hazard perspective.

The submission is consistent with this chapter.

Chapter 12 - Landscape

The site is not located within an outstanding natural landscape overlay under the Christchurch District Plan or within PC14.

The submission is consistent with this chapter.

Chapter 13 - Historic Heritage

The proposed submission will not cause any loss of historic or heritage sites.

The submission is consistent with this chapter.

Chapter 14 - Air Quality

The proposal will not cause any deterioration of ambient air quality. With the rezoning proposal to residential this will likely decrease the impact of air quality compared to the site staying zoned as rural.

The submission is consistent with this chapter.

Chapter 15 - Soils

The proposal will not result in soil erosion, sedimentation of water bodies or the loss of significant vegetation cover.

The submission is consistent with this chapter.

Chapter 16 - Energy

The site is located adjacent to the Hoon Hay suburb. There is existing transport links to Hoon Hay and surrounding suburbs as well as Christchurch City. Good urban design will provide efficient use of the site and connectivity to Greater Christchurch.

The submission is consistent with this chapter.

CRPS 2013 Chapters**Assessment of re-zoning for Cashmere/Henderson Private Plan Change**

Chapter 17 - Contaminated Land	The proposal site has been investigated through a PSI report as part of this application and has been deemed to not be contaminated. The submission is consistent with this chapter.
Chapter 18 - Hazardous Substances	N/A
Chapter 19 - Waste Minimisation and Management	N/A

Chapter 5 – Land Use and Infrastructure**CRPS 2013 Chapter 5 Relevant Objectives and Policies****Assessment of re-zoning for Cashmere/Hendersons Private Plan Change**

Objective 5.2.1 Location, Design and Function of Development (Entire Region) Development is located and designed so that it functions in a way that: 1. Achieves consolidated, well designed and sustainable growth in and around existing urban areas as the primary focus for accommodating the region's growth; and 2. Enables people and communities, including future generations, to provide for their social, economic and cultural well-being and health and safety; and which: a. Maintains, and where appropriate, enhances the overall quality of the natural environment of the Canterbury region, including its coastal environment, outstanding natural features and landscapes, and natural values; b. Provides sufficient housing choice to meet the region's housing needs; c. Encourages sustainable economic development by enabling business activities in appropriate locations; d. Minimises energy use and/or improves energy efficiency;	The rezoning will allow for residential development of the site. This would create a well designed and sustainable residential growth adjacent to Hoon Hay as well as having direct transport links to Christchurch City. As the submission site is not within the coastal environment or any outstanding natural landscapes or natural value overlays the rezoning will not need to consider the effects that it may pose to these overlays. The proposal has a housing supply yield with 20 dwellings per ha at 336 dwellings and 25 dwellings per ha at 420 dwellings. The rezoning and future subdivision will minimise energy use by maintaining a consolidated urban form with the option to extend existing public transport links to reduce car use. It is not anticipated that there will be any adverse effects or reserve sensitivity from the existing rural and residential use. The development features a buffer of stormwater management, recreation and conservation reserves between the proposed residential area and the existing rural land. The submission site is not located within an area where transmission lines will be impacted.
---	---

- e. Enables rural activities that support the rural environment including primary production;
 - f. Is compatible with, and will result in continued safe, efficient and effective use of regionally significant infrastructure;
 - g. Avoids adverse effects on significant natural and physical resources including regionally significant infrastructure, and where avoidance is impracticable, remedies or mitigates those effects on those resources and infrastructure;
 - h. Facilitates the establishment of papakāinga and marae; and
 - i. Avoids conflicts between incompatible activities.
-

The proposed rezoning is consistent with objective 5.2.1 because it will achieve a consolidated and sustainable extension to the Hoon Hay suburb which will enable housing options for the increasing population of Christchurch and can contribute to their social, economic, cultural well-being and health and safety now and in the future.

Chapter 6 – Recovery and Rebuilding of Greater Christchurch

CRPS 2013 Chapter 6 Relevant Objectives and Policies

Objective 6.2.1 Recovery Framework

Recovery, rebuilding and development are enabled within Greater Christchurch through a land use and infrastructure framework that:

1. Identifies priority areas for urban development within Greater Christchurch;
 2. Identifies Key Activity Centres which provide a focus for high quality, and where appropriate, mixed-use development that incorporates the principles of good urban design;
 3. Avoids urban development outside of existing urban areas or greenfield priority areas for development, unless expressly provided for in the CRPS;
-

Assessment of rezoning for Cashmere/Hendersons Private Plan Change

Chapter 6 of the CRPS has the purpose of providing a resource management framework for the recovery and rebuilding of Greater Christchurch following the Canterbury Earthquake Sequence. It can be considered now that the recovery and rebuilding following the earthquakes has mostly been completed, and now the residential demand is stemming from population growth, rather than specifically related to earthquake recovery.

It is acknowledged that the site is not located within an identified priority area for development within Greater Christchurch as identified at the time of the Canterbury Earthquakes, and as a result

4. Protects outstanding natural features and landscapes including those within the Port Hills from inappropriate subdivision, use and development;
5. Protects and enhances indigenous biodiversity and public space;
6. Maintains or improves the quantity and quality of water in groundwater aquifers and surface waterbodies, and quality of ambient air;
7. Maintains the character and amenity of rural areas and settlements;
8. Protects people from unacceptable risk from natural hazards and the effects of sea-level rise;
9. Integrates strategic and other infrastructure and services with land use development;
10. Achieves development that does not adversely affect the efficient operation, use, development, appropriate upgrade, and future planning of strategic infrastructure and freight hubs;
11. Optimises use of existing infrastructure; and
12. Provides for development opportunities on Maori Reserves in Greater Christchurch.

is not located within the “projected infrastructure boundary” as detailed in Map A.

It is noted that Chapter 6 and Map A have been reviewed as part of the Our Space 2048 Greater Christchurch Settlement Pattern Update, however no changes were proposed for the submission site and surrounding area. Therefore, any new residential growth is not currently able to comply with this objective.

The proposal will not adversely affect outstanding natural features or landscapes and will not adversely affect any indigenous biodiversity.

The proposed rezoning will improve the quality of groundwater and surface water bodies by providing an integrated stormwater treatment and detention system. The rezoning will also maintain the character and amenity of existing rural areas, as well as the existing residential areas and suburbs.

The proposal will ensure that infrastructure and servicing will be integrated with the existing residential developments and infrastructure to the east of the submission site.

Overall, the proposed rezoning is mostly consistent with Objective 6.2.1 with the exception of subclause 6.2.1(3) of 12. It is noted that any new residential growth in or near the Hoon Hay suburb will not comply with this objective and any relevant policies due to the limiting nature of the projected infrastructure boundary in Map A. This is contrary CRPS objective 5.2.1(2b) which expects sufficient housing choice to be provided.

Objective 6.2.2 Urban form and settlement pattern

The urban form and settlement pattern in Greater Christchurch is managed to provide sufficient land for rebuilding and recovery needs and set a foundation for future growth, with an urban form that achieves consolidation and intensification of urban areas, and avoids unplanned expansion of urban areas, by:

1. Aiming to achieve the following targets for intensification as a proportion of overall growth through the period of recovery:
 - a. 35% averaged over the period between 2013 and 2016
-

The proposed rezoning will provide a logical expansion to the urban area of Hoon Hay as well as housing supply in the Greater Christchurch area. This will provide a consolidated and intensified urban area.

The rezoning will enable land to be bought forward for residential development to meet demand and enable the efficient use of the infrastructure network. The proposal will specifically encourage sustainable and self-sufficient growth in a way that provides efficient use of network infrastructure at a rate and in a location that meets

- b. 45% averaged over the period between 2016 to 2021
- c. 55% averaged over the period between 2022 and 2028;
- 2. Providing higher density living environments including mixed use developments and a greater range of housing types, particularly in and around the Central City, in and around Key Activity Centres, and larger neighbourhood centres, and in greenfield priority areas, Future Development Areas and brownfield sites;
- 3. Reinforcing the role of the Christchurch central business district within the Greater Christchurch area as identified in the Christchurch Central Recovery Plan;
- 4. Providing for the development of greenfield priority areas, and of land within Future Development Areas where the circumstances set out in Policy 6.3.12 are met, on the periphery of Christchurch's urban area, and surrounding towns at a rate and in locations that meet anticipated demand and enables the efficient provision and use of network infrastructure;
- 5. Encouraging sustainable and self-sufficient growth of the towns of Rangiora, Kaiapoi, Woodend, Lincoln, Rolleston and Prebbleton and consolidation of the existing settlement of West Melton;
- 6. Managing rural residential development outside of existing urban and priority areas; and
- 7. Providing for development opportunities on Maori Reserves.

Objective 6.2.3 Sustainability

Recovery and rebuilding is undertaken in Greater Christchurch that:

- 1. Provides for quality living environments incorporating good urban design;
- 2. Retains identified areas of special amenity and historic heritage value;
- 3. Retains values of importance to Tangata Whenua;
- 4. Provides a range of densities and uses; and
- 5. Is healthy, environmentally sustainable, functionally efficient, and prosperous.

Objective 6.2.4 Integration of transport infrastructure and land use

Prioritise the planning of transport infrastructure so that it maximises integration with the priority areas and new settlement patterns and facilitates the

subclauses 4 and 5, despite not being a Greenfield Priority Area or Future Development Area.

Therefore, it is considered that the rezoning is consistent with the intention of Objective 6.2.2.

The rezoning (and any future residential subdivision) will provide for well-designed quality living environments and provide for residential amenity values can provide for a range of densities or housing, can enhance local amenity values and will be sustainable and functionally efficient.

Therefore, the rezoning is consistent with Objective 6.2.3.

Proposed access points to the development are shown within the proposed ODP. This will provide an integrated transport network that is coordinated with the adjoining residential development.

movement of people and goods and provision of services in Greater Christchurch, while:

1. Managing network congestion;
2. Reducing dependency on private motor vehicles;
3. Reducing emission of contaminants to air and energy use;
4. Promoting the use of active and public transport modes;
5. Optimising use of existing capacity within the network; and
6. Enhancing transport safety.

Objective 6.2.5 Key activity and other centres

Therefore, the rezoning is consistent with objective 6.2.4

N/A

Objective 6.2.6 Business land development

N/A

Policy 6.3.1 Development within the Greater Christchurch area

In relation to recovery and rebuilding for Greater Christchurch:

1. Give effect to the urban form identified in Map A, which identifies the location and extent of urban development that will support recovery, rebuilding and planning for future growth and infrastructure delivery;
 2. Give effect to the urban form identified in Map A (page 6.27) by identifying the location and extent of the indicated Key Activity Centres;
 3. Enable development of existing urban areas and greenfield priority areas, including intensification in appropriate locations, where it supports the recovery of Greater Christchurch;
 4. Ensure new urban activities only occur within existing urban areas or identified greenfield priority areas as shown on Map A, unless they are otherwise expressly provided for in the CRPS;
 5. Provide for educational facilities in rural areas in limited circumstances where no other practicable options exist within an urban area;
 6. Provide for commercial film or video production activities in appropriate commercial, industrial and rural zones within the Christchurch District;
 7. Provide for a metropolitan recreation facility at 466-482 Yaldhurst Road; and
 8. Avoid development that adversely affects the function and viability of, or public investment in, the Central City and Key Activity Centres.
-

It is acknowledged that the site is not located within an identified priority area for development within Greater Christchurch and is not located within the infrastructure boundary as detailed in Map A.

It is noted that Chapter 6 and Map A have been reviewed by ECan, however no changes were proposed to the Hoon Hay suburb and surrounding area. Therefore, any new residential growth in will not comply with this objective.

It is considered that the proposal does not strictly meet Policy 6.3.1 because the site of the proposed rezoning is not identified in Map A. It is noted that Policy 6.3.1(3) allows development to be enabled in existing urban areas in appropriate locations where it supports recovery.

The recent proposed changes to Map A did not identify any further land for development, despite their being significant residential demand.

The NPS-UD provides for unanticipated and out-of-sequence development that significantly adds to development capacity, therefore allowing development to be considered despite not being in accordance with the CRPS.

Policy 6.3.2 Development form and urban design

Business development, residential development (including rural residential development) and the establishment of public space is to give effect to the principles of good urban design below, and those of the NZ Urban Design Protocol 2005, to the extent appropriate to the context:

1. Turangawaewae – the sense of place and belonging – recognition and incorporation of the identity of the place, the context and the core elements that comprise the through context and site analysis, the following elements should be used to reflect the appropriateness of the development to its location: landmarks and features, historic heritage, the character and quality of the existing built and natural environment, historic and cultural markers and local stories.
 2. Integration – recognition of the need for well-integrated places, infrastructure, movement routes and networks, spaces, land uses and the natural and built environment. These elements should be overlaid to provide an appropriate form and pattern of use and development.
 3. Connectivity – the provision of efficient and safe high quality, barrier free, multimodal connections within a development, to surrounding areas, and to local facilities and services, with emphasis at a local level placed on walking, cycling and public transport as more sustainable forms of
 4. Safety – recognition and incorporation of Crime Prevention Through Environmental Design (CPTED) principles in the layout and design of developments, networks and spaces to ensure safe, comfortable and attractive places.
 5. Choice and diversity – ensuring developments provide choice and diversity in their layout, built form, land use housing type and density, to adapt to the changing needs and circumstances of the population.
 6. Environmentally sustainable design – ensuring that the process of design and development minimises water and resource use, restores ecosystems, safeguards mauri and maximises passive solar gain.
 7. Creativity and innovation – supporting opportunities for exemplar approaches to infrastructure and urban form to lift the benchmark in the development of new urban areas in the Christchurch region.
-

The proposed rezoning, outline development plan, and any future subdivision will give effect to the principles of good urban design.

The proposed ODP and any future subdivision will incorporate the concept of Turangawaewae by having a design that is cohesive with the surrounding suburbs and environment.

The proposed rezoning will be well integrated and connected with the existing residential development in Hoon Hay. Road connections will be provided to link in with the existing residential development of Hoon Hay.

Principles of CPTED have been incorporated into the proposed ODP plan to ensure passive surveillance and outlook over public spaces.

The proposal will provide a housing choice which could have the potential of up to 420 dwellings/lots. The design will be environmentally sustainable by having an integrated stormwater treatment system.

The proposal is consistent with Policy 6.3.2.

Policy 6.3.3 Development in accordance with outline development plans
Development in greenfield priority areas and rural residential development is to occur in accordance with the provisions set out in an outline development plan or other rules for the area. Subdivision must not proceed ahead of the incorporation of an outline development plan in a district plan. Outline development plans and associated rules will:

1. Be prepared as:
 - a. A single plan for the whole of the priority area; or
 - b. Where an integrated plan adopted by the territorial authority exists for the whole of the priority area and the outline development plan is consistent with the integrated plan, part of that integrated plan; or
 - c. A single plan for the whole of a rural residential area; and
2. Be prepared in accordance with the matters set out in Policy 6.3.2;
3. To the extent relevant show proposed land uses including:
 - a. Principal through roads, connections with surrounding road networks, relevant infrastructure services and areas for possible future development;
 - b. Land required for community facilities or schools;
 - c. Parks and other land for recreation;
 - Land to be used for business activities;
 - e. The distribution of different residential densities, in accordance with Policy 6.3.7;
 - f. Land required for stormwater treatment, retention and drainage paths;
 - g. Land reserved or otherwise set aside from development for environmental, historic heritage, or landscape protection or enhancement;
 - h. Land reserved or otherwise set aside from development for any other reason, and the reasons for its protection from development;
 - i. Pedestrian walkways, cycleways and public transport routes both within and adjoining the area to be developed;
4. Demonstrate how Policy 6.3.7 will be achieved for residential areas within the area that is the subject of the outline development plan, including

The proposed rezoning introduces an ODP for the site as part of this submission.

The ODP has been prepared as a single integrated plan that has incorporated the principles detailed in Policy 6.3.2 above. The ODP shows the road network, other transport routes, residential densities and layout, stormwater basins and reserves.

any staging;

5. Identify significant cultural, natural or historic heritage features and values, and show how they are to be protected and/or enhanced;
6. Document the infrastructure required, when it will be required and how it will be funded;
7. Set out the staging and co-ordination of subdivision and development between landowners;
8. Demonstrate how effective provision is made for a range of transport options including public transport options and integration between transport modes, including pedestrian, cycling, public transport, freight, and private motor vehicles;
9. Show how other potential adverse effects on and/or from nearby existing or designated strategic infrastructure (including requirements for designations, or planned infrastructure) will be avoided, remedied or appropriately mitigated;
10. Show how other potential adverse effects on the environment, including the protection and enhancement of surface and groundwater quality, are to be avoided, remedied or mitigated;
11. Show how the adverse effects associated with natural hazards are to be avoided, remedied or mitigated as appropriate and in accordance with Chapter 11 and any relevant guidelines; and
12. Include any other information that is relevant to an understanding of the development and its proposed zoning.

Policy 6.3.4 Transport Effectiveness

Ensure that an efficient and effective transport network that supports business and residential recovery is restored, protected and enhanced so that it maintains and improves movement of people and goods around Greater Christchurch by:

1. Avoiding development that will overload strategic freight routes;
 2. Providing patterns of development that optimise use of existing network capacity and ensuring that, where possible, new building projects support increased uptake of active and public transport, and provide opportunities for modal choice;
-

The proposed rezoning will have access from transport links which directly have access to the existing Hoon Hay suburb as well as links to Cashmere Road.

The proposal is consistent with Policy 6.3.4.

3. Providing opportunities for travel demand management;
 4. Requiring integrated transport assessment for substantial developments;
- and
5. Improving road user safety.

Policy 6.3.5 Integration of land use and infrastructure

Recovery of Greater Christchurch is to be assisted by the integration of land use development infrastructure by:

1. Identifying priority areas for development to enable reliable forward planning for infrastructure development and delivery;
- Ensuring that the nature, timing and sequencing of new development are co-ordinated with the development, funding, implementation and operation of transport and other infrastructure in order to:
- a. Optimise the efficient and affordable provision of both the development and the infrastructure;
 - b. Maintain or enhance the operational effectiveness, viability and safety of existing and planned infrastructure;
 - c. Protect investment in existing and planned infrastructure;
 - d. Ensure that new commercial film or video production facilities are connected to reticulated water and wastewater systems; and
 - e. Ensure new development does not occur until provision for appropriate infrastructure is in place;
3. Providing that the efficient and effective functioning of infrastructure, including transport corridors, is maintained, and the ability to maintain and upgrade that infrastructure is retained;
 4. Only providing for new development that does not affect the efficient operation, use, development, appropriate upgrading and safety of existing strategic infrastructure, including by avoiding noise sensitive activities within the 50dBA Ldn airport noise contour for Christchurch International Airport, unless the activity is within an existing residentially zoned urban area, residential greenfield area identified for Kaiapoi, or residential greenfield priority area identified in Map A (page 6-28) and enabling commercial film or video production activities within the noise contours as a compatible use of this land; and
-

The proposed rezoning will be appropriately serviced by reticulated water supply and wastewater connections, with an onsite stormwater treatment and management basin.

The proposal is unlikely to have adverse effects on strategic infrastructure.

The proposal is consistent with Policy 6.3.5.

5. Managing the effects of land use activities on infrastructure, including avoiding activities that have the potential to limit the efficient and effective, provision, operation, maintenance or upgrade of strategic infrastructure and freight hubs.

Policy 6.3.6 Business Land

N/A

Policy 6.3.7 Residential location yield and intensification

1. In relation to residential development opportunities in Greater Christchurch:
 2. Subject to Policy 5.3.4, residential greenfield priority area development shall occur in accordance with Map A. These areas are sufficient for both growth and residential relocation through to 2028.
 3. Intensification in urban areas of Greater Christchurch is to be focused around the Central City, Key Activity Centres and neighbourhood centres commensurate with their scale and function, core public transport routes, mixed-use areas, and on suitable brownfield land.
 4. Intensification developments and development in greenfield priority areas shall achieve at least the following residential net densities averaged over the whole of an ODP area (except where subject to an existing operative ODP with specific density provisions):
 5. 10 household units per hectare in greenfield areas in Selwyn and Waimakariri District;
 6. 15 household units per hectare in greenfield areas in Christchurch City;
 7. Intensification development within Christchurch City to achieve an average of:
 8. 50 household units per hectare for intensification development within Christchurch City;
 9. 30 households units per hectare for intensification development elsewhere.
 10. Provision will be made in district plans for comprehensive development across multiple or amalgamated sites.
 11. Housing affordability is to be addressed by providing sufficient intensification and greenfield priority area land to meet housing demand
-

The site of the proposed rezoning is not located within the greenfield development areas in Map A. However, the site is adjacent to the projected infrastructure boundary and existing residential development in Hoon Hay.

The proposed rezoning and ODP will provide a density of either a minimum of 20 or 25 dwellings per ha.

The NPS-UD enables a new site to be considered and weighed up ahead of full review of other statutory documents.

The proposal will be mostly consistent with Policy 6.3.7.

during the recovery period, enabling brownfield development and providing for a range of lot sizes, densities and appropriate development controls that support more intensive developments such as mixed use developments, apartments, townhouses and terraced housing

Policy 6.3.8 Regeneration of brownfield land	N/A
Policy 6.3.9 Rural residential development	N/A
Policy 6.3.10 Maori Rserve	N/A
Policy 6.3.11 Monitoring and Review	N/A

Appendix M. Water Supply Report

A white topographic map with contour lines is overlaid on a solid red background. The map shows a complex, mountainous terrain with numerous peaks and valleys. The contour lines are closely spaced in some areas, indicating steeper slopes, and more widely spaced in others, indicating flatter ground. The map covers most of the upper and middle portions of the page.

Water Supply Design Report

Cashmere/Hendersons Plan Change

Prepared for Cashmere Park Ltd, G. Ward & R.

Brown

511270

**eliot
sinclair**

Water Supply Design Report

Cashmere/Hendersons Plan Change

Prepared for Cashmere Park Ltd, G. Ward & R. Brown

511270

Quality Control Certificate

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Status:	A		
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Version History

Status	Description	Author	Release Date
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Appendix A. EPA NET Model Output Plans

Appendix B. Pipe Information

1. Introduction

Eliot Sinclair (ES) has been engaged by Cashmere Park Limited, Geoff Ward and Robert Brown to prepare a preliminary potable water supply model in support of a Plan Change Application, located within the Cashmere Stream and Hendersons Basin catchments, as shown in Figure 1.



Figure 1. Plan Change Zone Boundary

The purpose of this report is to present the hydraulic modelling results for the conceptual water supply design to show that the proposed plan change area can be serviced by the existing water supply network.

The conceptual water supply design has been modelled using the freeware water supply modelling software package EPA NET version 2. Modelling for both the residential and firefighting demand has been carried out.

Residential and firefighting supply pressures were supplied by the Christchurch City Council (CCC) for the water supply input to the model (reference CCC Final WS Rezone Source and Sprinkler Design Pressures Plan (2014)).

The following information is provided within the Appendices.

Appendix A provides the EPA NET model output plans.

Appendix B provides the modelled pipe information.

2. Water Supply Network

2.1. Catchment Area

The area included within the conceptual water supply model comprised of the following land parcels:

- Stages 1 & 2 of the Cashmere Park residential subdivision (already zoned residential).
- The approximate 23 ha plan change area (part of which is already zoned residential).
- The approximate 4.17 ha land neighbouring and to the west of the plan change area (already zoned residential).

The total number of allotments (lots) accounted for within the modelled area is 381.

Figure 2 Shows the land area included within the water supply network model.

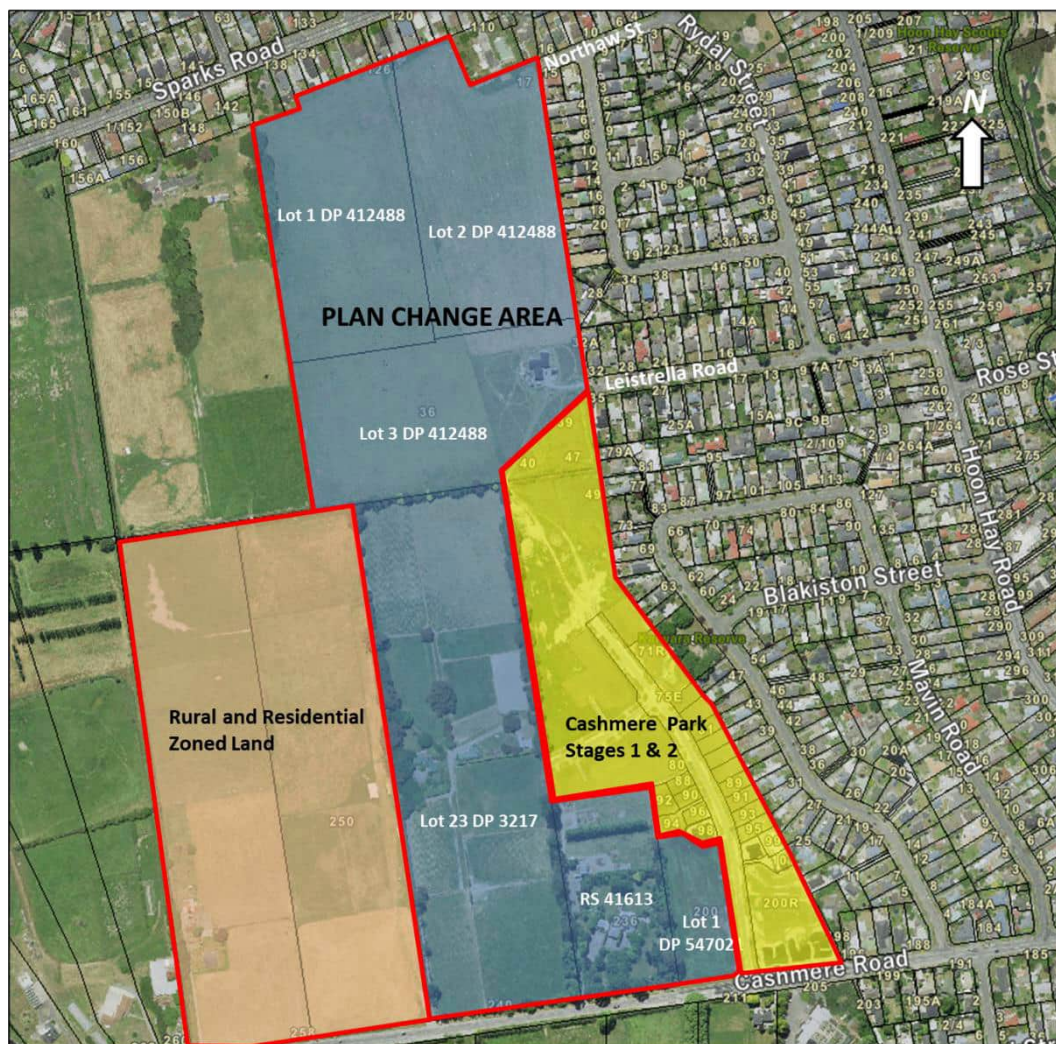


Figure 2. Residential Catchment Included Within The Water Supply Model

2.2. Peak Flow Demand

With a diversity factor applied, in accordance with Chart 1 of the CCC Infrastructure Design Standard (IDS) Part 7 Section 7.5.1, the peak design flow per lot is approximately 0.15 L/s; as shown in Figure 3.

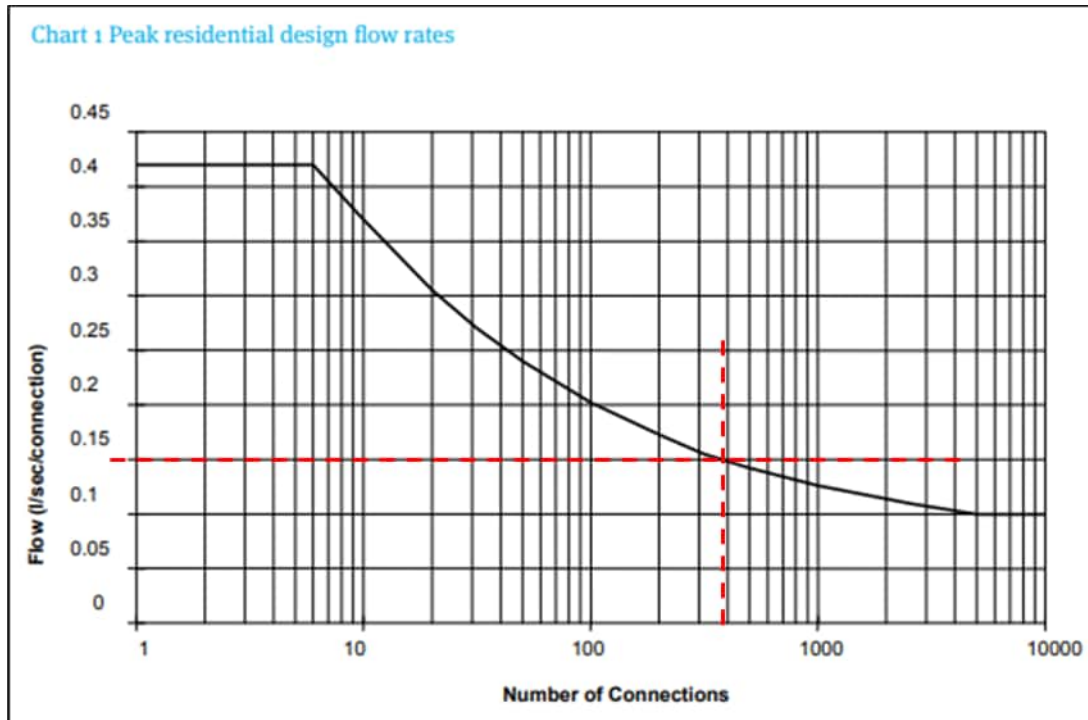


Figure 3. IDS Chart 1 Residential Design Flow Rates

2.3. Points of Supply

The plan change area is located on the boundary between the Central and Sutherlands Water Supply Zones. During the development of Stage 1 of the Cashmere Park residential subdivision, the zone boundary valve was moved to the west down Cashmere Road, to allow the entire Cashmere Park Stages 1, 2 & 3 to fall within the Central Water Supply Zone. The hydraulic water supply model is based on the current boundary valve location and allows for the entire plan change area to be supplied with water from the Central Zone. The undeveloped residential zoned land to the west of the plan change area that has been included within the model may require the zone boundary valve to be moved further to the west, however this potential requirement has not been accounted for within the modelling.

The modelled points of supply are the DN100 water main within Cashmere Road (two points of supply have been taken off this main) and the DN100 main within Leistrella Road. The CCC Source and Sprinkler Design Pressures Map indicate a sprinkler pressure of 400 kPa for the Central Zone and this minimum residual pressure was used as the basis for modelling.

2.4. Firefighting

Modelling was carried out using two hydrants with the discharge flow at each hydrant set to 12.5 L/s (25 L/s total) and the residential demand set to 60% of the peak load. The hydrants tested were located at the furthest end of the supply main.

2.5. Pipe Sizes

All mains included within the model are DN180 OD PE100.

63 OD MDPE submains and crossovers will provide points of connection to individual residential lots.

3. EPA NET Model Assumption

	Value	Units
Friction factors used		
Plastic pipes, includes fitting losses	0.15	mm
Fire hydrants used	2	
Flow per hydrant	12.5	l/s

Domestic Subdivision check sheet

Fire service Zone	FW2	
Hydrants required	2	
Flow per hydrant	12.5	l/s
Required fire flows and pressures met	Yes	
Number of Lots in model	381	
Flow per Lot (See Chart 1 of IDS Part 7)	0.15	l/s
Can lots be subdivided further hence increase demand	n/a	
Possible ultimate number of lots	Taken account of in model	
Is significant surge expected at the site	No	
Predicted surge pressure	-	kPa
Lowest Residual Mains Pressure	400	kPa
Hence minimum house site pressure (at building site not boundary)	200	kPa
See Table 1 of IDS Part 7		
Minimum calculated pressure at building site	358	kPa
Maximum calculated pressure in system	392	kPa

Does this exceed the PN rating of the associated pipe and fittings	No
Unit headloss less than 0.01 m/m in mains (When firefighting flows not included)	Yes
Operating temperature expected to exceed 20 degrees Reduction factor in strength for temperature - See manufacture data	No -
Is the Ground Contaminated Pipe material required for contaminated ground	No -
Valve spacing and location allows isolation	Yes
Likelihood of contamination or Stagnation	No
Suitable connections provided for future subdivision	Yes
Capacity provided for future subdivision	Yes

4. EPA NET Version 2 Model Outputs

Appendix A provides plans showing the pressures at the nodes according to the colour coded pressure legend in metres of head. The plans also show the unit headloss in the mains according to the colour coded unit headloss legend. The colours on these legends represent the range of pressures and losses.

Information on the demand and the location of the hydrants tested for firefighting flows has been noted on the output plans.

Appendix B provides full pipe information for the modelled residential demands showing internal diameter, length, pressure ratings, flows, velocity and unit head loss. Full pipe information for the fire flow scenarios has not been included as it would be duplication.

5. Disclaimer

This report has been prepared by Eliot Sinclair & Partners Limited ("Eliot Sinclair") only for the intended purpose as technical supporting documentation in support of a Plan Change Application.

The report is based on:

- Information supplied by the Christchurch City Council for the Stage 1 design of the Cashmere Park residential subdivision.
- Christchurch City Council Infrastructure Design Guideline.
- New Zealand Firefighting Code of Practise SNZ PAS 4509:2008.
- Christchurch City Council services maps.

Where data supplied by Cashmere Park Ltd, G. Ward & R. Brown or other external sources, including previous site investigation reports, have been relied upon, it has been assumed that the information is correct unless otherwise stated. No responsibility is accepted by Eliot Sinclair for incomplete or inaccurate data supplied by other parties.

Whilst every care has been taken during our investigation and interpretation of describe conditions to ensure that the conclusions drawn, and the opinions and recommendations expressed are correct at the time of reporting, Eliot Sinclair has not performed an assessment of all possible conditions or circumstances that may exist at the site. Variations in conditions may occur between investigatory locations and there may be conditions that were not detected by the scope of the investigation that was carried out or have been covered over or obscured over time. Eliot Sinclair does not provide any warranty, either express or implied, that all conditions will conform exactly to the assessments contained in this report.

The exposure of conditions or materials that vary from those described in this report, may require a review of our recommendations. Eliot Sinclair should be contacted to confirm the validity of this report should any of these occur.

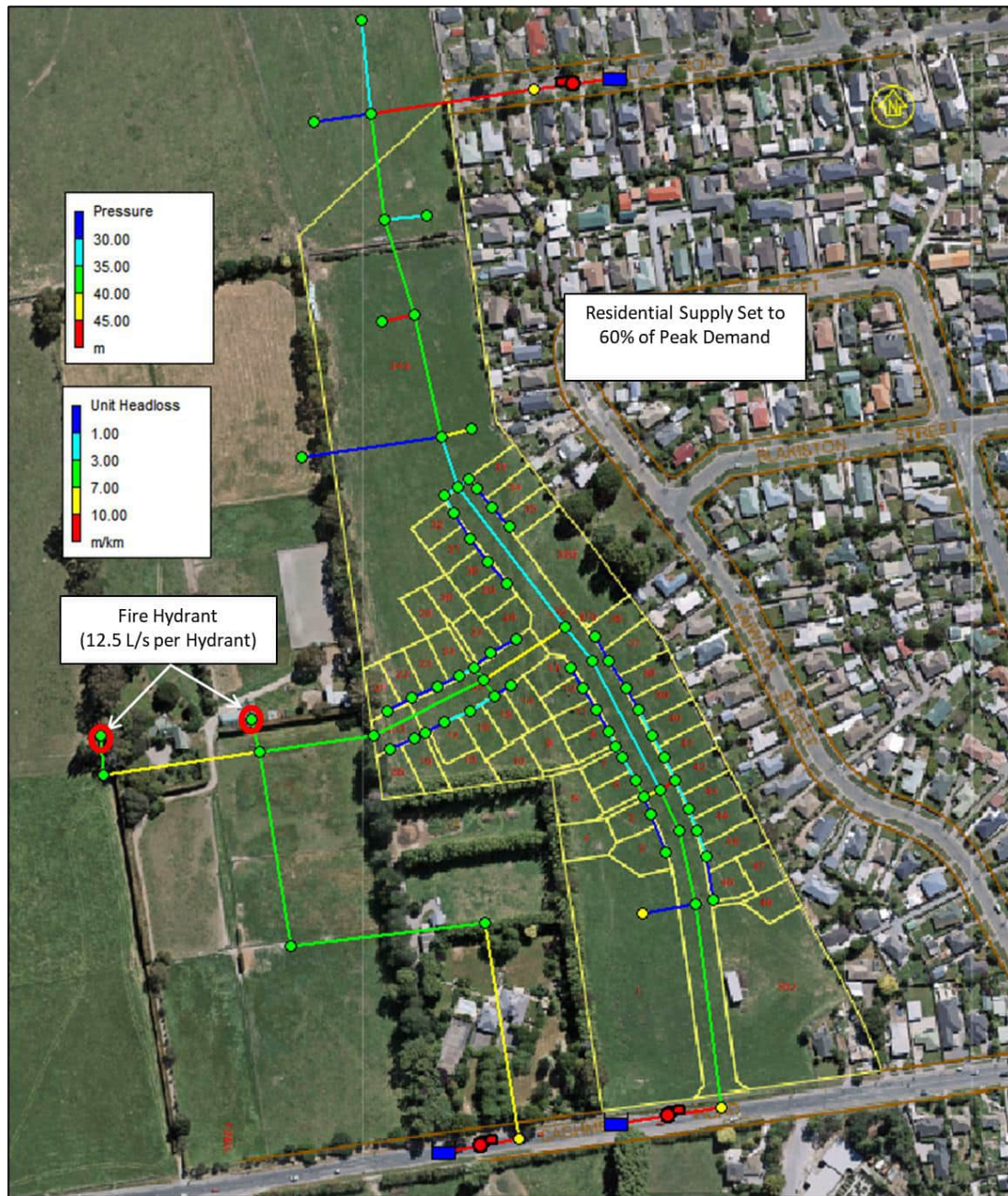
This report has been prepared for the benefit of Cashmere Park Ltd, G. Ward & R. Brown and the Christchurch City Council for the purposes as stated above. No liability is accepted by Eliot Sinclair or any of their employees with respect to the use of this report, in whole or in part, for any other purpose or by any other party.

Appendix A. EPA NET Model Output Plans

DOMESTIC PRESSURES AND HEADLOSSES



FIREFIGHTING PRESSURES AND HEADLOSSES



INTERNAL PIPE DIAMETERS



Appendix B. Pipe Information

Link ID	Length m	Diameter mm	Roughness mm	Flow LPS	Velocity m/s	Unit Headloss m/km
Pipe 3	121.82	152.7	0.15	13.47	0.74	3.99
Pipe 4	45.24	152.7	0.15	12.66	0.69	3.54
Pipe 5	26.5	152.7	0.15	12.66	0.69	3.54
Pipe 6	10.44	50.9	0.15	1.17	0.57	10.06
Pipe 7	18.62	50.9	0.15	0.54	0.27	2.39
Pipe 8	13.98	50.9	0.15	0.45	0.22	1.71
Pipe 9	16.96	50.9	0.15	0.36	0.18	1.14
Pipe 10	25.92	50.9	0.15	0.27	0.13	0.68
Pipe 11	10.41	50.9	0.15	0.99	0.49	7.35
Pipe 12	11.15	50.9	0.15	0.18	0.09	0.33
Pipe 13	24.08	50.9	0.15	0.09	0.04	0.06
Pipe 14	10.74	50.9	0.15	0.63	0.31	3.17
Pipe 15	15.79	50.9	0.15	0.54	0.27	2.39
Pipe 16	85.93	152.7	0.15	10.5	0.57	2.48
Pipe 17	25.63	152.7	0.15	10.5	0.57	2.48
Pipe 18	57.28	152.7	0.15	19.09	1.04	7.79
Pipe 19	73.38	152.7	0.15	17.74	0.97	6.76
Pipe 20	15.04	50.9	0.15	0.54	0.27	2.39
Pipe 21	14.69	50.9	0.15	0.45	0.22	1.71
Pipe 22	17.19	50.9	0.15	0.36	0.18	1.14
Pipe 23	14.69	50.9	0.15	0.27	0.13	0.68
Pipe 24	19.09	50.9	0.15	0.18	0.09	0.33
Pipe 25	16.48	50.9	0.15	0.09	0.04	0.06
Pipe 26	9.13	50.9	0.15	0.63	0.31	3.17
Pipe 27	13.03	50.9	0.15	0.18	0.09	0.33
Pipe 28	17.19	50.9	0.15	0.09	0.04	0.06
Pipe 29	10.03	50.9	0.15	0.36	0.18	1.14
Pipe 30	15.04	50.9	0.15	0.27	0.13	0.68
Pipe 31	16.5	50.9	0.15	0.18	0.09	0.33
Pipe 32	16.48	50.9	0.15	0.09	0.04	0.06
Pipe 33	11.54	50.9	0.15	0.63	0.31	3.17
Pipe 34	11.54	50.9	0.15	0.09	0.04	0.06
Pipe 35	16.89	50.9	0.15	0.45	0.22	1.71
Pipe 36	17.24	50.9	0.15	0.36	0.18	1.14
Pipe 37	12.91	50.9	0.15	0.27	0.13	0.68
Pipe 38	7.16	50.9	0.15	0.18	0.09	0.33
Pipe 39	15.77	50.9	0.15	0.09	0.04	0.06
Pipe 40	8	50.9	0.15	0.36	0.18	1.14
Pipe 41	7.38	50.9	0.15	0.27	0.13	0.68
Pipe 42	14.25	50.9	0.15	0.18	0.09	0.33
Pipe 43	15.29	50.9	0.15	0.09	0.04	0.06
Pipe 44	10.03	50.9	0.15	0.45	0.22	1.71
Pipe 45	12.22	50.9	0.15	0.36	0.18	1.14
Pipe 46	17.99	50.9	0.15	0.27	0.13	0.68
Pipe 47	17.13	50.9	0.15	0.18	0.09	0.33
Pipe 48	17.02	50.9	0.15	0.09	0.04	0.06
Pipe 49	104.54	152.7	0.15	-8.59	0.47	1.7
Pipe 51	31.39	152.7	0.15	-9.4	0.51	2.01
Pipe 52	74.58	152.7	0.15	-14.53	0.79	4.61
Pipe 53	58.73	152.7	0.15	-15.7	0.86	5.34
Pipe 54	63.74	152.7	0.15	-16.06	0.88	5.58
Pipe 55	25.56	50.9	0.15	0.36	0.18	1.14
Pipe 56	19.62	50.9	0.15	1.17	0.57	10.06
Pipe 57	19.03	50.9	0.15	0.99	0.49	7.35
Pipe 58	83.39	152.7	0.15	4.14	0.23	0.44
Pipe 59	7.55	50.9	0.15	0.45	0.22	1.71
Pipe 60	9.67	50.9	0.15	0.36	0.18	1.14
Pipe 61	14.69	50.9	0.15	0.27	0.13	0.68
Pipe 62	15.1	50.9	0.15	0.18	0.09	0.33
Pipe 63	14	50.9	0.15	0.09	0.04	0.06
Pipe 1	55.45	152.7	0.15	7.83	0.43	1.43
Pipe 65	68.15	152.7	0.15	17.65	0.96	6.69
Pipe 66	34.07	152.7	0.15	1.89	0.1	0.11
Pipe 67	93.57	152.7	0.15	18.17	0.99	7.08
Pipe 71	32.24	152.7	0.15	0.81	0.04	0.02
Pipe 72	97.75	152.7	0.15	25.78	1.41	13.92
Pipe 68	129.55	152.7	0.15	19.68	1.07	8.26
Pipe 69	115.91	152.7	0.15	16.8	0.92	6.09
Pipe 70	116.58	152.7	0.15	15.9	0.87	5.48
Pipe 73	19.91	152.7	0.15	12.5	0.68	3.46
Pipe 74	23.4	152.7	0.15	12.5	0.68	3.46

Appendix N. Geotechnical Report



GEOTECH
consulting ltd

CASHMERE FIELDS REZONING GEOTECHNICAL REPORT



Reference Number: 3933

Date: 15 December 2022

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Appendix 1 **Site Plan & Land Damage Records**

Appendix 2 **CPT and Borelogs**

Appendix 3 **Lab Data and C_{FC} Analysis**

Appendix 4 **Liquefaction Profiles**

OVERVIEW SUMMARY

Project Type:	Land Development			
Nature of Project:	Plan Change			
Investigation undertaken:	24 CPTs to 9 - 15m depth, 4 boreholes to 7 – 21m, 6 hand augers and scala penetrometer tests to 2m depth, seismic dilatometer testing to 10m depth, geophysical testing to 7m depth.			
Subsoil Characteristics:	Interbedded loose to very loose silts and sandy silts/silty sands, with some bands of medium dense clean sands, and also significant bands of non-liquefiable clayey materials. Most of the CPT probes terminated in a lower sand or silt layer prior to refusing suddenly on a dense gravel layer some 9 to 12m below ground level. Below this are interbedded sands, gravels and silts to 16-19m depth, then dense gravels to at least 21m depth.			
Water table depth:	1.3m -1.75m (full saturation) depth.			
Calculated Settlements:	SLS		ULS	
	Total	Upper 10m	Total	Upper 10m
	10-50mm (25mm avg)	10 - 40mm (20mm avg)	50 - 260mm (100mm avg)	50 - 140mm (80mm avg)
Lateral Spread:	Currently not a likely hazard but the imposition of requirements for stormwater detention basins and the like will likely create a lateral spread risk that will require mitigation.			
Technical Category:	Land assessed as TC2-like or Hybrid TC2/TC3 behavior.			
Foundation options:	Shallow TC2-type or TC2/TC3 Hybrid foundations will likely be suitable.			
Suitability for Rezoning	Suitable for rezoning for residential subdivision.			

GEOTECHNICAL REPORT

Cashmere Fields Rezoning

1.0 INTRODUCTION

It is proposed to rezone a block of land that lies to the immediate west of the existing residential suburb of Hoon Hay. The (currently rural) block, consisting mainly of relatively flat farmland, is bounded by a strip of residential land along Sparks Road to the north, runs south (in a width of 300 – 600m) to Cashmere Road. To the west is further rural land; to the east are the suburban houses of Hoon Hay.

A series of geotechnical investigations have been carried out at the site as part of the assessment of the land for the proposed plan change (as well as for an existing subdivision on the land), and a detailed liquefaction assessment has been undertaken. This report outlines that assessment and the conclusions that can be drawn from it.

It is envisaged that at subdivision stage further investigations will be carried out to refine the assessment of liquefaction on the site, and to provide design parameters for any future subdivision.

2.0 DAMAGE OBSERVATIONS

Lidar data shows very little to only moderate cumulative ground deformations at the site from the events spanning from September 2010 to June 2011. Appendix 1 (figure SK2) shows the results of these damage observations.

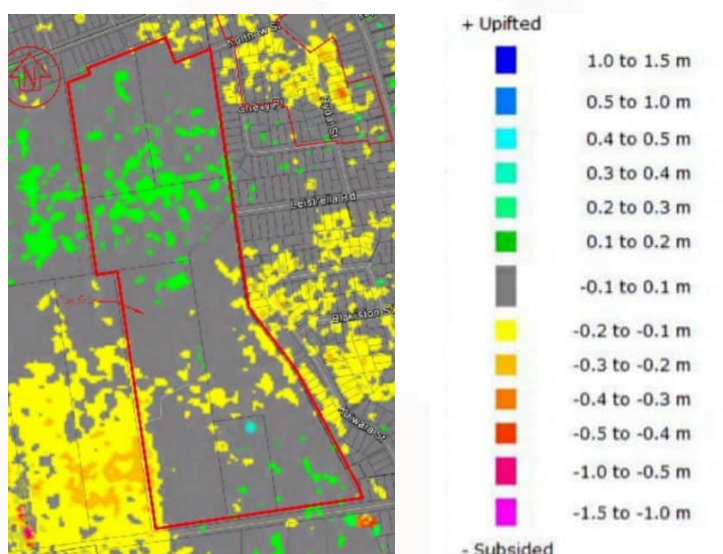


Figure 1 Lidar ground deformations, September 2010 to June 2011 Events

All the land to the immediate east of the site is classified as MBIE Technical category 2 (“TC2”); the Lidar cumulative ground deformations there (i.e. to the immediate east) are similar, if not slightly more intense, than those on this site. Our own observations on the site following the February 2011 earthquake event showed only minor surface manifestation of liquefaction, affecting less than 5% of the land.

Appendix 1 contains summary information from the NZGD (drawing sheets 2 & 3).

3.0 THE SITE INVESTIGATION

3.1 Objectives

This site investigation data has been analysed to provide information about the composition, spatial relationships and geotechnical properties of the materials that underlie the site.

In particular the following information was sought:

- Definition of the quality and variability of the soils underlying the site.
- Water table depth.
- Liquefaction potential.
- Permissible likely foundation types.
- Site subsoil category.

3.2 Methodology

Twenty-four cone penetrometer tests (“CPT”) have been carried out at the site between 2011 and 2019. The combined data for the CPTs range in depth from 9m to 15m below ground level (all refusing on dense gravels). Two dual tube boreholes have been drilled at the site, one in the west of the site and one in the north of the site, to a depth of 21m in each case. A seismic dilatometer test has been carried out in the central part of the site, as well as two boreholes to 7-10m depth. Some geophysical testing (i.e. shear wave velocity) has also been carried out at the site as part of a University research project. Six hand augers with associated scala penetrometer tests to 2 metres depth have been drilled at the site as well.

Further information regarding groundwater levels, ground deformations, levels of shaking, and observed ground damage during the Canterbury Earthquake Sequence was also retrieved from the New Zealand Geotechnical Database.

Appendix 1 (drawing sheet 1) has a plan showing the locations of the investigations that have been carried out to date.

3.3 Subsurface Conditions

The geological map for Christchurch indicates that the site is underlain by predominantly sand and silt overbank deposits (Springston Formation), of Holocene age.

The interpreted CPT probes show variable subsurface conditions. Generally, the soils consist of interbedded loose to very loose silts and sandy silts/silty sands, with some bands of medium dense clean sands (often about 1-2 metres thick, somewhere between 3 and 6 metres below ground level) and also significant bands of non-liquefiable clayey materials. Most of the CPT probes terminated in a lower sand or silt layer prior to refusing suddenly on what is likely to be a dense gravel layer 9-12m below ground. Below this are interbedded sands, gravels, and silts to 16-19m depth, then dense gravels to at least 21m depth.

CPT traces and borelogs are included in Appendix 2.

3.4 Groundwater

Groundwater was observed during the hand auger investigations at 1.0 – 1.9m. Piezometer records from the site indicate that groundwater levels can fluctuate from 2m depth to ground level. The GNS Science Median Groundwater Surface Elevations from the Canterbury Geotechnical Database for this site indicate that the long-term median water table is 1.3m below ground surface.

While these levels are a useful guide to expected conditions during construction, another aspect that can be considered for liquefaction analysis purposes is the degree of saturation of the soils that lie below the apparent water table. If a soil is not 100% saturated then it is unable to liquefy.

Typically, it is assumed that any soil below the water table is 100% saturated. However, in a number of separate liquefaction research projects in Christchurch and also overseas where cross-hole geophysical testing has been undertaken, the measured P-wave velocity (V_p) profiles have shown that in fact it is not uncommon for soils below the water table to be unsaturated. V_p testing was undertaken at Cashmere Fields on two separate occasions. Testing in December 2013 showed that the soils were not saturated in the upper 2.7m of the soil profile. Testing in the same location in late March 2017 showed the depth to complete saturation to be over 8 metres. Therefore, the design depth of 1.3m if used for liquefaction analyses would be conservative.

We have examined core photos from the borehole drilled at BH 38197. This shows a brown colouration to the soils to a depth of 1.75m, below which all of the soils are grey in colour. The grey soils are from the same geological origin as the brown ones, but the grey colouration indicates that they have not been exposed to oxygen in the long term. In other words, the position of the change in colour indicates the long term average (saturated) groundwater table. We also carried out a set of hand auger boreholes on the site. All the soils in those locations were a brown colouration to 2m depth, with the exception of one location where the colour change occurred at 1.8m depth.

Therefore, for liquefaction analysis purposes we have set a design median groundwater level at 1.75m depth.

3.5 Environmental Issues

Environmental engineering is beyond the scope of our expertise, however we have checked the Environment Canterbury 'Listed Land Use Register' (LLUR) (<http://llur.ecan.govt.nz/>) and found that (on the day accessed, 15 December 2022) it advises for this site (excluding the already developed area in the eastern side) the following:

"The Listed Land Use Register does not currently have any information about a Hazardous Activities and Industries List site on this land parcel"

3.6 Flood Levels

The Christchurch City Council flood hazard maps at: <https://www.ccc.govt.nz/services/stormwater-and-drainage/flooding/floorlevelmap> were accessed on 15 December 2022. The CCC system shows that much of the site, with the exception of some higher ground in the central portion of the land, is within the modelled 50-year and 200-year flood extents, and is within the Flood Management Area ("FMA"). The City Council should be referred to for further information.

4.0 INTERPRETATION

The gathered data (as described in the previous section) has been analysed for dynamic and static conditions as follows:

4.1 Fines Content Analysis

For routine liquefaction analysis it is common to use soil fines contents ('FC') that are inferred from the CPT data, rather than actual FC data from laboratory testing. This can affect the outcome of the analysis to varying degrees. The more robust way to carry out an analysis is to use detailed laboratory-measured fines contents from actual soil samples. However, the cost of doing this can be relatively high, and often not warranted on small projects. The CPT data-derived fines content formulation uses a 'best fit' line from a regression of historical FC and I_c data (I_c is a parameter derived from CPT data) – see Figure 2 below.

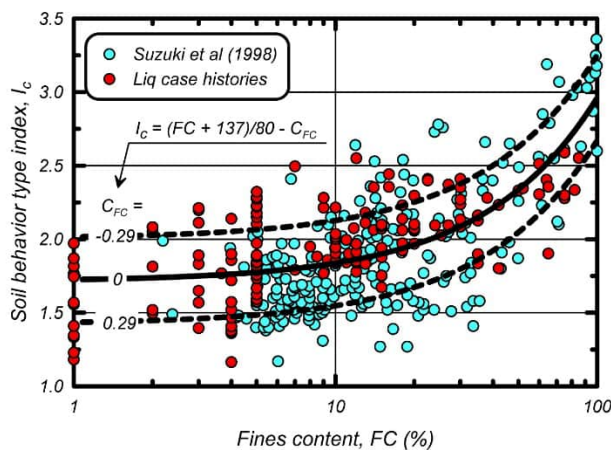


Figure 2 - Figure 2.11 from Boulanger & Idriss (2014)

The data is however quite scattered, and a particular site might not necessarily be best represented by the 'best fit' line ($C_{FC} = 0$ in Figure 2). In Christchurch it is not uncommon for site data to fall well below the best fit line, for example. Other correlations can be used by employing an appropriate site-specific 'fines correction factor' (" C_{FC} "). It is often found in Christchurch that a C_{FC} of 0.2 – 0.3 can be appropriate.

Four samples were retrieved from the liquefiable soils at the Cashmere Fields site and tested for fines content, as part of a silty soils research project in 2013. The fines content tests when regressed against the CPT-derived I_c parameter, showed that a C_{FC} parameter of 0.23 is appropriate. (When additional data is added from adjacent properties, the average C_{FC} is even higher.)

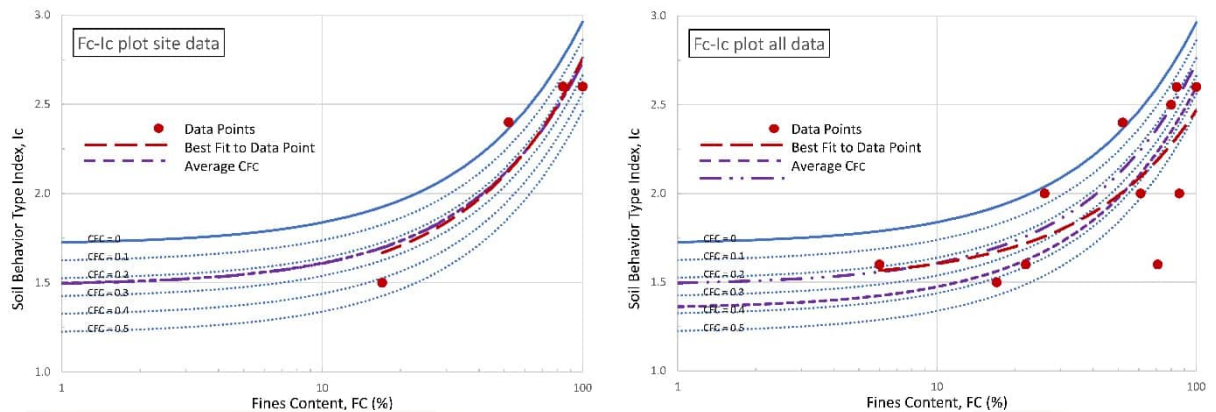


Figure 3 – C_{FC} Plots

(a) site specific data only.

(b) additional data from neighbouring sites

4.2 Liquefaction Potential

The saturated silty and sandy materials below the water table have some potential for liquefaction in a large earthquake. The CPT profiles have been analysed using the method of Boulanger & Idriss (2014); and free field settlements assessed using the method of Zhang et al (2002). A ‘fines correction’ coefficient (C_{FC}) of 0.23 was adopted for the analysis, as described in the previous section. Additionally, given the good performance of the site in the Canterbury Earthquake Sequence as discussed in Section 2, a probability of liquefaction threshold, P_L , of 50% was adopted.

For the design input ground motion accelerations, we have adopted the PGAs (peak ground accelerations) recommended by MBIE, which is an SLS event (at M7.5) of 0.13g, a further SLS event (at M6) of 0.19g, and at ULS 0.35g (M7.5) for an IL2 (importance level 2) building. The SLS event at 0.19g/M6 was found (as is almost always the case) to be the dominant SLS event.

From the CPT data analyses we calculate Ultimate Limit State (‘U.L.S.’) theoretical post liquefaction free-field ground settlements at the site of up to 140mm in the upper 10m of the soil profile, averaging 80mm, and 260mm for the full depth of CPTs (but less than 120mm for all but one CPT location). We have also calculated liquefaction potential and ground settlements from the smaller Serviceability Limit State (‘S.L.S.’) – this indicates ground settlements of up to 40mm in the upper 10m of the soil profile and 50mm for the full depth profiles.

Additionally, we have assessed the ‘Liquefaction Severity Number’ (LSN) for each of the liquefaction cases.

Table 1 – Assessed Liquefaction Induced Settlements (+/-50%) and LSN

CPT I.D.	500 years (ULS) 0.35g/M7.5			25 years (SLS) 0.13g / M7.5, 0.19g / M6		
	Ground Settlement (mm)		LSN	Ground Settlement (mm)		LSN
	Total	Upper 10m		Total	Upper 10m	
CPT 02	257	137	35	51	27	7
CPT 03	109	107	22	29	29	5
CPT 04	96	75	14	23	17	3
CPT 05	93	74	16	42	37	7
CPT 06	52	52	14	11	11	3
CPT 07	53	50	12	15	15	3
CPT 08	104	104	23	22	22	4
CPT 36421	54	52	11	19	19	4
CPT 10	98	90	17	36	35	6
CPT 11	99	78	16	31	22	3
CPT 12	79	62	14	29	22	4
CPT 13	81	64	18	21	14	3
CPT 14	120	75	20	48	36	9
CPT 15	99	99	27	10	10	3
CPT 16	106	86	22	23	20	5
CPT 18	81	81	16	16	16	3
CPT 19	86	85	15	12	12	2
CPT 20	101	101	20	32	32	6
CPT 21	92	88	21	37	34	6
CPT 22	78	70	15	26	23	4
CPT 24	114	47	11	23	13	2
CPT 25	101	98	20	11	11	2
CPT 26	66	66	14	16	16	3
CPT 27	80	75	15	20	19	4

Table 2 – Results Summary

Design Event	Design Ground Acceleration	Ground Settlement		LSN
		Total	Upper 10m	
500 years (U.L.S.)	0.35g / M7.5	50 - 260mm (100mm)	50 - 140mm (80mm)	11-35 (18)
25 years (S.L.S.)	0.13g / M7.5, 0.19g / M6	10-50mm (25mm)	10 - 40mm (20mm)	2-9 (4)

(values in brackets are averages)

The LSN values are a rough guide to the degree of ground surface damage that might be expected. The general descriptors are as follows in Table 3 (taken from the

NZGS Module 3 document, 'Investigation, Assessment and Mitigation of Liquefaction Hazards'):

Table 3– General Performance levels for Liquefied Deposits

Performance Level	Effects	Characteristics and Consequences	Characteristic LSN
L0	Insignificant	No significant excess pore water pressures (no liquefaction).	<10
L1	Mild	Limited excess pore water pressures; negligible deformation of the ground, and small settlements.	5-15
L2	Moderate	Liquefaction occurs in layers of limited thickness (small proportion of the deposit, say 10 percent or less) and lateral extent; ground deformation results in relatively small differential settlements.	10 - 25
L3	High	Liquefaction occurs in significant portion of the deposit (say 30 percent to 50 percent) resulting in transient lateral displacements, moderate differential movements, and settlement of the ground in the order of 100mm to 200mm.	15 - 35
L4	Severe	Complete liquefaction develops in most of the deposit resulting in large lateral displacements of the ground, excessive differential settlements and total settlement of over 200mm.	>30
L5	Very Severe	Liquefaction resulting in lateral spreading (flow), large permanent lateral ground displacements and/or significant ground distortion (lateral strains/stretch, vertical offsets and angular distortion).	

The LSN values assessed at ULS levels of shaking indicate 'moderate' to 'high' effects. For the SLS case the assessed effects are 'insignificant' to 'mild'.

Work by Bradley & Hughes (2012) indicates that in the M6.2 February 2011 event, this site was subject to a median PGA of 0.46g, which scales to an equivalent 0.32g from a 'standard' M7.5 event (i.e. close to a ULS event) and is well in excess of a 100 year 'ILS' event. If the 10-percentile ground motion is considered, this ground motion scales to an equivalent 0.20g from an M7.5 event (i.e. equivalent to a 100-year ILS design event). Similarly, the September 2010 event (0.25g from M7.1) 10-percentile motion scales to an equivalent 0.14g from an M7.5 event (i.e. in excess of an SLS event).

From this we can conclude that the site has been 'well tested' at SLS levels of shaking and ILS shaking.

4.3 Lateral Spread

Lateral spread is the post-liquefaction movement of either level liquefied ground towards a free edge or of sloping liquefied ground downhill. It often occurs along riverbanks and shorelines, and ground deformation is often expressed as extensional fissures. No instances of lateral spread were observed as a result of the Canterbury Earthquake Sequence and in its current state we do not anticipate a lateral spread hazard for this land. However, any requirements imposed on future subdivisions on this land for stormwater detention basins or the like will likely result in the creation of a localised lateral spread risk that will need to be mitigated at the time of construction.

4.4 Static Bearing Capacities

In the limited number of hand augers carried out to date, below the topsoil layer, scala penetrometer testing averages in the order of 50mm per blow, which indicates an ultimate bearing capacity of 200 kPa. More extensive testing will be required at subdivision and building consent stages to confirm this.

5.0 RMA NATURAL HAZARDS

5.5.1 Erosion

There are no major waterways adjacent to this subdivision. If a swale is constructed, then flow quantities and velocities are likely to be small and not cause erosion issues.

5.5.2 Falling Debris

The site is flat and not adjacent to any sloping ground; therefore danger from falling debris is not an issue at this site.

5.5.3 Subsidence

The land is regarded as TC2-like or in some areas 'TC2-3 Hybrid' in its performance (see section 6.2). Penetrometer testing has shown reasonable bearing capacities for foundations, and investigations have not detected any areas of uncontrolled fill or significant organic deposits. If suitable foundations are constructed, then structures will meet the requirements of the building code.

5.5.4 Flooding

This aspect is discussed in section 4.6 of the report. Suitable floor levels will be set in consultation with the Christchurch City Council.

5.5.5 Instability

The site is flat lying and therefore slope instability is not an issue for the subdivision under static conditions.

5.5.6 Volcanic and Geothermal Activity

These are not recognised risks at this site as there are no known active volcanic or geothermal areas in or near Canterbury.

5.5.7 Fire

This is beyond the scope of our expertise, however we note that the site is serviced by the Spreydon Fire Station, located approximately 3.8 km away by road.

5.5.8 Wind

This is beyond the scope of our expertise, however we note that NZS 3604 would suggest that this site is subject to 'high' wind loads.

5.5.9 Tsunami

The site is well outside any designated Tsunami evacuation zones.

6.0 RECOMMENDATIONS

Based on the information contained in section 3, and the data interpretations of section 4, we make the following recommendations for this site:

6.1 MBIE/MfE guidelines

In terms of the 2017 MBIE/MfE guidelines (Planning and Engineering Guidance for Potentially Liquefaction-Prone Land) we have carried out the equivalent of a 'Level C' (i.e. a detailed area-wide) assessment, and this land is classified as 'Liquefaction is Possible - Medium Liquefaction Vulnerability'.

6.2 Likely Technical Category

In considering the likely future land performance at this site we have considered the following aspects:

- Low levels of damage were observed after the September and February earthquakes.
- As concluded in section 4.2, the site has been 'well tested' at SLS levels of shaking and ILS shaking, and possibly near to ULS levels of shaking. Ground damage in a future SLS and ILS event is therefore unlikely to significantly exceed what is already evident on the site (which is relatively minor).
- Research into the over-prediction of liquefaction deformations (which utilised data from the Cashmere Fields site) shows that soil profiles that consist of highly interbedded deposits with few layers of clean sands, and having liquefiable layers that are predominantly silty sands that lack vertical connectivity between liquefiable layers, will likely perform better than the standard analysis methods would predict (Cubrinovski et al, 2017). The soil profiles at Cashmere Fields are of this nature.
- The adjacent suburb is all TC2, but Lidar settlements there from the Canterbury Earthquake Sequence are, on the whole, a little worse than at Cashmere Fields.

Therefore, based on the CPT-based assessment the land, and backed up by its performance in the Canterbury Earthquake Sequence, we advise that the Cashmere Fields land in its current state can be characterised by Technical Category 2 ("TC2") performance. A limited number of CPTs did show slightly worse theoretical performance under ULS conditions, and additional investigations at subdivision stage may also find some areas that indicate potentially worse performance – but

given that SLS performance is uniformly good across the entire site, the worst outcome is likely to be some areas designated as TC2/TC3 Hybrid.

6.3 Likely Foundation Construction

For residential buildings, TC2-type foundation construction likely will be suitable for much of the land here. This typically consists of a TC2 waffle slab or monolithic foundation mat for concrete floors, however other options are available (refer to the MBIE Guidelines for residential construction). For timber floors, shallow piles as per NZS 3604 are permissible (for a 'Type A' dwelling), or a well reinforced ring foundation (as per figure 4a in the MBIE guidelines), with internal shallow piles ('Type B' dwelling).

Where areas of TC/TC3 Hybrid performance are found, these TC2 waffle slabs will need to be underlain with a 600mm thick layer of reinforced compacted gravels.

6.4 Seismic Category

The consistency and depth of the alluvial formations underlying this site makes it a 'Class D' site in terms of the seismic design requirements of NZS1170.5:2004.

7.0 SUMMARY & CONCLUSIONS

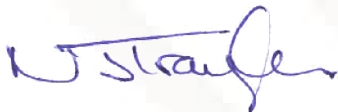
Ground conditions consist of interbedded loose to very loose silts and sandy silts/silty sands, with some bands of medium dense clean sands, and also significant bands of non-liquefiable clayey materials. Most of the CPT probes terminated in a lower sand or silt layer prior to refusing suddenly on a dense gravel layer some 9 to 12m below ground level. Below this are interbedded sands, gravels, and silts to 16-19m depth, then dense gravels to at least 21m depth.

Liquefaction assessments and site performance in the 2010-2011 Canterbury Earthquake Series indicate minor land deformations at SLS and ILS levels of shaking, and moderate deformations at ULS. The land is assessed as likely having TC2-like performance, with some areas that may be akin to TC2/TC3 hybrid performance.

It is my opinion that the land is geotechnically suitable for rezoning for residential subdivision and the construction of housing. Further ground investigations will be needed at subdivision consent stage as well as building consent stage.

Yours faithfully,

Geotech Consulting Ltd per:



Nick Traylen BE(Civil) (Hons) FEngNZ CPEng MICE CEng
CPEng 119170

8.0 LIMITATIONS

This report has been prepared solely for the benefit of, and under specific instruction from Warren Lewis as our client with respect to the brief, for use for this specific project. The reliance by other parties on the information or opinions contained in the report shall be at such parties' sole risk.

Recommendations and opinions (not to be construed as guarantees) in this report are based on data from boreholes and probings, including data provided by others. The borelogs are an engineering interpretation of the subsurface conditions. The nature and continuity of subsoil conditions away from the test locations are inferred and it must be appreciated that actual conditions could vary from the assumed model.

Environmental engineering is not within our area of expertise and therefore others will need to be consulted on such matters as contaminated ground issues.

During excavation and construction, the site should be examined by an Engineer or Engineering Geologist competent to judge whether the exposed subsoils are compatible with the inferred conditions on which the report has been based. It is possible that the nature of the exposed subsoils may require further investigation, and the modification of any design work that may have been based on this report.

It is important that Geotech Consulting Ltd is contacted if there is any variation in subsoil conditions from those described, as well as any variation in the property damage discussed in this report, as it may affect opinions expressed and any design parameters recommended in this report.

Regulatory and insurance issues may arise from some of the recommendations in this report; the client should seek independent advice on these aspects. This opinion is not intended to be advice that is covered by the Financial Advisers Act 2010.

9.0 REFERENCES

Boulanger, R.W., Idriss, I.M. (2014) "CPT and SPT based Liquefaction Triggering Procedures" *UCD Report UCD/CGM-14/01*

Bradley, B., Hughes, M. (2012) "Conditional Peak Ground Accelerations in the Canterbury Earthquakes for Conventional Liquefaction Assessment" *Technical Report for Department of Building and Housing*

Cubrinovski, M., Rhodes, A., Ntritsos, N., Van Ballegooy, S. (2017) "System Response of Liquefiable Deposits" *Proc. 3rd International Conference on Performance-based Design in Earthquake Geotechnical Engineering (PBD-III)*

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Ministry of Business Innovation and Employment and Ministry for the Environment (2017) "Planning and Engineering Guidance for Potentially Liquefaction-Prone Land" *dated December 2012*

Zhang,,G., Robertson. P.K., Brachman, R.W.I. (2002) "Estimating Liquefaction-Induced Ground Settlements from CPT for Level Ground", *Can. Geotech. J.* (39), 1168-1180.

Appendix 1

Site Plan & Land Damage Records



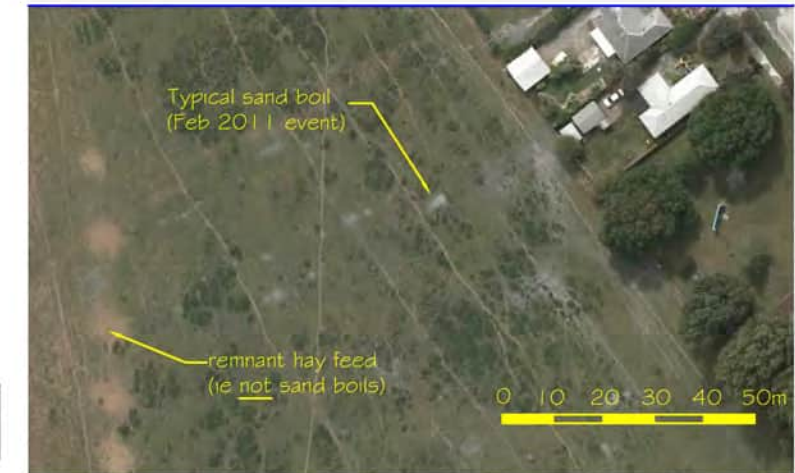
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- Stage 1 CPT
- Stage 2 CPT
- Stage 3 CPT
- DT1
- DT2
- Stage 1 Borehole
- HA3
- Stage 2 Hand Auger

DETAIL A
1:2500



DETAIL B
1:1500



DETAIL C
1:1500



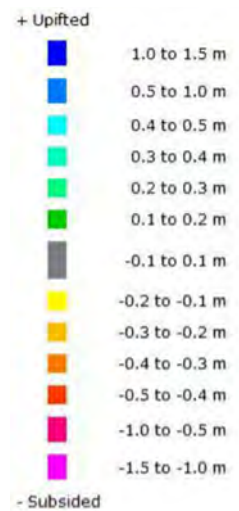
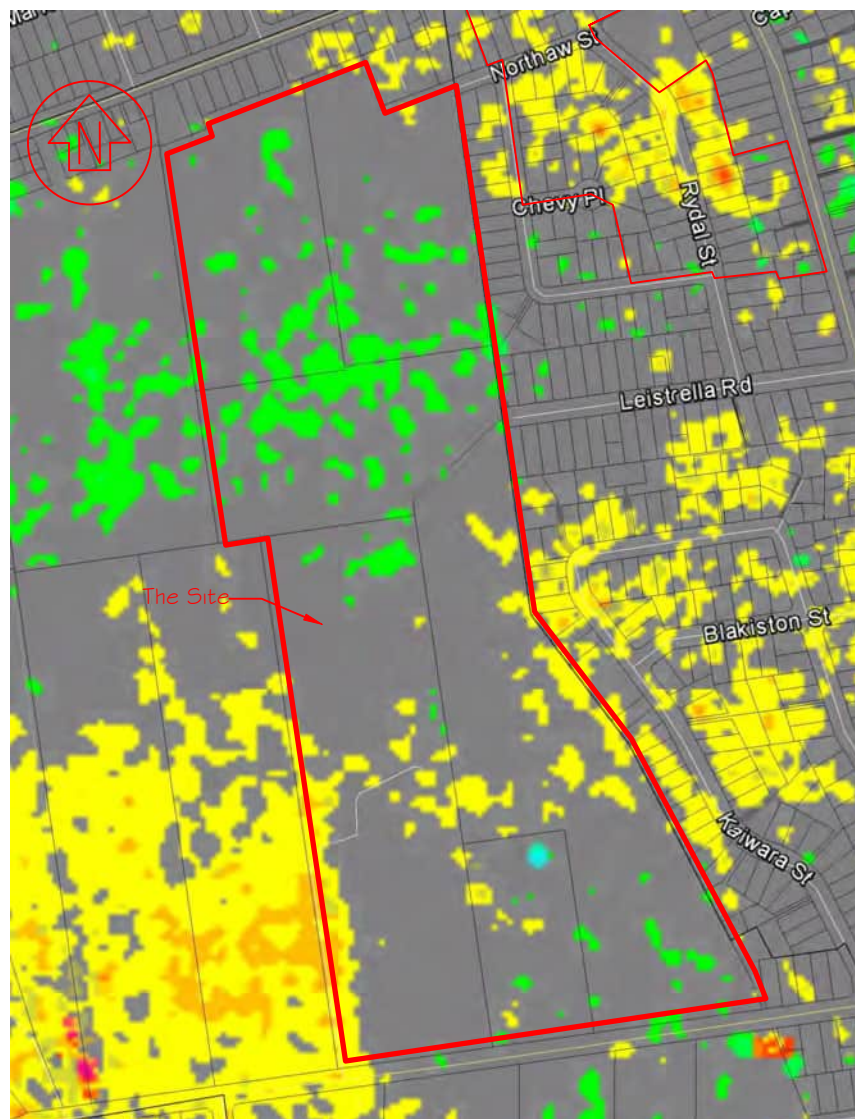
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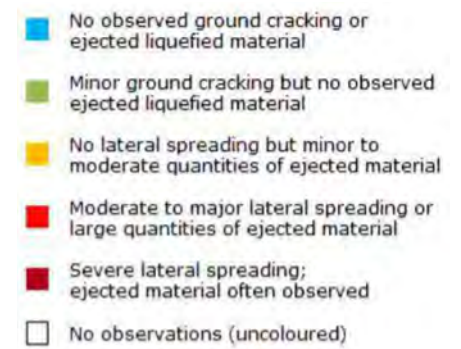
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LIQUEFACTION PROPERTY OBSERVATIONS SEPT 2010
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LIQUEFACTION PROPERTY OBSERVATIONS FEB 2011
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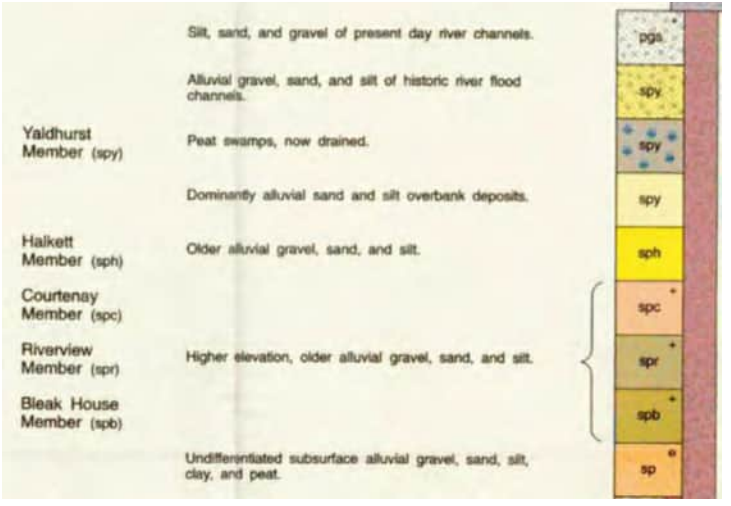
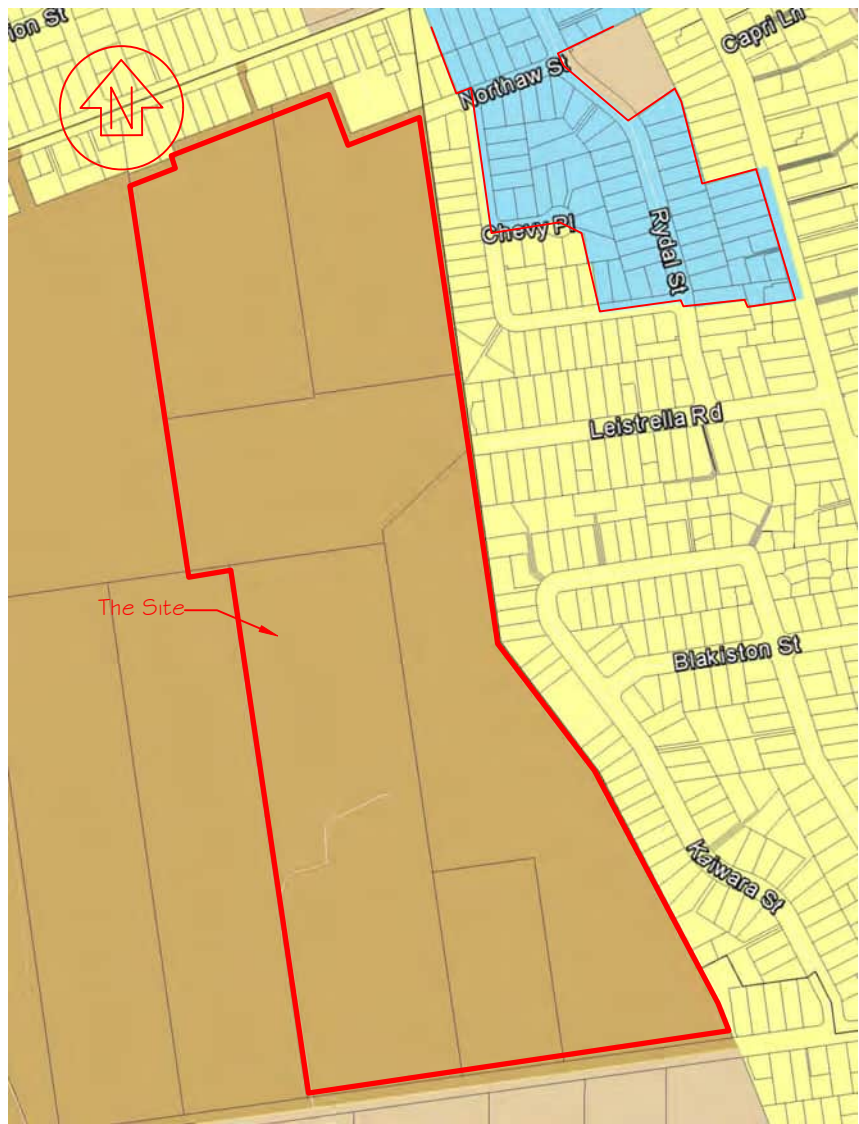
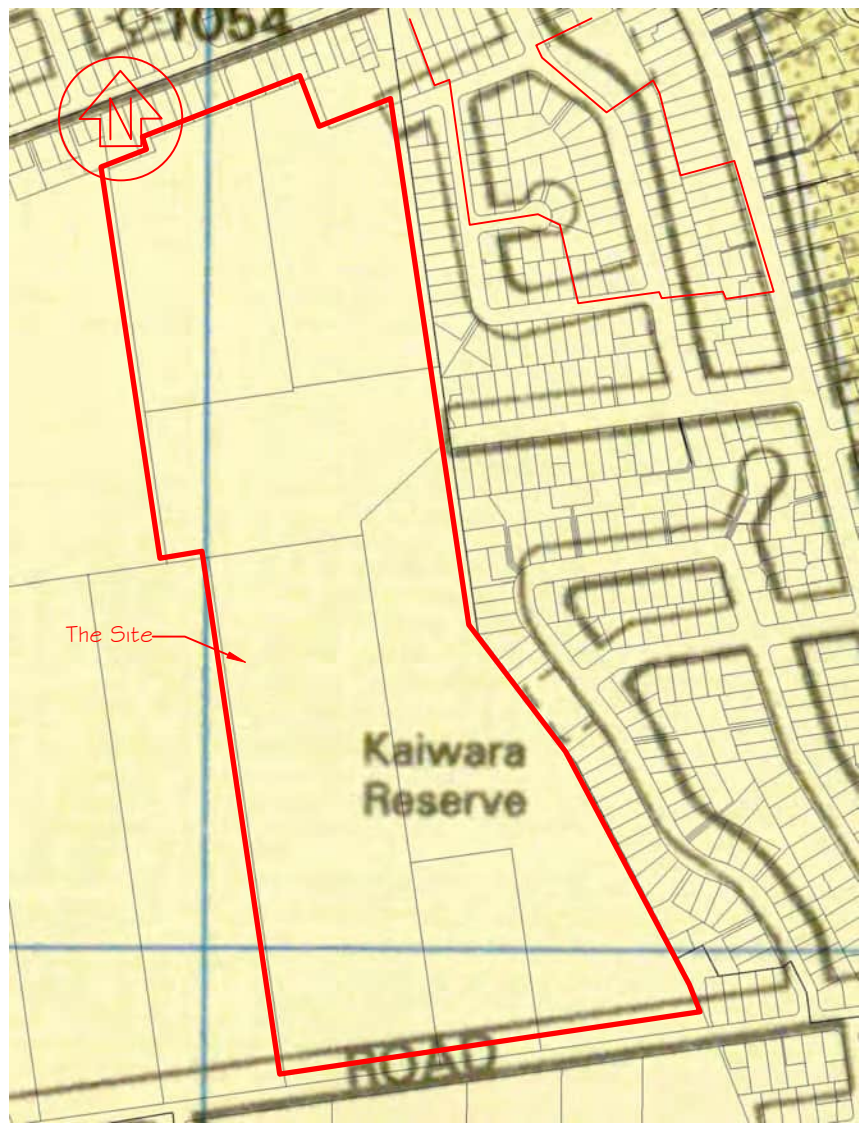
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MBIE TECHNICAL CATEGORIES
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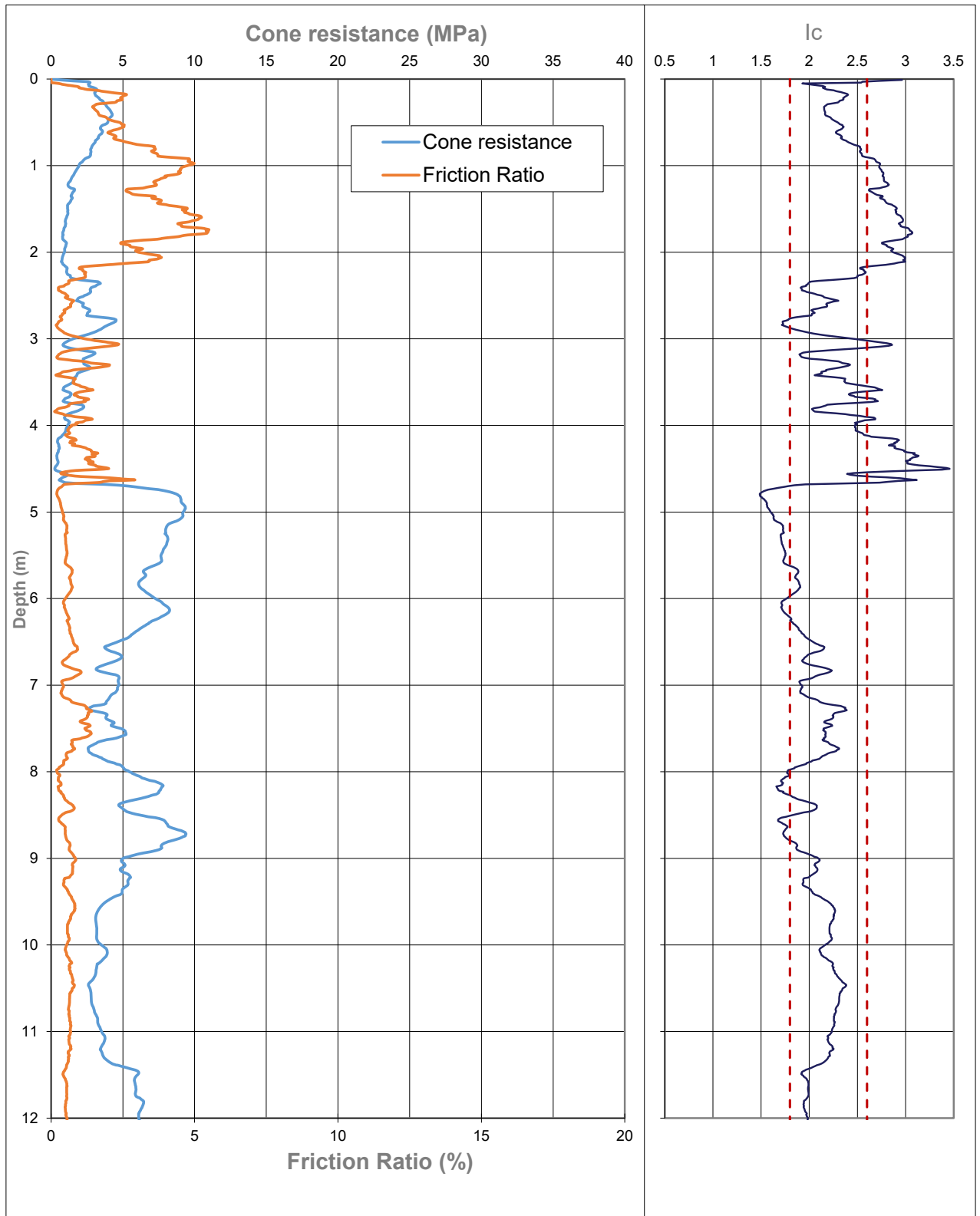
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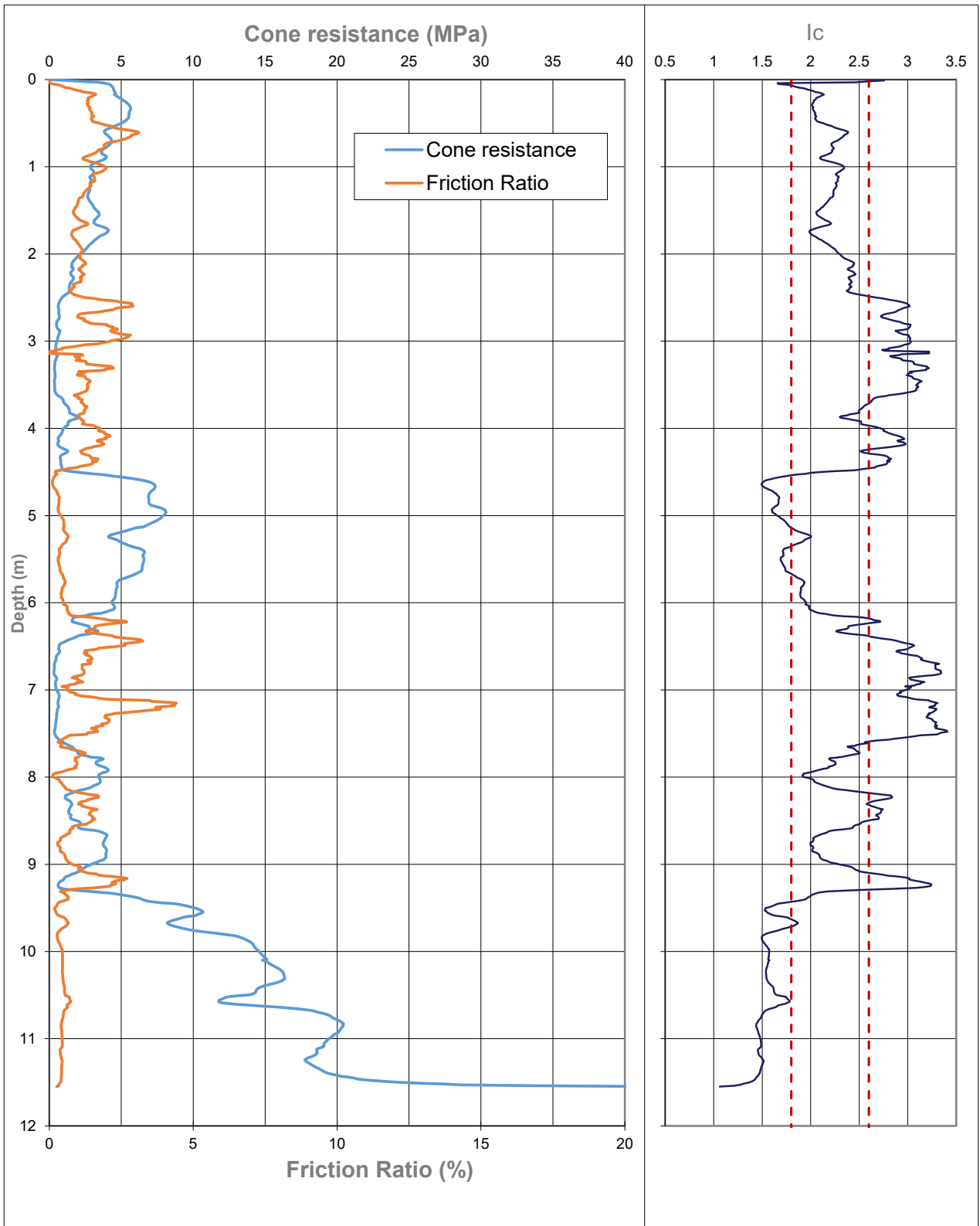
Appendix 2


CPT Profiles & Borelogs

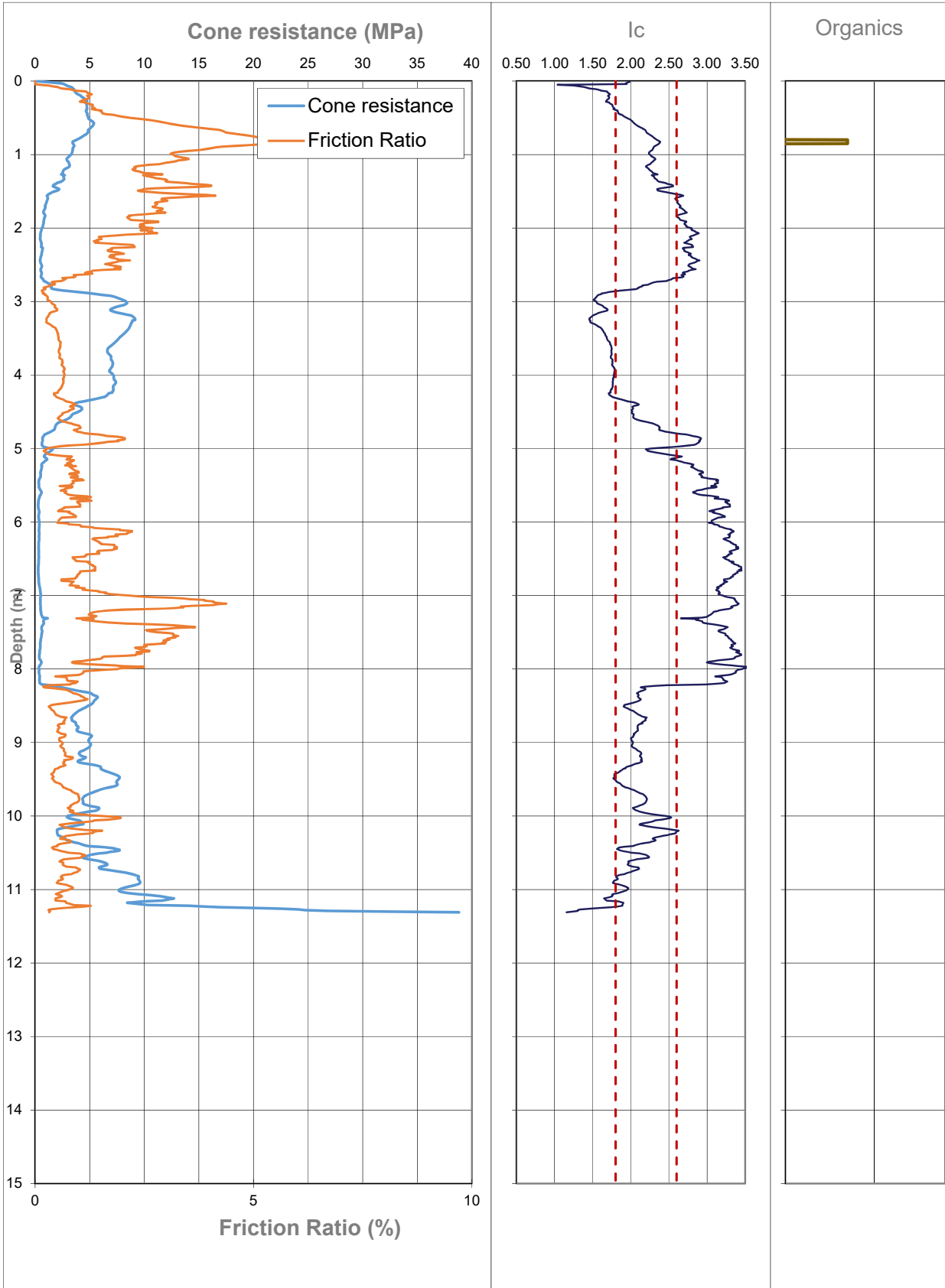
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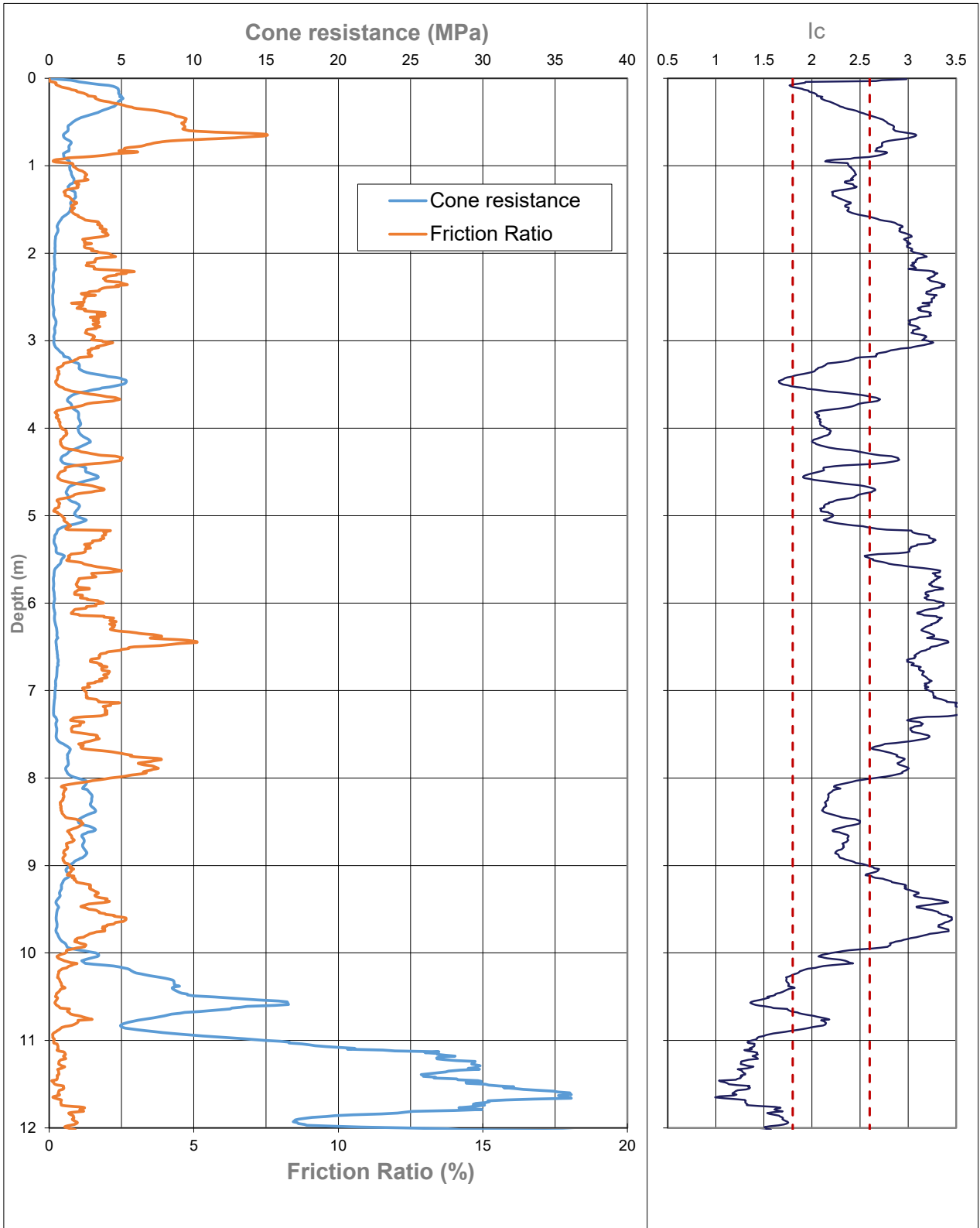
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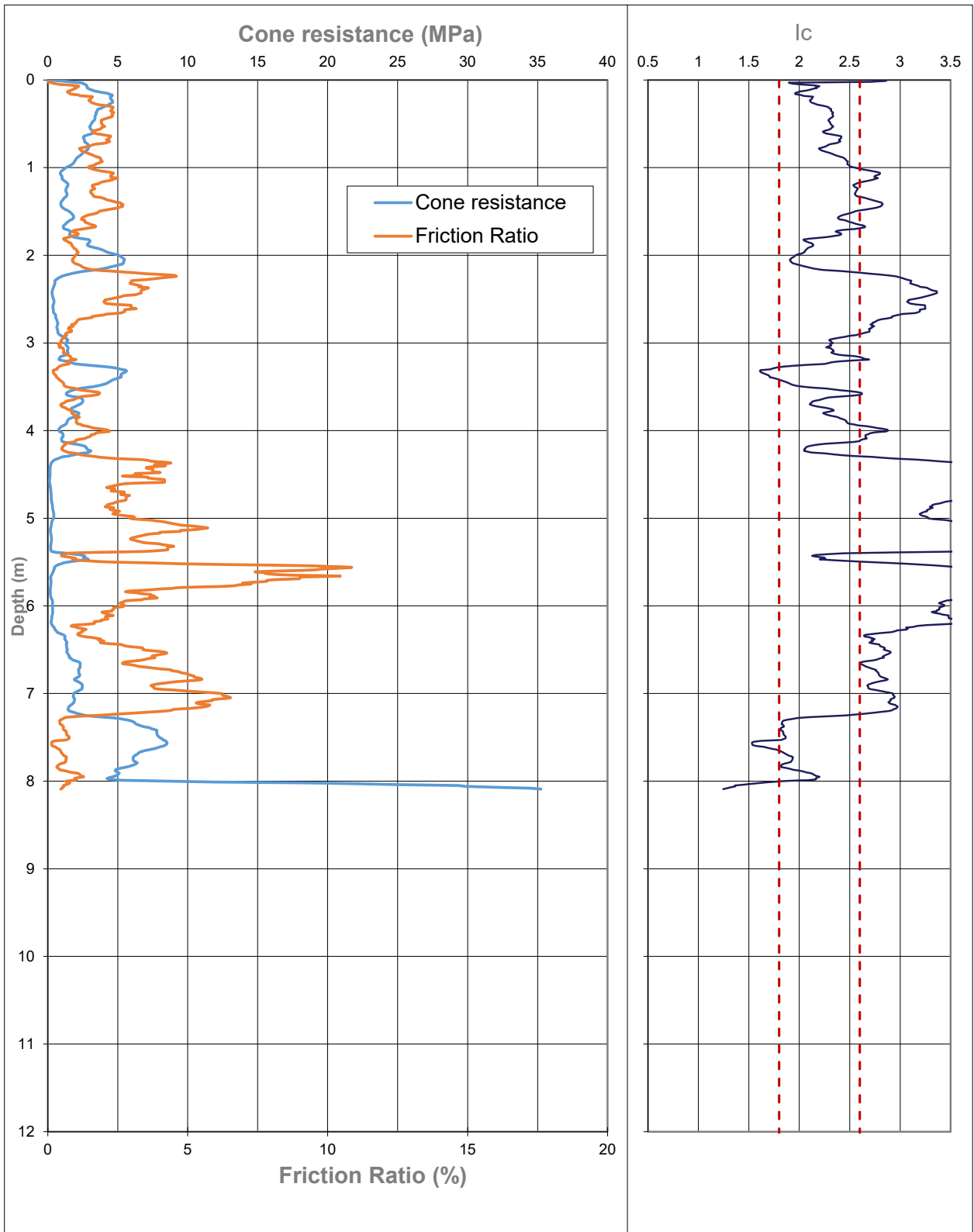
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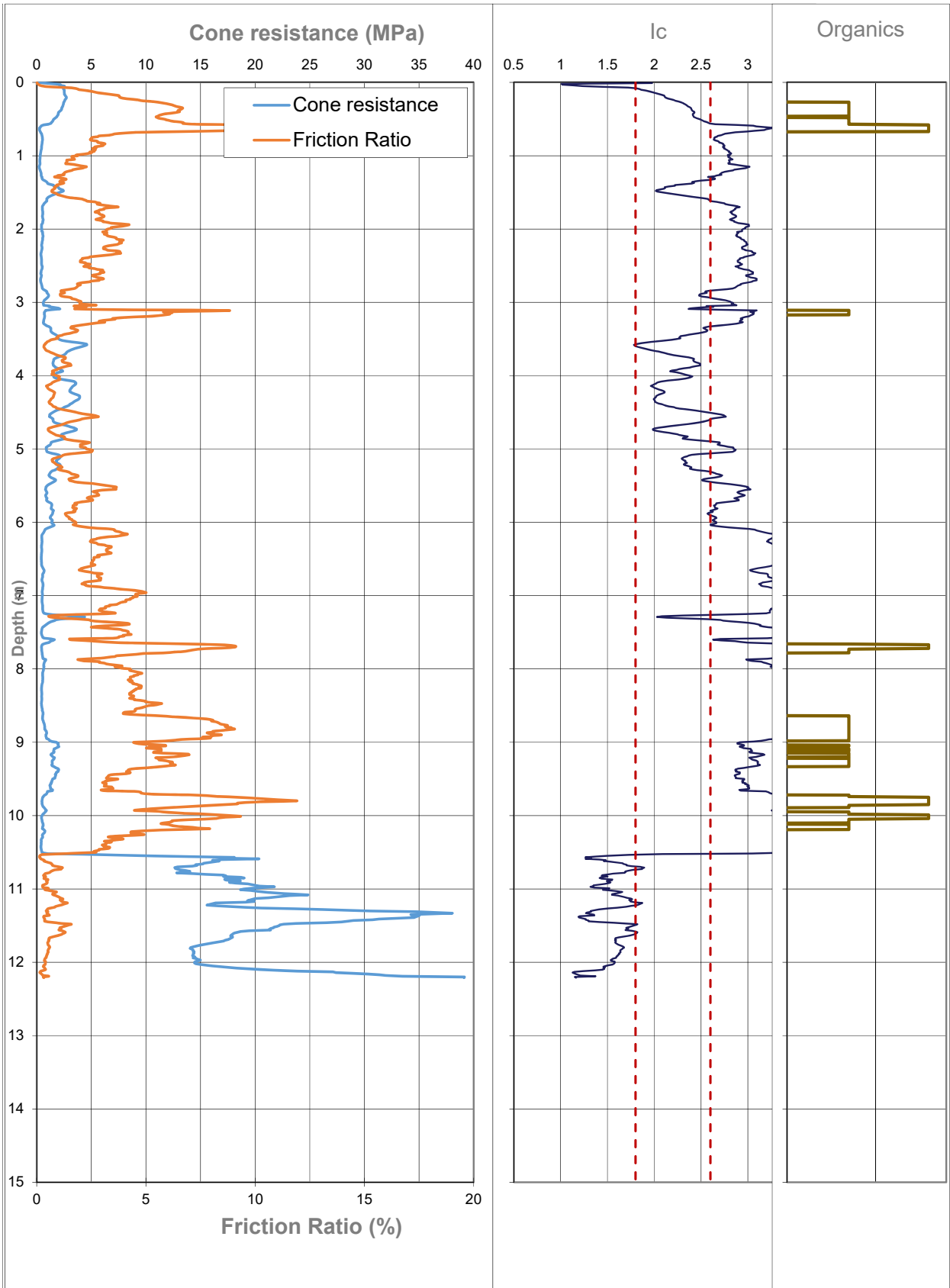
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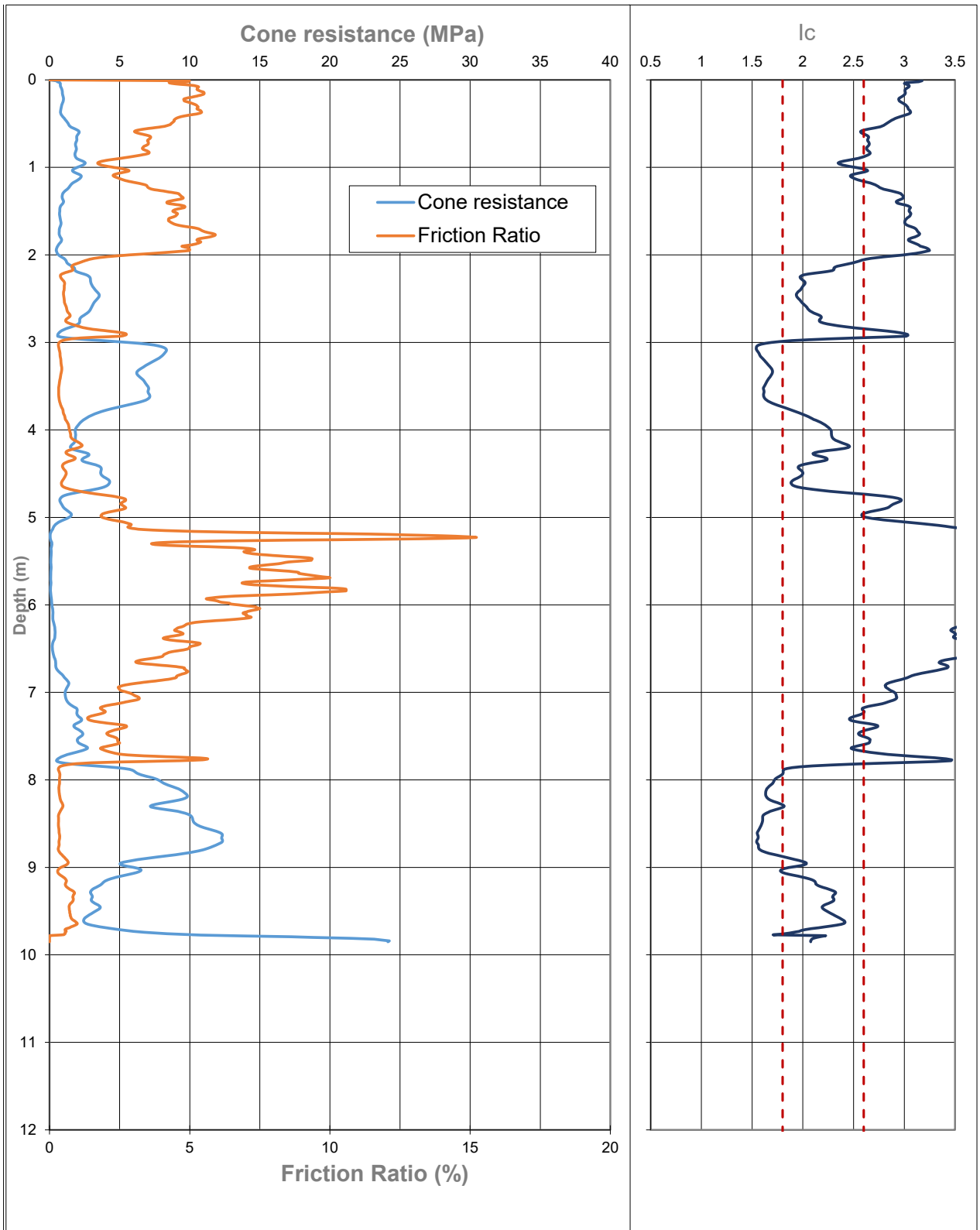
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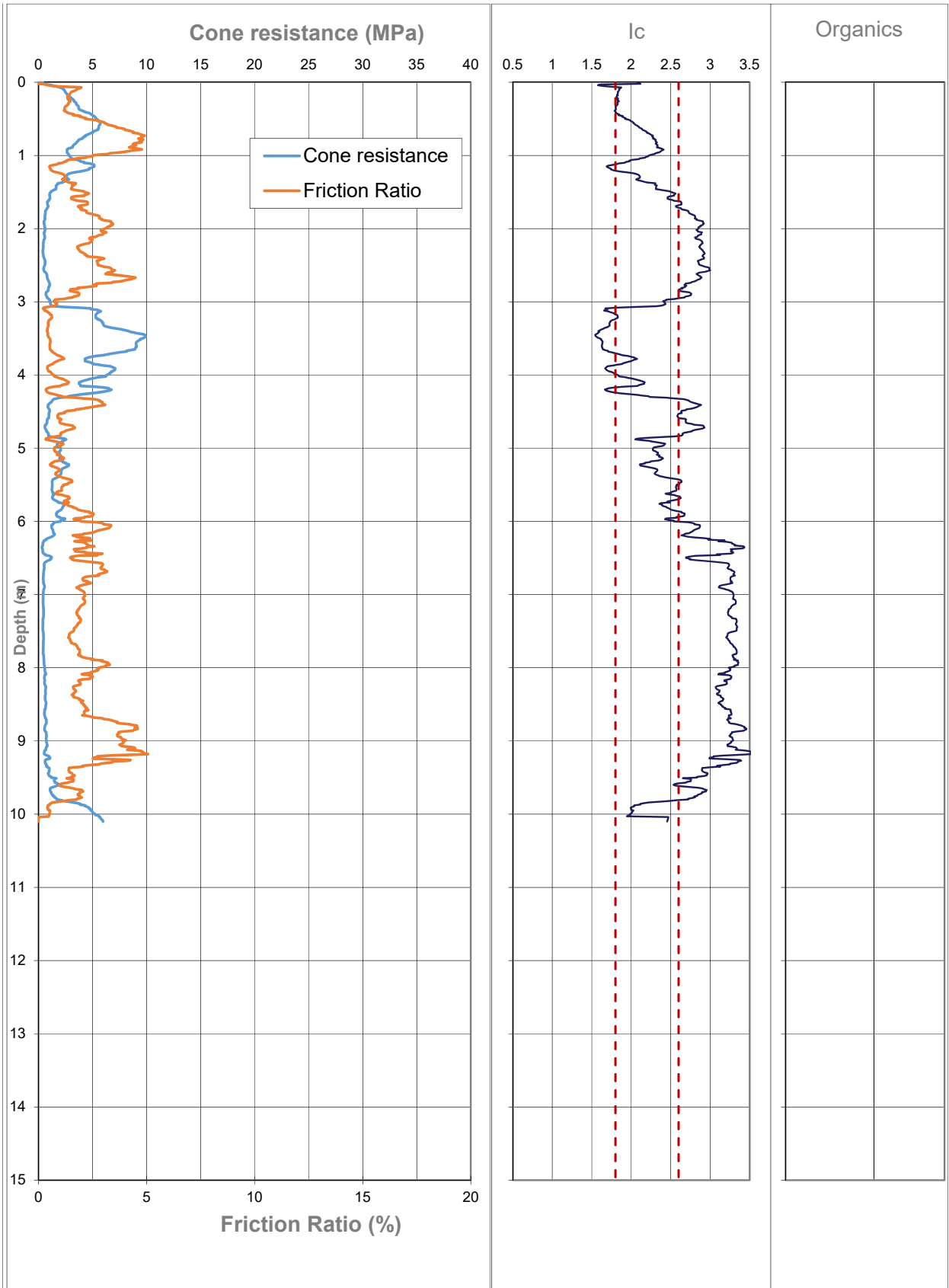
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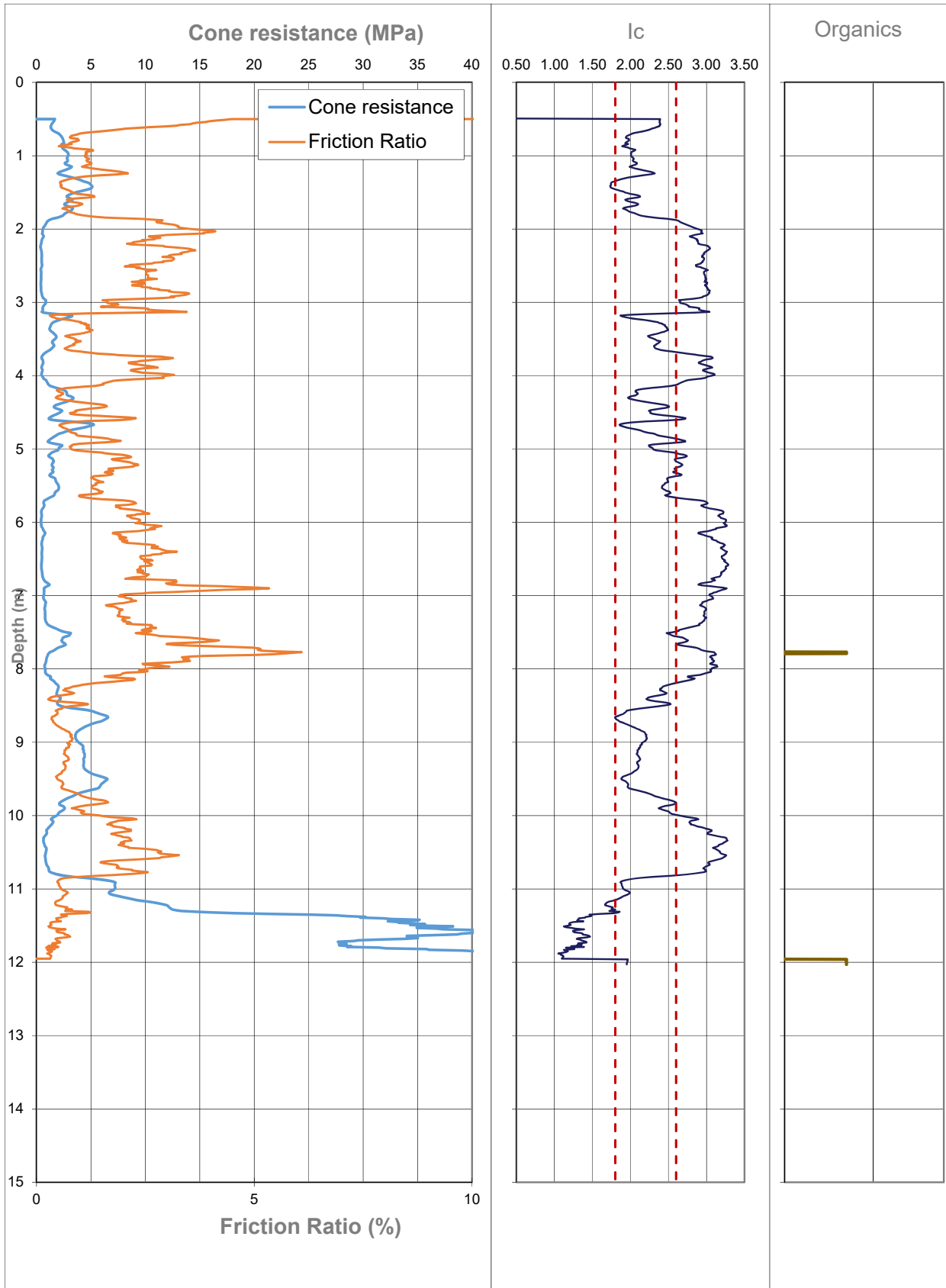
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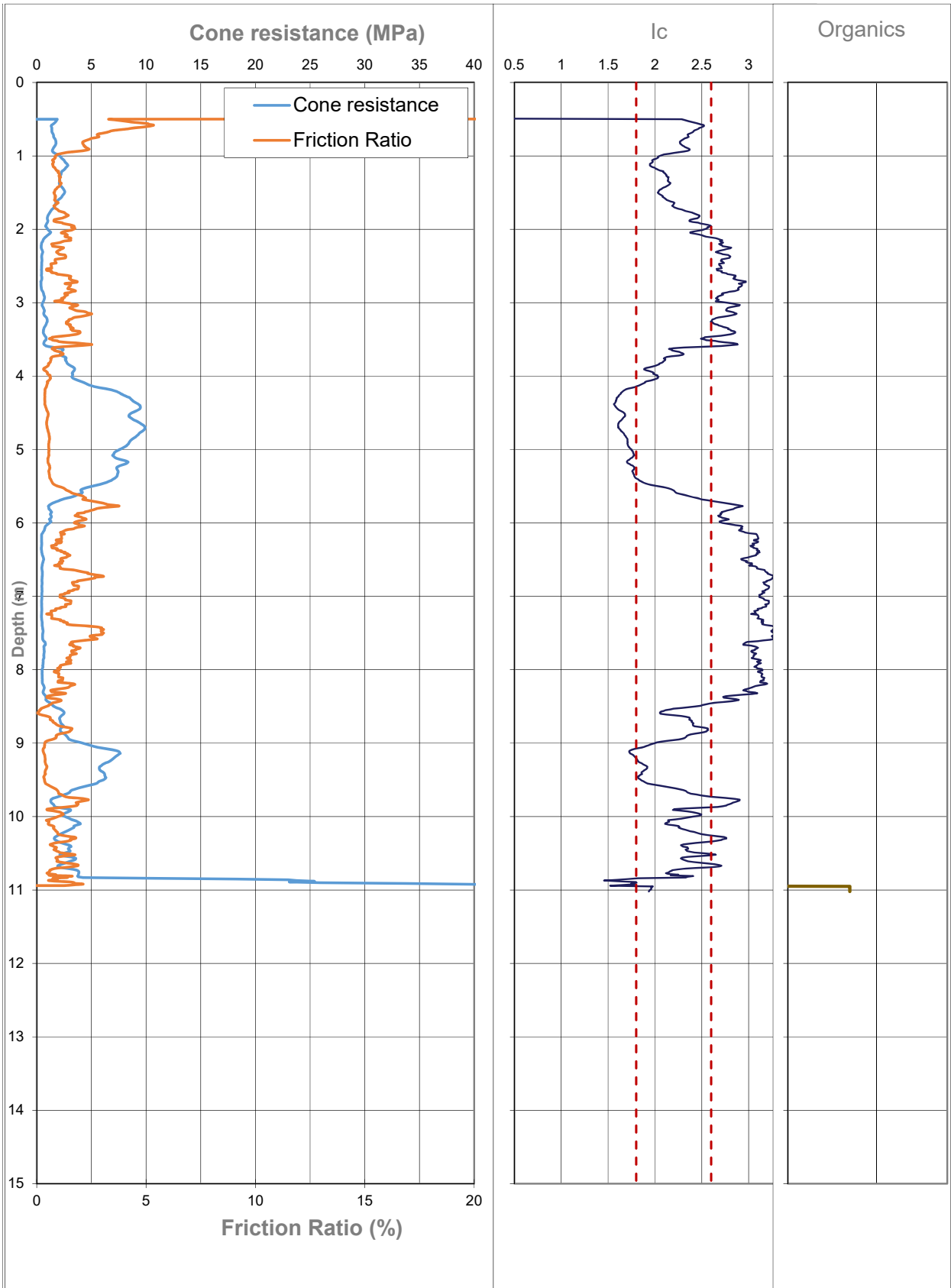
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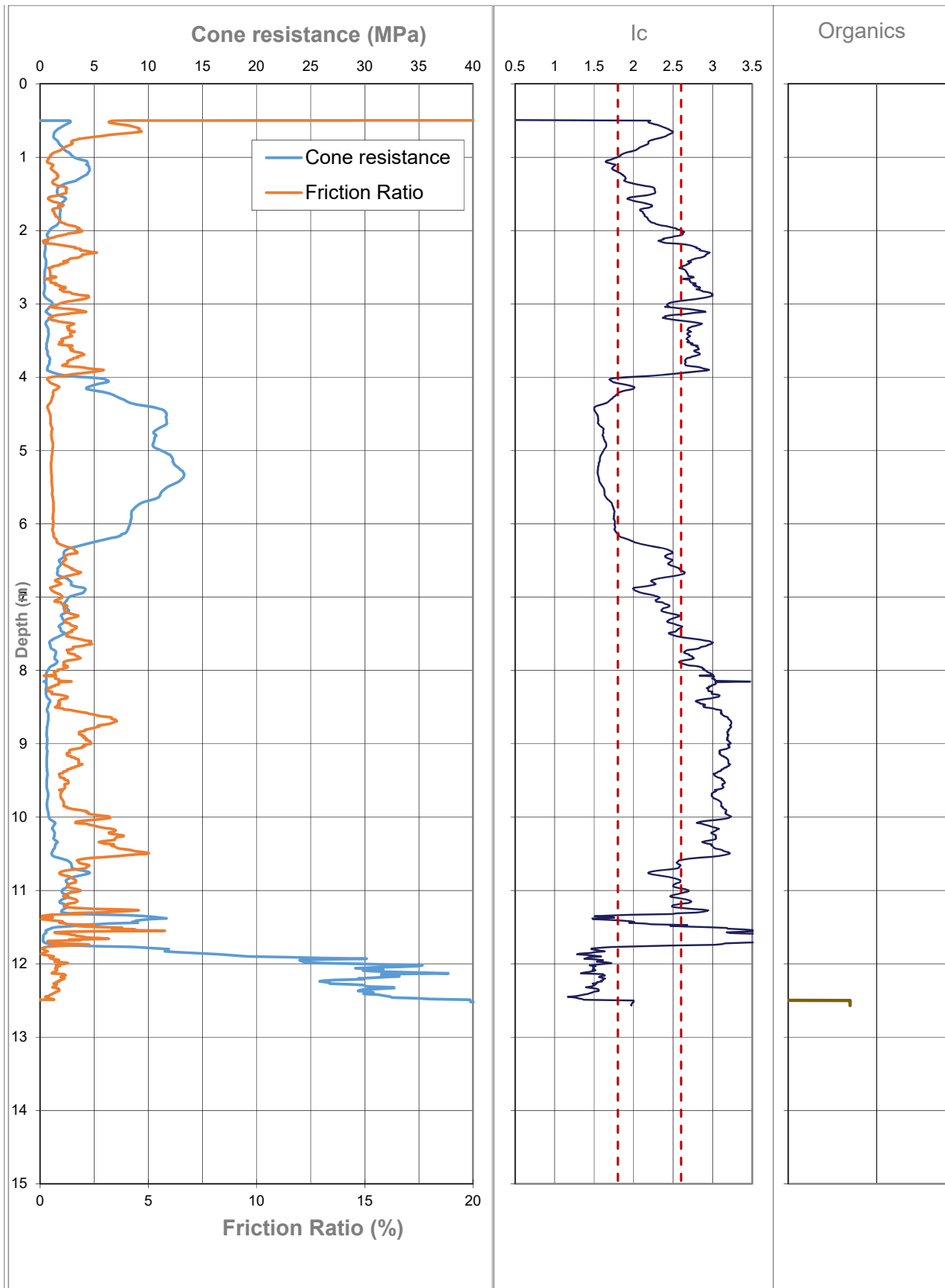
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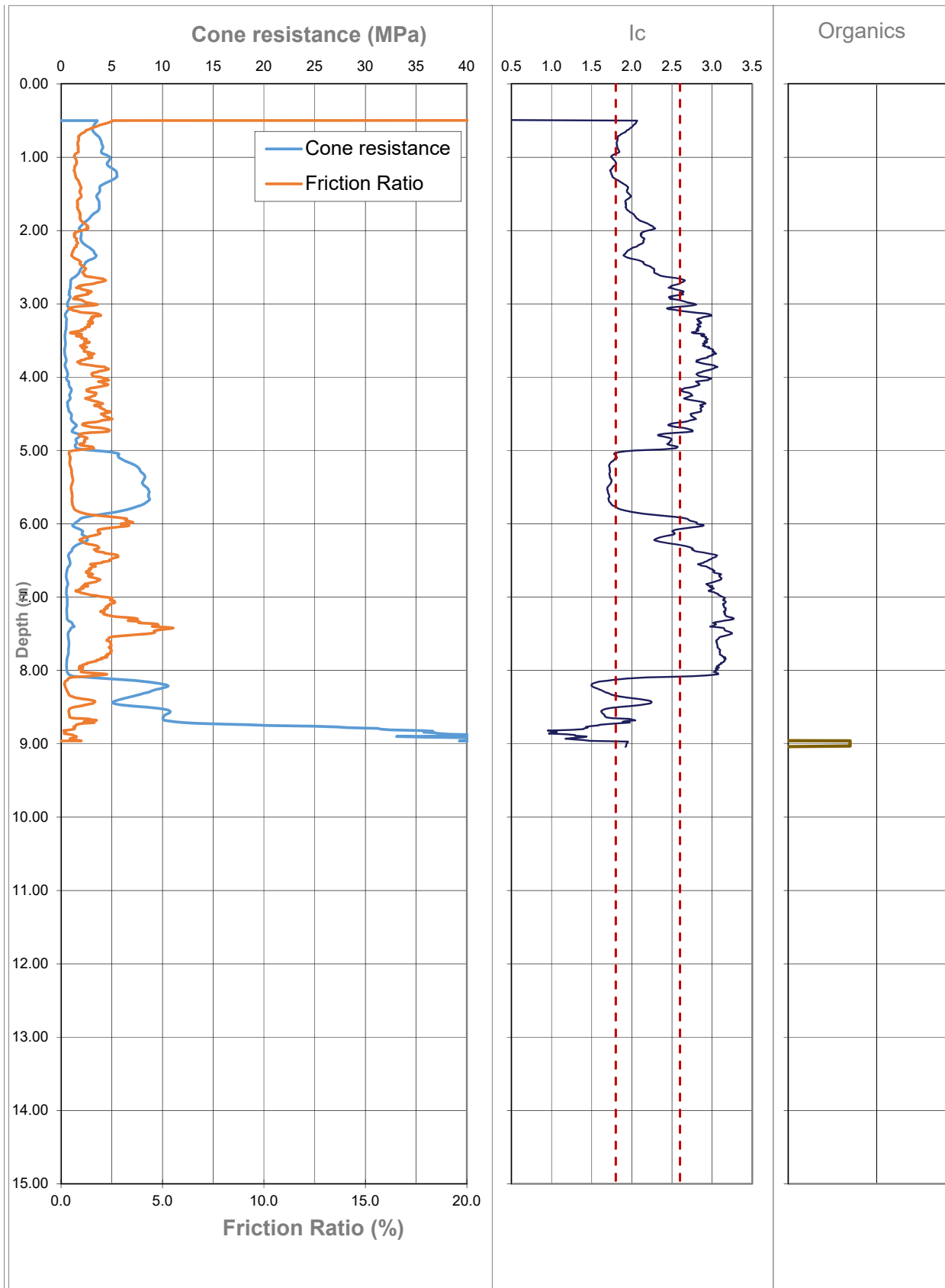
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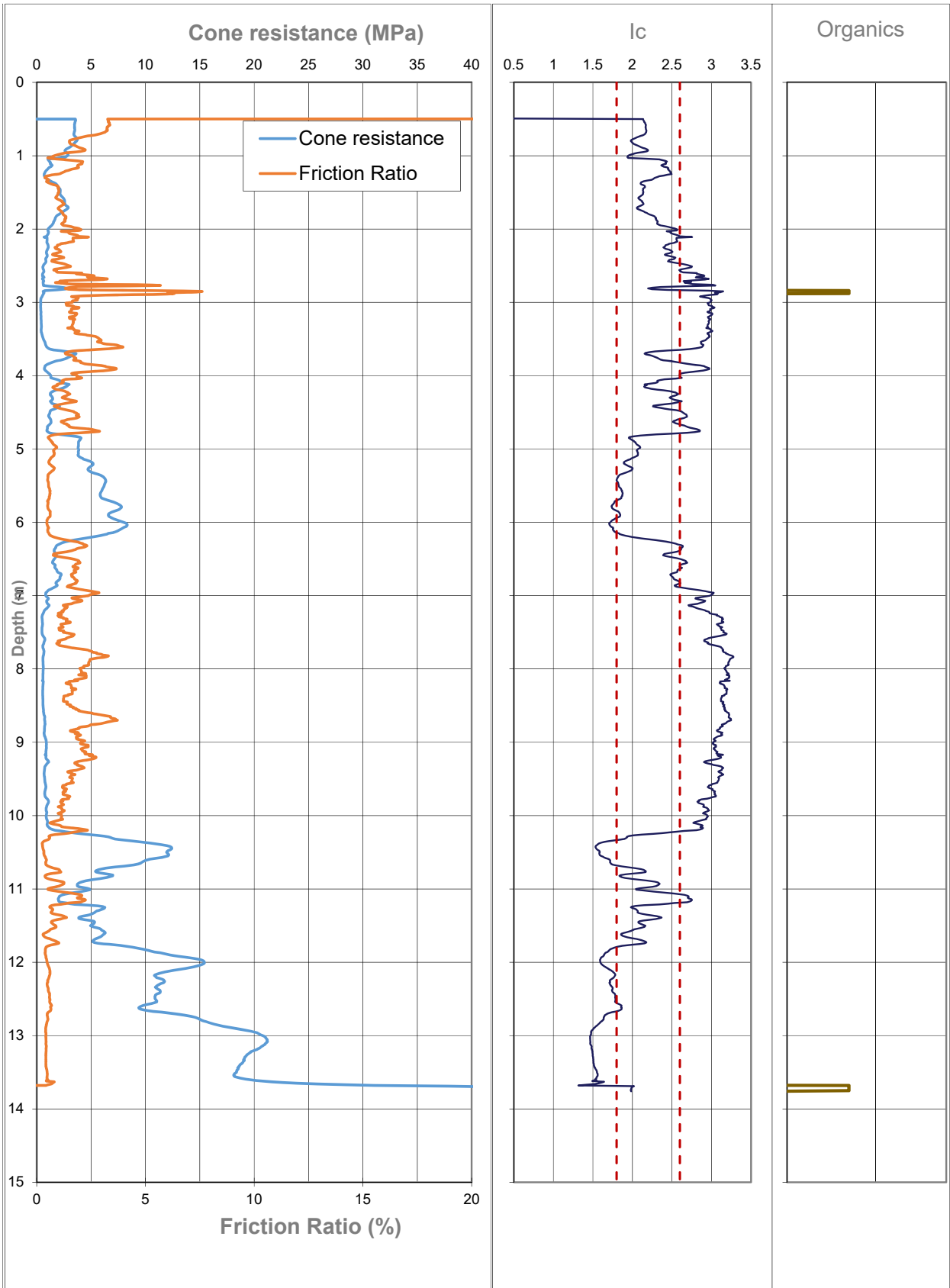
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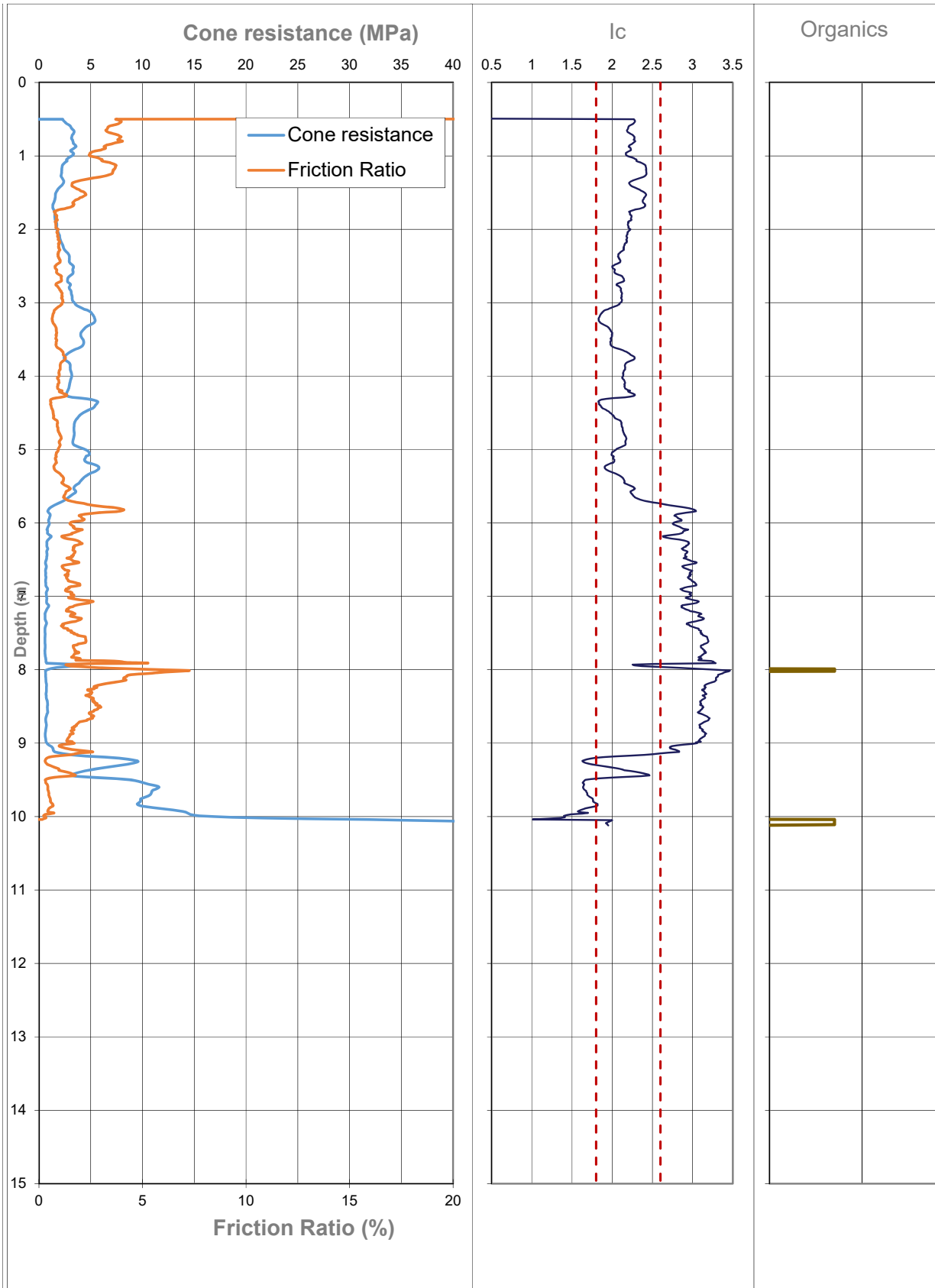
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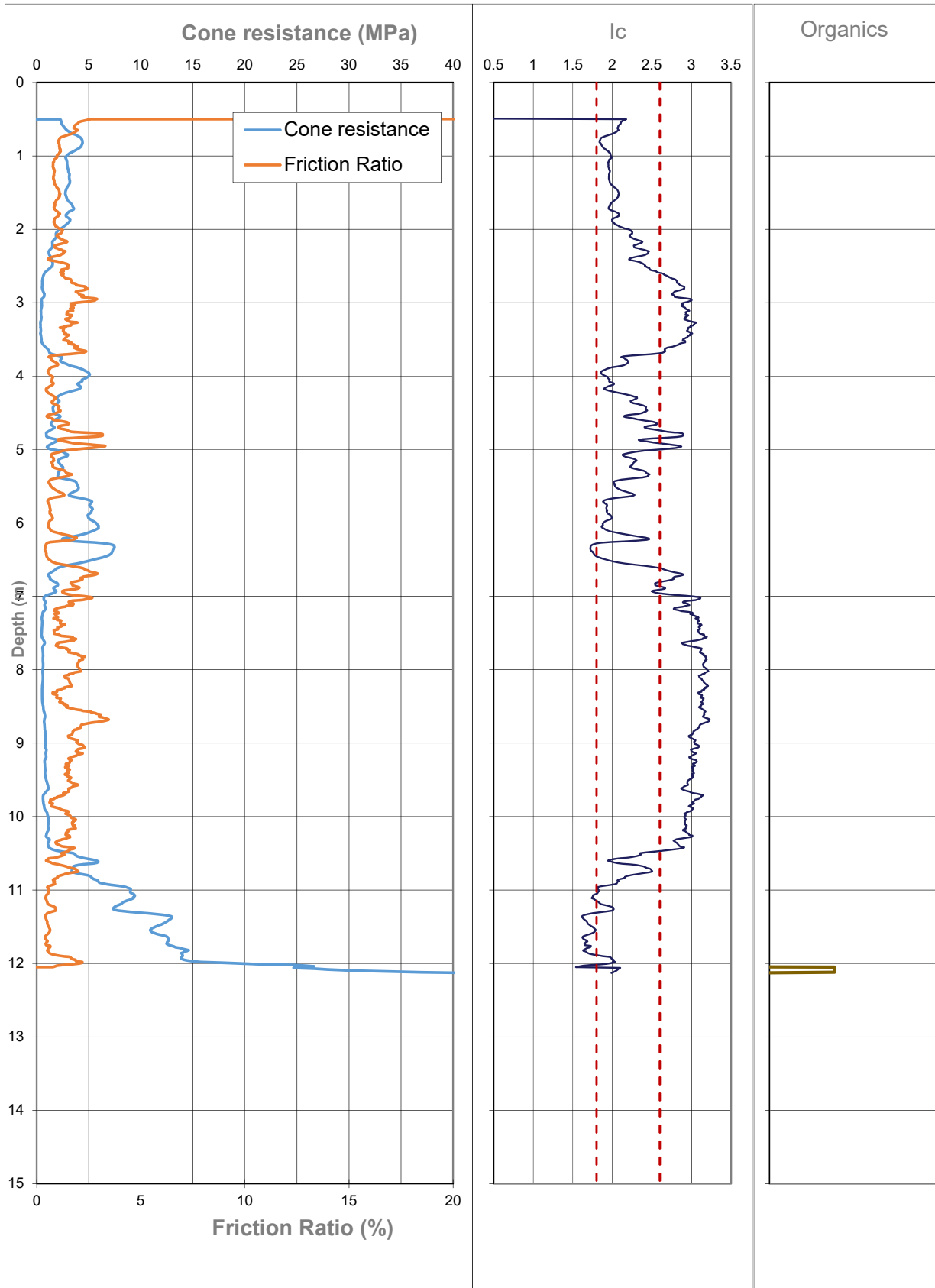
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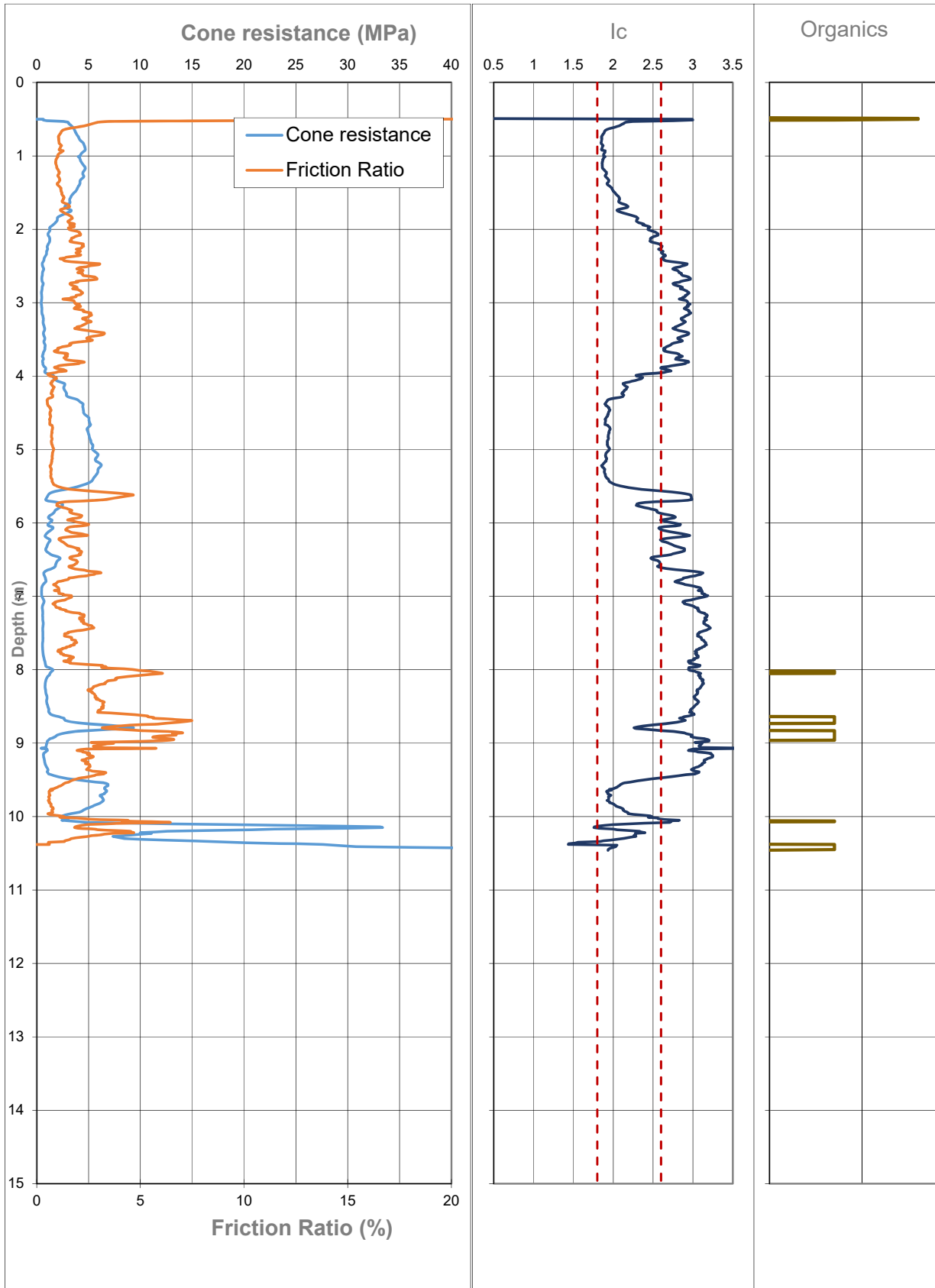
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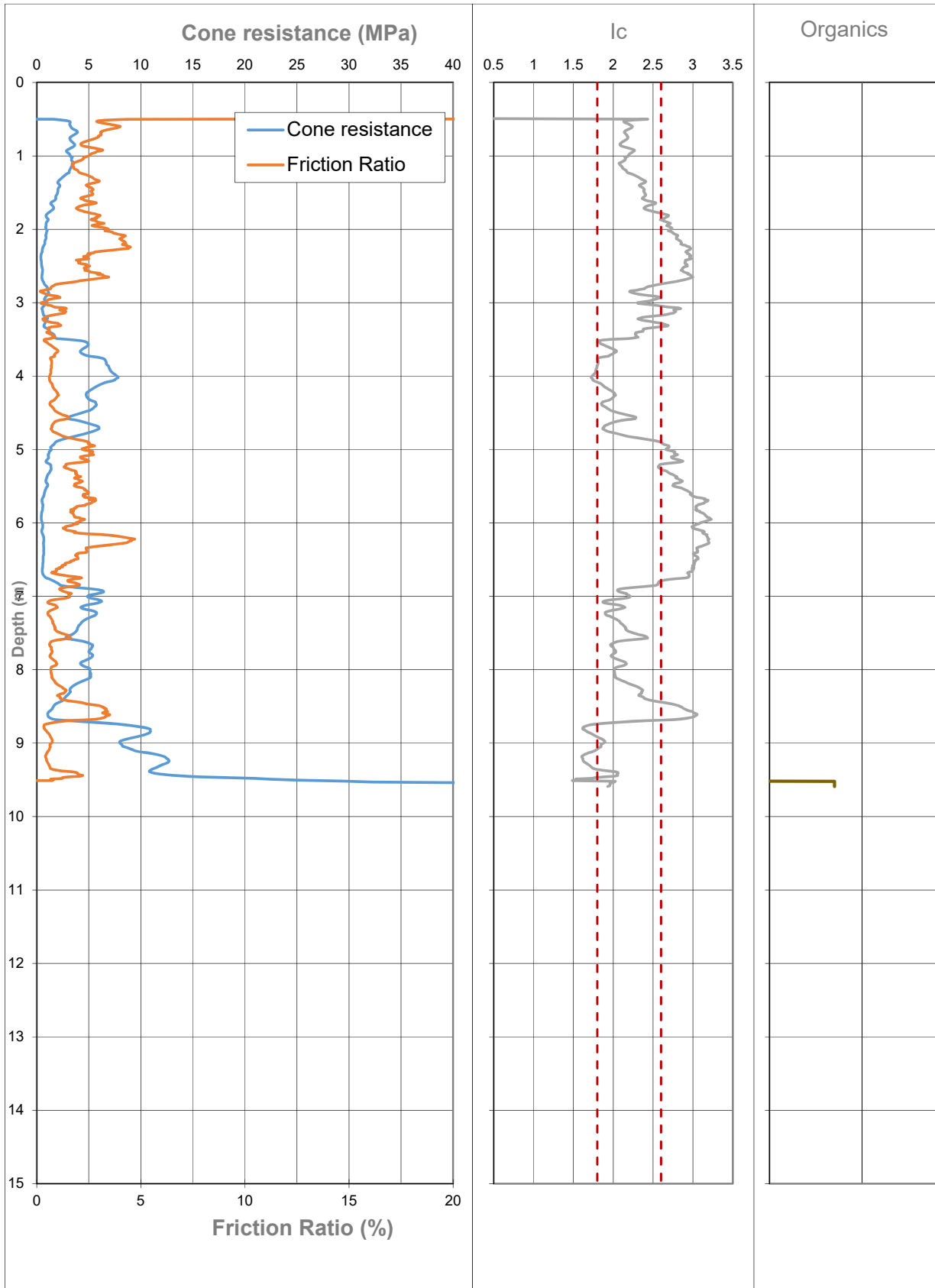
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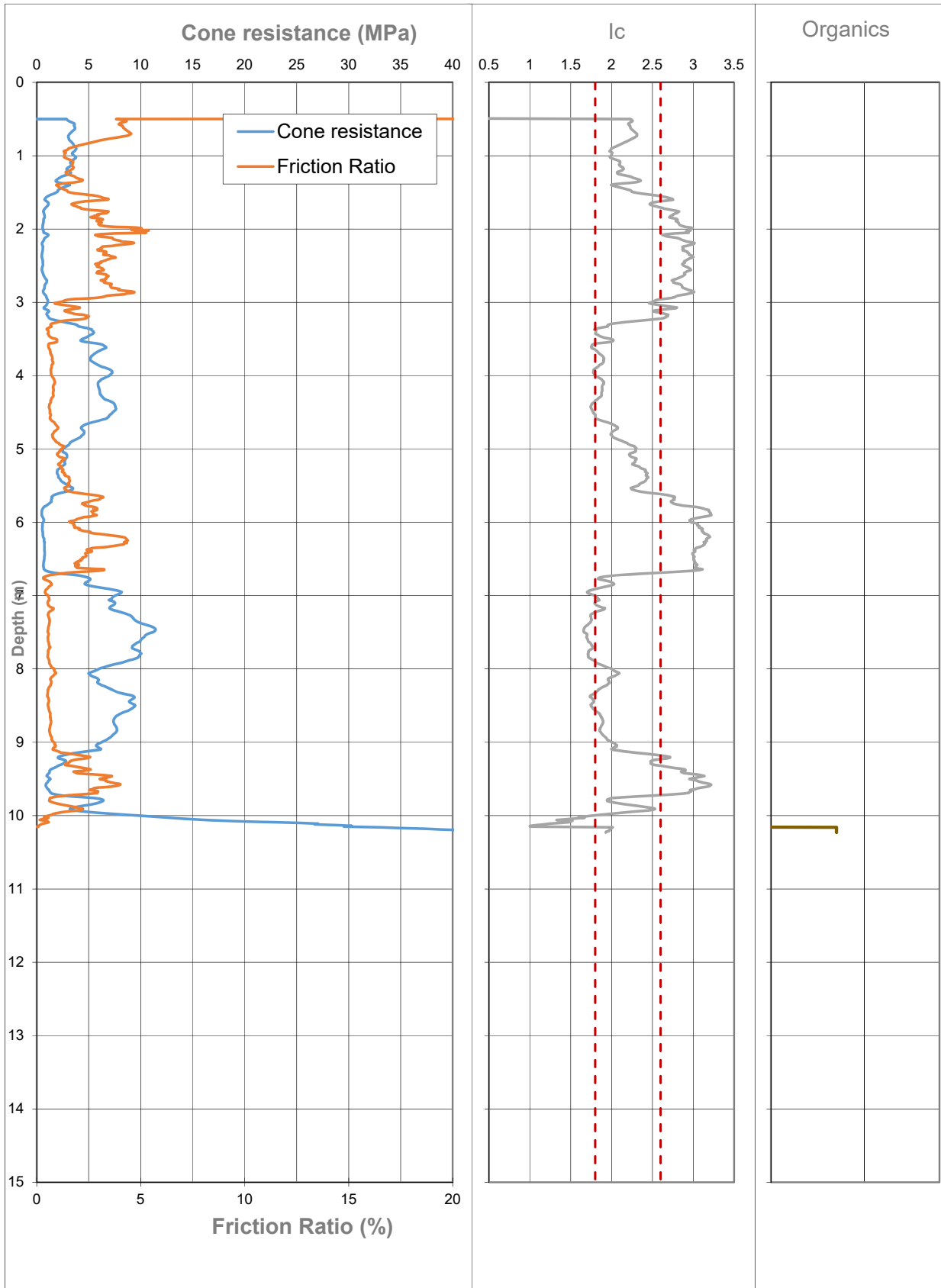
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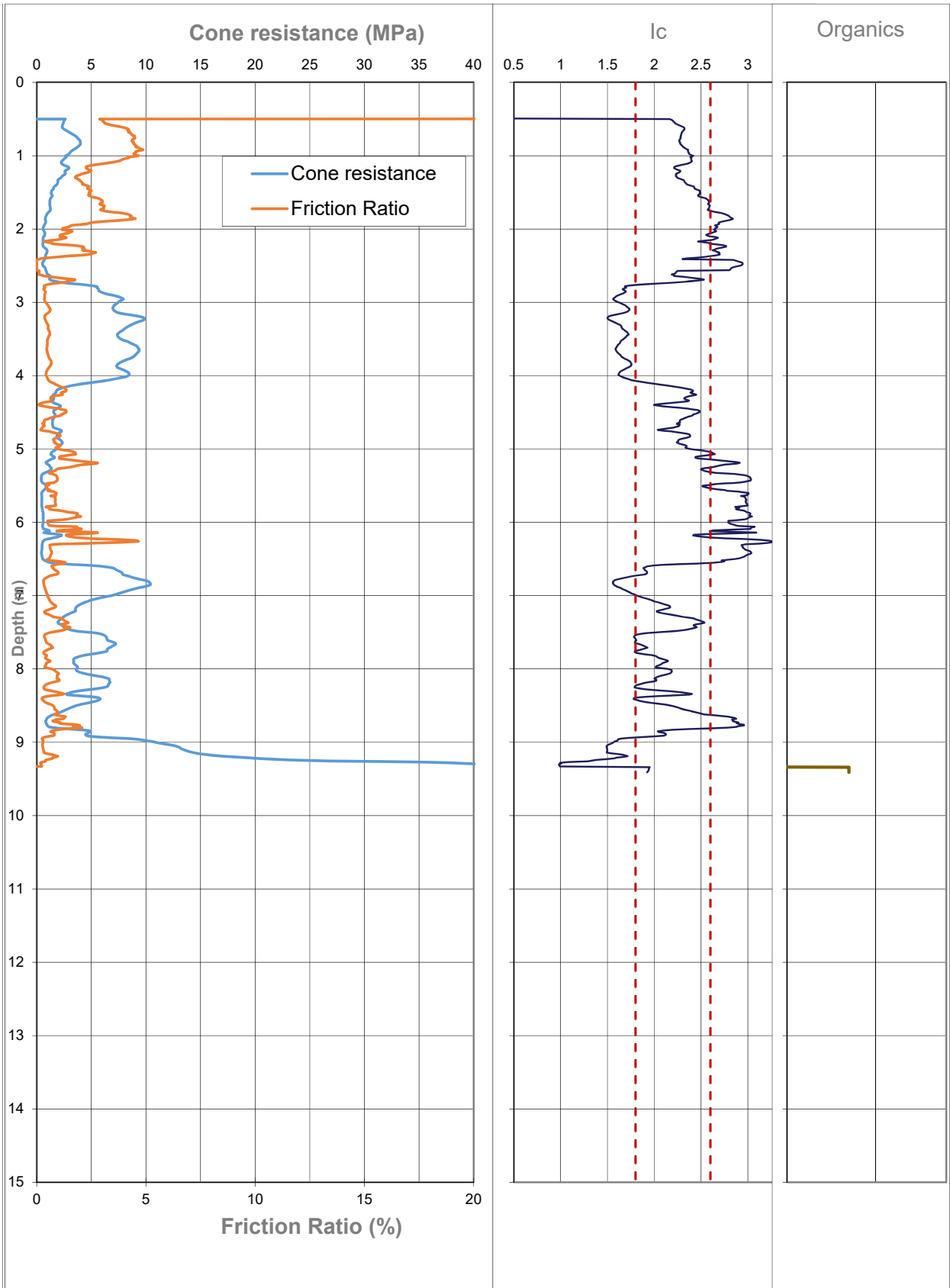
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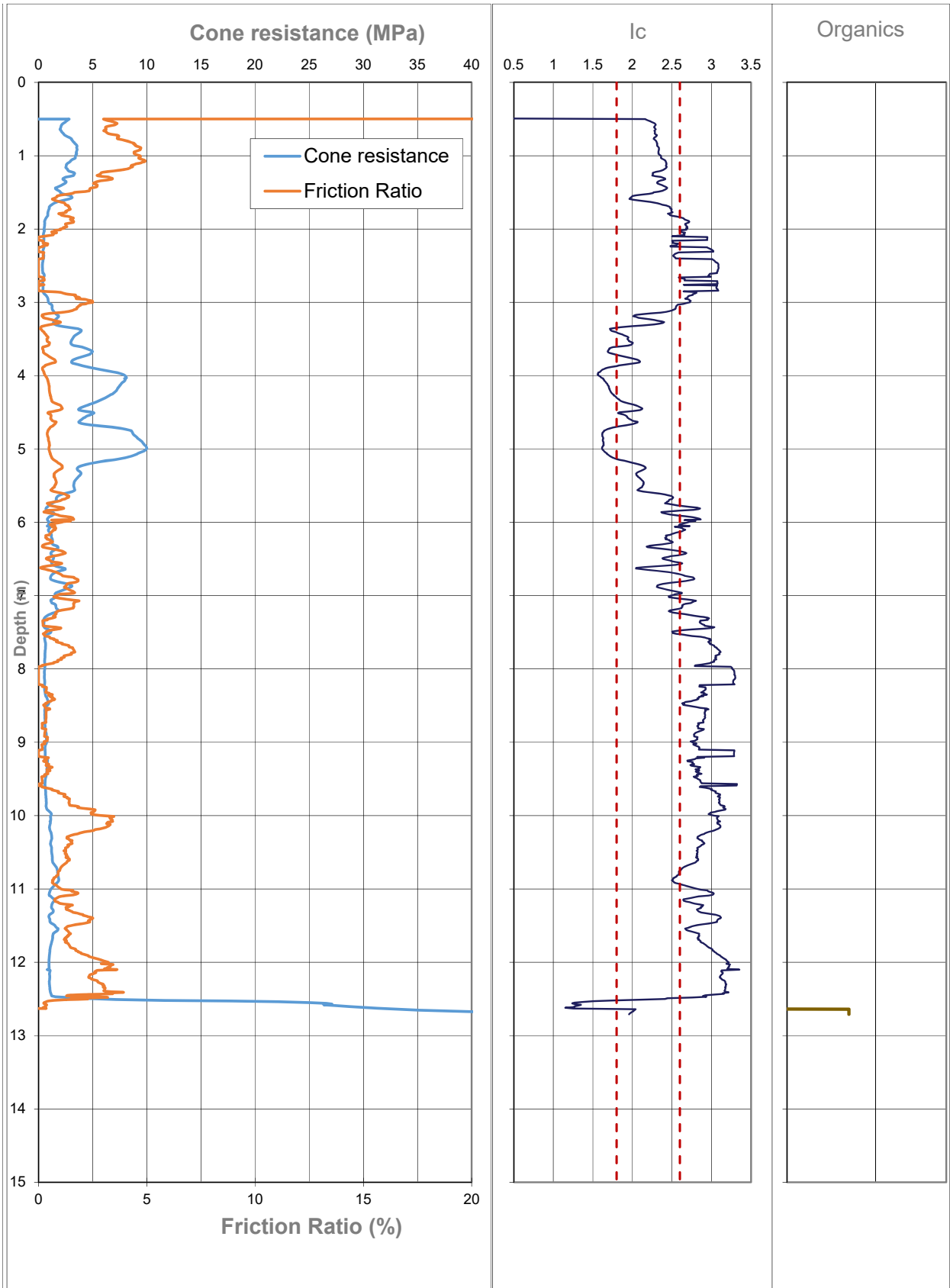
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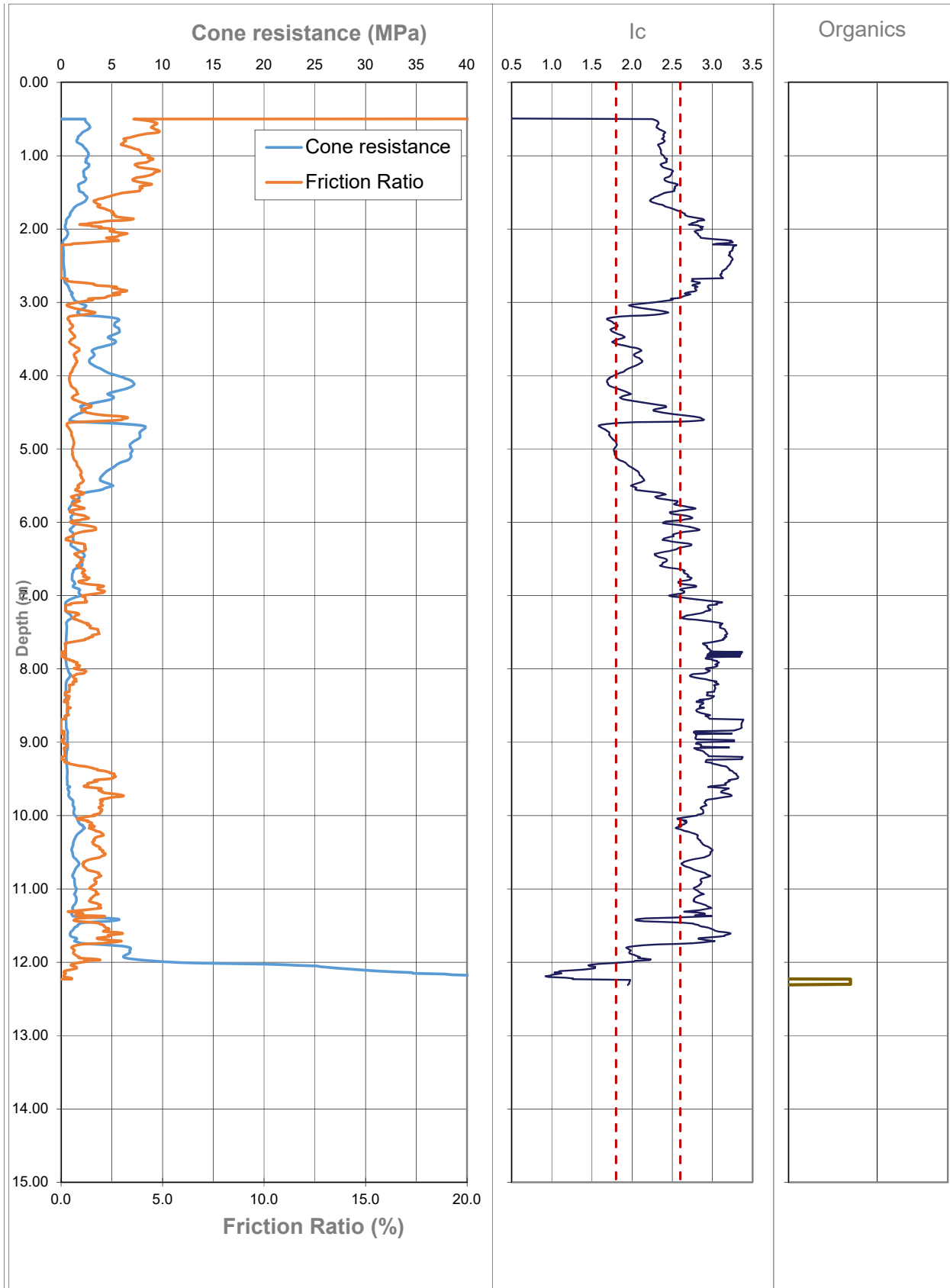
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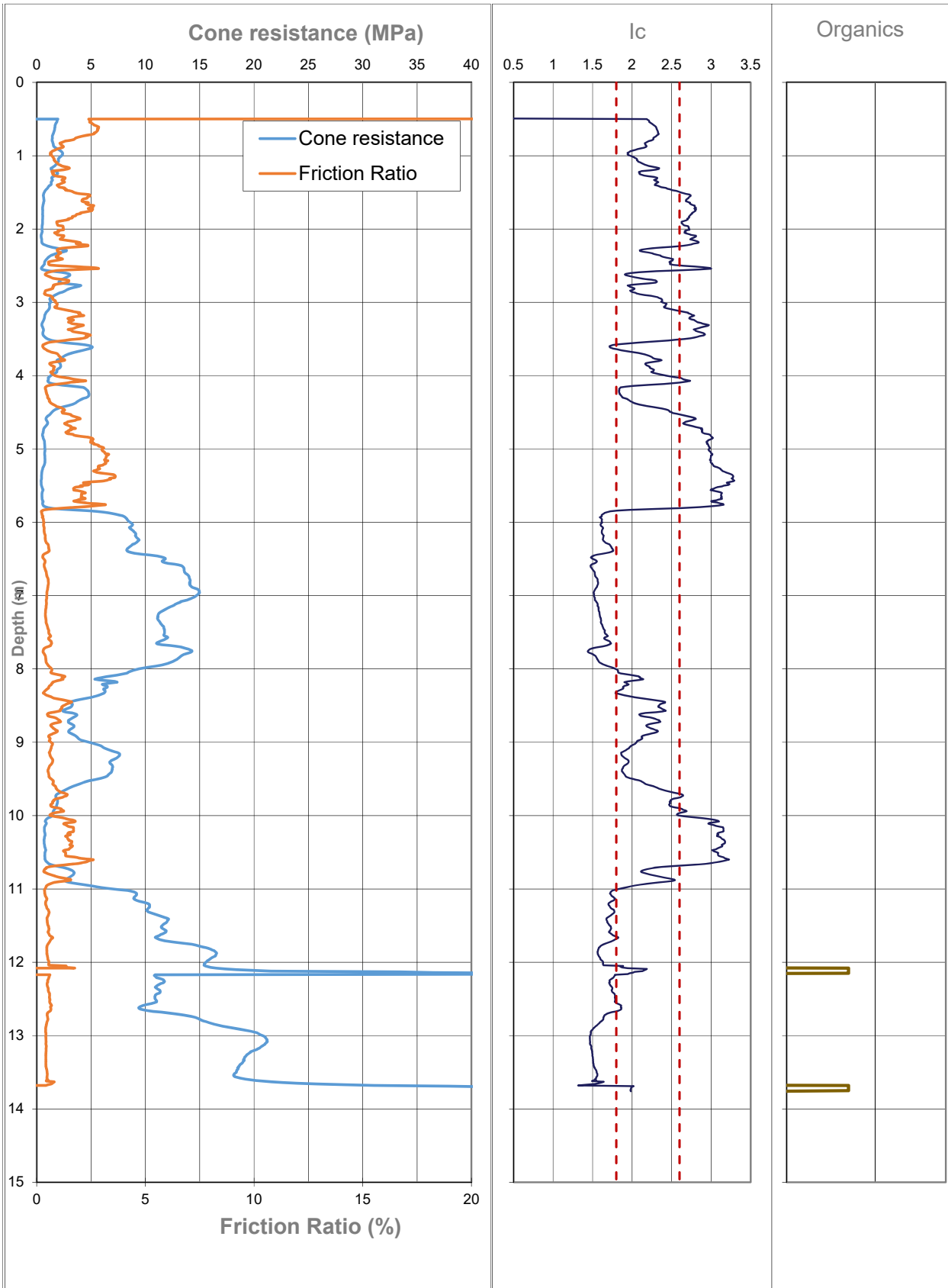
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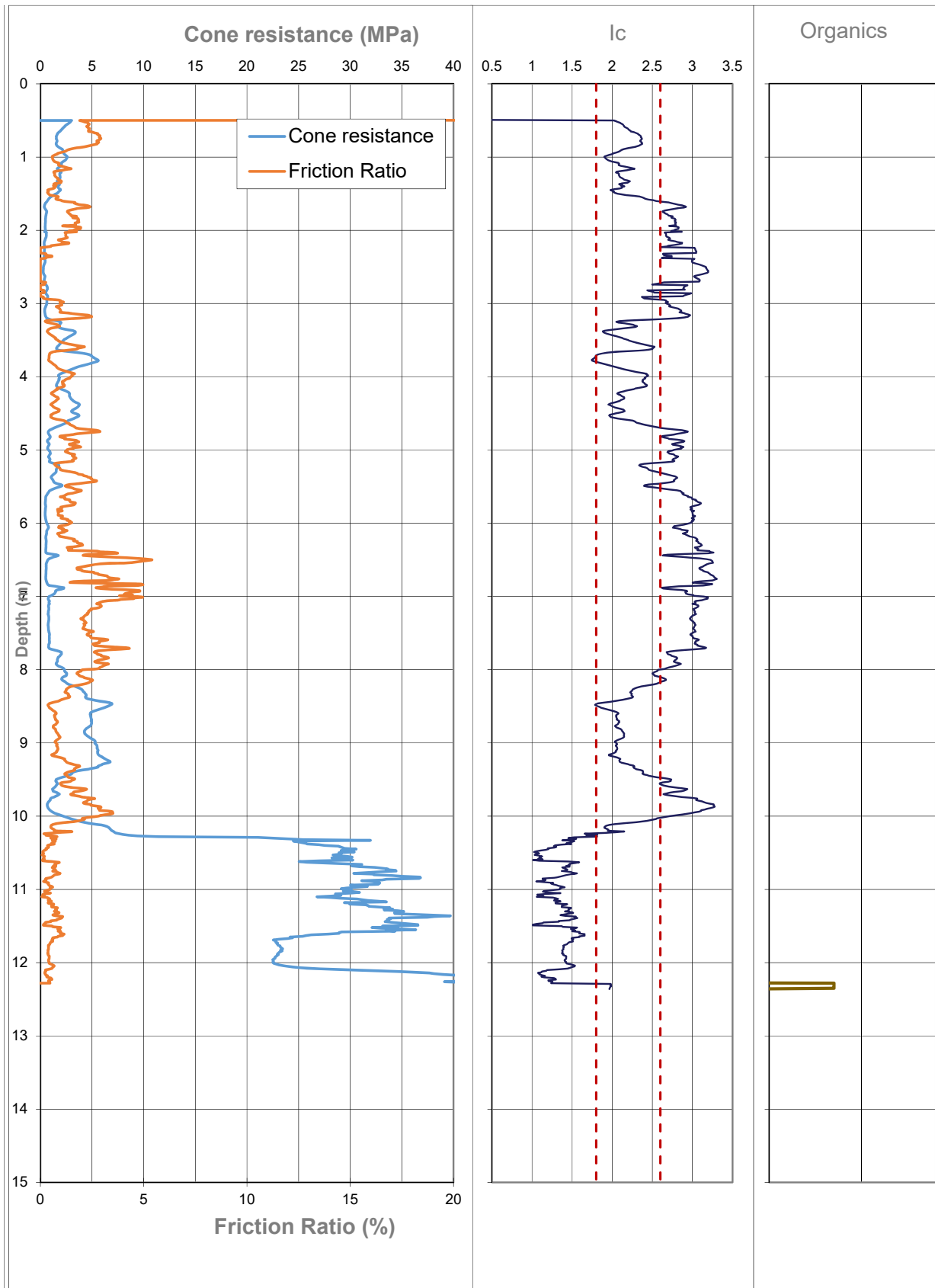
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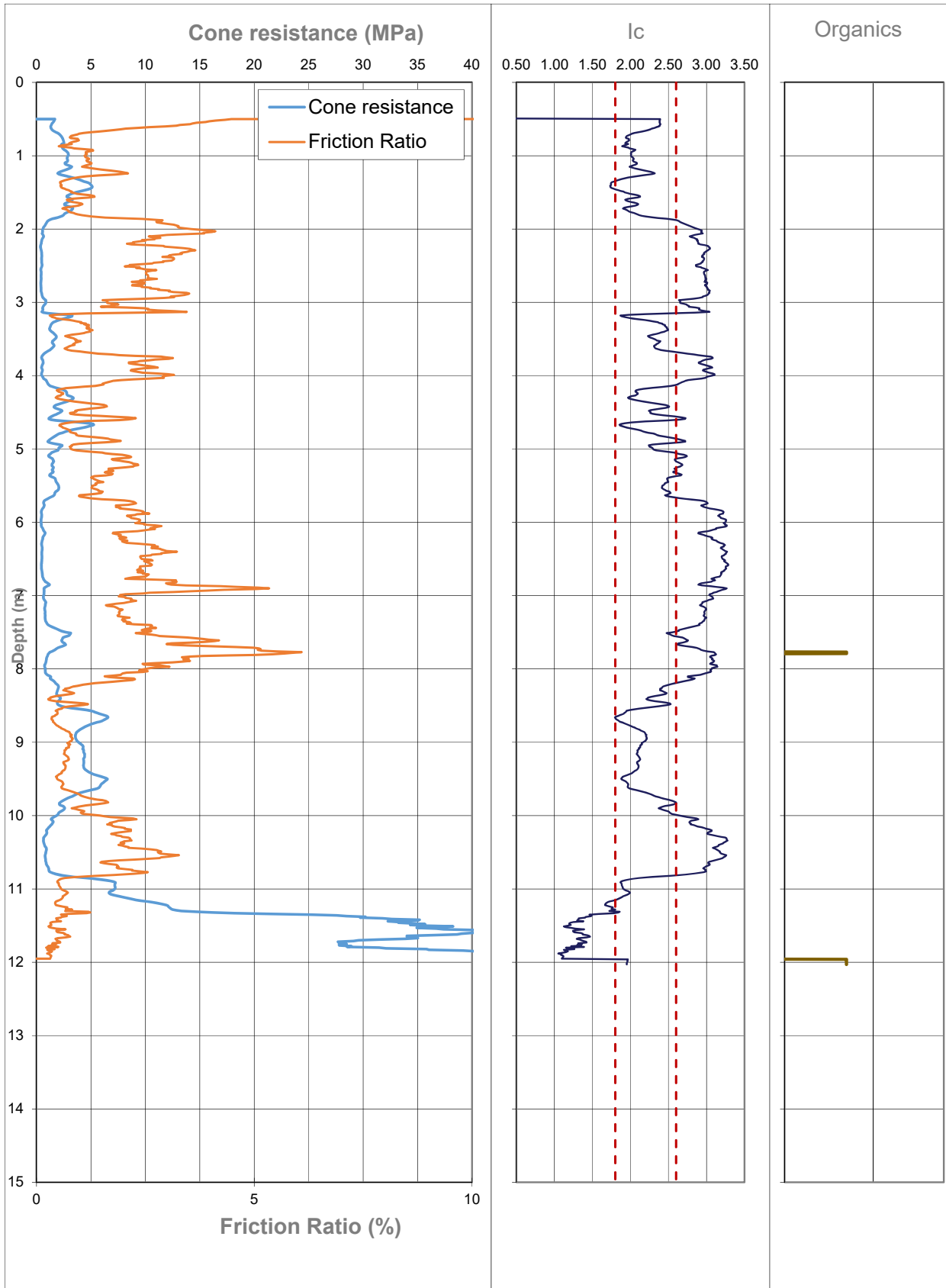
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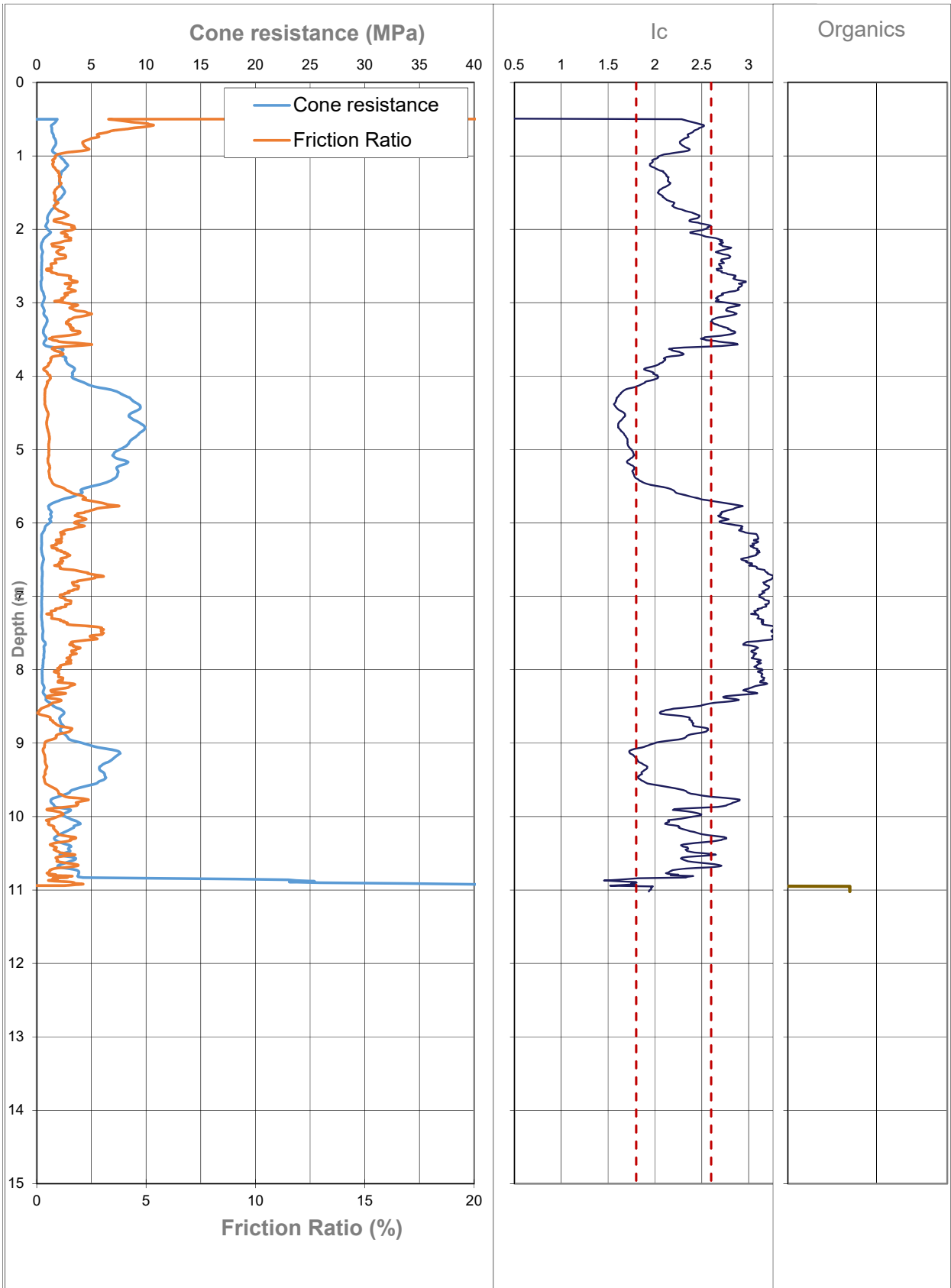
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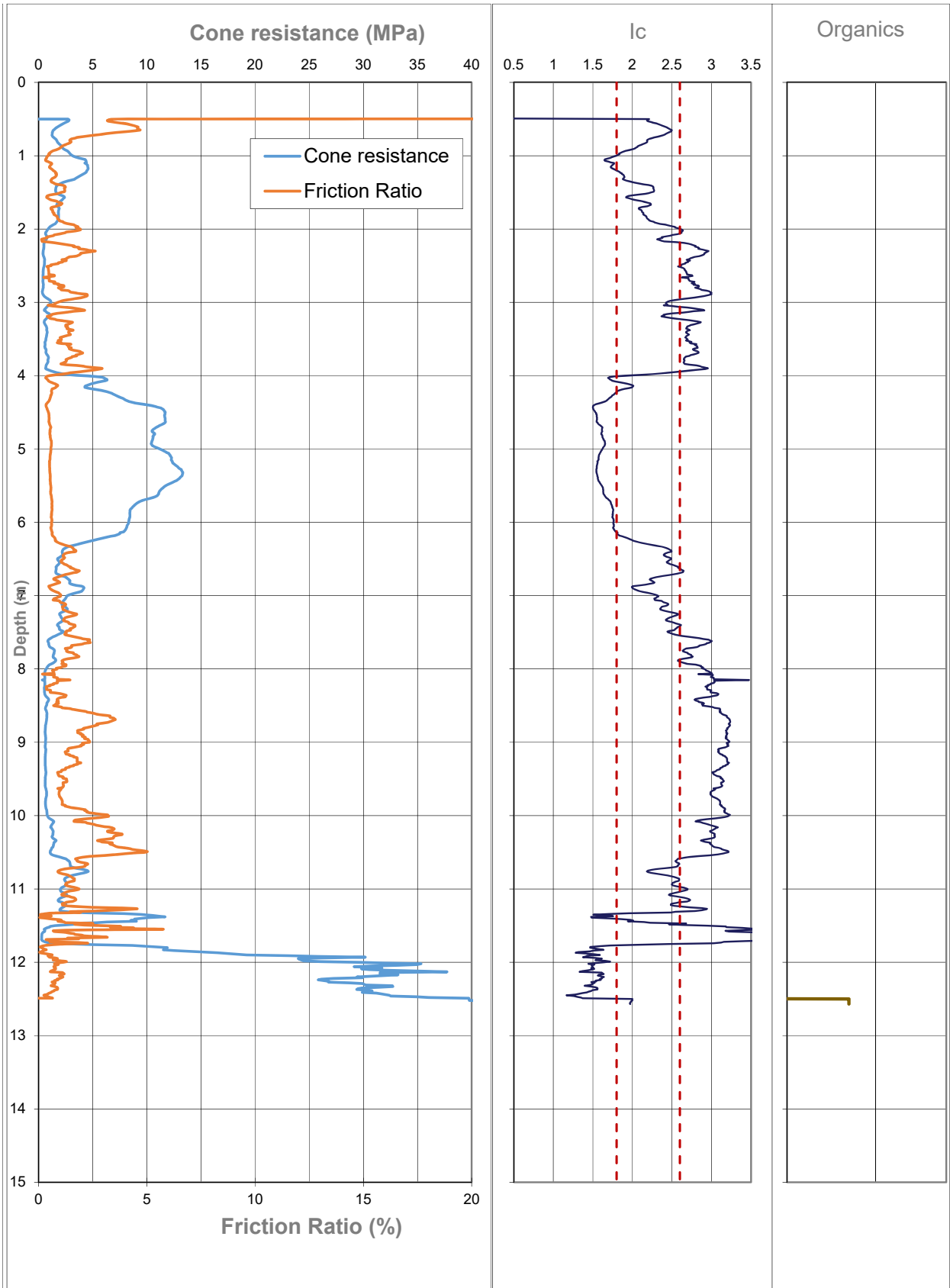
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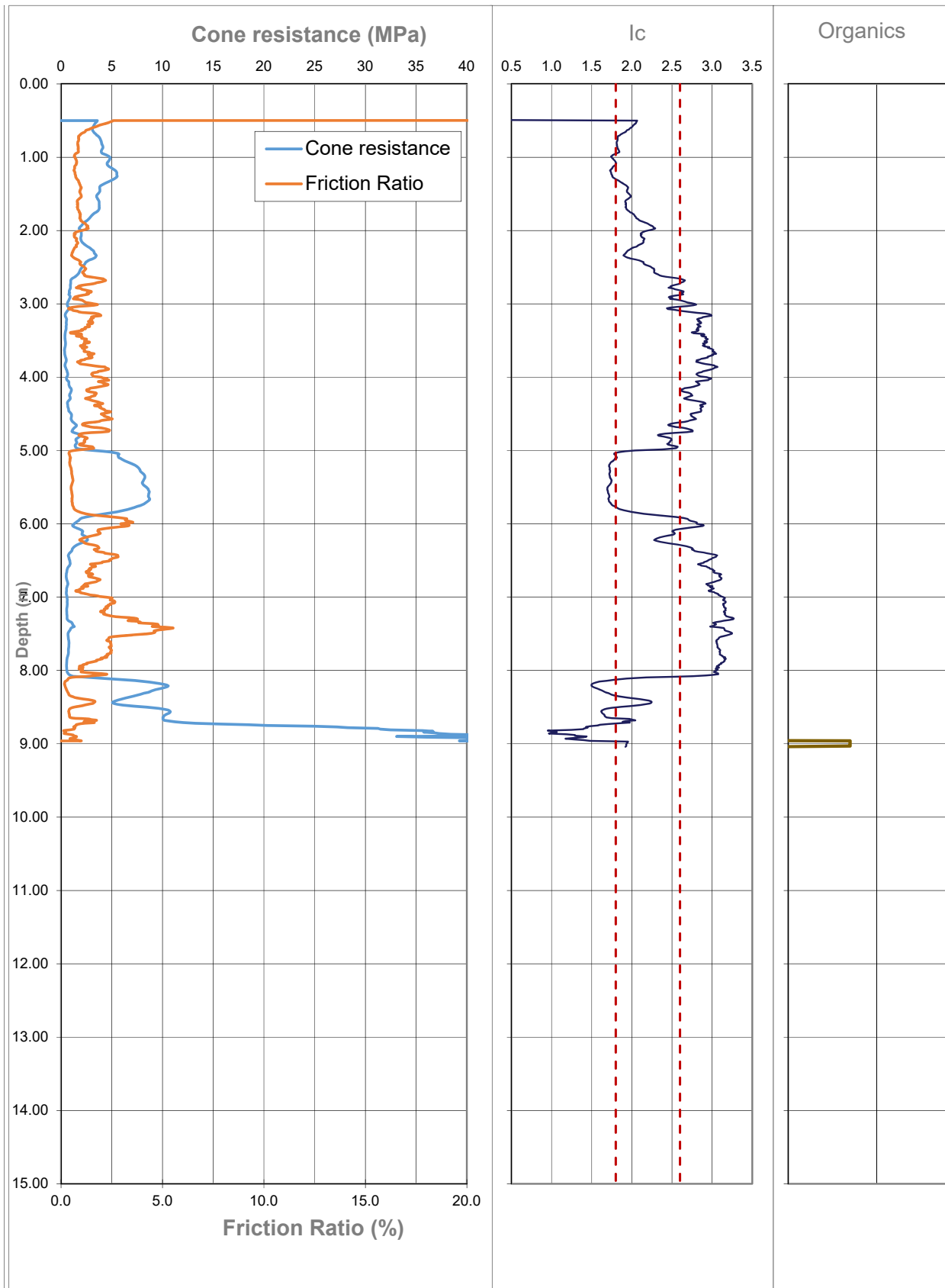
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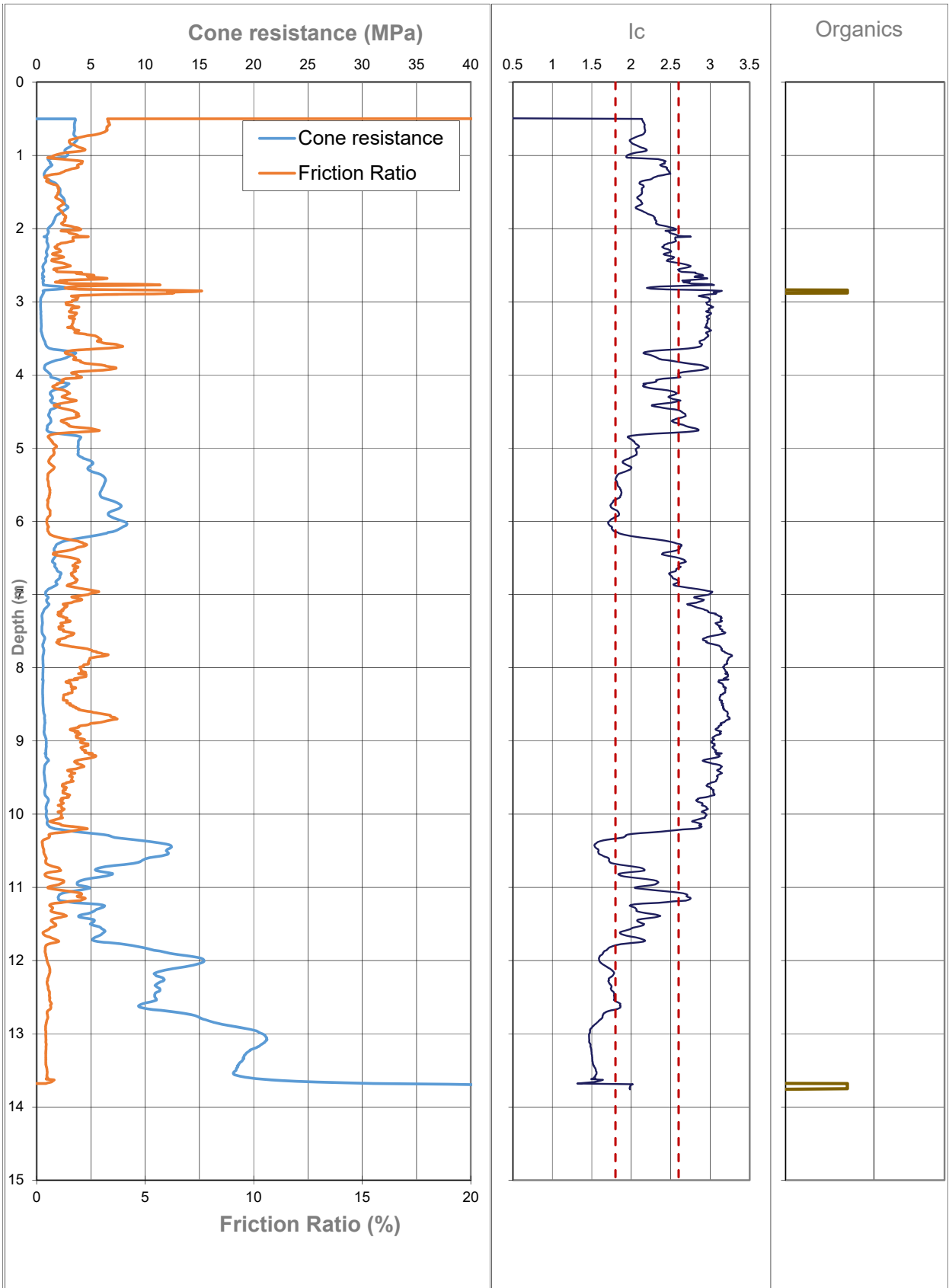
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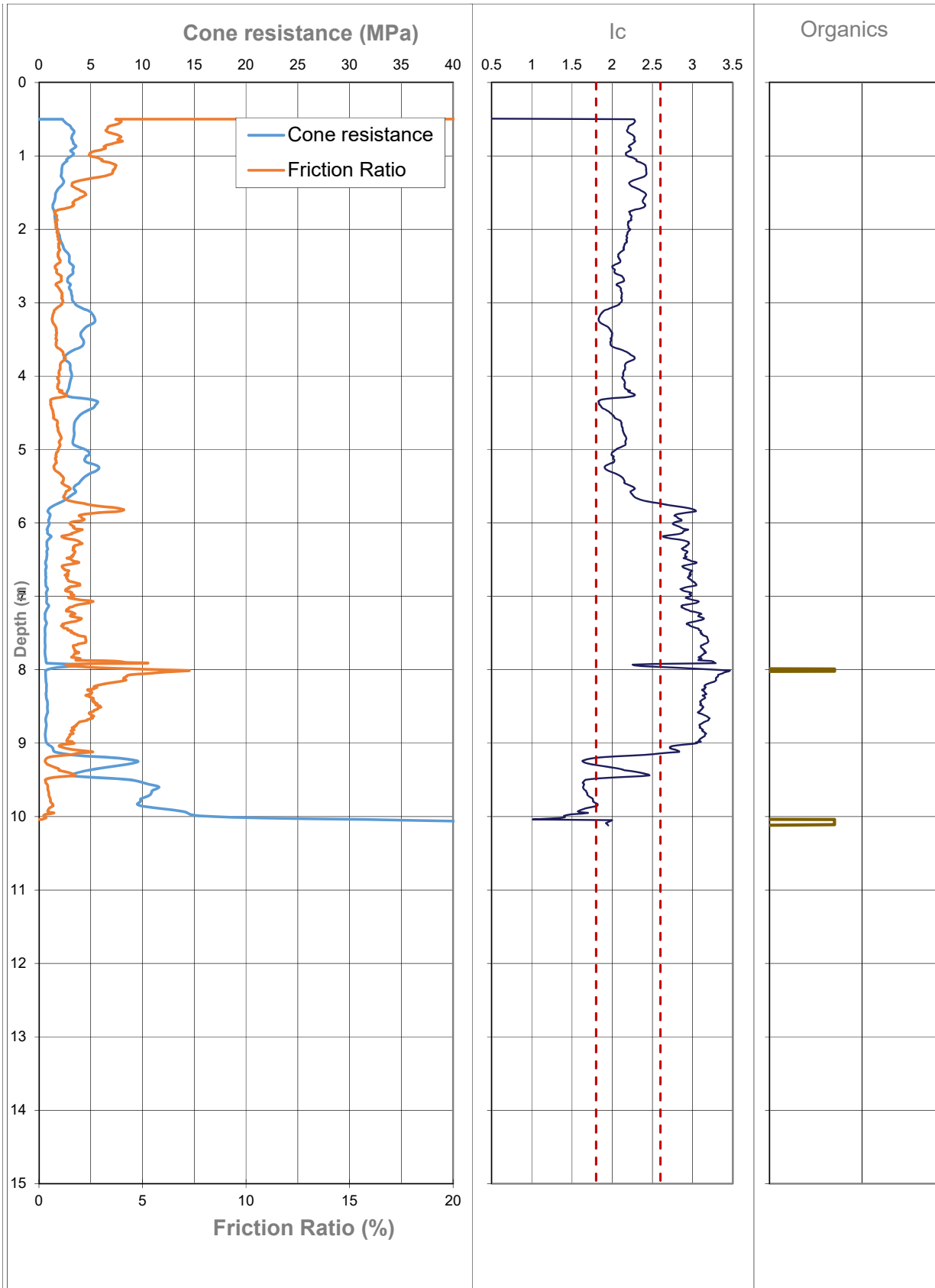
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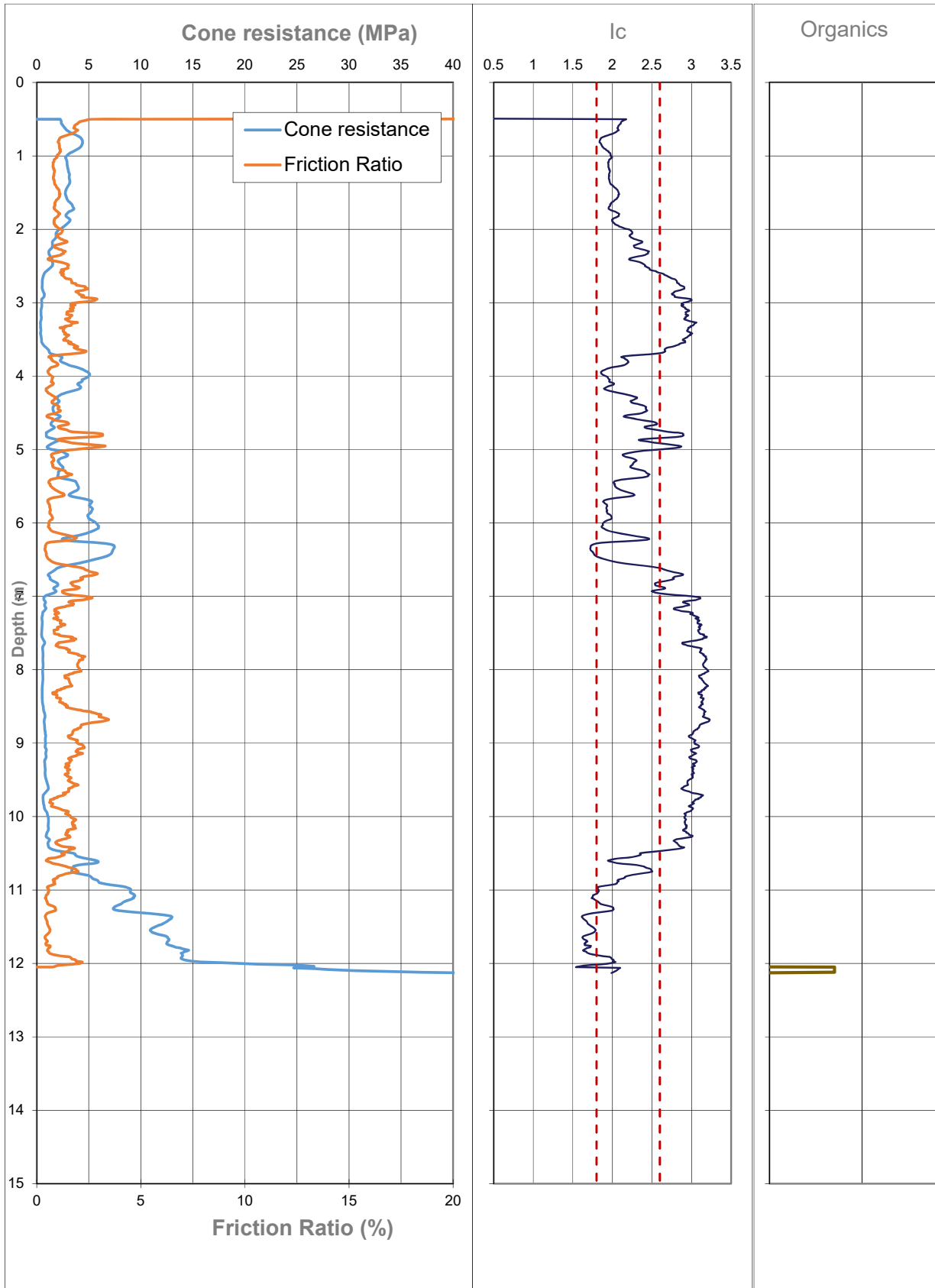
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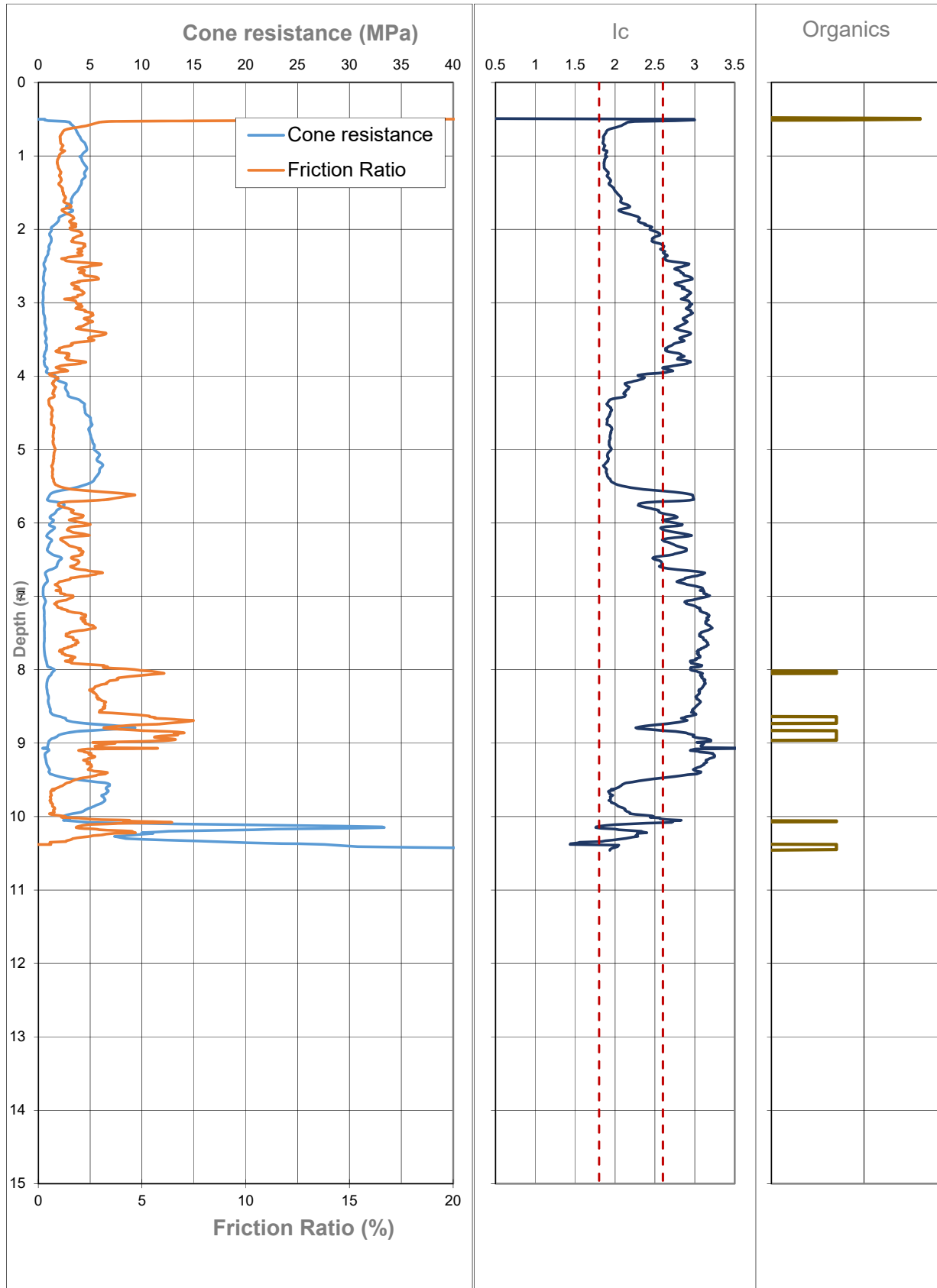
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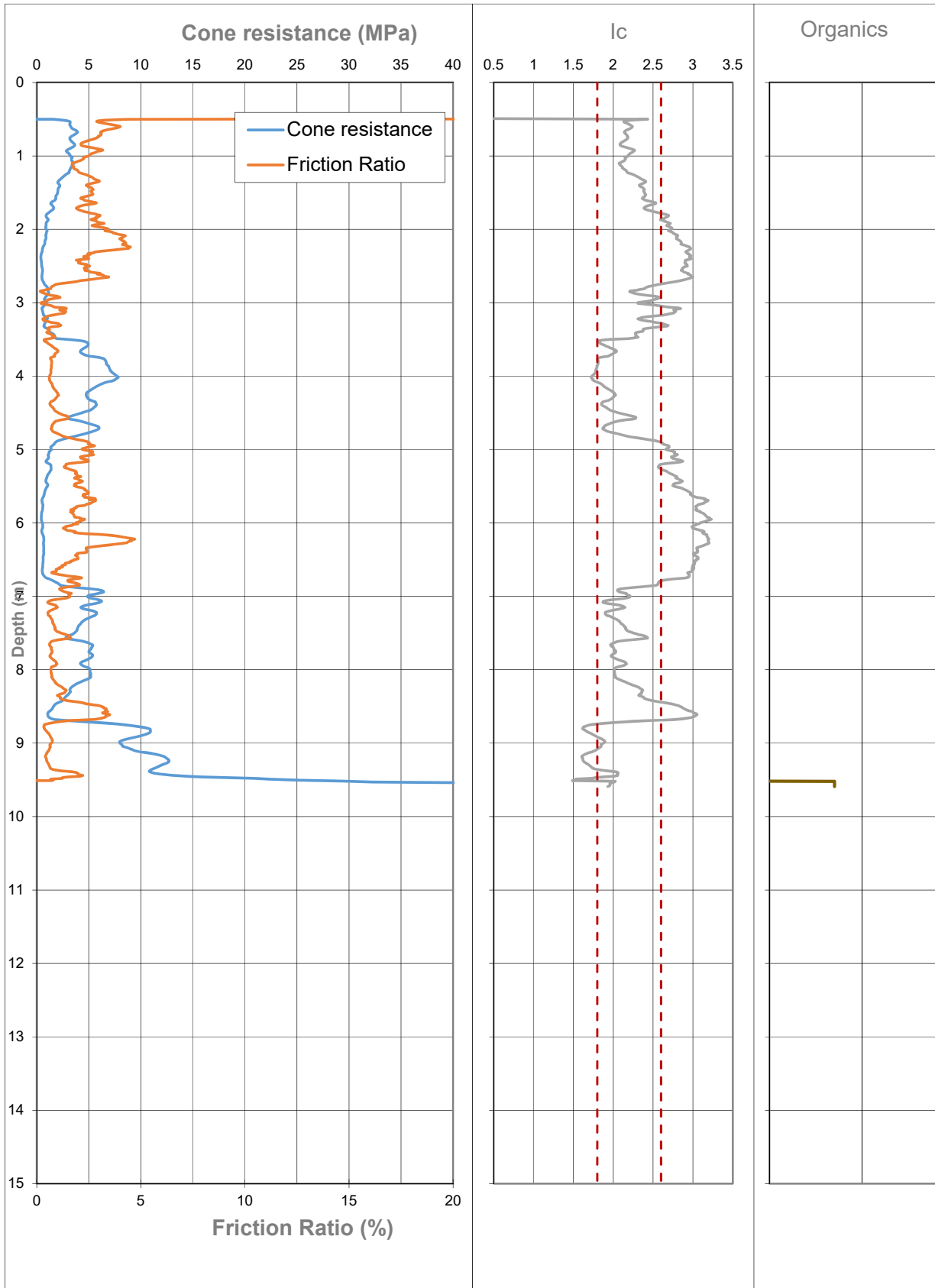
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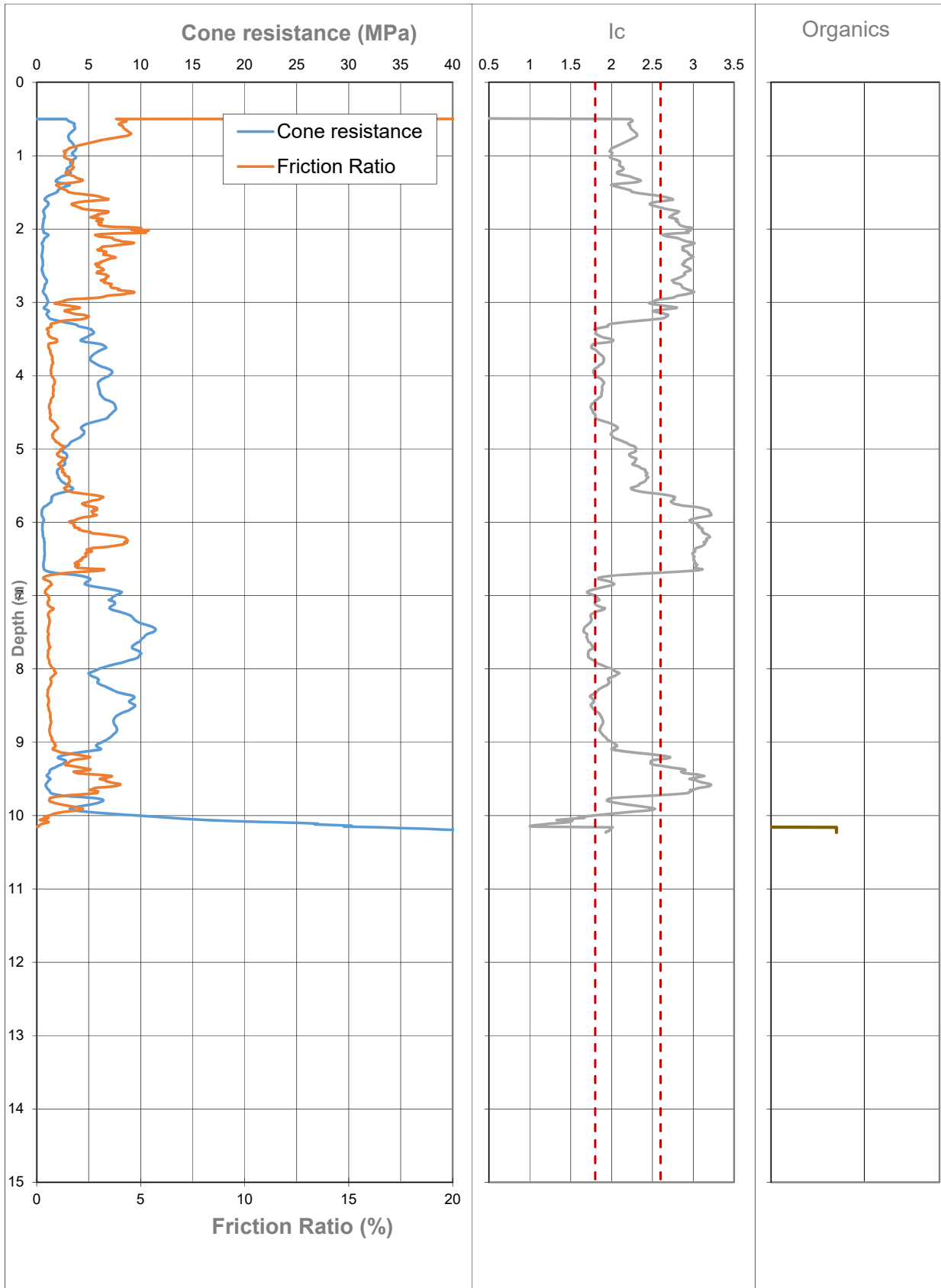
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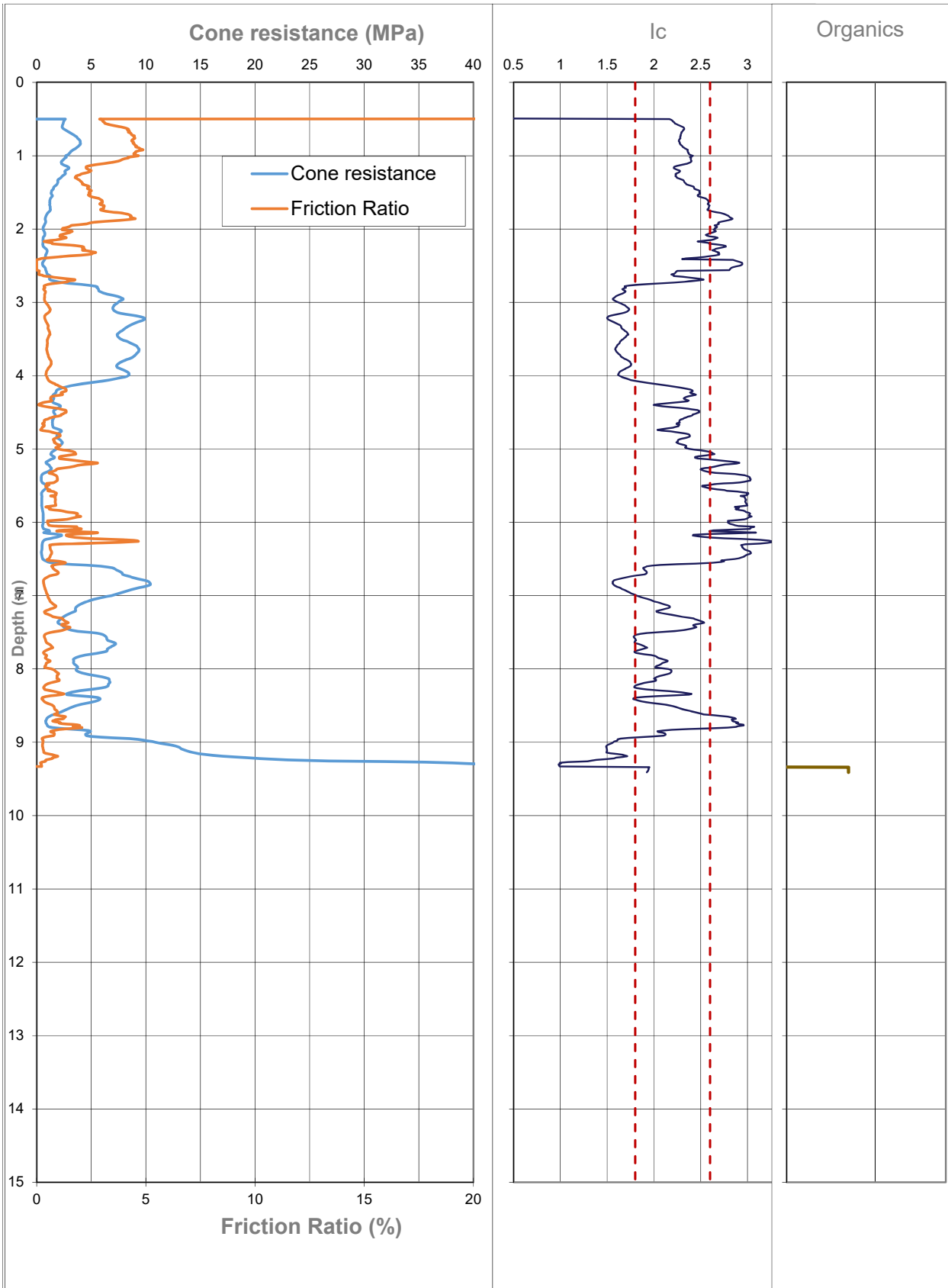
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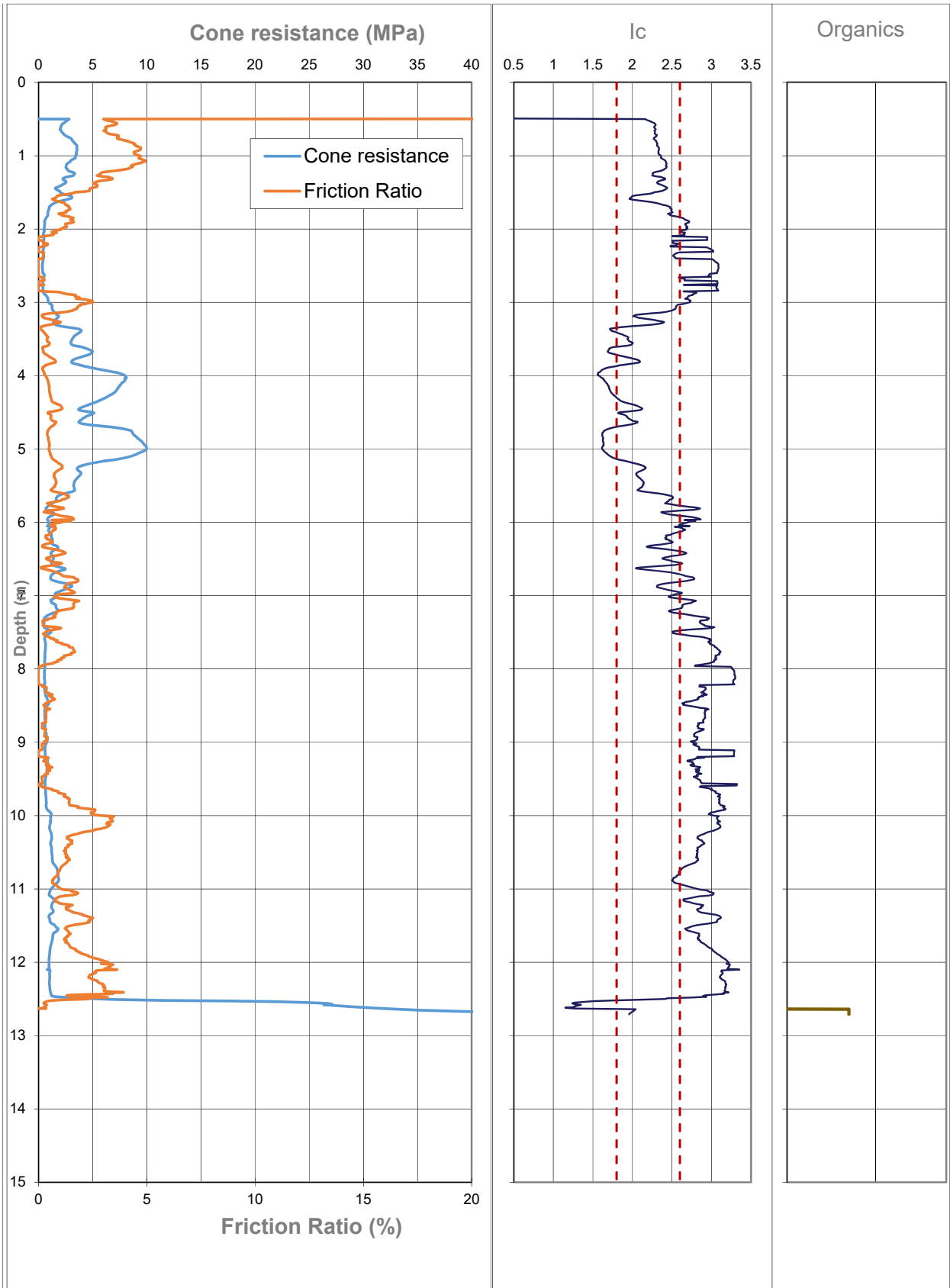
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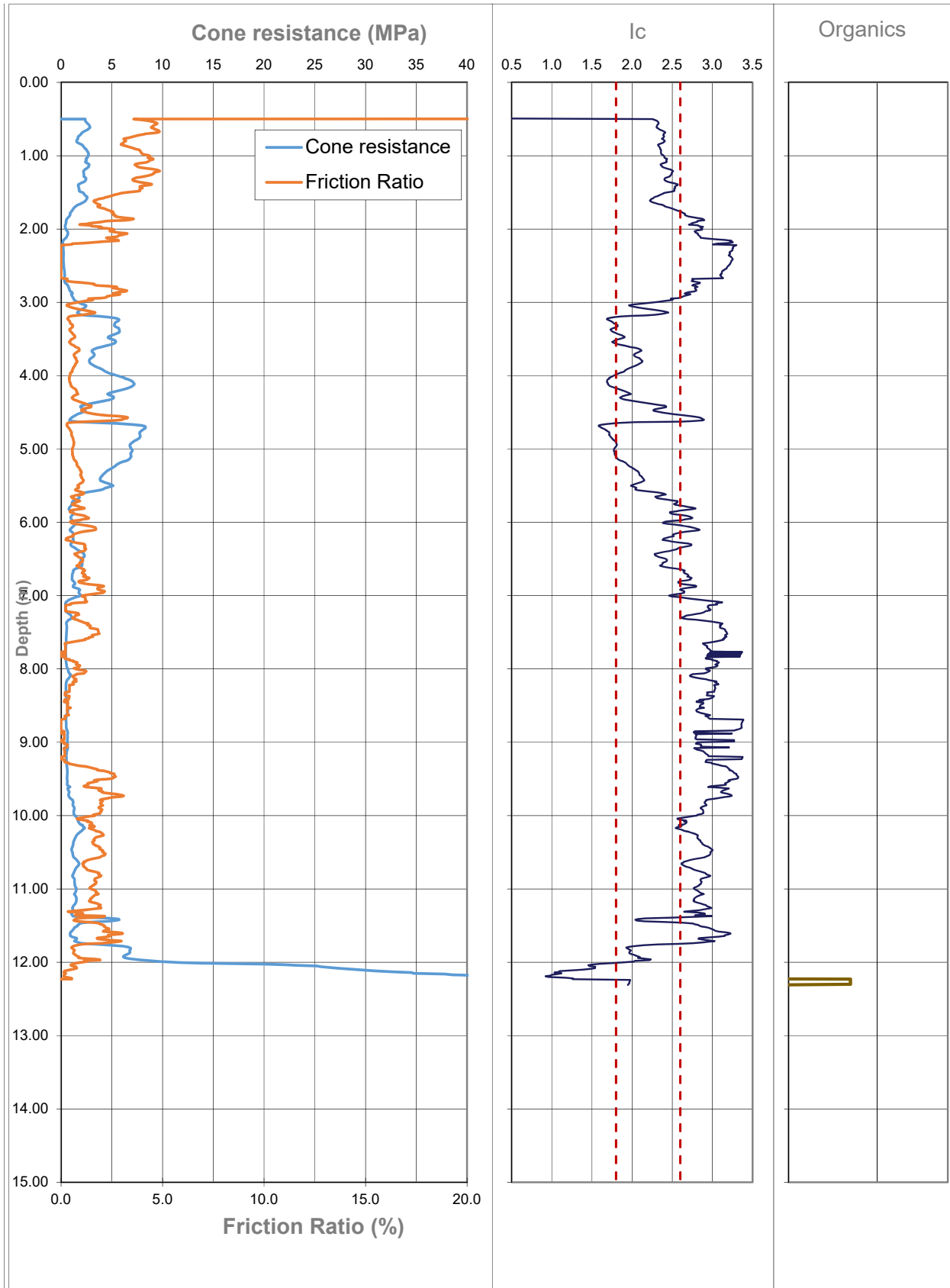
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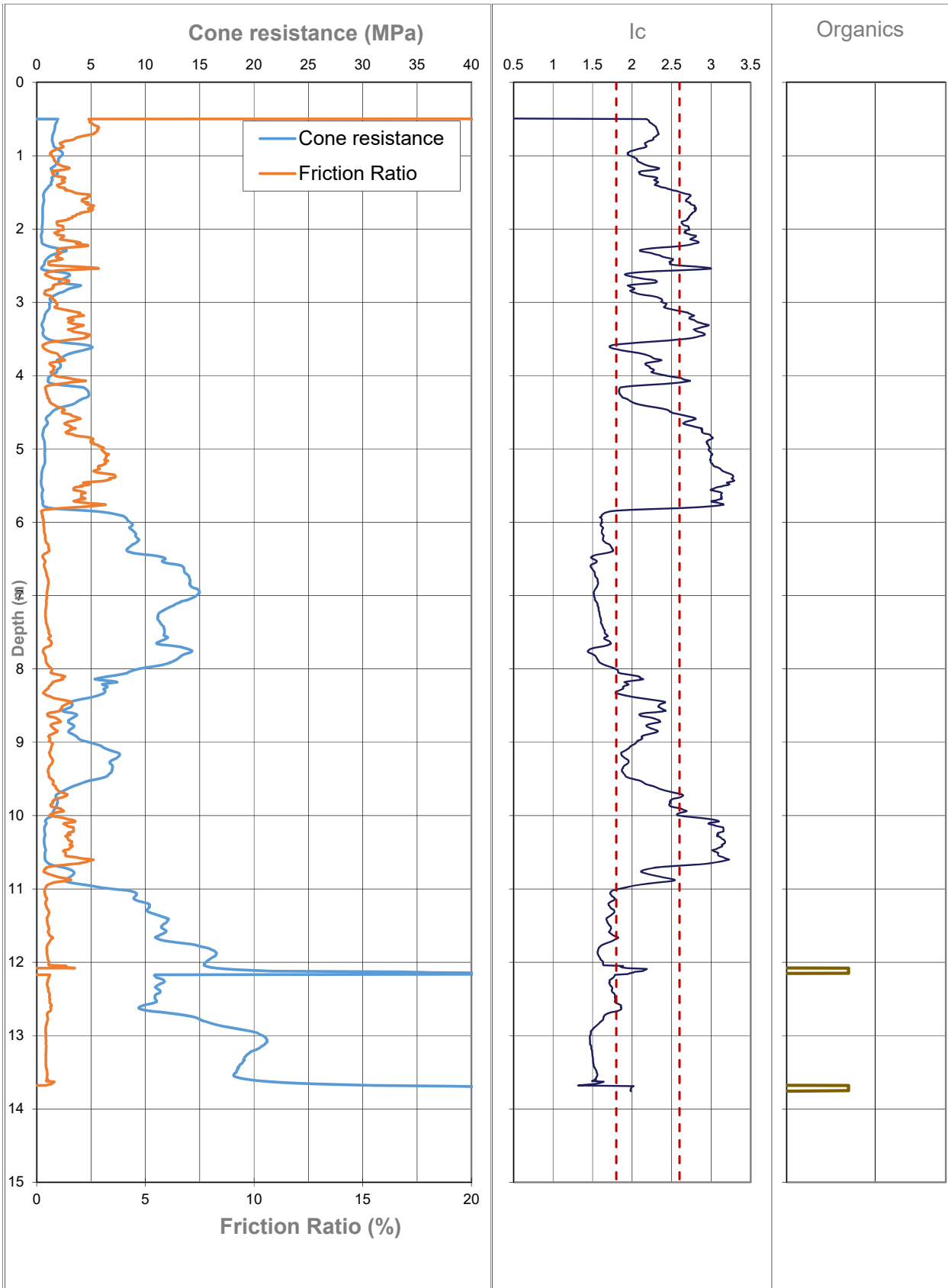
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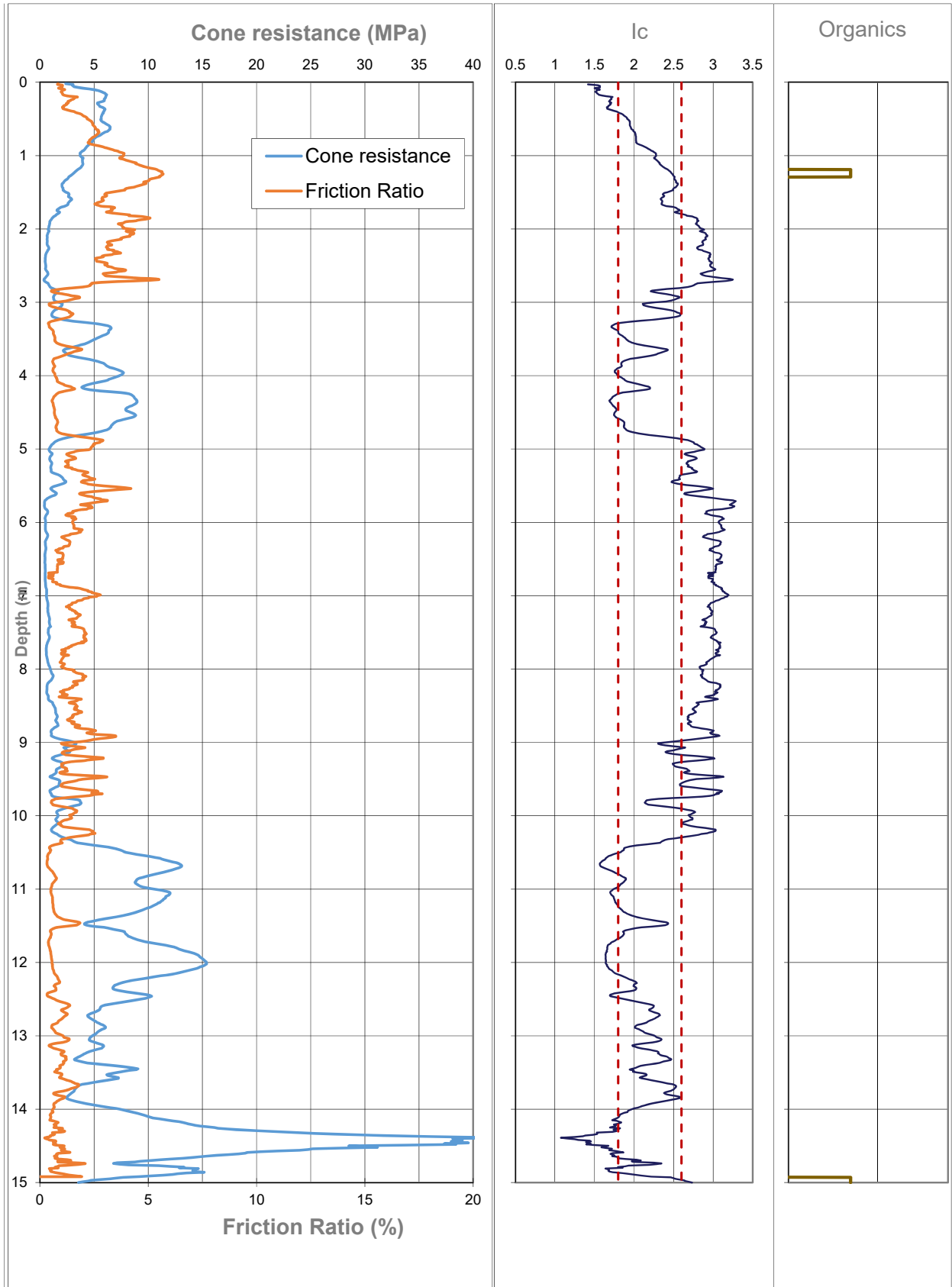
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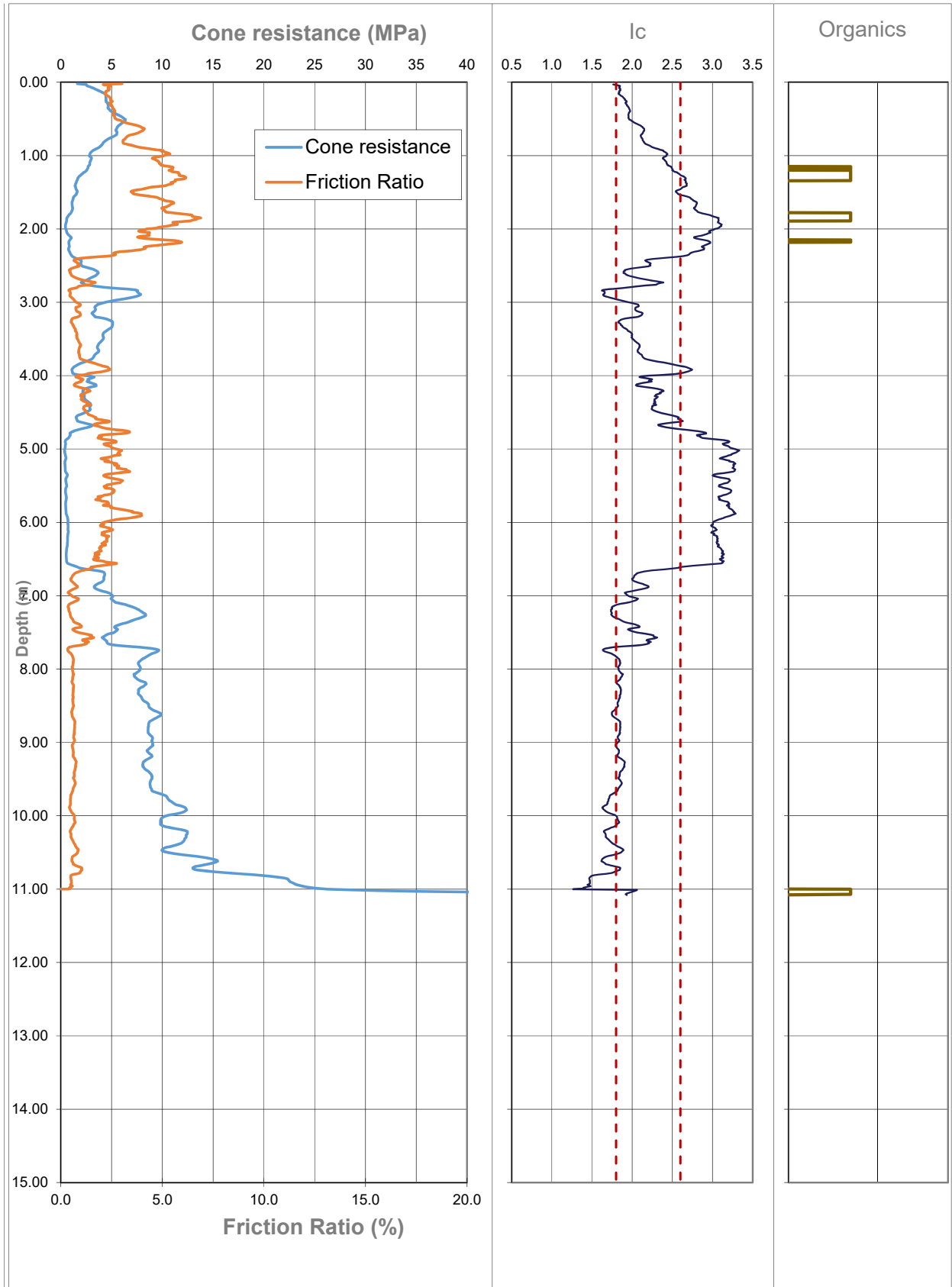
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	Client:	Cashmere Park Trust	Job No:	3933




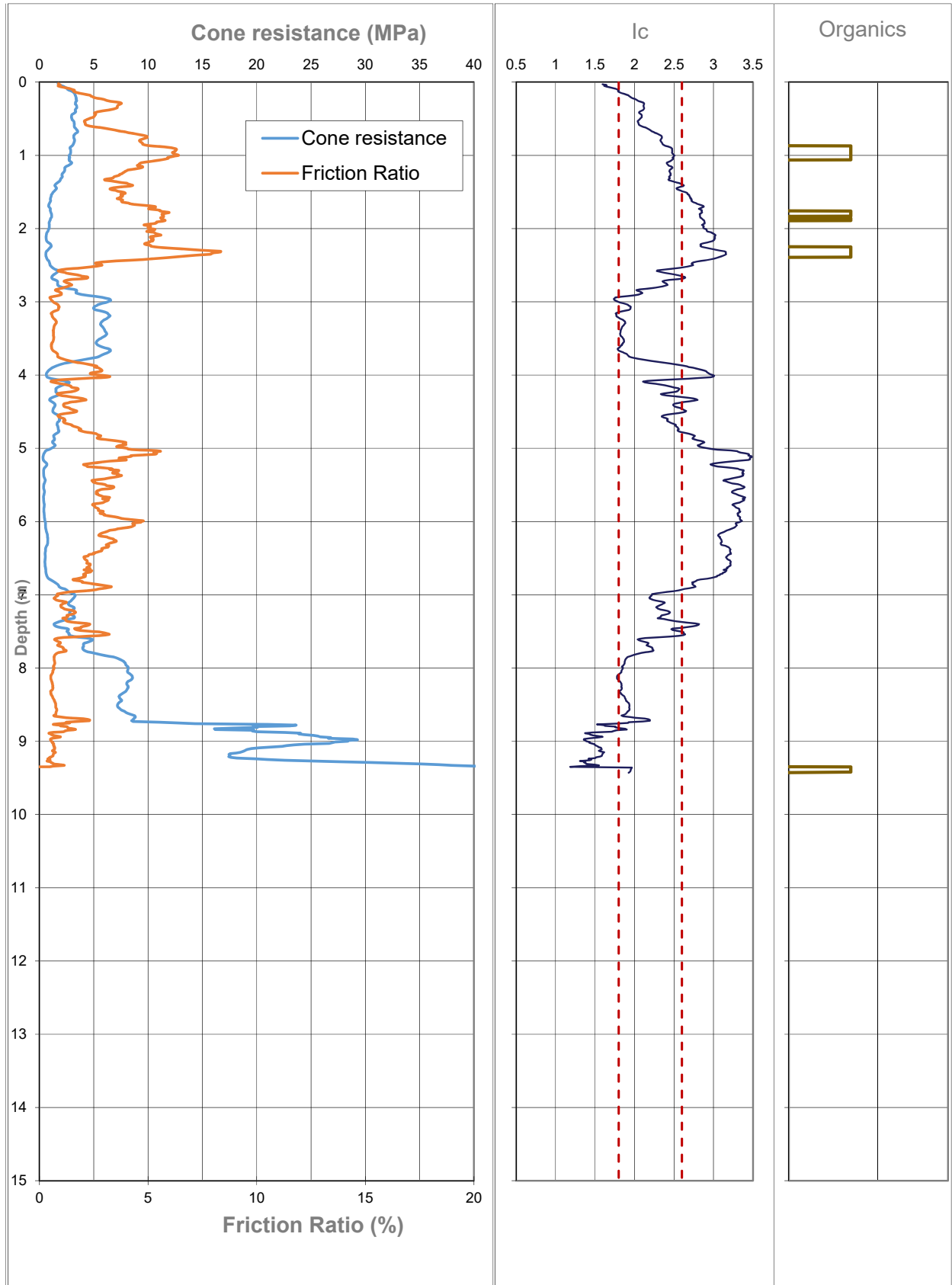
	CPT Data Plots			
	GEOTECH CONSULTING LTD			
	Project:	Cashmere Park Subdivision	Hole No:	CPT 24
	Client:	Cashmere Park Trust	Job No:	3933




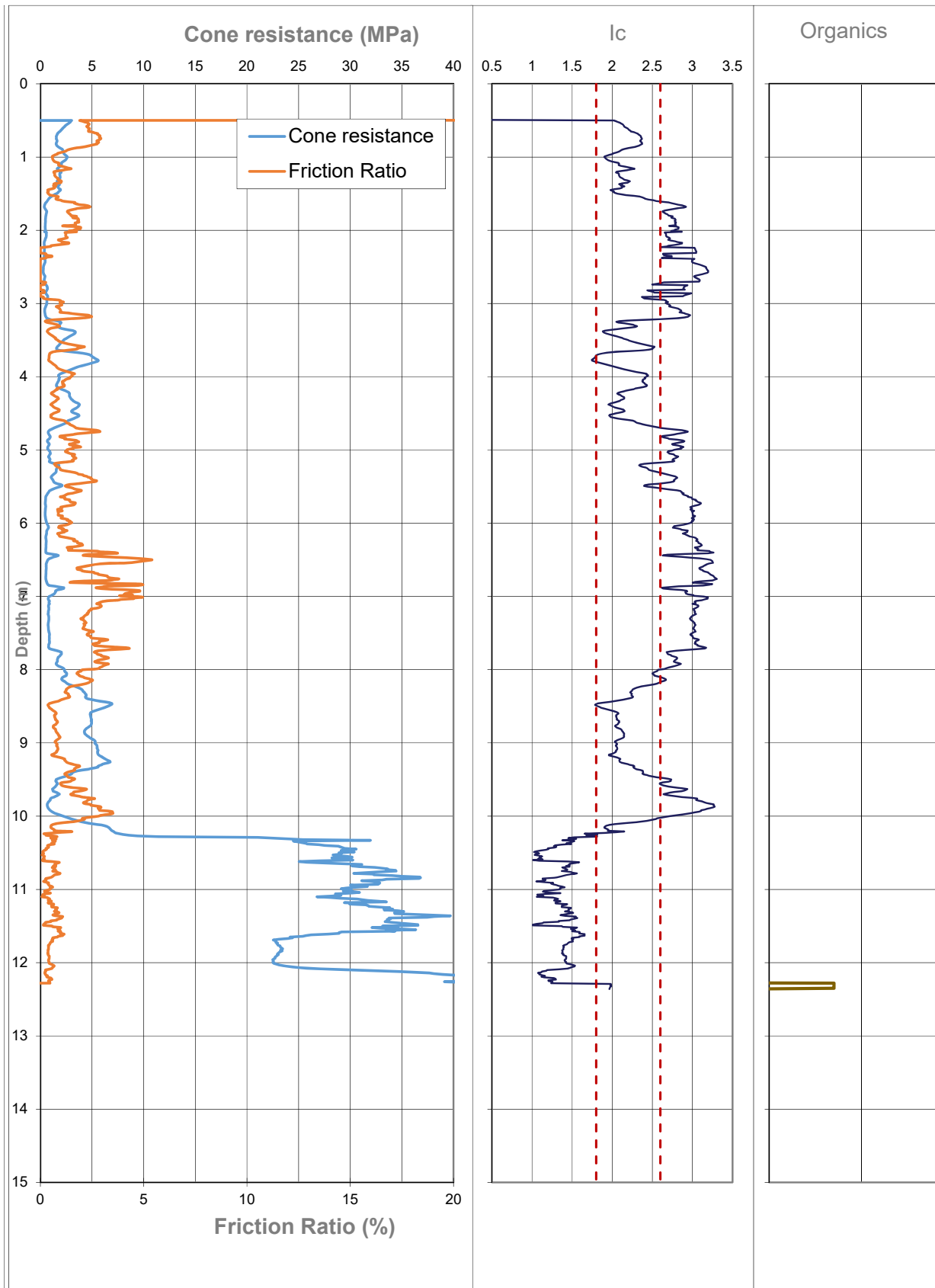
 GEOTECH	CPT Data Plots			
	GEOTECH CONSULTING LTD			
	Project:	Cashmere Park Subdivision	Hole No:	CPT 25
	Client:	Cashmere Park Trust	Job No:	3933



	CPT Data Plots			
	GEOTECH CONSULTING LTD			
	Project:	Cashmere Park Subdivision	Hole No:	CPT 26
	Client:	Cashmere Park Trust	Job No:	3933



 GEOTECH	CPT Data Plots			
	GEOTECH CONSULTING LTD			
	Project:	Cashmere Fields Subdivision	Hole No:	CPT 27
	Client:	Cashmere Park Trust	Job No:	3933





DRILLHOLE BORELOG

Hole ID:	BH1
Sheet:	2 of 3
Date:	20/01/2012

Project No:	3933	Equipment:	8140LS (DT45)	G.L. R.L.:		Logged by:	PEW
Project:	Cashmere Fields Rezoning	Drilling Co:	McMillan	Max Depth:	21.4m	Checked by:	NJT
Client:	Cashmere Park Trust	Operator:	D. Keown	Location:	Refer to Site Plan		

Geological Formation	STRATA DESCRIPTION SOIL DESCRIPTION Major colour, second colour, Subordinate fraction, minor fractions, - plasticity, bedding, moisture, structures ROCK DESCRIPTION Colour, fabric, rock name	Graphic Log	Depth	Piezo- meter and Water Levels	COMMENTS	Drill method	Samples	Tests	SPT blows/mm					
									20	40	60	80		
	Sandy fine to coarse GRAVEL with some Silt ; continued. -10.0m, minor cobble; decrease in sand.		10.0		-10.3 - 11.8m, 100% sample recovery.	Dual Tube Ø70mm								
	Medium to coarse SAND with some Silt ; dark grey. Minor wood fragments. -11.3m, coarse sand.		11.0											
	Gravelly coarse SAND ; Gravel, fine to coarse, subrounded.		11.8		-11.8 - 13.3m, 100% sample recovery.			11.8 SPT				12		
	NO SAMPLE Coarse SAND ; dark grey.		12.0									17		
	Gravelly coarse SAND ; dark grey. Gravel, fine to coarse. Medium dense to dense.		12.9									19		
	Sandy fine to coarse GRAVEL with some Silt ; dark grey. Sand, coarse; some organic and wood fragments. Medium dense to dense.		13.0											
	SILT with fine Sand ; grey; low to medium plasticity. Medium dense to dense. -12.9m, interbedded fine to medium Sand. Plasticity increases with depth.		13.3		-13.3 - 16.4m, 100% sample recovery.			13.3 SPT				2		
	NO SAMPLE Medium to coarse SAND ; brown grey to dark grey. Medium dense.		14.0									10		
	Coarse SAND with interbedded Silt ; dark grey. High plasticity. Medium dense.		14.8			Dual Tube		14.8 SPT				11		
	Sandy fine to coarse GRAVEL with interbedded Silt ; dark grey. Gravel, subrounded; Sand, coarse. Silt increases with depth.		15.0									0		
	SILT with minor very fine Sand ; dark grey; high plasticity. Minor Peat and wood fragments -15.1m, interbedded fine to medium Sand. Soft.		15.8									0		
	Very fine SAND with some Silt ; dark grey. -15.8m, medium to coarse Sand; grey brown. -15.9m, fine Sand; grey.		16.0									6		
	SILT with Peat ; dark brown to dark grey. Medium to high plasticity; Soft. -16.65m, decrease Silt. -16.75m, increase Silt.		16.4		-16.4 - 17.9m, 100% sample recovery.			16.4 SPT				0		
	-17.25m, increase organic content; high plasticity.		17.0									5		
	-17.75m, low plasticity. -17.85m, high plasticity.		17.9									5		
	-18.8m, wood fragment. -19.0m, wood fragment.		18.0		-17.9 - 19.4m, 100% sample recovery.			17.9 SPT				0		
	Silty fine SAND with minor PEAT ; dark grey.		18.8			Dual Tube						2		
	Silty Sandy fine to coarse GRAVEL ; dark grey to yellow brown. Gravel, subrounded; Sand, coarse; dense.		19.4		-19.4 - 20.9m, 100% sample recovery.			19.4 SPT				4		
			20.0									16		
			20.9									18		
			21.4									18		
			21.4									36		



DRILLHOLE BORELOG

Hole ID:	BH1
Sheet:	3 of 3
Date:	20/01/2012

Project No:	3933	Equipment:	8140LS (DT45)	G.L. R.L.:		Logged by:	PEW
Project:	Cashmere Fields Rezoning	Drilling Co:	McMillan	Max Depth:	21.4m	Checked by:	NJT
Client:	Cashmere Park Trust	Operator:	D. Keown	Location:	Refer to Site Plan		

Geological Formation	STRATA DESCRIPTION		Graphic Log	Depth	Piezo-meter and Water Levels	COMMENTS	Drill method	Samples	Tests	SPT blows/mm			
	SOIL DESCRIPTION Major colour, second colour, Subordinate fraction, minor fractions, - plasticity, bedding, moisture, structures	ROCK DESCRIPTION Colour, fabric, rock name								20	40	60	80
	Silty Sandy fine to coarse GRAVEL ; dark grey to yellow brown. Gravel, subrounded; Sand, coarse; dense. (continued)			20.0		-19.4 - 20.9m, 100% sample recovery.	Dual Tube Ø70mm		20.9 SPT	11	6	10	16/300mm
	NO SAMPLE			-21.0									
	21.4m E.O.H.												
				-22.0									
				-23.0									
				-24.0									
				-25.0			Dual Tube						
				-26.0									
				-27.0									
				-28.0									
				-29.0			Dual Tube						
				-30.0									



DRILLHOLE BORELOG

Hole ID:	BH 2
Sheet:	1 of 3
Date:	20/01/2012

Project No:	3933	Equipment:	8140LS (DT45)	G.L. R.L.:		Logged by:	PEW
Project:	Cashmere Fields Rezoning	Drilling Co:	McMillan	Max Depth:	21.4m	Checked by:	NJT
Client:	Cashmere Park Trust	Operator:	D. Keown	Location:	Refer to Site Plan		

Geological Formation	STRATA DESCRIPTION SOIL DESCRIPTION Major colour, second colour, Subordinate fraction, minor fractions, - plasticity, bedding, moisture, structures ROCK DESCRIPTION Colour, fabric, rock name	Graphic Log	Depth	Piezo- meter and Water Levels	COMMENTS	Drill method	Samples	Tests	SPT blows/mm				
									20	40	60	80	
	TOP SOIL ; dark brown, organic, wood fragments.		0.0		-0.0 - 1.2m, 90% sample recovery.	Dual Tube Ø70mm							
	SAND with minor Silt ; dark brown with yellow-brown mottling; fine to medium grained. -1.2m, dark grey. -1.4, very fine to fine sand. -1.7m, increase in Silt content.		1.0	W.T. 1.1m	-1.2 - 2.7m, 100% sample recovery.								
	Silty very fine to fine SAND ; grey-brown with yellow-brown mottling. -2.7m, dark grey, very fine.		3.0		-2.7 - 4.2m, 100% sample recovery.	Dual Tube							
	SILT with minor very fine grained Sand ; dark grey with yellow-brown mottle. High plasticity. Silty very fine SAND ; dark grey.		4.0		-4.2 - 5.7m, 100% sample recovery.								
	SAND ; dark grey, very fine to fine grained; trace of Silt. -4.7m, fine to medium sand. -5.0m, fine to coarse sand.		5.0		-5.7 - 7.2m, 100% sample recovery.	Dual Tube							
	Silty very fine to fine SAND ; dark grey. SAND ; dark grey, medium to coarse grained. -4.7m, coarse		6.0		-7.2 - 8.2m, 100% sample recovery.								
	Silty very fine to fine SAND ; dark grey.		7.0		-8.2 - 10.2m, 100% sample recovery.	Dual Tube							
	SILT ; dark grey. High plasticity; trace of very fine Sand. Peaty SILT ; dark grey. SILT ; dark grey. High plasticity; trace of very fine Sand.		8.0		-8.2 - 10.2m, 100% sample recovery.								
	NO SAMPLE SILT ; dark grey. High plasticity; trace of very fine Sand. Peaty SILT ; dark grey. Trace of very fine Sand and wood fragments. Sandy SILT ; dark grey. High plasticity, fine Sand.		9.0		-8.2 - 10.2m, 100% sample recovery.	Dual Tube							
	Sandy medium to coarse GRAVEL ; dark grey. Subrounded; Sand, fine to coarse. SAND ; dark grey; Medium to coarse.		10.0										
	Gravelly medium to coarse SAND ; dark grey. Gravel, subrounded, medium to coarse. SAND with minor fine to coarse GRAVEL ; dark grey. Sand, fine to coarse; Gravel, subrounded.		10.0										

16.4
SPT
4
6
10
16/300mm



DRILLHOLE BORELOG

Hole ID:	BH 2
Sheet:	2 of 3
Date:	20/01/2012

Project No:	3933	Equipment:	8140LS (DT45)	G.L. R.L.:		Logged by:	PEW
Project:	Cashmere Fields Rezoning	Drilling Co:	McMillan	Max Depth:	21.4m	Checked by:	NJT
Client:	Cashmere Park Trust	Operator:	D. Keown	Location:	Refer to Site Plan		

Geological Formation	STRATA DESCRIPTION		Piezo-meter and Water Levels	COMMENTS	Drill method	Samples	Tests	SPT blows/mm												
	SOIL DESCRIPTION Major colour, second colour, Subordinate fraction, minor fractions, - plasticity, bedding, moisture, structures ROCK DESCRIPTION Colour, fabric, rock name	Graphic Log						Depth	20	40	60	80								
	Gravelly medium to coarse SAND ; dark grey. Gravel, medium to coarse.		10.0																	
	SAND ; dark grey. Medium to coarse grained; medium dense to loose (density decreases with depth).		-11.0	-10.3 - 11.8m, 100% sample recovery.	Dual Tube Ø70mm		10.3 SPT	10	10	13	23/300mm									
	-11.4 to 11.6m, wood fragments.		-12.0																	
	-12.7 to 12.9m, some Peat.		-13.0																	
	Silty fine to medium SAND ; dark grey. Loose.		-14.0	-11.8 - 13.3m, 100% sample recovery.			11.8 SPT	6	4	2	6/300mm									
	SAND ; dark grey; medium to coarse. Trace of Silt.		-15.0																	
	NO SAMPLE		-16.0																	
	SAND ; dark grey; medium to coarse. Dense.		-17.0	-13.3 - 14.8m, 100% sample recovery.	Dual Tube		13.3 SPT	1	1	4	5/300mm									
	Sandy fine to coarse GRAVEL ; dark grey. Gravel, subrounded; Sand, coarse; dense.		-18.0																	
	-17.6m, yellow brown Sand.		-19.0																	
	NO SAMPLE		-20.0																	
	GRAVEL ; dark grey. Medium to coarse; dense.		-21.0	-14.8 - 16.4m, 100% sample recovery.			14.8 SPT	3	3	4	7/300mm									
	Sandy fine to coarse GRAVEL ; dark grey. Gravel, subrounded; Sand, coarse; dense.		-22.0																	
	NO SAMPLE		-23.0																	
	NO SAMPLE		-24.0																	
	NO SAMPLE		-25.0	-16.4 - 17.9m, 100% sample recovery.			16.4 SPT	12	13	17	30/300mm									
	NO SAMPLE		-26.0																	
	NO SAMPLE		-27.0																	
	NO SAMPLE		-28.0	-17.9 - 19.4m, 75% sample recovery.	Dual Tube		17.9 SPT	11	25	14	39/300mm									
	NO SAMPLE		-29.0																	
	NO SAMPLE		-30.0																	
	NO SAMPLE		-31.0																	
	NO SAMPLE		-32.0																	
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	NO SAMPLE		-98.0																	
	NO SAMPLE		-99.0																	
	NO SAMPLE		-100.																	



TONKIN & TAYLOR LTD

BOREHOLE LOG

BOREHOLE No:S33_BH-Sc
 Hole Location: 200 Cashmere Road
 SHEET 2 OF 2

PROJECT: Silty Soil Liquefaction Guidance LOCATION: 200 Cashmere Road JOB No: 53399.000
 CO-ORDINATES: 5175519.77 mN DRILL TYPE: Fraste Multidril - XL HOLE STARTED: 21/2/14
 1568352.4 mE DRILL METHOD: Sonic, 95.2% efficiency HOLE FINISHED: 21/2/14
 R.L.: DRILLED BY: Prodrill - Cam
 DATUM: DRILL FLUID: Drill pro LOGGED BY: JXXM CHECKED: DAA

GEOLOGICAL		ENGINEERING DESCRIPTION																				
GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION.	FLUID LOSS	WATER	CORE RECOVERY (%)	METHOD	CASING	TESTS	SAMPLES	R.L. (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MOISTURE / WEATHERING CONDITION	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa)			COMPRESSIVE STRENGTH (MPa)			DEFECT SPACING (mm)	SOIL DESCRIPTION Soil type, minor components, plasticity or particle size, colour. ROCK DESCRIPTION Substance: Rock type, particle size, colour, minor components. Defects: Type, inclination, thickness, roughness, filling.	
														10	25	100	200	50	100			200
Yaldhurst Member of the Springston Formation			100	Sonic		*PI; PSD & WC @5.5 - 5.6m			5.5	SM	W										Silty fine SAND; grey.	
			100	Sonic		*PI & WC @5.9 - 6.0m			5.5	ML		F									SILT, with some sand and trace organics; grey. Non-plastic, quick; sand, fine; organics, fibrous. 5.50m: Grades to sandy. 5.65m: Grades to some sand. 5.75m: Grades to trace sand. Becomes low plasticity, slow.	
			100	Sonic		*PI; PSD & WC @7.4 - 7.5m			6.0			S									6.05m: Becomes quick.	
			100	Sonic					6.5			VS										6.30m: Grades to sand and organics absent. Becomes low to moderate plasticity, slow.
			100	Sonic					7.0													7.05m: Grades to trace fibrous organics.
			100	Sonic					7.5				S									7.60m: Becomes very slow.
			100	Sonic					8.0				F									7.75m: Becomes moderate plasticity.
			100	Sonic					8.5													8.00m: Becomes low to moderate plasticity. 8.10m: Grades to minor organics.
			100	Sonic					9.0				S									8.50m: Grades to trace fine sand. 8.80m: Grades to trace organics.
			100	Sonic					9.5				F									8.95m: Grades to sandy. Becomes non-plastic, quick. Silty fine SAND, with trace organics and silt laminations; grey. Organics, fibrous. Fibrous WOOD; brown. Silty fine SAND, with trace organics; grey. Organics, fibrous. 9.50m: Grades to silt laminations absent.
								10.0													End of Borehole at 10.00m bgl. Target Depth Reached.	

T-T DATATEMPLATE.GDT actv



Project No: 53399
Site: 200 Cashmere Road
BH No: Site 33
Date: 13 03 2014
Box No: 1 of 4
Depth From: 0.0 m to 3.0 m
www.tonkin.co.nz
Scale: mm 600



SOIL BORING LOG

Project Number
n/a

Boring Number
DM-2

**General
Comments:**

Dames & Moore Continuous Sampling
(This is a simplified log. Detailed logging will be provided.)

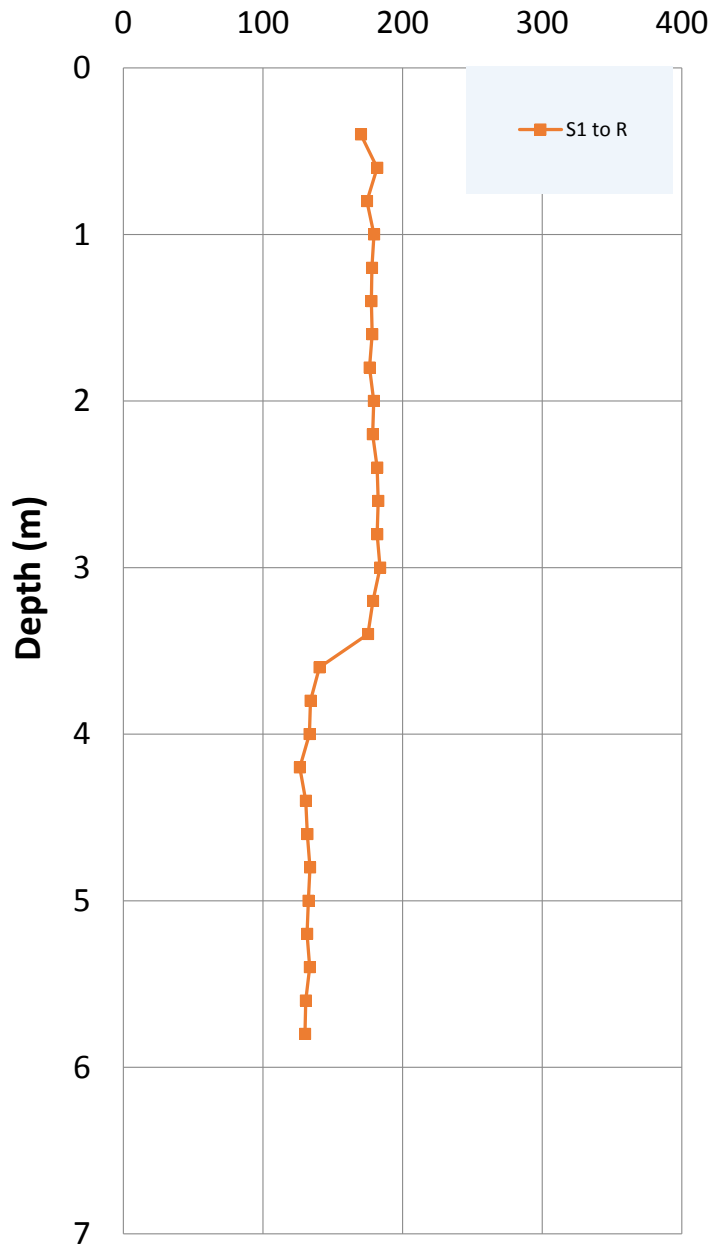
Project Name: Mini-Cone/Continuous D&M	Location: 200 Cashmere Road ("Site 33"), Christchurch, New Zealand
Elevation: ---	Drilling Contractor: McMillan Drilling Services
Drilling Method and Equipment: Mud-rotary, Track rig (Geoprobe 8140LS)	
Mud Level: Above ground surface (7 June 2016, 8:30AM)	Start/Finish: 3 June 2016 (Friday) - 7 June 2016 (Tuesday)
Logger: Christine Z. Beyzaei (UC Berkeley)	

Depth below Surface (m)	Sample			D&M Sampling Pressure	Soil Description	Comments
	Interval	Number and Type	Recovery (%)	(psi)	Soil Name, Color, Moisture Content, Relative Density or Consistency, Soil Structure, Mineralogy, USCS Group Symbol	Depth of Casing, Drilling Rate, Drilling Fluid Loss, Tests and Instrumentation
						<i>Hand-augered (0 - 0.5m)</i>
1	0.5- 0.89 m	1U (DM)	100%	350-400 psi	Gray sandy silt	No casing. Sampler not fully advanced* (estimated advancement approx. 39 cm).
	0.95- 1.40 m	2U (DM)	100%	200 psi	Gray sandy silt	No casing.
	1.40- 1.85 m	3U (DM)	100%	100 psi	Gray sandy silt	Casing at 0.78 m.
2	1.85- 2.30 m	4U (DM)	99%	100 psi	Gray clayey silt	Casing at 0.78 m.
	2.30- 2.75 m	5U (DM)	101%	100 psi	Gray clayey silt	Casing at 1.85 m.
3	2.75- 3.20 m	6U (DM)	101%	100 psi	Gray sandy silt to silty sand	Casing at 1.85 m.
	3.20- 3.65 m	7U (DM)	100%	150-250 psi	Gray fine sand, some silt	Casing at 2.90 m.
4	3.65- 4.10 m	8U (DM)	101%	150-250 psi	Gray silty fine sand (silt/organic bands and laminations)	Casing at 2.90 m.
	4.10- 4.55 m	9U (DM)	95%	75 psi	Gray fine sand, some silt & Gray silt with laminations	Casing at 3.80 m.
5	4.55- 5.00 m	10U (DM)	101%	75 psi	Gray silt & silty fine sand (organic/sand laminations and partings)	Casing at 4.25 m.
	5.00- 5.45 m	11U (DM)	102%	50 psi	Layered silty sand and silt	Casing at 4.25 m.
	5.45- 5.90 m	12U (DM)	98%	100 psi	Layered silty sand and silt	Casing at 4.25 m.
6	5.90- 6.35 m	13U (DM)	100%	50 psi	Layered silt	Casing at 5.34 m.
	6.35- 6.80 m	14U (DM)	101%	75 psi	Layered silt	Casing at 5.34 m.
7						<i>End of boring at 6.80 m</i>

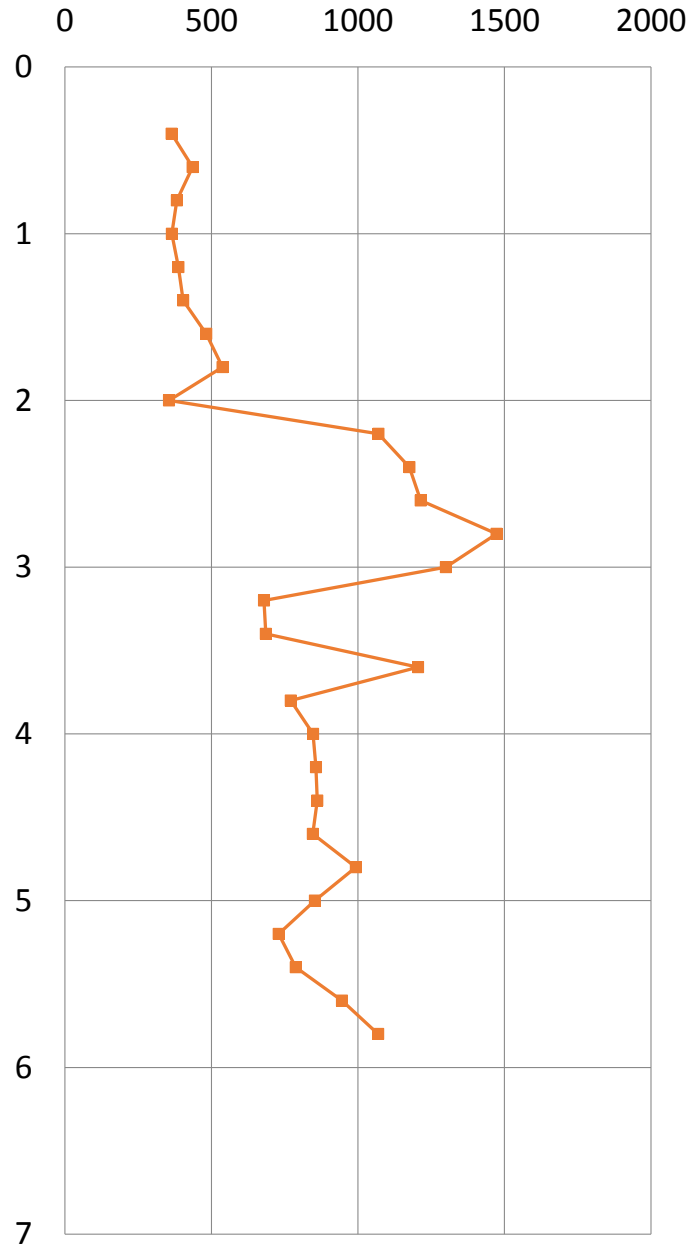
*Note: Full sampler advancement = 45 cm.

HNH-TCR01-XH01

S-Wave Velocity, Vs (m/s)



P-Wave Velocity, Vp (m/s)



Project:

T-Rex Ground Improvement Trials

Test Date: 6 December 2013

Suburb: Hoon Hay

Located By: Survey GPS

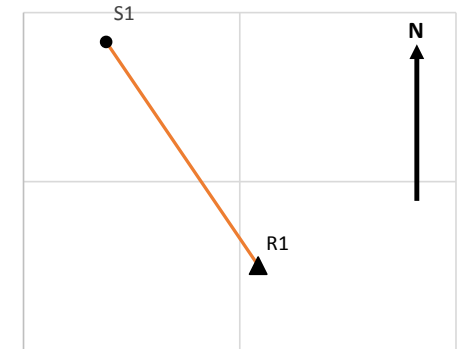
Coord System: NZTM

Vertical Datum: Lyttleton Vertical Datum 1937

Probe Positions:

Probe	Easting (mE)	Northing (mN)	Elevation (mRL)
R1	1568355.1	5175519.5	9.3
S1	1568354.4	5175520.8	9.3
S2	0.0	0.0	0.0

Indicative Location Plan



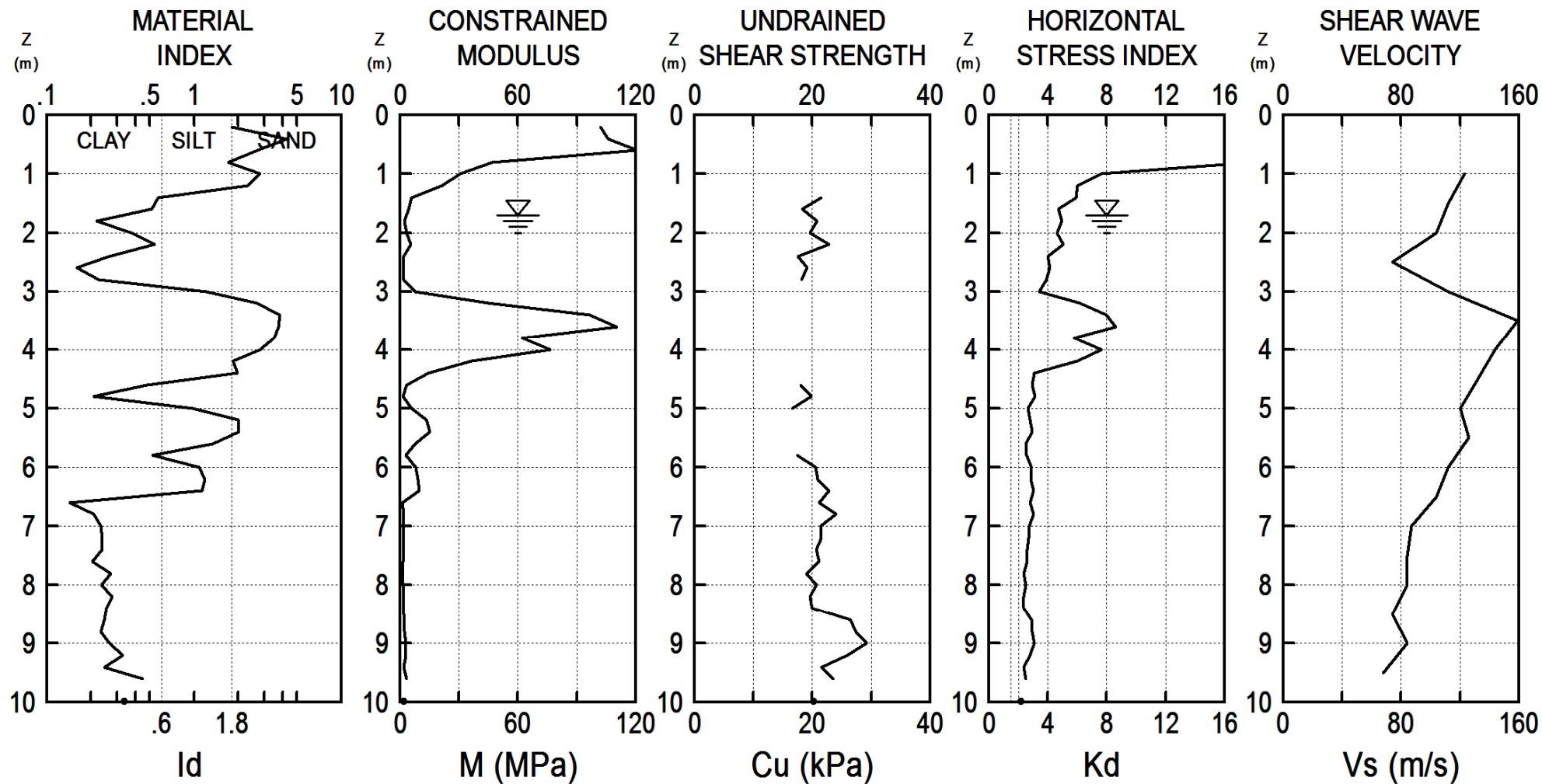
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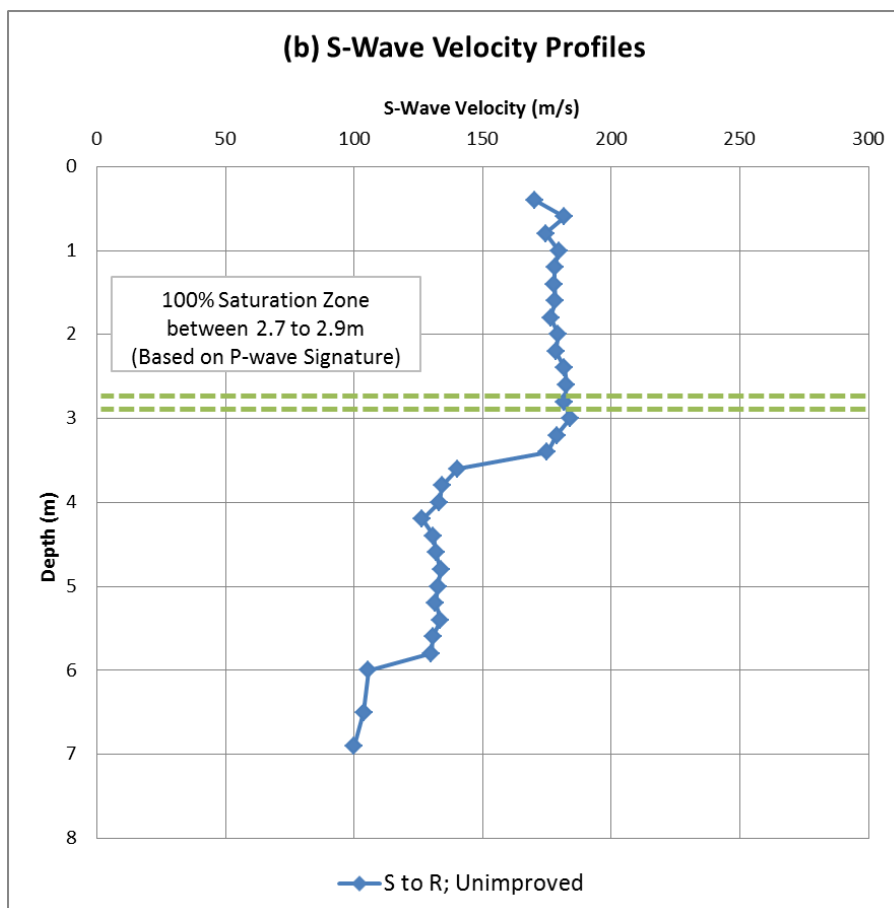
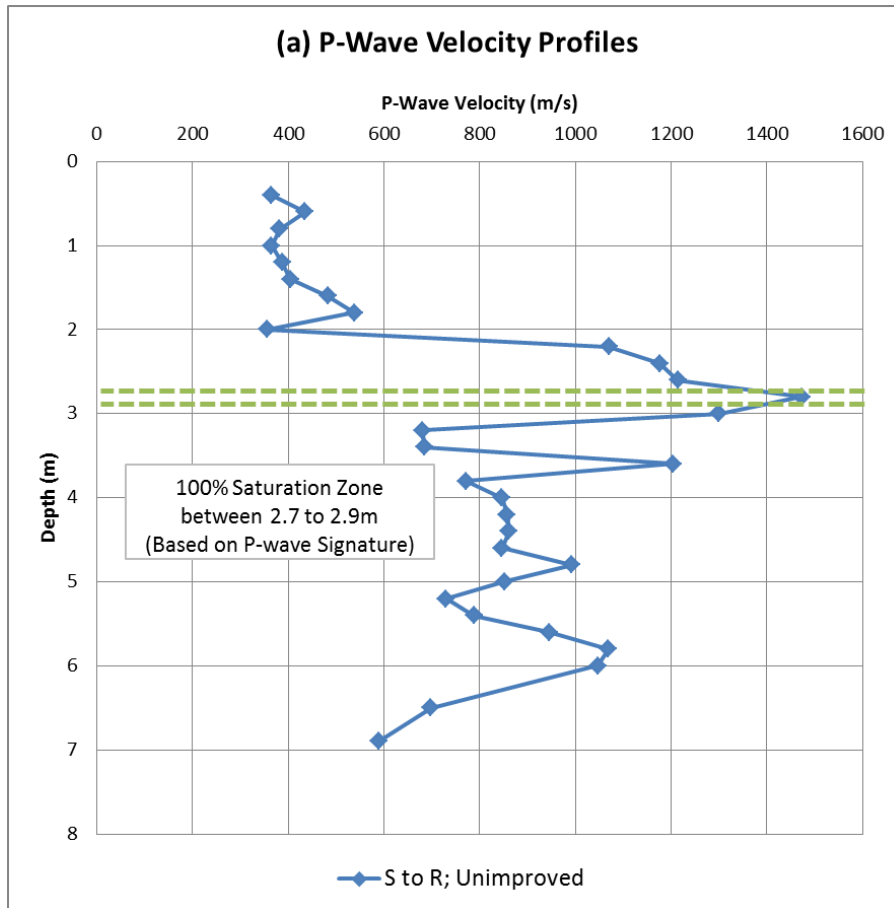
200 Cashmere Road: S1 to R; Unimproved ground.

Site 33
200 Cashmere Rd

Natural soil
Christchurch

TEST
SDMT1
14 DEC 2013





Appendix 3


Lab data and C_{FC} Analysis

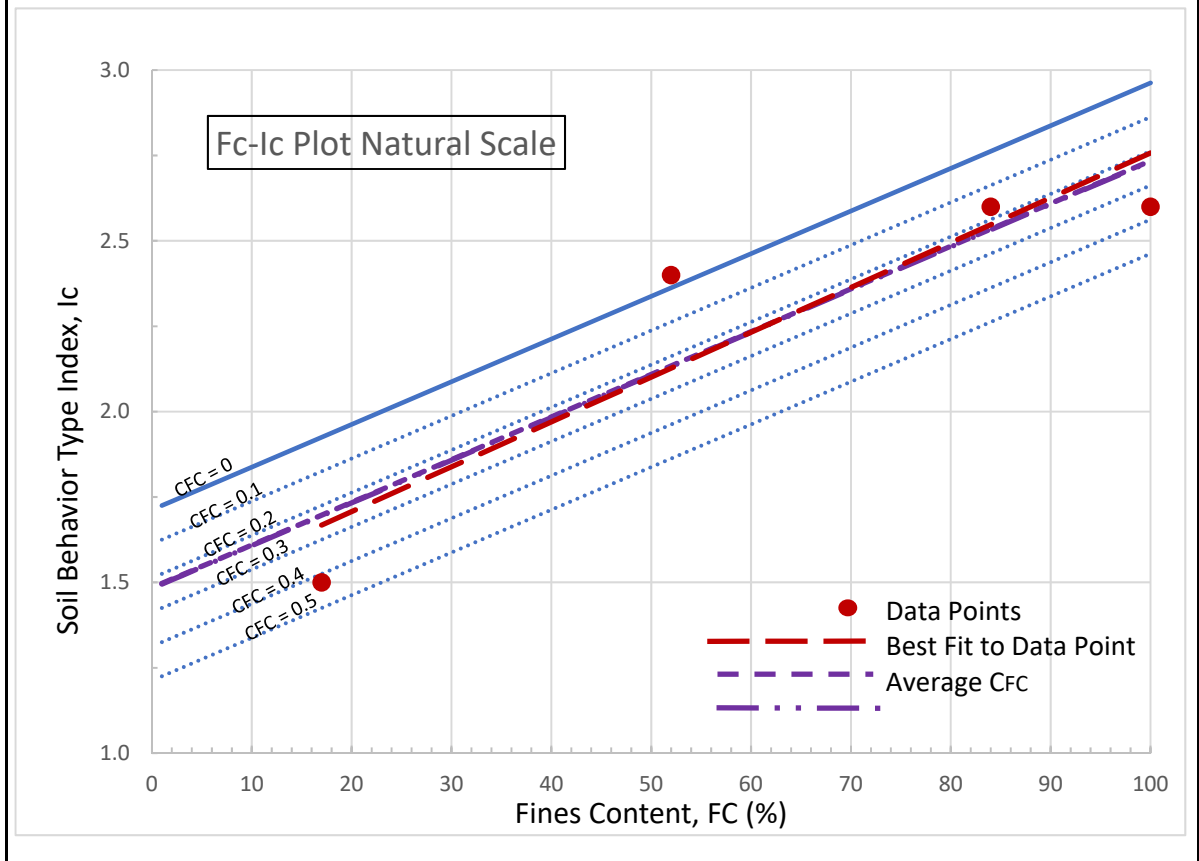
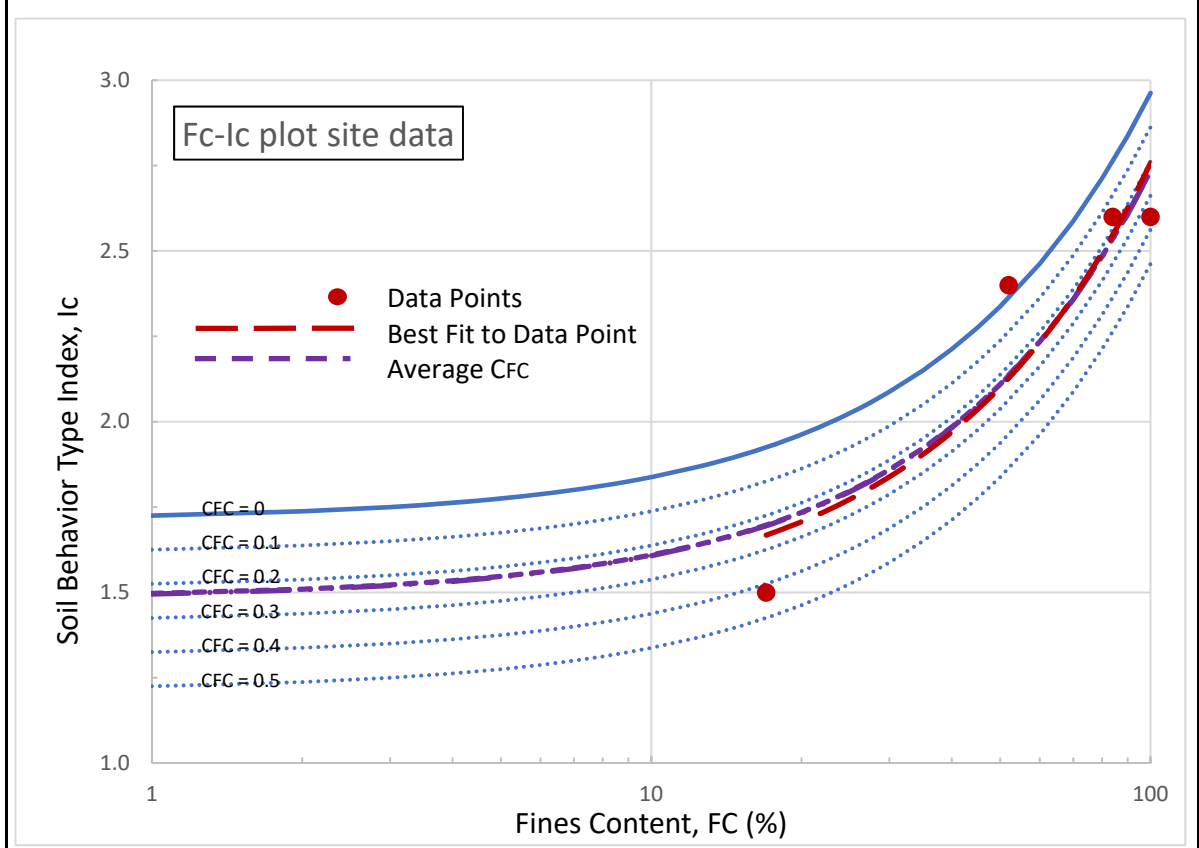
Research Project for Silty Soil Liquefaction Guidance - Lab Schedule


PI	Atterberg Limits
FC	Wet seive at 75µm and 63µm to provide fines content
WS	Wet seive particle size distribution
Hyd	Hydrometer particle size distribution
Full PSD	Wet seive plus hydrometer PSD
Vis Insp	Visual inspection has confirmed ~100% fines
WC	Water content on as-received sample
Zip Lock Core	Sample was bagged on site soon after drilling, so expected to be close to natural water content

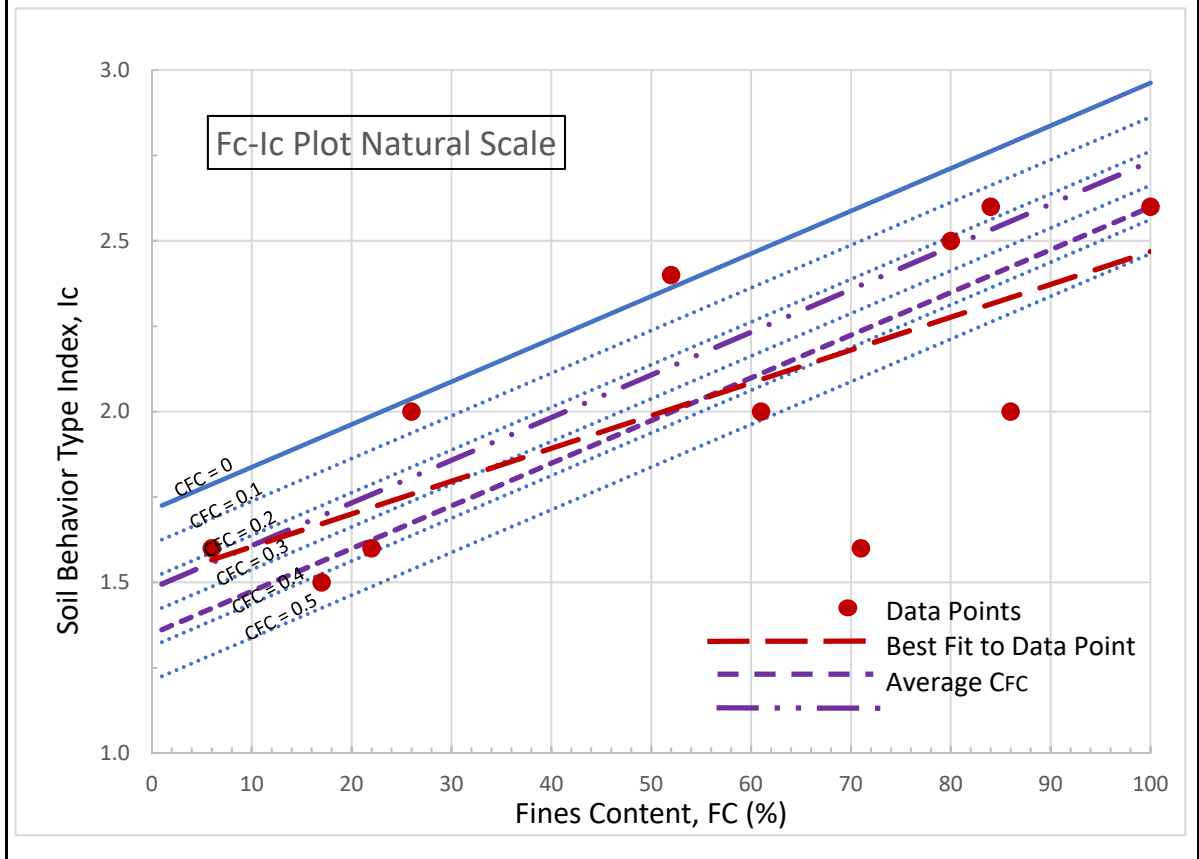
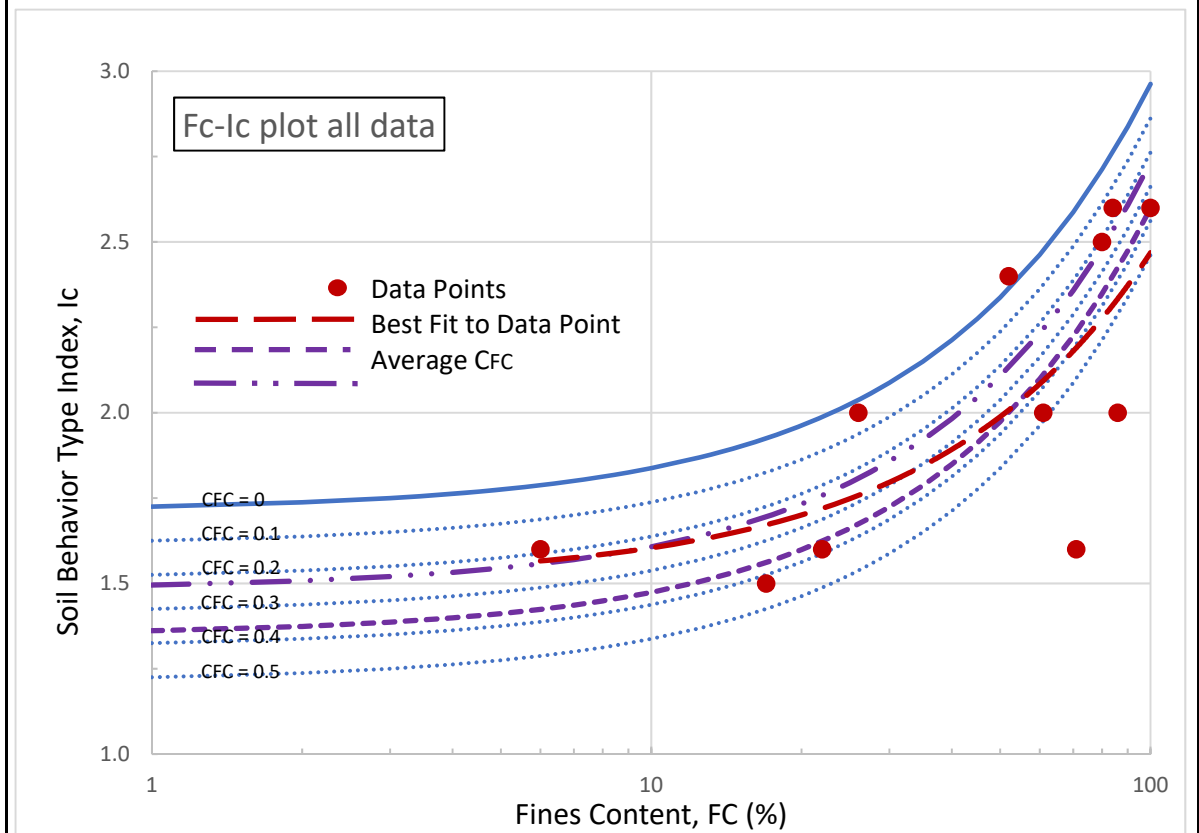
Site 33 - 200 Cashmere Road

Depth	Description	PI	FC	WS	Full PSD	WC	Hyd	Approx CPT I _c	Vis Insp	Zip Lock Core	Fines content results (75µm)	Lab
2.05 - 2.15m	Clayey SILT/Silty CLAY; minor cyclic softening	X			X	X		3.05			100%	Geotechnics
3.80 - 3.90m	SAND with some silt; classic liquefaction		X	X		X		1.50			17%	Geotechnics
4.05 - 4.15m	SILT, with minor sand; low plasticity, quick.	X	X			X		2.85		Yes	96%	Geotechnics
4.90 - 5.00m	Silty fine SAND; classic liquefaction, non-plastic			X		X		2.40			52%	Geotechnics
5.50 - 5.60m	Low plasticity, softening, without dilation	X			X	X		2.60		Yes	84%	Geotechnics
5.90 - 6.00m	Clayey SILT; low PI, cyclic softening, not much dilatancy, MH?, elastic silt?, ~100% fines	X				X		2.60	Yes		100%	Geotechnics
7.40 - 7.50m	Clayey SILT; low to moderate PI, minor cyclic softening, ~100% fines	X			X	X		3.30			99%	Geotechnics

 GEOTECH	Fines Content vs Ic Analysis GEOTECH CONSULTING LTD	
	Project: Cashmere Park Subdivision Client: Cashmere Park Trust	Borehole No: 38197 Job No: 3933



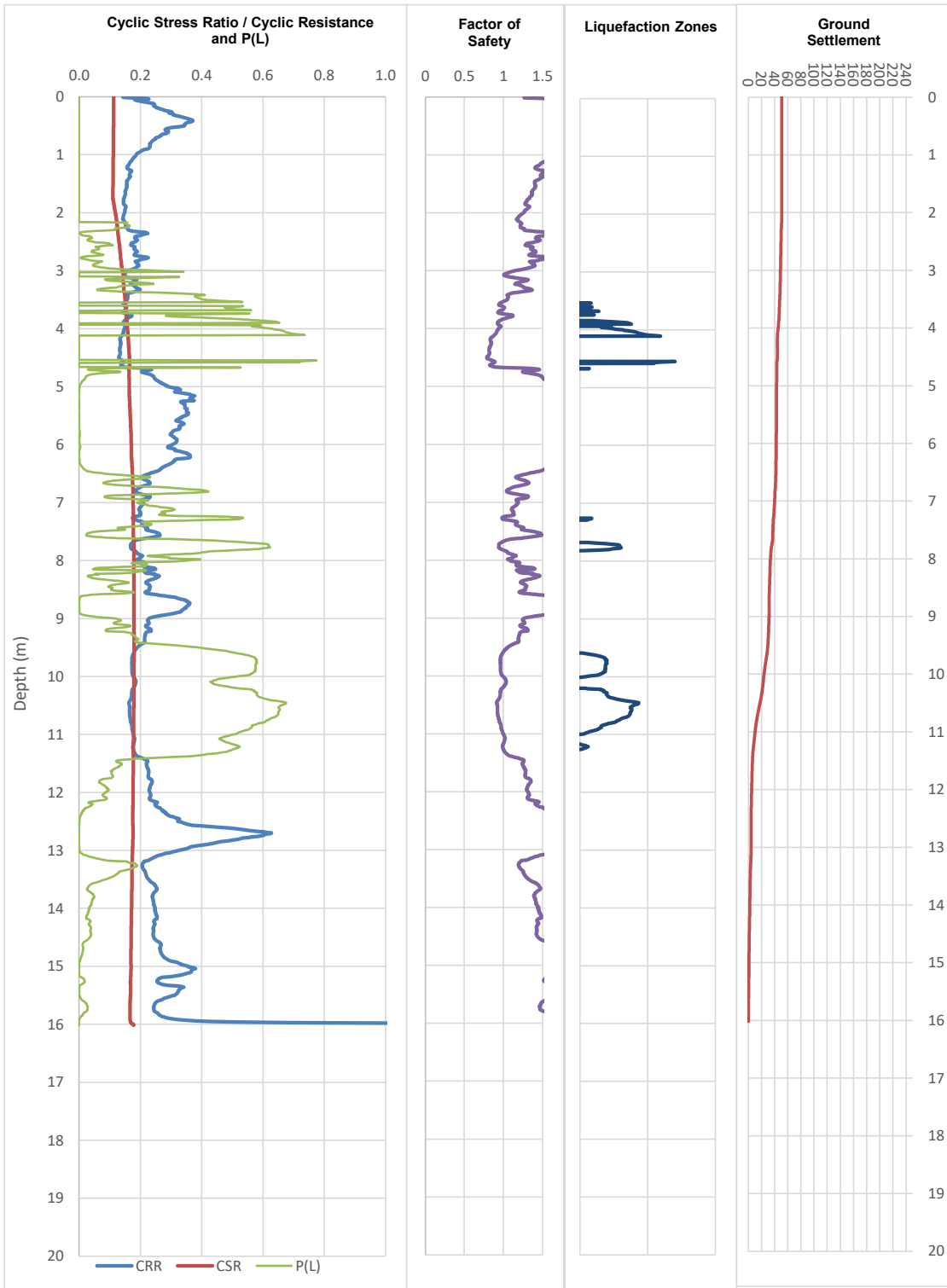
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	Project: Cashmere Park Subdivision Client: Cashmere Park Trust	Borehole No: All Job No: 3933



Appendix 4

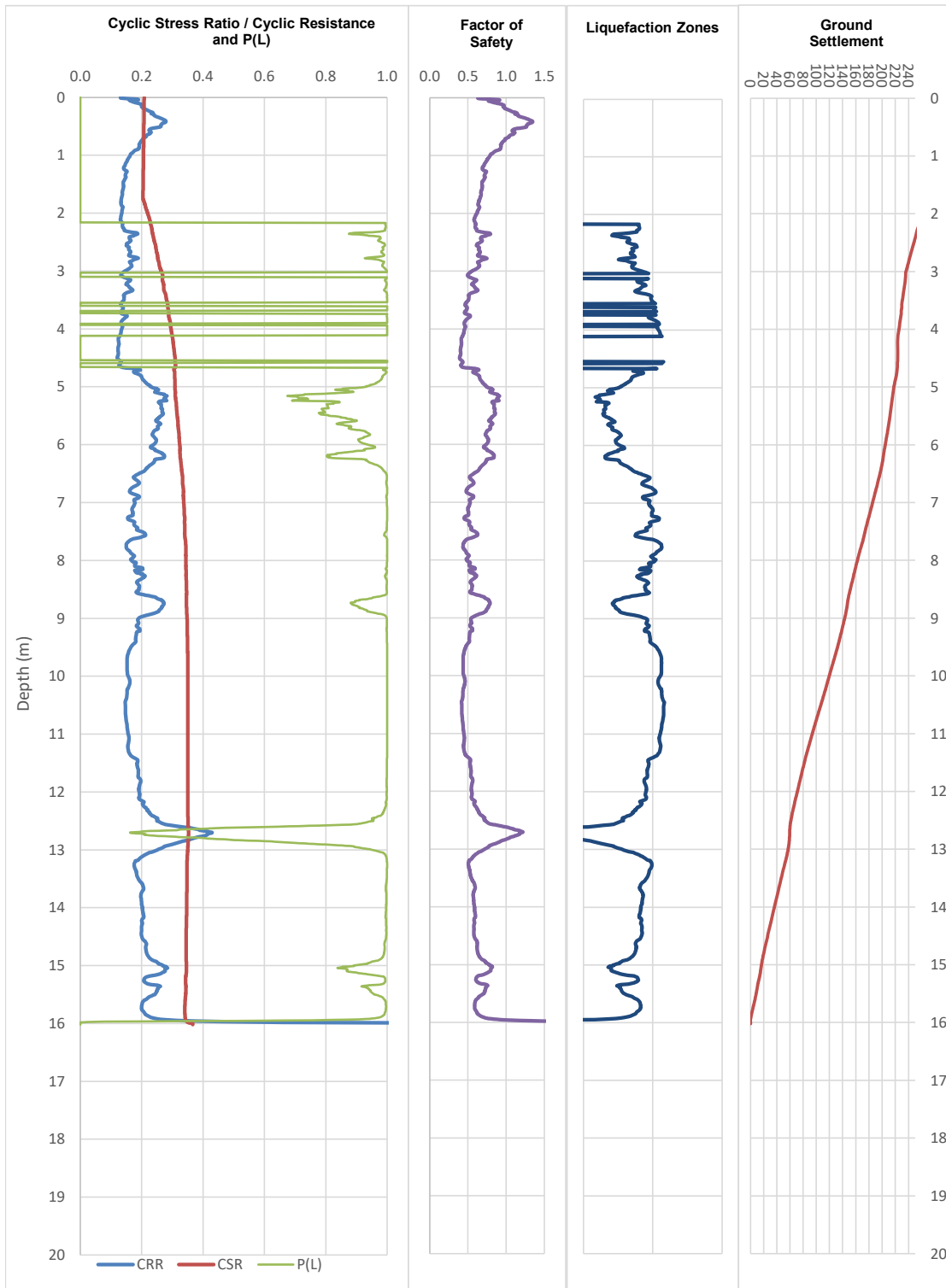
Liquefaction Profiles

	Liquefaction Potential Analysis		
	GEOTECH CONSULTING LTD		
	Project:	Cashmere Fields Rezoning	Hole No:
Client:	W Lewis	Job No:	3933



Based on Idriss & Boulanger (2014) and Zhang (2002) SLS 25yr
 $a(g) = 0.19$ M 6

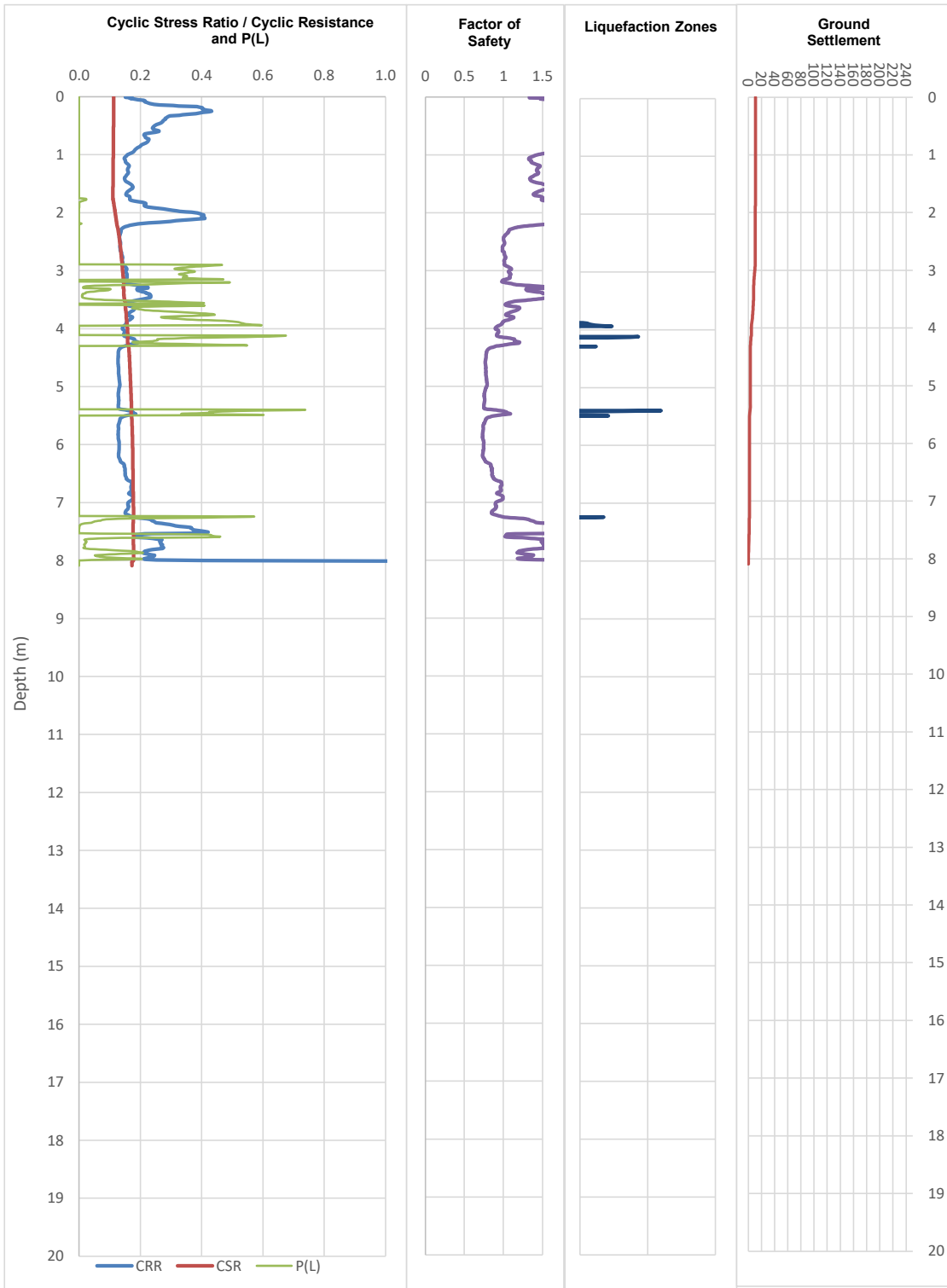
	Liquefaction Potential Analysis		
	GEOTECH CONSULTING LTD		
	Project:	Cashmere Fields Rezoning	Hole No:
Client:	W Lewis	Job No:	3933



Based on Idriss & Boulanger (2014) and Zhang (2002) **ULS 500 yrs**
M 7.5

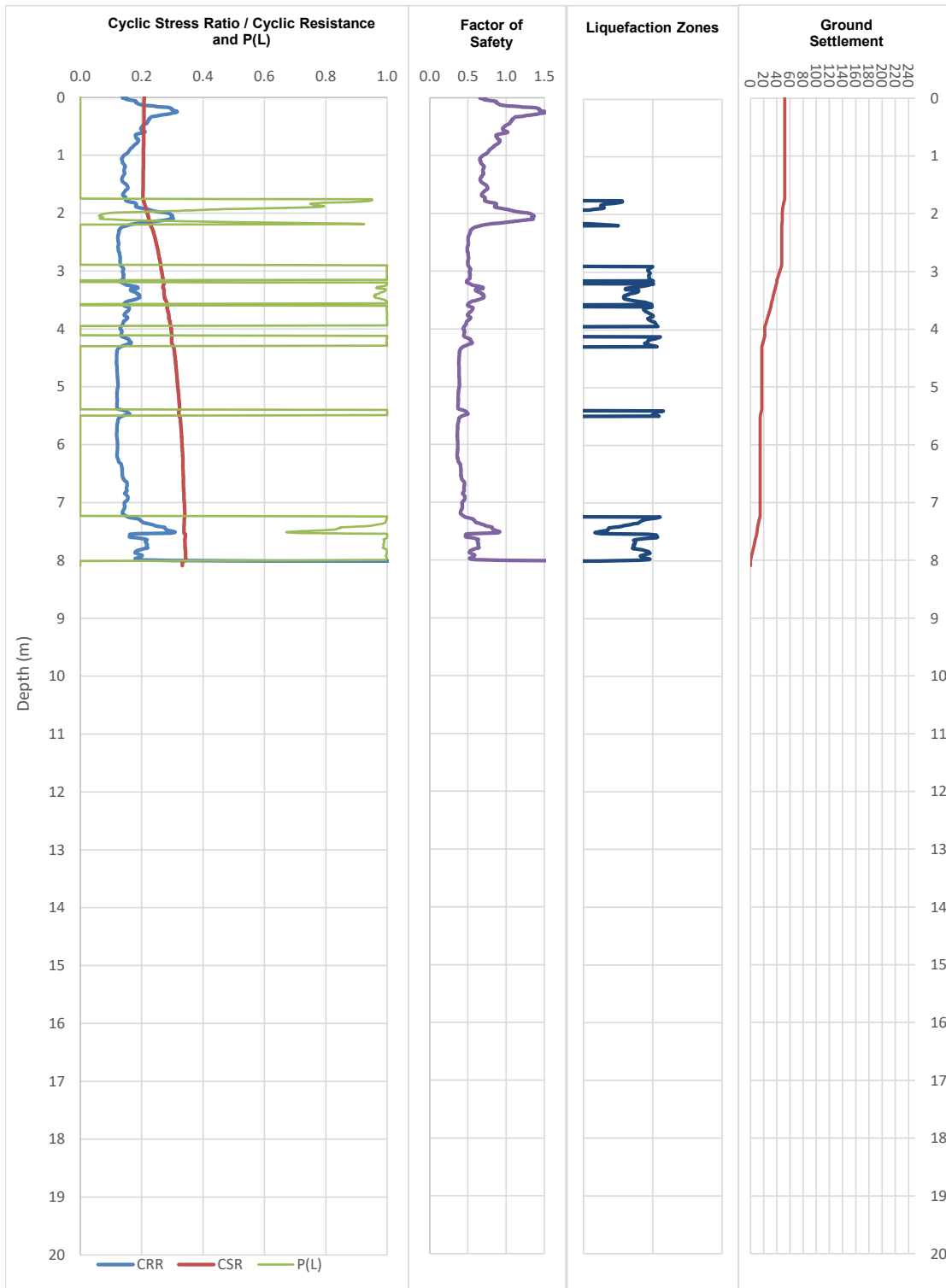
$a(g) = 0.35$

	Liquefaction Potential Analysis		
	GEOTECH CONSULTING LTD		
	Project:	Cashmere Fields Rezoning	Hole No:
Client:	W Lewis	Job No:	3933



Based on Idriss & Boulanger (2014) and Zhang (2002) **SLS 25yr**
 $a(g) = 0.19$ M 6

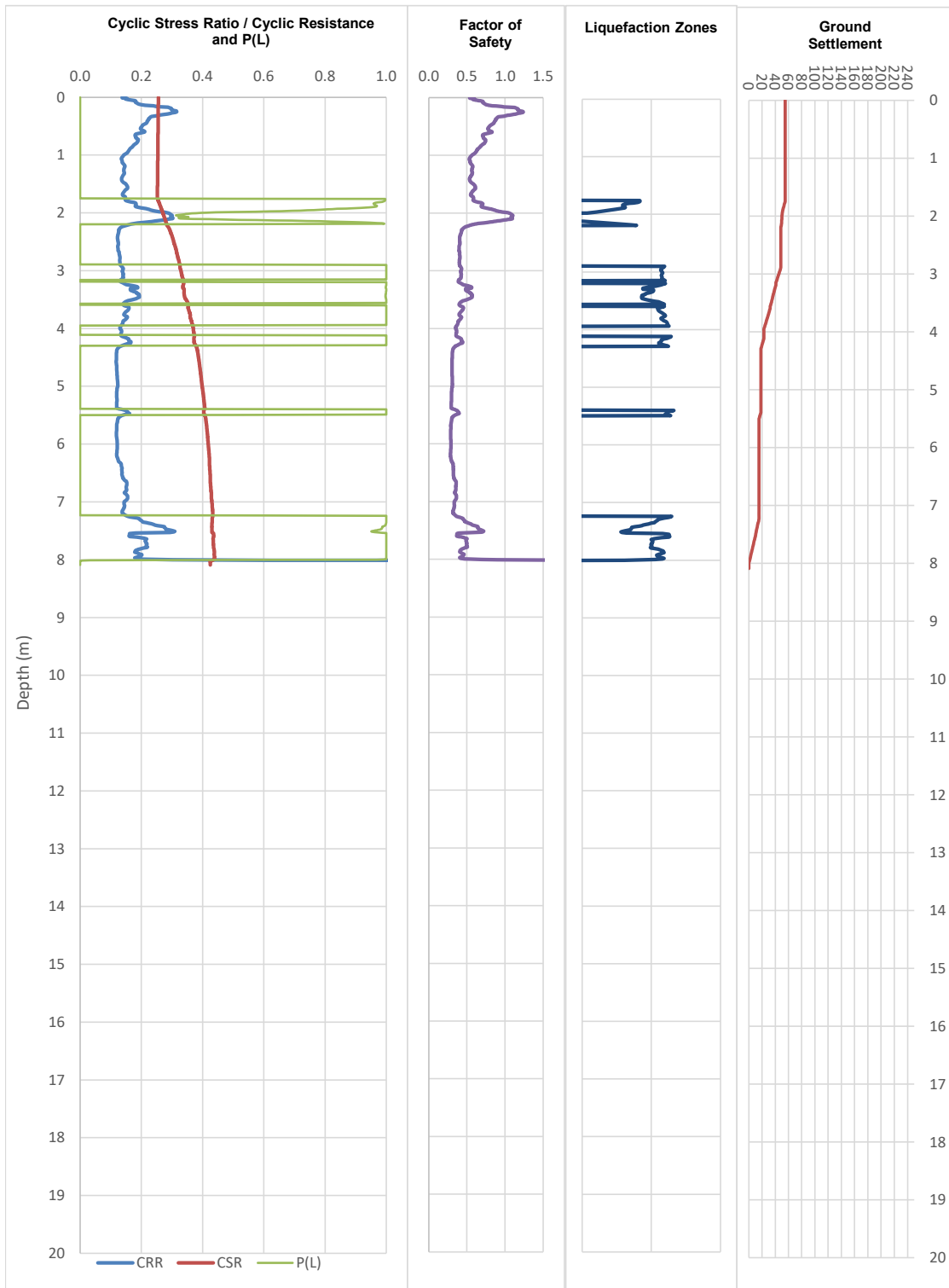
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	GEOTECH CONSULTING LTD		
	Project:	Cashmere Fields Rezoning	Hole No:
Client:	W Lewis	Job No:	3933




Based on Idriss & Boulanger (2014) and Zhang (2002) **ULS 500 yrs**
M 7.5

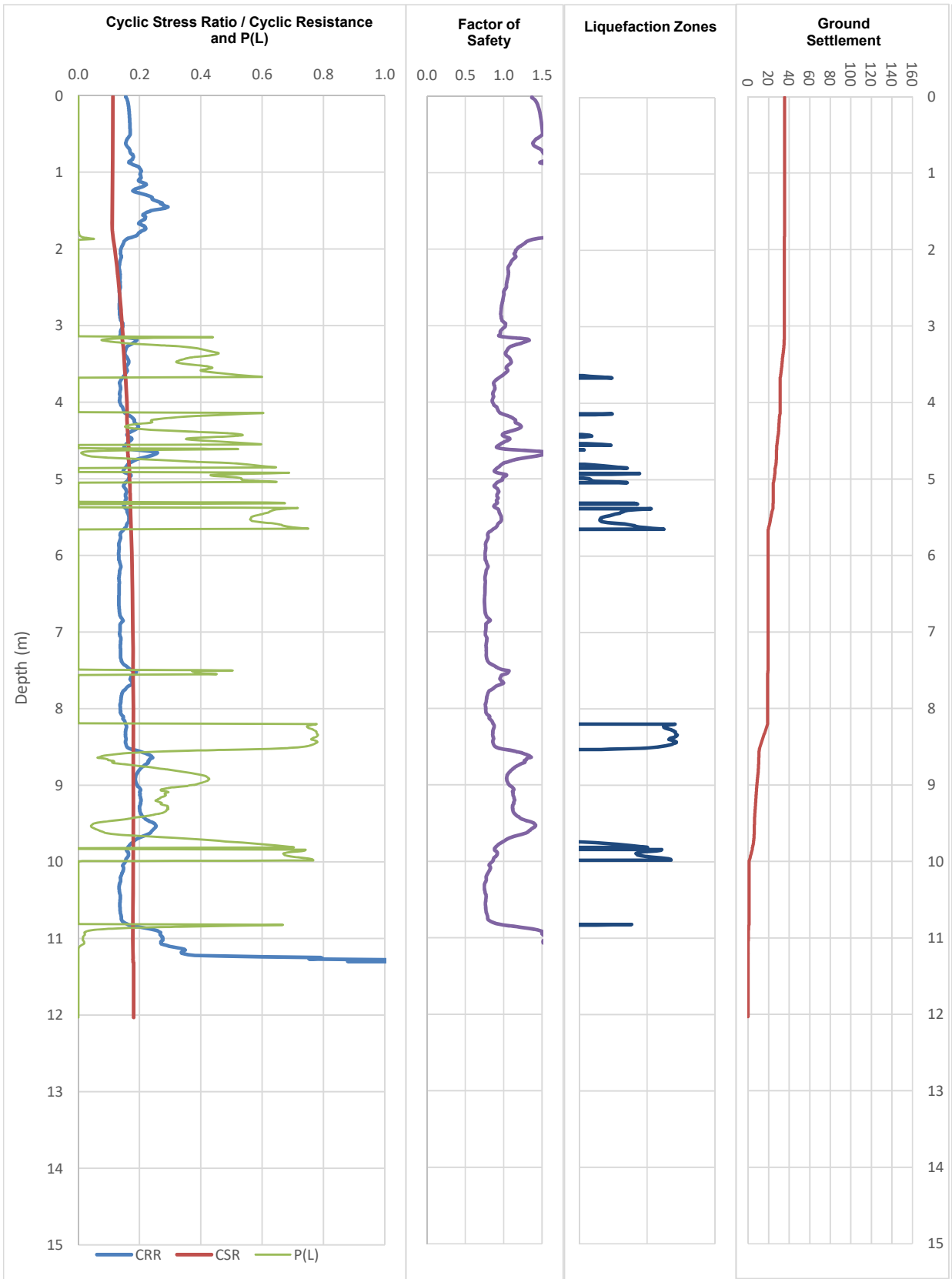
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	Liquefaction Potential Analysis		
	GEOTECH CONSULTING LTD		
	Project:	Cashmere Fields Rezoning	Hole No: CPT 06
Client:	W Lewis	Job No: 3933	




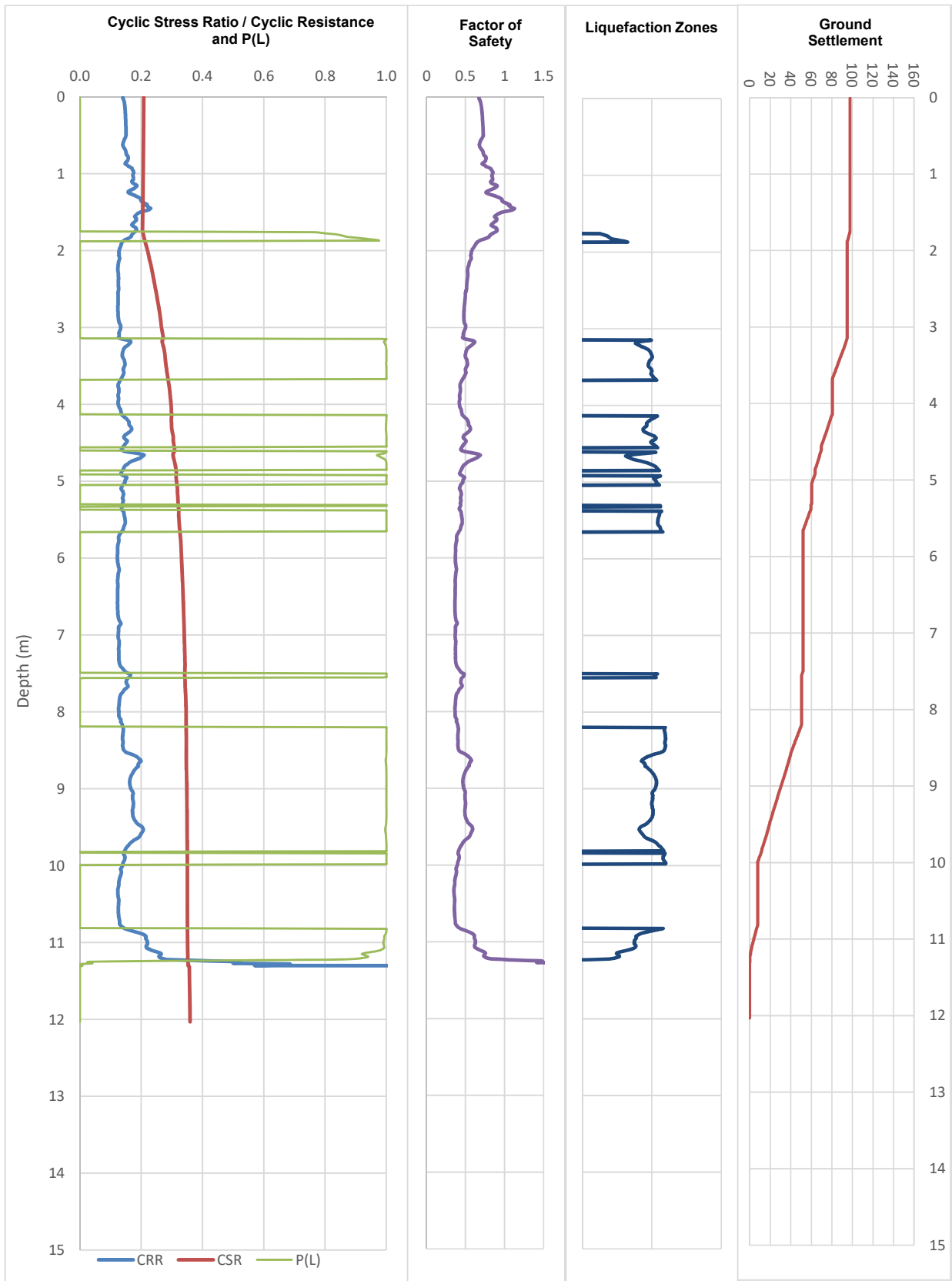
Based on Idriss & Boulanger (2014) and Zhang (2002) ILS 100 yrs
 $a(g) = 0.43$ M 7.5

	Liquefaction Potential Analysis			
	GEOTECH CONSULTING LTD			
	Project:	Cashmere Park Subdivision	Hole No:	CPT 10
	Client:	Cashmere Park Trust	Job No:	3933




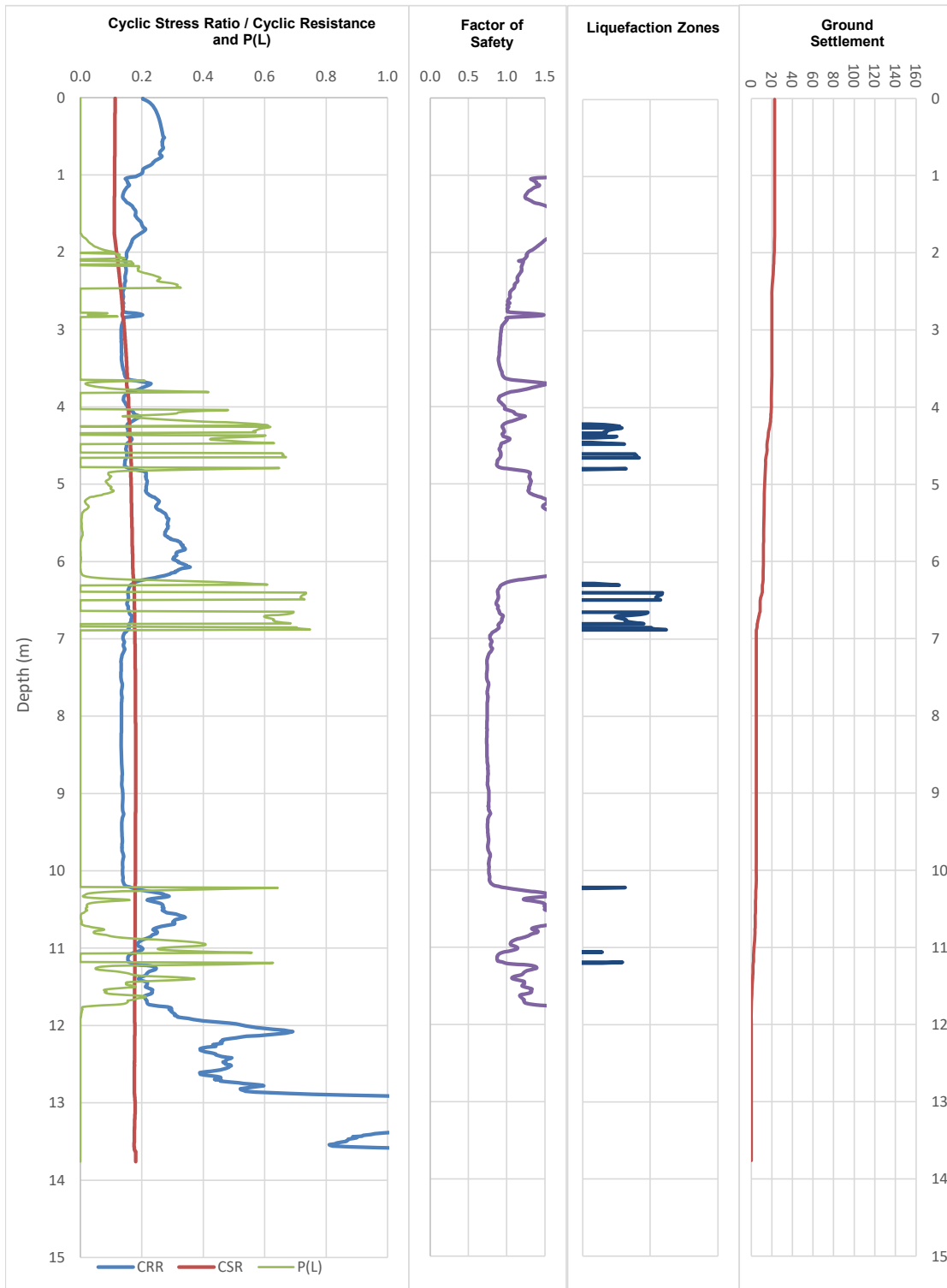
Based on Idriss & Boulanger (2014) and Zhang (2002) **SLS**
 $a(g) = 0.19$ M 6

	Liquefaction Potential Analysis		
	GEOTECH CONSULTING LTD		
	Project:	Cashmere Park Subdivision	Hole No:
Client:	Cashmere Park Trust	Job No:	3933



Based on Idriss & Boulanger (2014) and Zhang (2002) **ULS 1 in 500 yr**
 $a(g) = 0.35$ **M 7.5**

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	GEOTECH CONSULTING LTD		
	Project:	Cashmere Fields	Hole No:
Client:	Cashmere Park Trust	Job No:	3933




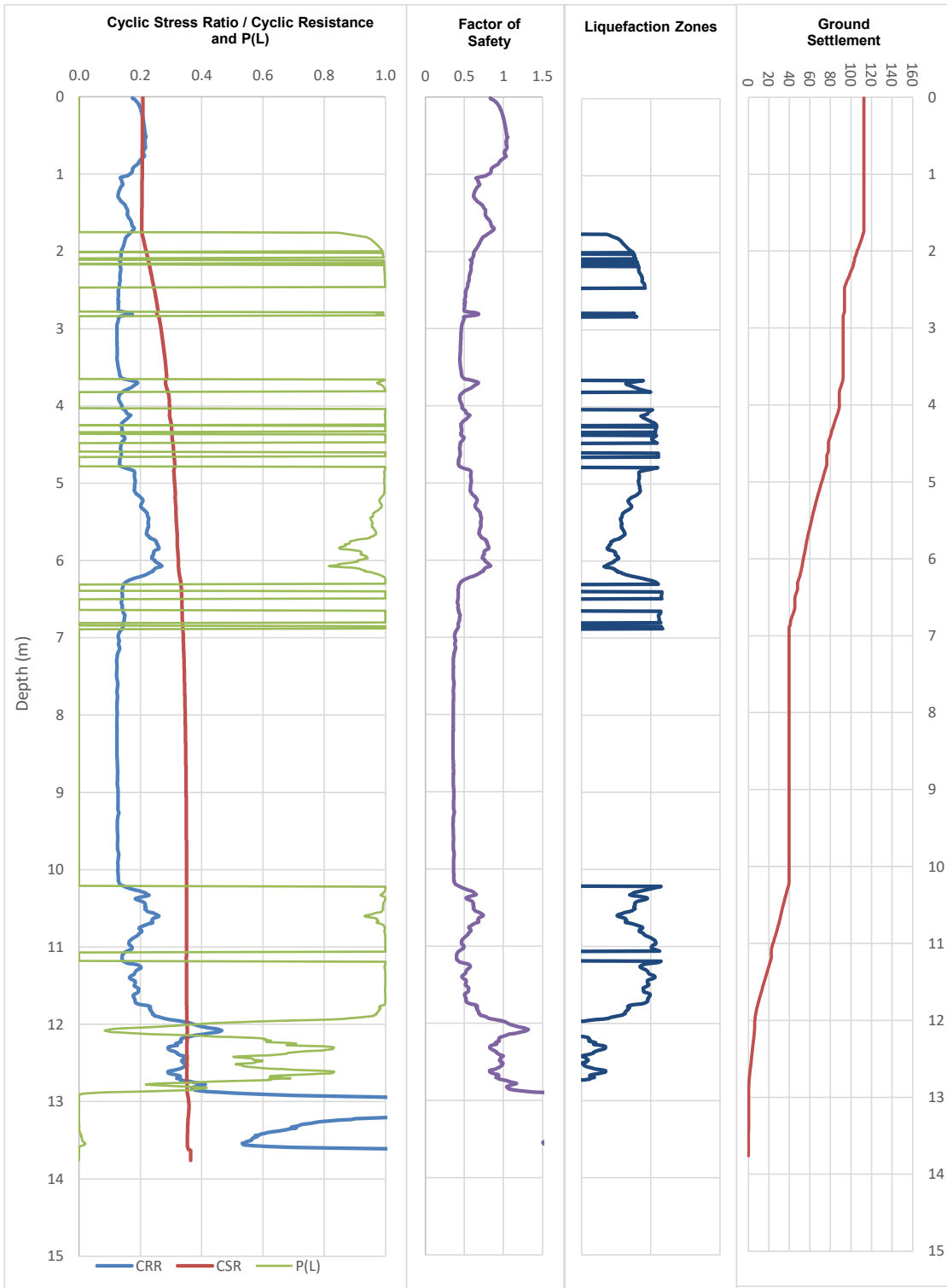
Based on Idriss & Boulanger (2014) and Zhang (2002)

$a(g) = 0.19$

SLS


M 6

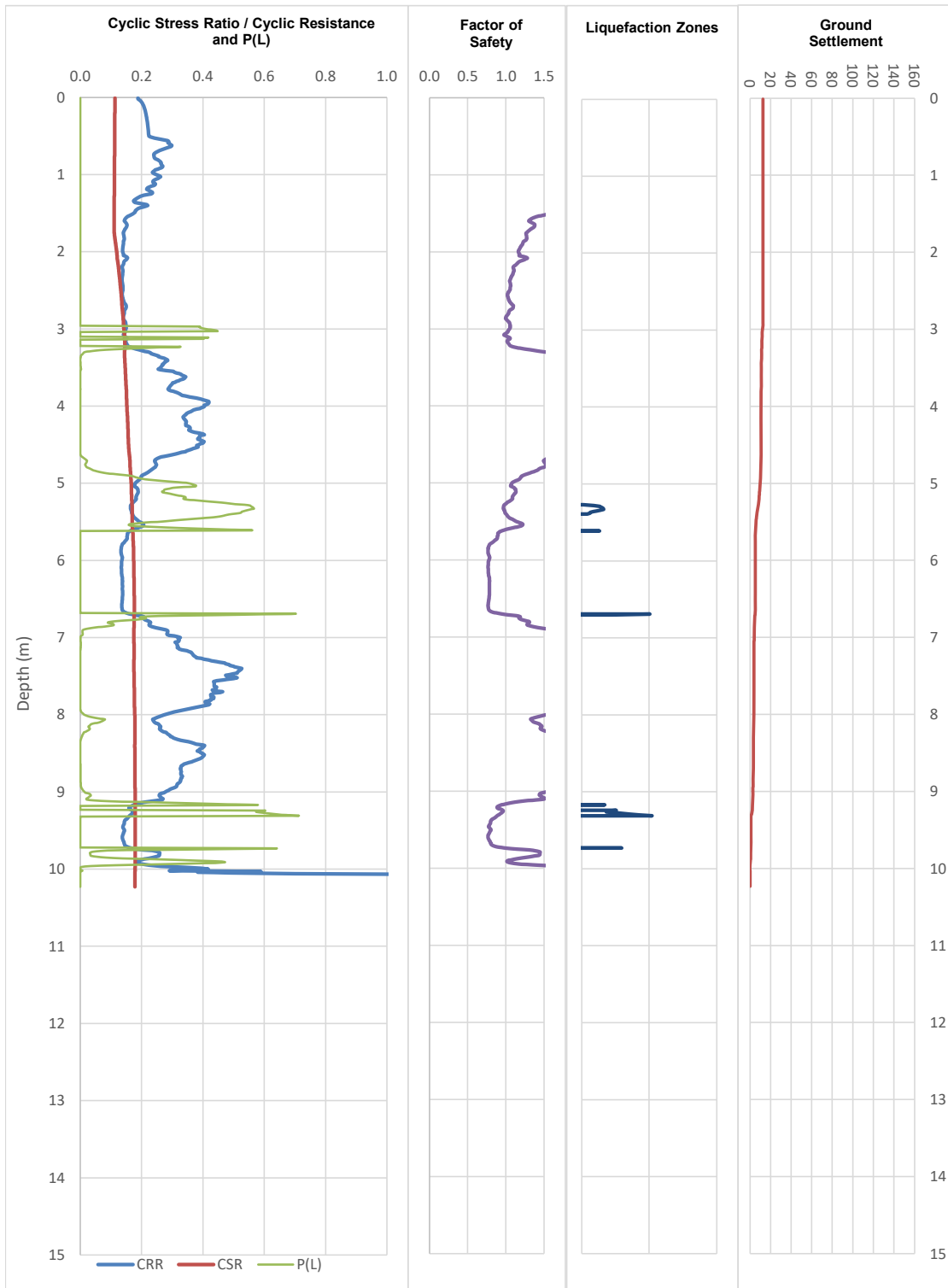
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	Project:	Cashmere Fields	Hole No:
Client:	Cashmere Park Trust	Job No:	3933




Based on Idriss & Boulanger (2014) and Zhang (2002) **ULS 1 in 500 yr**
M 7.5

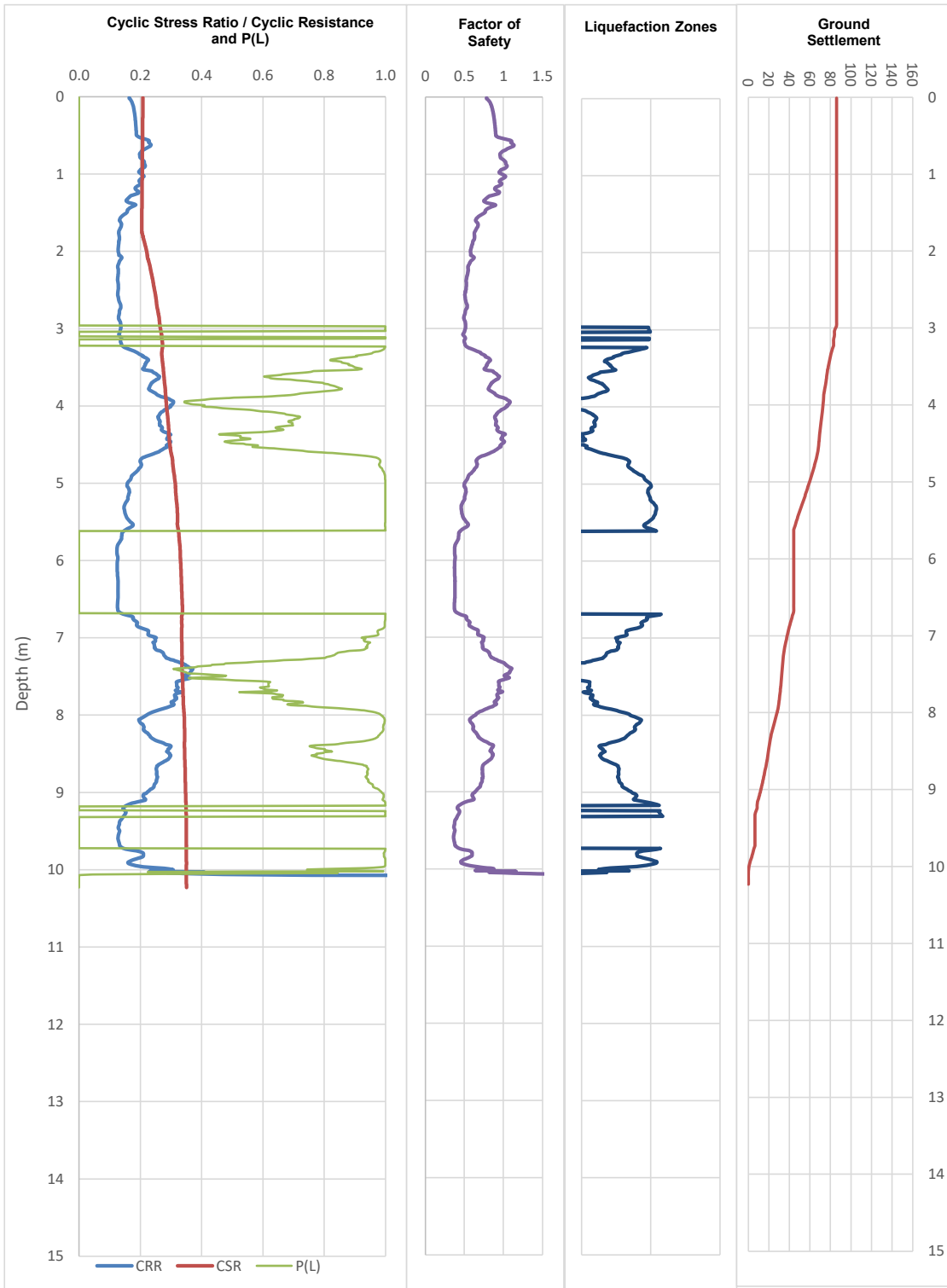
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	GEOTECH CONSULTING LTD		
	Project:	Cashmere Fields Subdivision	Hole No:
Client:	Cashmere Park Trust	Job No:	3933




Based on Idriss & Boulanger (2014) and Zhang (2002) **SLS**
 $a(g) = 0.19$ M 6

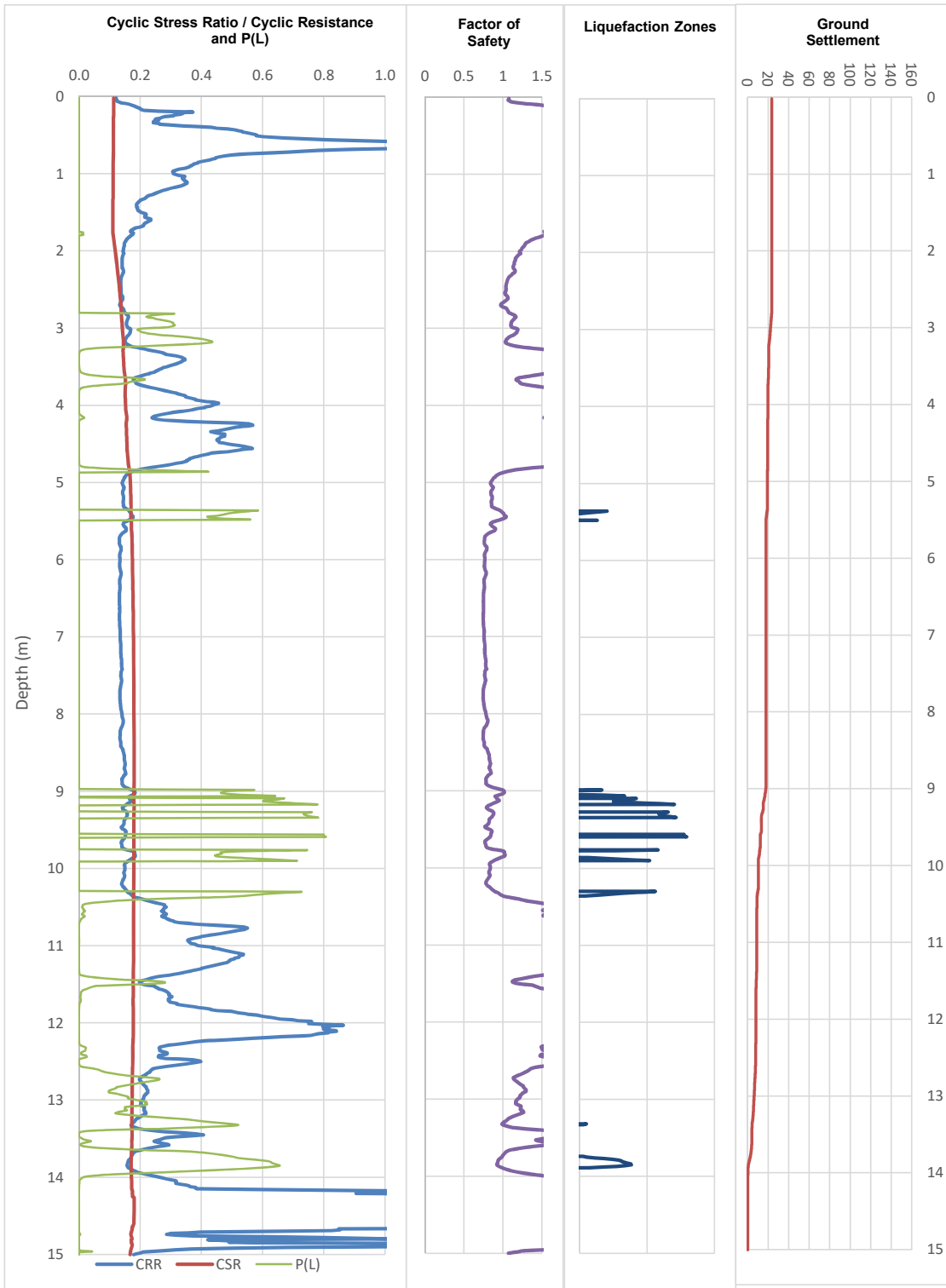
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	GEOTECH CONSULTING LTD		
	Project:	Cashmere Fields Subdivision	Hole No:
Client:	Cashmere Park Trust	Job No:	3933




Based on Idriss & Boulanger (2014) and Zhang (2002) **ULS 1 in 500 yr**
M 7.5

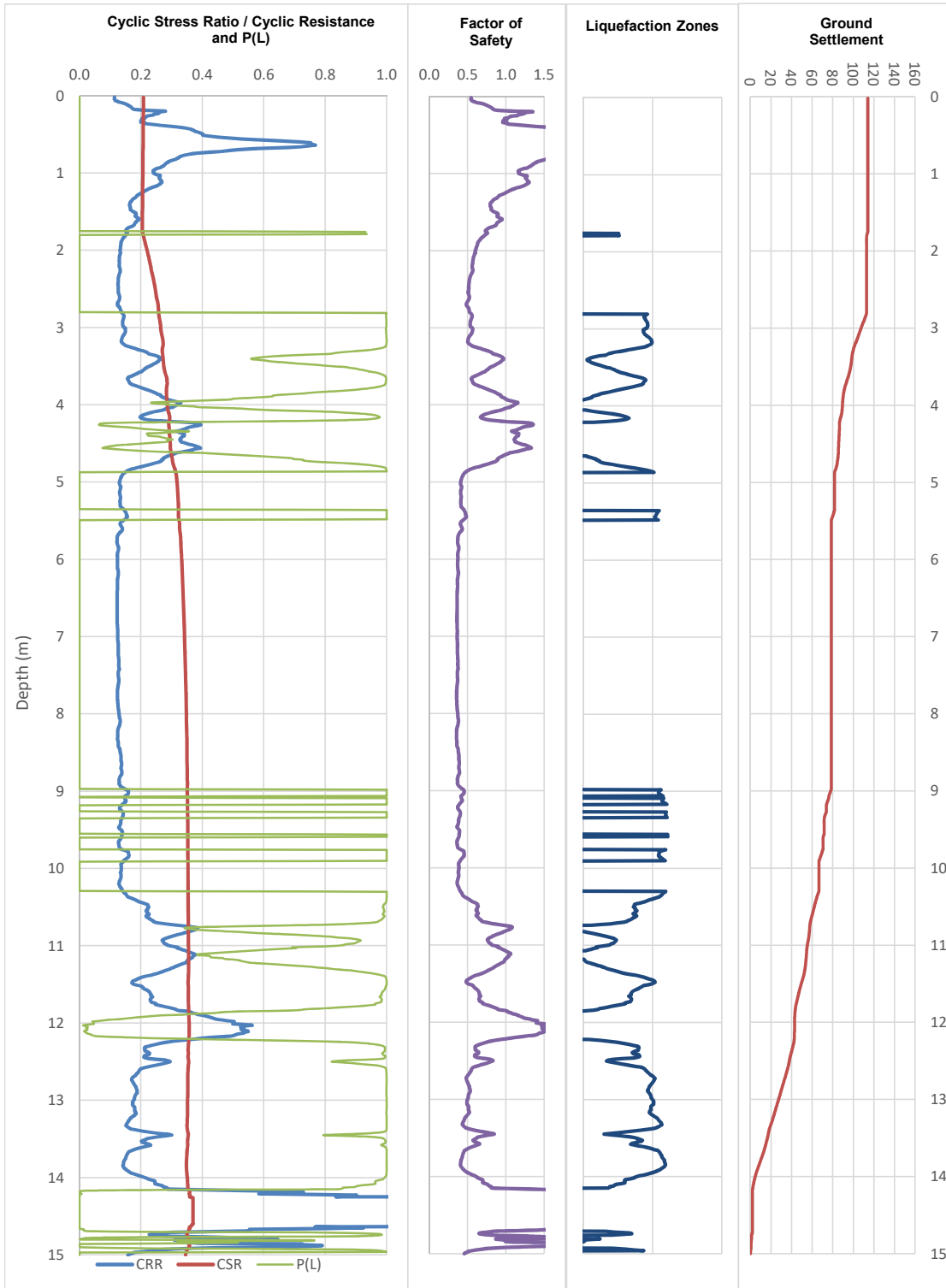
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	Liquefaction Potential Analysis GEOTECH CONSULTING LTD		
	Project:	Cashmere Fields	Hole No: CPT 24
	Client:	Cashmere Park Trust	Job No: 3933



Based on Idriss & Boulanger (2014) and Zhang (2002) **25 years**
 $a(g) = 0.19$ M 6

	Liquefaction Potential Analysis		
	GEOTECH CONSULTING LTD		
	Project:	Cashmere Fields	Hole No: CPT 24
	Client:	Cashmere Park Trust	Job No: 3933



Based on Idriss & Boulanger (2014) and Zhang (2002)

$a(g) = 0.35$

500 yrs

M 7.5

Appendix O. Mahaanui Kurataiao Response

MEMO: Hendersons Development Plan Change

DATE: 30/03/2023

Eliot Sinclair engaged Mahaanui Kurataiao to seek rūnanga feedback on a proposed change to the district plan zoning at Hendersons/Cashmere/Sparks Road. The site is currently split-zoned between 'Residential New Neighborhood' (allowing for significant residential development) and 'Rural Urban Fringe' (requiring a minimum allotment size of 4ha for development). The applicant wishes to rezone a portion of the site to enable a future subdivision at this location, therefore requiring a change from Rural Urban Fringe to Residential New Neighborhood for this portion of the site.

Rūnanga response:

The Kaitiaki of Te Ngāi Tūāhuriri and Te Taumutu Rūnanga have viewed the plans and proposal at this location and do not oppose the plan change required for its' development. This stance extends only to the proposed site not any wider changes to the District Plan zoning. The rūnanga understand there will be further consultation as the development progresses and requires resource consents, and will offer recommendations on indigenous vegetation, stormwater systems, and environmental effects at this time.

Ngā mihi,

Fraser Doake

Environmental Advisor

Appendix P. Christchurch District Plan Assessment

Christchurch District Plan Assessment

The objectives and policies in the Christchurch District Plan have been considered for the assessment of this rezoning submission.

Relevant Objectives and Policies

3.3.1 Objective – Enabling recovery and facilitating the future enhancement of the district.

The expedited recovery and future enhancement of Christchurch as a dynamic, prosperous and internationally competitive city, in a manner that:

1. Meets the community's immediate and longer term needs for housing, economic development, community facilities, infrastructure, transport, and social and cultural wellbeing; and
2. Fosters investment certainty; and
3. Sustains the important qualities and values of the natural environment.

3.3.4 Objective – Housing bottom lines and choice

For the period 2021-2051, at least sufficient development capacity for housing is enabled for the Ōtautahi Christchurch urban environment in accordance with the following housing bottom lines:

1. short-medium term: 18,300 dwellings between 2021 and 2031, and
2. long term: 23,000 dwellings between 2031 and 2051; and
3. 30 year total: 41,300 dwellings between 2021 and 2051; and

There is a range of housing opportunities available to meet the diverse and changing population and housing needs of Christchurch residents, including:

1. a choice in housing types, densities and locations; and
2. affordable, community and social housing and papakāinga.

Assessment of re-zoning for Cashmere/Hendersons Private Plan Change

The proposed rezoning is consistent with this objective because the proposed rezoning and subsequent residential development will enable longer term housing for the local area as well as Christchurch. It has been integrated into the existing environment in a way through the proposed ODP where it keeps within the existing qualities and values in the surrounding area.

The proposed rezoning is consistent with this objective because the proposed rezoning has development capacity where it can contribute towards the requirement for long term housing options for the Christchurch urban environment. As shown in the proposed ODP there are options for varying densities and housing options that can suit a range of community needs.

Relevant Objectives and Policies

3.3.6 Objective – Natural hazards

New subdivision, use and development (other than new critical infrastructure or strategic infrastructure to which paragraph b. applies):

1. is to be avoided in areas where the risks from natural hazards to people, property and infrastructure are assessed as being unacceptable; and
2. in all other areas, is undertaken in a manner that ensures the risks of natural hazards to people, property and infrastructure are appropriately mitigated.

New critical infrastructure or strategic infrastructure may be located in areas where the risks of natural hazards to people, property and infrastructure are otherwise assessed as being unacceptable, but only where:

1. there is no reasonable alternative; and
2. the strategic infrastructure or critical infrastructure has been designed to maintain, as far as practicable, its integrity and form during natural hazard events; and
3. the natural hazard risks to people, property and infrastructure are appropriately mitigated.

There is increased public awareness of the range and scale of natural hazard events that can affect Christchurch District.

The repair of earthquake damaged land is facilitated as part of the recovery.

3.3.7 Objective – Urban growth, form and design

A well-integrated pattern of development and infrastructure, a consolidated urban form, and a high quality urban environment that:

1. Is attractive to residents, business and visitors; and
2. Has its areas of special character and amenity value identified and their specifically recognised values appropriately managed; and

Assessment of re-zoning for Cashmere/Hendersons Private Plan Change

The proposed rezoning is consistent with this objective because the proposed rezoning is on a site located within natural hazard overlays, but the development has been designed where the risks to people, housing and infrastructure has been mitigated. This is shown in the proposed ODP.

The proposed rezoning is consistent with this objective because the proposed rezoning and development is well designed through the establishing of the proposed ODP. It will provide for only urban activities even though it is not an established urban area identified in Map A. It has also recognised the existing amenity value of the area and through the ODP has proposed options for cycle links, recreational areas, stormwater management areas and conservation use. It is also providing the option

Relevant Objectives and Policies

3. Provides for urban activities only:
 - a) within the existing urban areas unless they are otherwise expressly provided for in the CRPS; and
 - b) on greenfield land on the periphery of Christchurch's urban area identified in accordance with the Greenfield Priority Areas in the Canterbury Regional Policy Statement Chapter 6, Map A; and

Increases the housing development opportunities in the urban area to meet the intensification targets specified in the Canterbury Regional Policy Statement, Chapter 6, Objective 6.2.2 (1); particularly:

- a) in and around the Central City, Key Activity Centres (as identified in the Canterbury Regional Policy Statement), larger neighbourhood centres, and nodes of core public transport routes; and
- b) in those parts of Residential Greenfield Priority Areas identified in Canterbury Regional Policy Statement Chapter 6, Map A; and
- c) in suitable brownfield areas; and

Maintains and enhances the Central City, Key Activity Centres and Neighbourhood Centres as community focal points; and

Identifies opportunities for, and supports, the redevelopment of brownfield sites for residential, business or mixed use activities; and

Promotes the re-use and re-development of buildings and land; and

Improves overall accessibility and connectivity for people, transport (including opportunities for walking, cycling and public transport) and services; and

Promotes the safe, efficient and effective provision and use of infrastructure, including the optimisation of the use of existing infrastructure; and

Co-ordinates the nature, timing and sequencing of new development with the funding, implementation and operation of necessary transport and other infrastructure.

Assessment of re-zoning for Cashmere/Hendersons Private Plan Change

for housing intensification to help with the increasing demand of housing supply. It will provide housing options for communities that need more direct access to Christchurch City compared to having to find housing supply further out towards the Selwyn and Waimakariri districts.

Relevant Objectives and Policies

3.3.12 Objective - Infrastructure

The social, economic, environmental and cultural benefits of infrastructure, including strategic infrastructure, are recognised and provided for, and its safe, efficient and effective development, upgrade, maintenance and operation is enabled; and

Strategic infrastructure, including its role and function, is protected from incompatible development and activities by avoiding adverse effects from them, including reverse sensitivity effects. This includes:

1. avoiding noise sensitive activities within the Lyttelton Port Influences Overlay area; and
2. managing activities to avoid adverse effects on the National Grid, including by identifying a buffer corridor within which buildings, excavations sensitive activities will generally not be provided for; and
3. avoiding new noise sensitive activities within the 50dB Ldn Air Noise Contour and the 50dB Ldn Engine Testing Contour for Christchurch International Airport, except:
 - a) within an existing residentially zoned urban area; or
 - b) within a Residential Greenfield Priority Area identified in the Canterbury Regional Policy Statement Chapter 6, Map A; or
 - c) for permitted activities within the Specific Purpose (Golf Resort) Zone of the District Plan, or activities authorised by a resource consent granted on or before 6 December 2013; and
 - d) for permitted, controlled, restricted discretionary and discretionary activities within the Specific Purpose (Tertiary Education) Zone at the University of Canterbury; and

Managing the risk of birdstrike to aircraft using Christchurch International Airport;
and

Assessment of re-zoning for Cashmere/Hendersons Private Plan Change

The proposed rezoning is consistent with this objective because the proposed rezoning and development through its design and proposed ODP have taken into consideration infrastructure design and how best to provide to the proposed residential areas within the development.

Relevant Objectives and Policies

Managing activities to avoid adverse effects on the identified 66kV and 33kV electricity distribution lines and the Heathcote to Lyttelton 11kV electricity distribution line, including by identifying a buffer corridor within which buildings, excavations and sensitive activities will generally not be provided for; and

The adverse effects of infrastructure on the surrounding environment are managed, having regard to the economic benefits and technical and operational needs of infrastructure.

Assessment of re-zoning for Cashmere/Hendersons Private Plan Change

7.2.1 Objective – Integrated transport system for Christchurch District

An integrated transport system for Christchurch District:

1. that is safe and efficient for all transport modes;
2. that is responsive to the current recovery needs, future needs, and enables economic development, in particular an accessible Central City able to accommodate projected population growth;
3. that supports safe, healthy and liveable communities by maximising integration with land use;
4. that reduces dependency on private motor vehicles and promotes the use of public and active transport;
5. that is managed using the one network approach.

The proposed rezoning is consistent with this objective because the proposed rezoning and development is able to provide infrastructure and a transport system which is sufficient to provide for the proposed residential development and zoning. This includes proposed locations of local roads, access points, cycle links, pedestrian routes as well as recreational routes. This can be seen in the proposed ODP.

7.2.1.3 Policy – Vehicle access and manoeuvring

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

The proposed rezoning is consistent with this policy because the proposed rezoning and development is proposed and able to provide vehicle access through local roads that would allow access for emergency services to ensure the safety of the community. Each individual lot and access would also meet this requirement.

8.2.2.3 Policy – Design and amenity/ Tohungatanga

Ensure that subdivision;

1. incorporates the distinctive characteristics of the place's context and setting;

The proposed rezoning is consistent with this policy because the proposed rezoning and development has taken into consideration the existing environment and current rural zoning of the site and area to the west through its design and proposed ODP. It has kept the proposed residential

Relevant Objectives and Policies

2. promotes the health and wellbeing of residents and communities; and
3. provides an opportunity to recognise Ngāi Tahu culture, history and identity associated with specific places, and affirms connections between mana whenua and place, particularly with sites of Ngāi Tahu cultural significance identified in Appendix 9.5.6.

8.2.2.4 Policy – Identity

Create or extend neighbourhoods which respond to their context and have a distinct identity and sense of place, by ensuring that subdivision, where relevant:

1. incorporates and responds to existing site features (including trees, natural drainage systems, buildings), cultural elements and values and amenity values (including by taking advantage of views and outlooks);
2. incorporates public spaces that provide opportunities for formal and informal social interaction;
3. has a pattern of development that responds to the existing urban context;
4. is designed with a focus on the use of open space, commercial centres, community facilities, and the use of views;
5. outside the Central City, in addition to iv., is designed with a focus on density, roads, land form, stormwater facilities and, in the Residential New Neighbourhood Zone, development requirements in an outline development plan, as key structuring elements; and
6. incorporates and responds to Rangatiratanga – the expression of te reo kawa, tikanga, history, identity and the cultural symbols of Ngāi Tahu.

8.2.2.6 Policy – Integration and connectivity

Ensure effective integration within and between developments and existing areas, including in relation to public open space networks, infrastructure, and movement networks.

Assessment of re-zoning for Cashmere/Hendersons Private Plan Change

areas to the east of the development where it borders existing and established residential activities. Along the west of the development stormwater management, recreational activities and conservation use are proposed in order to keep a natural barrier between the rural and residential.

The proposed rezoning is consistent with this policy because the proposed rezoning and development has taken into consideration the existing environment and current rural zoning of the site and area to the west through its design and proposed ODP. Through its design it has responded to the existing urban context and come up with a development and ODP which fits the environment.

The proposed rezoning is consistent with this policy because the proposed rezoning and development has kept the proposed residential areas to the east of the development where it borders existing and established residential activities. Along the west of the development stormwater

Relevant Objectives and Policies

Ensure that the boundaries between new and existing developments are, where appropriate, managed to avoid or mitigate adverse effects.

Outside the Central City, avoid significant adverse effects and remedy or mitigate other adverse effects on existing businesses, rural activities or infrastructure.

8.2.2.9 Policy – Outline development plans

An outline development plan (as relevant) must demonstrate that:

1. land uses will be distributed in a way that is consistent with Policy 8.2.2.8;
2. land for community uses will be provided in locations convenient to the community and of an adequate size to serve the intended population;
3. adequate infrastructure capacity will be available to service the intended population and/or business activities;
4. infrastructure and transport connections will be integrated effectively with networks in neighbouring areas, and with strategic infrastructure;
5. infrastructure and transport connections through the outline development plan area will support co-ordinated development between different landowners;
6. natural hazards will be managed in an integrated way across the area; and
7. significant natural and cultural heritage features, sites of Ngāi Tahu cultural significance identified in Schedule 9.5.6.1, and the quality of surface water and groundwater, will be protected; and where required to give effect to the Canterbury Regional Policy Statement Policy 6.3.3, include the necessary information set out in that policy.

Information in outline development plans:

1. should be presented in the form of one or two plans that show a distribution of land uses, infrastructure and transport networks and

Assessment of re-zoning for Cashmere/Hendersons Private Plan Change

management, recreational activities and conservation use are proposed in order to keep a natural barrier between the rural and residential.

The proposed rezoning is consistent with this policy because the proposed rezoning and development through the proposed ODP as it provides for land that will be used for residential activity that is located in an area that is convenient to Christchurch City compared to areas such as in the Selwyn and Waimakariri district. Sufficient infrastructure capacity is available for the anticipated level of residential development which includes sewer, stormwater and water access. Transport networks as in local roads are provided for which connects to the existing transport routes which links to the existing suburbs as well as the city. Natural hazards are also managed in the proposed ODP through stormwater management areas and utility reserves. Required information when presenting the proposed ODP is supplied through the ODP which is part of the submission.

Relevant Objectives and Policies

Assessment of re-zoning for Cashmere/Hendersons Private Plan Change

connections, areas set aside from development and other land use features; and

2. may include an accompanying narrative that:
 - a) is concise and addresses matters in Policy 8.2.2.9(a) and any matters required to give effect to the Canterbury Regional Policy Statement Policy 6.3.3 that cannot be shown on the plans;
 - b) describes the context and provides guidance on the outcomes sought;
 - c) specifies development requirements that must be achieved to be considered as being in accordance with the outline development plan; and
 - d) states any staging requirements that give consideration to the provision, funding, implementation and operation of new and upgraded infrastructure and will guide infrastructure planning processes of the Council and other network providers.

Subdivision, use and development shall be in accordance with the development requirements in the relevant outline development plan, or otherwise achieve similar or better outcomes.

Any quarrying or other interim activity shall not compromise the timely implementation of, or outcomes sought by, the outline development plan

8.2.3 Objective – Infrastructure and transport

Subdivision design and development promotes efficient provision and use of infrastructure and transport networks.

A legible, well connected, highly walkable, and comprehensive movement network for all transport modes is provided.

Outside the Central City, land is set aside for services which can also be used for other activities, such as pedestrian or cycle ways.

The proposed rezoning is consistent with this objective because the proposed rezoning and development promotes use of existing infrastructure as well as existing transport which links to Christchurch City. Pedestrian and cycle ways are proposed and outlined within the ODP.

Relevant Objectives and Policies

8.2.3.4 Policy – Stormwater disposal

District wide:

Avoid any increase in sediment and contaminants entering water bodies as a result of stormwater disposal.

Ensure that stormwater is disposed of in a manner which maintains or enhances the quality of surface water and groundwater.

Ensure that any necessary stormwater control and disposal systems and the upgrading of existing infrastructure are sufficient for the amount and rate of anticipated runoff.

Ensure that stormwater is disposed of in a manner which is consistent with maintaining public health.

Outside the Central City:

Encourage stormwater treatment and disposal through low-impact or water-sensitive designs that imitate natural processes to manage and mitigate the adverse effects of stormwater discharges.

Ensure stormwater is disposed of in stormwater management areas so as to avoid inundation within the subdivision or on adjoining land.

Where feasible, utilise stormwater management areas for multiple uses and ensure they have a high quality interface with residential activities or commercial activities.

Incorporate and plant indigenous vegetation that is appropriate to the specific site.

Ensure that realignment of any watercourse occurs in a manner that improves stormwater drainage and enhances ecological, mahinga kai and landscape values.

Assessment of re-zoning for Cashmere/Hendersons Private Plan Change

The proposed rezoning is consistent with this policy because the proposed rezoning and development as shown in the proposed ODP has provided an area which will be used for stormwater management.

Relevant Objectives and Policies

Assessment of re-zoning for Cashmere/Hendersons Private Plan Change

Ensure that stormwater management measures do not increase the potential for birdstrike to aircraft in proximity to the airport.

Encourage on-site rain-water collection for non-potable use.

Ensure there is sufficient capacity to meet the required level of service in the infrastructure design standard or if sufficient capacity is not available, ensure that the effects of development are mitigated on-site.

8.2.3.5 Policy – Adverse effects on infrastructure

Ensure that the requirements of infrastructure, including their ongoing operation, development and maintenance, are recognised in subdivision design, including any potential for adverse effects (including reverse sensitivity effects) from subdivision.

Ensure that the operation, development and maintenance of the Lyttelton Port is not compromised by subdivision, including in relation to reverse sensitivity effects.

The proposed rezoning is consistent with this policy because the proposed rezoning and development has considered the effects and design of the infrastructure required and is outlined within the proposed ODP.

8.2.4 Objective – Earthworks

Earthworks facilitate subdivision, use and development, the provision of utilities, hazard mitigation and the recovery of the district.

The proposed rezoning is consistent with this objective because the earthworks will be addressed and monitored through the subdivision process and of the development of the site once the submission is granted.

8.2.4.4 Policy – Amenity

Ensure, once completed, earthworks do not result in any significant shading, visual impact, loss of privacy or other significant detractor from the amenity values enjoyed by those living or working in the locality.

The proposed rezoning is consistent with this policy because the earthworks will be addressed and monitored through the subdivision process and of the development of the site once the submission is granted.

8.2.5 Objective – Earthworks health and safety

People and property are protected during, and subsequent to, earthworks.

The proposed rezoning is consistent with this objective because the earthworks will be addressed and monitored through the subdivision process and of the development of the site once the submission is granted.

Relevant Objectives and Policies

14.2.1 Objective – Housing Supply

An increased supply of housing that will:

1. enable a wide range of housing types, sizes, and densities, in a manner consistent with Objectives 3.3.4(a) and 3.3.7;
2. meet the diverse needs of the community in the immediate recovery period and longer term, including social housing options; and
3. assist in improving housing affordability.

14.2.1.1 Policy – Housing distribution and density

Provide for the following distribution of different areas for residential development, in accordance with the residential zones identified and characterised in Table 14.2.1.1a, in a manner that ensures:

1. new urban residential activities only occur in existing urban areas or in greenfield priority areas identified in Map A of the Canterbury Regional Policy Statement;
2. high density residential development in the Central City, that achieves an average net density of at least 50 households per hectare for intensification development;
3. medium density residential development in and near identified commercial centres in existing urban areas where there is ready access to a wide range of facilities, services, public transport, parks and open spaces, that achieves an average net density of at least 30 households per hectare for intensification development;
4. a mix of low and medium residential density development in greenfield neighbourhoods, that achieves a net density (averaged over the Outline development plan) of at least 15 households per hectare;
5. greenfield land that is available for further residential development up to 2028;

Assessment of re-zoning for Cashmere/Hendersons Private Plan Change

The proposed rezoning is consistent with this objective because the proposal and development will be able to provide a range of housing types as well as densities over the area that is designated for residential activity. The proposed ODP shows this. It is also the hope that this development will help the housing affordability issues that all of New Zealand are experiencing.

The proposed rezoning while it is not located within a greenfield area identified in Map A it does provide housing opportunities which are located adjacent to the Hoon Hay and Westmorland suburbs which are ideally located to ensure a easy transit into Christchurch City. It also provides more housing which is closer to the city compared to further developments being made in the Selwyn and Waimakariri districts which are forcing people to move further out of the city in order to access housing supply.

Relevant Objectives and Policies

Assessment of re-zoning for Cashmere/Hendersons Private Plan Change

6. low density residential environments in other existing suburban residential areas and in the residential areas of Banks Peninsula, and in small settlements are maintained, but limited opportunities are provided for smaller residential units that are compatible with the low density and township suburban environment; and
7. within Banks Peninsula, limited low density residential development adjacent to existing residential townships and small settlements, that complements the surrounding environment, is able to be efficiently serviced by public infrastructure and in some limited circumstances private infrastructure; and is in locations not subject to significant risks to life safety and property damage from natural hazards.

14.2.1.9 Policy – Monitoring

Evaluate the effectiveness of the District Plan's residential provisions by monitoring the supply of additional housing through residential intensification, greenfield and brownfield development (including housing types, sizes and densities), and its contribution to:

1. meeting regional growth targets for greater Christchurch in the Greater Christchurch Settlement Plan Update and the Canterbury Regional Policy Statement;
2. achieving a minimum of 55,950 additional dwellings by 2048 (Objective 3.3.4(a));
3. meeting the diverse and changing population and housing needs for Christchurch residents, in the immediate recovery period and longer term;
4. improving housing affordability; and
5. meeting the housing intensification targets specified in Objective 3.3.7(a)(iv).

The proposed rezoning is consistent with this policy because the proposal and development is able to help meet the regional growth targets as well as contributing towards additional housing supply. It will also provide living options for a wide diverse and changing population and is hoped to help improve housing affordability.

Relevant Objectives and Policies

Assessment of re-zoning for Cashmere/Hendersons Private Plan Change

Undertake the monitoring and evaluation at such intervals as to inform any other monitoring requirements of other statutory instruments, and make the results publicly available.

Have regard to the information from this monitoring when determining priority areas for residential intensification and provision for new and upgraded infrastructure.

14.2.4 Objective – High quality residential environments

High quality, sustainable, residential neighbourhoods which are well designed, have a high level of amenity, enhance local character and reflect the Ngāi Tahu heritage of Ōtautahi.

The proposed rezoning is consistent with this objective because the proposal and development through the design process and proposed ODP will enable a high quality residential neighbourhood that is affordable and is also able to maintain the existing character of the Hoon Hay suburb.

14.2.4.1 Policy – Neighbourhood character, amenity and safety

Facilitate the contribution of individual developments to high quality residential environments in all residential areas (as characterised in Table 14.2.1.1a), through design:

1. reflecting the context, character, and scale of building anticipated in the neighbourhood;
2. contributing to a high quality street scene;
3. providing a high level of on-site amenity;
4. minimising noise effects from traffic, railway activity, and other sources where necessary to protect residential amenity;
5. providing safe, efficient, and easily accessible movement for pedestrians, cyclists, and vehicles; and
6. incorporating principles of crime prevention through environmental design.

The proposed rezoning is consistent with this policy because the proposal and development will reflect the overall character and context of the Hoon Hay suburb. Through the anticipated build of each individual lot street scene and on-site amenity will be maintained. Pedestrian and cycle ways are provided in order to provide safe and efficient movement areas. This is also shown in the proposed ODP.

14.2.4.2 Policy – High quality, medium density residential development

Encourage innovative approaches to comprehensively designed, high quality, medium density residential development, which is attractive to residents,

The proposed rezoning is consistent with this policy because the proposal and development as the proposed zoning under PC14 does not have a minimum density requirement will be able to provide a range of lots which

Relevant Objectives and Policies

responsive to housing demands, and provides a positive contribution to its environment (while acknowledging the need for increased densities and changes in residential character), through:

1. consultative planning approaches to identifying particular areas for residential intensification and to defining high quality, built and urban design outcomes for those areas;
2. encouraging and incentivising amalgamation and redevelopment across large-scale residential intensification areas;
3. providing design guidelines to assist developers to achieve high quality, medium density development;
4. considering input from urban design experts into resource consent applications;
5. promoting incorporation of low impact urban design elements, energy and water efficiency, and life-stage inclusive and adaptive design; and
6. recognising that built form standards may not always support the best design and efficient use of a site for medium density development, particularly for larger sites.

14.2.5 Objective – Residential New Neighbourhood Zone

Co-ordinated, sustainable and efficient use and development is enabled in the Residential New Neighbourhood Zone.

Assessment of re-zoning for Cashmere/Hendersons Private Plan Change

can be developed at varying densities. Regarding the built form and design of future dwellings these will be assessed at the time they are established and proposed.

The proposed rezoning is consistent with this objective because the proposal and development as a portion of the site is currently zoned Residential New Neighbourhood and the proposed new zoning is effectively the same under PC14 will provide for a development that is co-ordinated and efficiently uses the site location to enable good quality residential sites.

14.2.5.1 Policy – Outline development plans

Use and development shall be in accordance with the development requirements in the relevant Outline development plan, or otherwise achieve similar or better outcomes, except as provided for in Clause b. in relation to any interim use and development.

The proposed rezoning is consistent with this policy because the proposal and development through the proposed ODP as it provides for land that will be used for residential activity that is located in an area that is convenient to Christchurch City compared to areas such as in the Selwyn and Waimakariri district. Sufficient infrastructure capacity is available for

Relevant Objectives and Policies

Interim use and development shall not compromise the timely implementation of, or outcomes sought by, the Outline development plan.

Recognise that quarrying activities and other interim activities may be a suitable part of preparing identified greenfield priority areas for urban development, provided that their adverse effects can be adequately mitigated and they do not compromise use of the land for future urban development.

14.2.5.3 Policy – Development density

In residential development areas, achieve a minimum net density of 15 households per hectare, when averaged across the whole of the residential development area within the relevant outline development plan, except:

1. in the Residential New Neighbourhood (Prestons) Zone where the minimum net density is between 13 and 15 households per hectare; and
2. in areas shown on an Outline development plan as being subject to development constraints.

Except as provided for in (a)(i) and (ii) above, any use and development which results in a net density lower than the required net density shall demonstrate, through the use of legal mechanisms as appropriate, that the net density required across residential development areas of the outline development plan can still be achieved.

Except as provided for in (a) and (b) above, a proposal for use and development which results in a net density lower than the required net density will result in other owners of greenfield (undeveloped) land within the outline development plan area being identified as affected parties (where they have not given written approval).

Assessment of re-zoning for Cashmere/Hendersons Private Plan Change

the anticipated level of residential development which includes sewer, stormwater and water access. Transport networks as in local roads are provided for which connects to the existing transport routes which links to the existing suburbs as well as the city. Natural hazards are also managed in the proposed ODP through stormwater management areas and utility reserves. Required information when presenting the proposed ODP is supplied through the ODP which is part of the submission.

The proposed rezoning is consistent with this policy because the proposal and development can provide 20-25 households per ha depending on the densities of each lot which is consistent with this policy. This is also shown in the proposed ODP.

Relevant Objectives and Policies

Encourage higher density housing to be located to support, and have ready access to, commercial centres, community facilities, public transport and open space; and to support well-connected walkable communities.

14.2.5.4 Policy – Neighbourhood quality and design

Ensure that use and development:

1. contributes to a strong sense of place, and a coherent, functional and safe neighbourhood;
2. contributes to neighbourhoods that comprise a diversity of housing types;
3. retains and supports the relationship to, and where possible enhances, recreational, heritage and ecological features and values; and
4. achieves a high level of amenity.

14.2.5.5 Policy – Infrastructure servicing for developments

Ensure that developments are serviced with all required infrastructure in an effective and efficient manner.

14.2.5.6 Policy – Integration and connectivity

Ensure effective integration within and between developments and existing areas, including in relation to public open space networks, infrastructure and movement networks.

Ensure that the boundaries between new and existing developments are, where appropriate, managed to avoid or mitigate adverse effects.

Avoid significant adverse effects and remedy or mitigate other adverse effects on existing businesses, rural activities or infrastructure.

Assessment of re-zoning for Cashmere/Hendersons Private Plan Change

The proposed rezoning is consistent with this policy because the proposal and development as it will be able to provide a range of housing types to help with the housing supply shortage. The development will also keep within the local amenity and will provide a safe neighbourhood with designated cycle and pedestrian pathways.

The proposed rezoning is consistent with this policy because the proposed rezoning and development promotes use of existing infrastructure as well as existing transport which links to Christchurch City. Pedestrian and cycle ways are proposed and outlined within the ODP.

The proposed rezoning is consistent with this policy because the proposed rezoning and development has kept the residential areas to the east of the development where it borders existing and established residential activities. Along the west of the development stormwater management, recreational activities and conservation use are proposed in order to keep a natural barrier between the rural and residential.

Section 32AA Planning Assessment Addendum

Cashmere/Hendersons, Christchurch – Rezoning Submission

Prepared for Cashmere Park Ltd, Hartward
Investment Trust and Robert Brown

511270

Section 32AA Planning Assessment Addendum

Cashmere/Hendersons, Christchurch – Rezoning
Submission

Quality Control Certificate

Prepared for Cashmere Park Ltd, Hartward
Investment Trust and Robert Brown

Eliot Sinclair & Partners Limited

511270

eliotsinclair.co.nz

Action	Name	Signature	Date
Reviewed by:	Bryan McGillan Resource Management Planner BAppSc, MNZPI & RMLA		12 May 2023
Directed and approved for release by:	Bryan McGillan Resource Management Planner BAppSc, MNZPI & RMLA		12 May 2023
Status:	Final		
Release date:	12 May 2023		
Distributed to:	Cashmere Park Ltd, Hartward Investment Trust and Robert Brown Christchurch City Council		

Version History

Status	Description	Author	Release Date
Final	Cashmere/Hendersons, Christchurch – Rezoning submission addendum		12 May 2023

Planning Assessment for Submission - Addendum

To Christchurch City Council
Plan Change 14
PO Box 73014
Christchurch 8154

From Cashmere Park Ltd, Hartward
Investment Trust and Robert Brown

Address for service of applicant:

Eliot Sinclair & Partners Ltd
PO Box 9339
Christchurch 8149
Phone: 03 379 4014
Attn: Cashmere/Hendersons Private Plan Change
Email: holly.luzak@eliot Sinclair.co.nz

Cashmere Park Ltd, Hartward Investment Trust and Robert Brown ('the Submitters') make this submission to the Christchurch District Plan (CDP) and PC14. The Submission is to request the rezoning of the site located within the Henderson's and Cashmere catchments which include the following addresses:

- 126 Sparks Road (Lot 1 DP 412488)
- 17 Northaw Street (Lot 2 DP 412488)
- 36 Leistrella Road (Lot 3 DP 412488)
- 240 Cashmere Road (Lot 23 DP 3217)
- 236 Cashmere Road (RS 41613)
- 200 Cashmere Road (Lot 1 DP 547021)

The current zoning of the sites under the CDP are Rural Urban Fringe (RuUF) and Residential New Neighbourhood (RNN) and we are requesting this under PC14 to be rezoned Medium Density Residential (MDR) for the whole submission site.

This addendum provides additional supporting information to be read in conjunction with the original submission.

BJ McGillan

Signature of Cashmere Park Ltd, Hartward
Investment Trust and Robert Brown (or
person authorised to sign on behalf of the
applicant)

12/05/2023

Date

1. Introduction

1. Cashmere Park Ltd, Hartward Investment Trust and Robert Brown ('the Submitters') have made a submission as part of the PC14 process to rezone their sites located at addresses,
 - 126 Sparks Road (Lot 1 DP 412488)
 - 17 Northaw Street (Lot 2 DP 412488)
 - 36 Leistrella Road (Lot 3 DP 412488)
 - 240 Cashmere Road (Lot 23 DP 3217)
 - 236 Cashmere Road (RS 41613)
 - 200 Cashmere Road (Lot 1 DP 547021)
2. This addendum provides additional supporting information to be read in conjunction with the original submission which is dated 4 May 2023.
3. The addendum provides confirmation from Enable and ORION confirming that both companies are able to provide services to the proposed area that is requested to be rezoned. In addition, further information in respect of the wastewater servicing for the proposed area of rezoning has been provided by IOTA. Please note that IOTA have re-modelled the wastewater network accounting for all 396 lots within the plan change area, coming off the existing Cashmere Park Stage 1 connection in Cashmere Road. Therefore, this gives the total flows discharged to the council network. At detailed design stage when the development lot layout is known, an additional connection to the sewer main in Cashmere road may be required to split the total flow between the existing and the new connection.
4. Section 9.1 of the Infrastructure Servicing report states that:
5. "Orion had not confirmed whether there was capacity within their network to service the plan change area at the time this report was prepared."
6. ORION have confirmed since the writing of that report that they have the capacity to provide power to the proposed Lots.
7. Section 9.2 of the Infrastructure Servicing report states that:

"Enable had not confirmed whether there was capacity within their network to service the plan change area at the time this report was prepared."
8. Enable have confirmed since the writing of that report that they can deliver full UFB fibre to the proposed Lots.
9. The relevant information is attached in the three appendices below'

Appendix A. Enable Confirmation



9 January 2023

Cameron Mars
Eliot Sinclair
Christchurch

Dear Cameron

UFB Fibre delivery to Cashmere/Hendersons Basin

In response to your email of the 14th of December requesting confirmation from Enable of fibre delivery to the proposed lots at Cashmere/Hendersons Basin. I am pleased to be able to confirm the following:

These lots can be provisioned to provide full UFB fibre from Enable. Standard design, implementation and fees will apply.

I trust that the above confirmation allows you to continue the planning and consenting of this lot. Please let me know if you require any other information.

Yours sincerely

A handwritten signature in black ink, appearing to read "Richard Gilbert".

Richard Gilbert
Business Development Manager

Appendix B. ORION Confirmation

Direct: 027 2626827

Email: paul.golding@oriongroup.co.nz

Ref: **ES497624**

7-Feb-2023

Cameron Mars
20 Troup Drive PO Box 9339
Tower Junction
Christchurch 8149

Dear Sir,

Proposed subdivision – 200 Cashmere Road, Cashmere, Christchurch

I refer to your email/letter and your request for a letter to confirm there is capacity on the Orion network to service the electrical needs of your proposed subdivision. This letter is not suitable for 224 clearance purposes.

I confirm:

1. Orion has the capacity on the network to meet your request.
2. There are no specific connections available for this subdivision however:
 - a. A connection can be made available for 318 Lots/dwellings subject to alteration to the Orion network; and
 - b. It is likely Orion will need to either upgrade existing network or lay new cables to create these connections. We recommend the developer engages an authorised Orion subdivision designer to help you through this process and submit a suitable design proposal so that your development may connect to the Orion network.
 - c. There will be costs associated in providing the connection(s). The costs payable will be in accordance with the Orion [*extensions and connections or subdivision*] policy and will be the responsibility of the property owner.
 - d. The next step will be to engage an authorised Orion subdivision designer.
3. Orion will request an easement in gross for all over boundary existing network not currently secured by way of easement at the developers cost prior to the issuing 224 clearance.
4. To comply with Orion's network security conditions an alternative feed from adjoining developments may also be required.

5. All proposed new structures near or under existing overhead lines (eg house, sheds, carports, garages or any other structures) must comply with the distances stated in the New Zealand Electrical Code of Practice for Electrical Safe Distances 2001 (NZECP34:2001).
6. **IMPORTANT:** This Capacity Letter will expire upon the earlier of the date upon which a connection for each of the lots for the development has been approved and livened or 6 months from the date of this letter in the case of a residential/rural subdivisions or, 12 months in the case of a commercial/industrial subdivision.

All terms and conditions will be subject to current Orion policies and practices.

Please don't hesitate to contact the writer should you have any questions.

Yours faithfully

A handwritten signature in blue ink, appearing to read 'Paul Golding', with a large circular flourish at the end.

Paul Golding
Contract Manager (Connections)



Appendix C. IOTA Wastewater Servicing

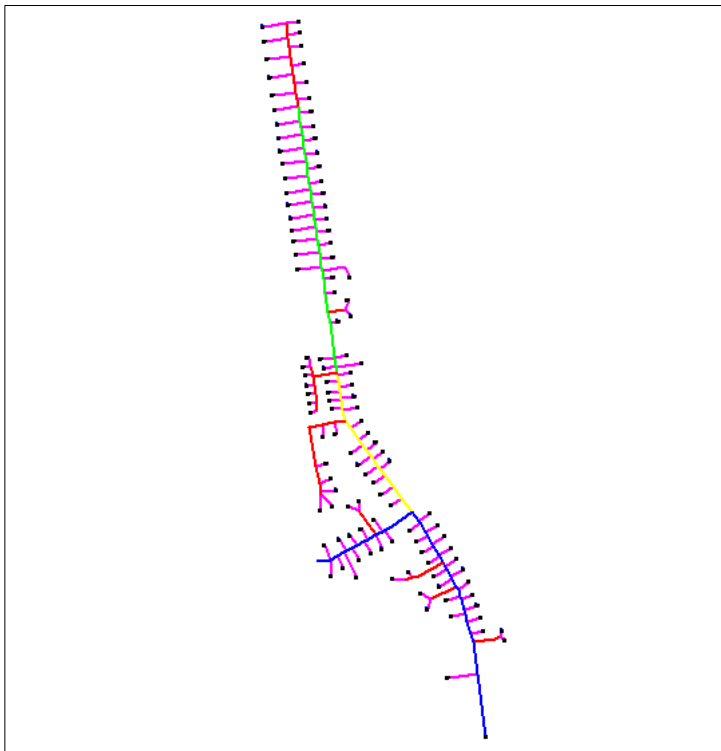
Cashmere Fields Development (Revised for 277 future lots)

Hydraulic Result Summary

Adopted pressure sewer network parameters:

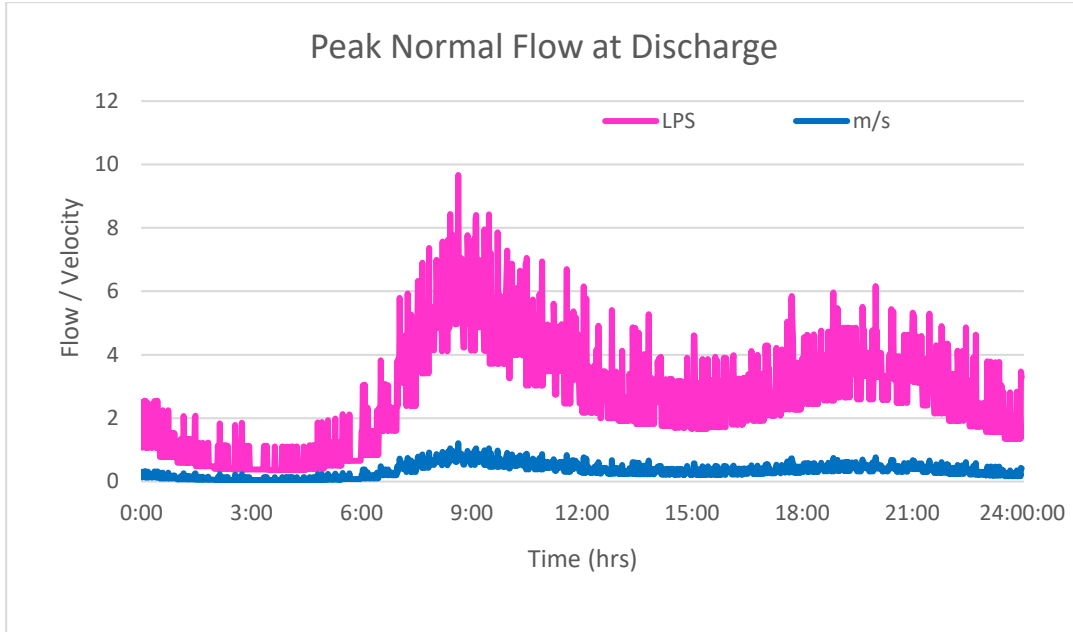
- Design ADWF loading per lot = 594L;
- Each property will produce 300L during a 24hr power outage;
- Minimum scouring velocities of 0.6 m/s per day;
- Peak Summer Day velocity less than 2.5 m/s;
- Power outage recovery period - velocity not restricted;
- No tanks to spill (*not greater than 95% full*) during 24hr power outage;
- Ideal maximum operating pressures for individual property pumps should not exceed 55m head based on pump curves from manufacturers for optimal performance;
- Pipe sizes are based on polyethylene pipes (*PE100 PN16*); and
- Pump cut-in level for residential = 0.452m (varies in peak shifting mode) cut-out = 0.351m
- Hydraulic design based on **119** residential connections and **277** future lots as an inflow node
- Eone pumps were used for modelling the network
- Simplex tank = 2010 iP Eone tank
- Site assumed to be reasonably flat with discharge point being slightly higher than the rest to give a fully primed network

Modelled network layout:



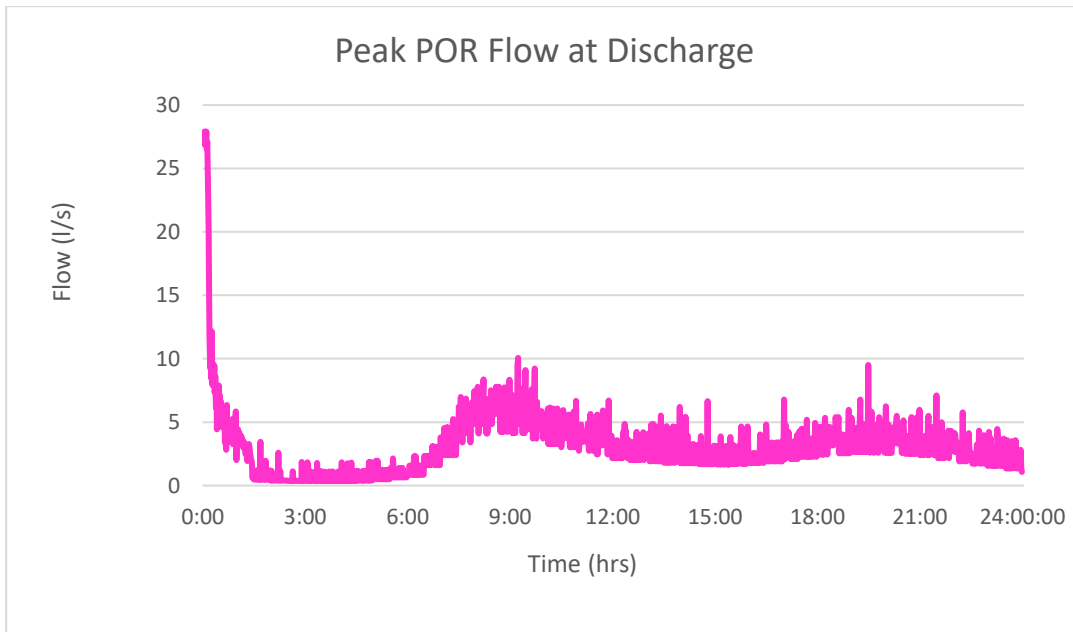
Pipe sizes shown by colour with red = OD40, green = OD63, yellow = OD90, blue = OD125

Peak normal flow = 8.44 l/s (ignoring the instantaneous spike)



Peak POR flow = 27.92 l/s

No spills were recorded during simulation of the power outage recovery – system manages to work itself out.

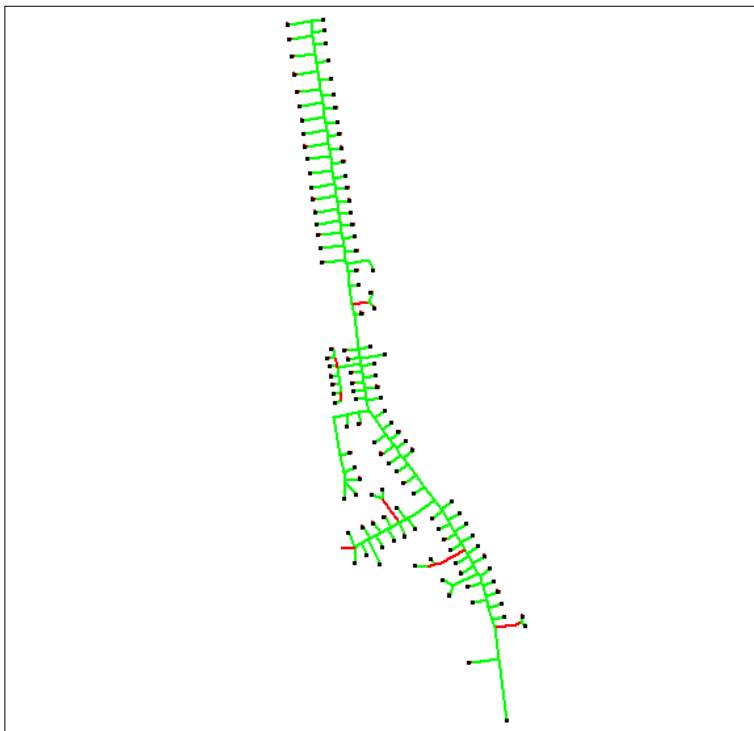


Maximum pressure seen in the normal flow is 39.0m

Network pressures: Green = 0 – 25m, Blue = 25.1 – 45.0, Red = 45.1 – 56m



Maximum Velocities reached within pipe network: Blue = 1.1 – 2.0 m/s, Green = 0.61 – 1.0 m/s, Red = 0.0 – 0.61 m/s



Commentary:

- The model output represents an instance in time at full development and is therefore subject to continual change. The low flows are reflective of no flow or single property flow in those sections. The key finding is the self-cleansing flows are achieved throughout the network
- Maximum pipe size used in model OD125mm (ID101) which requires a minimum of 5.0L/s flow to achieve self -cleansing. This can be achieved by providing a minimum of 10 pumps pumping concurrently in flushing mode during the early stages of development. Recommend placing the first 10 properties in flushing mode until the development is 80% connected.
- The 277 future residential lots are represented with an in-flow node and no further lots have been considered from this
- The site elevations are assumed relatively flat with the discharge MH being slightly higher than the network to provide a primed system. No air valves were considered and no odour assessment were taken



CASHMERE FIELDS PRESSURE SEWER SYSTEM

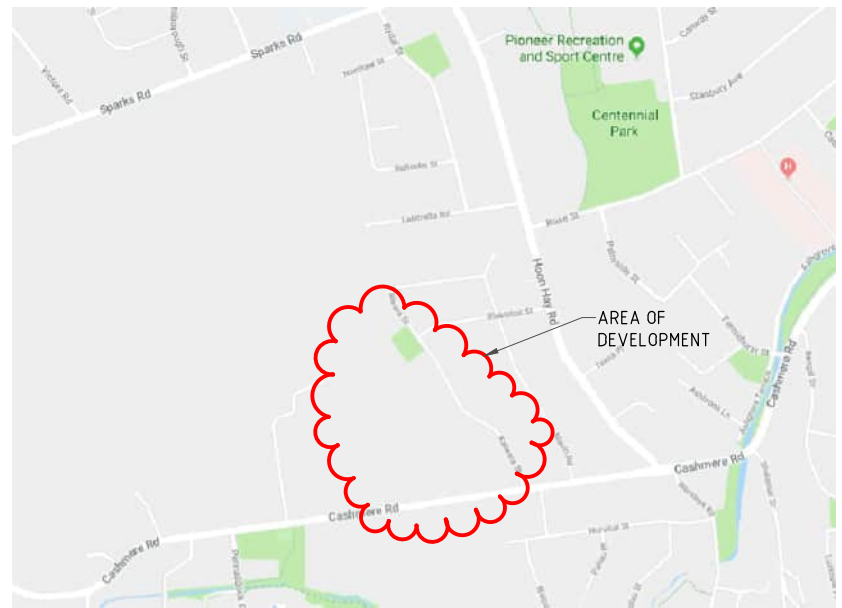
GENERAL NOTES:

- G1. REFERENCE CODES AND GUIDELINES
ALL WORKS SHALL BE IN ACCORDANCE WITH RELEVANT AUSTRALIAN/NEW ZEALAND STANDARDS, CODES OF PRACTICE AND INDUSTRY GUIDELINES, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:-
POLYETHYLENE PIPELINE CODE - WSA 01 - 2004
PRESSURE SEWERAGE CODE OF AUSTRALIA - WSA 07 - 2007
SEWERAGE CODE OF AUSTRALIA - WSA 02 - 2002 (MRWA EDITION _VERSION1.0)
P.I.P.A. INDUSTRY GUIDELINES:
(POP001) ELECTROFUSION JOINTING OF PE PIPE AND FITTINGS FOR PRESSURE APPLICATIONS (ISSUE 6.0); AND (POP003) BUTT FUSION JOINTING OF PE PIPES AND FITTINGS - RECOMMENDED PARAMETERS (ISSUE 5.1).
- G2. MATERIALS AND WORKMANSHIP
ALL EQUIPMENT, MATERIALS AND ACCESSORIES USED IN THIS CONTRACT SHALL BE NEW, SHALL CONFORM TO THE APPROPRIATE CURRENT AUSTRALIAN/NEW ZEALAND STANDARD SPECIFICATION AND SHALL COMPLY WITH LOCAL AUTHORITY REQUIREMENTS.
- G3. CADASTRAL INFORMATION
THE BASE CADASTRAL INFORMATION ON THE PLANS IS FROM CHRISTCHURCH CITY COUNCIL AND MAY NOT REFLECT THE EXACT TITLE BOUNDARIES. FENCES SHOWN ON AERIAL MAP MAY VARY FROM TITLE BOUNDARIES. ALL SEWER OFFSETS ARE FROM TITLE BOUNDARIES ON THE CONSTRUCTION DRAWINGS, UNLESS NOTED OTHERWISE.
- G4. ENVIRONMENTAL REQUIREMENTS
A) VEGETATION SHOWN ON THE DRAWINGS IS INDICATIVE ONLY.
B) THE CONTRACTOR SHALL COMPLY WITH THE VEGETATION REMOVAL AND PROTECTION REQUIREMENTS SPECIFIED IN THE ENVIRONMENTAL MANAGEMENT PLAN (EMP).
C) ALL VEGETATION SHOULD BE PROTECTED WHERE POSSIBLE.
D) THE EXTENT OF ANY VEGETATION REMOVAL FOR EACH SEWER LENGTH SHALL BE CONFIRMED ON-SITE WITH THE SUPERINTENDENT AND WELLINGTON SHIRE COUNCIL PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
E) REFER TO EMP FOR CULTURAL HERITAGE CONTINGENCIES.
- G5. TRAFFIC MANAGEMENT
ALL WORKS IN ROADS AND RESERVES ARE TO HAVE APPROPRIATE ROAD SIGNAGE AND TRAFFIC MANAGEMENT PROCEDURES IN ACCORDANCE WITH RELEVANT ROAD AUTHORITY REQUIREMENTS.
- G6. EXISTING SERVICES
A) THE EXISTING SERVICES SHOWN ON THE DRAWINGS ARE OFFERED AS A 'GUIDE ONLY' AND ARE NOT GUARANTEED AS CORRECT.
B) THE LOCATION OF ALL EXISTING SERVICES SHALL BE DETERMINED BY THE CONTRACTOR INCLUDING ALL HOUSE UTILITY CONNECTIONS.
C) FOR MINIMUM HORIZONTAL AND VERTICAL CLEARANCES REFER TO SEWERAGE CODE OF AUSTRALIA/NEW ZEALAND - WSA 02 - 2002 (MRWA EDITION _VERSION1.0) SECTION 4.4, TABLE 4.2.
- G7. PIPE CONSTRUCTION
A) INSTALLATION SHALL BE IN ACCORDANCE WITH AS 2033, INSTALLATION OF POLYETHYLENE PIPE SYSTEMS.
B) ALL PIPELINES MAY BE INSTALLED BY DIRECTIONAL BORING AND/OR OTHER APPROVED 'TRENCHLESS METHODS'.
C) THE MINIMUM COVER OVER THE PIPE SHALL BE 0.9m AND 1.2m UNDER ROAD CROSSINGS. FOR VICROAD'S ROAD CROSSING MINIMUM COVER SHALL BE 1.2m.
D) THE MAXIMUM COVER OVER THE PIPE SHALL BE 1.5m, UNLESS OTHERWISE SPECIFIED ON THE CONSTRUCTION DRAWINGS OR APPROVAL IS OBTAINED FROM THE PROJECT SUPERINTENDENT.
- G8. POLYETHYLENE PIPEWORK AND FITTINGS
A) PIPE MATERIAL TO BE PE 100, SDR11/PN16 POLYETHYLENE PIPE, BLACK IN ACCORDANCE WITH WSA PS-2075, AND SHALL BE MANUFACTURED IN ACCORDANCE WITH AS/NZS 4130 - 'POLYETHYLENE PIPES FOR PRESSURE APPLICATIONS'.
B) ALL PE PIPE SIZES SHOWN ON THE DRAWINGS ARE OUTSIDE DIAMETER (OD).
- C) POLYETHYLENE FITTINGS AND JOINTING SHALL BE UNDERTAKEN USING PN16 ELECTROFUSION FITTINGS ONLY, COMPLYING WITH WSA PS-2085 AND IN ACCORDANCE WITH AS/NZS 4129.
- D) PE PIPE MAY BE COLD BENT TO A MINIMUM RADIUS OF 25 X (OD). STAKES OR OTHER SOURCES OF POINT LOADS SHALL NOT BE USED TO ASSIST IN BENDING THE PIPE.
- E) 90° BENDS IN THE PIPELINE SHALL BE AVOIDED BY USING 2 X 45° BENDS OR SIMILAR.
- G9. FUSION WELDING
A) ELECTROFUSION JOINTING SHALL BE UNDERTAKEN IN ACCORDANCE WITH PLASTICS INDUSTRY PIPE ASSOCIATION OF AUSTRALIA LIMITED DOCUMENT (POP001) 'ELECTROFUSION JOINTING OF PE PIPE AND FITTINGS FOR PRESSURE APPLICATIONS'.
B) BUTT FUSION JOINTING OF PE PRESSURE CONDUIT SHALL BE BUTT FUSION JOINTED IN ACCORDANCE WITH AS 2033 - 1980 'INSTALLATION OF POLYETHYLENE PIPE SYSTEMS' AND PLASTICS INDUSTRY PIPE ASSOCIATION OF AUSTRALIA LIMITED'S DOCUMENT 'BUTT FUSION JOINTING OF PE PIPES AND FITTINGS - RECOMMENDED PARAMETERS'.
C) ALL JOINTING SHALL BE PERFORMED UNDER CONTROLLED CONDITIONS BY SKILLED AND EXPERIENCED OPERATORS UTILISING APPROVED EQUIPMENT. ALL OPERATORS TO BE USED ON THE WORK SHALL BE ACCREDITED BY A REGISTERED TRAINING ORGANISATION.
- G10. CAPPING OFF
DURING THE CONSTRUCTION OF THE PROJECT, ALL OPEN ENDS OF PIPES ARE TO BE CAPPED OFF TO PREVENT ENTRY OF FOREIGN MATTER INTO THE PIPEWORK.
- G11. DETECTION TAPE
A) WHERE PIPE IS TO BE INSERTED INTO A BORE HOLE, ATTACH A CONTINUOUS 2mm 316L STAINLESS STEEL MIG WIRE TO THE TOP OF THE PIPE TO ASSIST IN DETECTING THE SERVICE PIPE AFTER INSTALLATION.
B) WHERE PIPE IS TO BE INSTALLED BY OPEN-CUT TECHNIQUES, SUPPLY AND LAY MARKER TAPE WITH 316 STAINLESS STEEL TRACER WIRE, 150mm ABOVE THE SOFFIT OF THE PRESSURE SEWER PIPE IN THE TRENCH.
- G12. INITIAL FLUSHING OF THE SYSTEMS
A) ALL PRESSURE SEWER SYSTEMS ARE TO BE FLUSHED WITH WATER SO THAT ALL FOREIGN MATTER IS REMOVED FROM THE BORE OF THE PIPE WORK PRIOR TO BEING PUT INTO OPERATION.
B) AFTER SYSTEM HAS BEEN TESTED AND PRIOR TO THE SYSTEM BEING PUT INTO OPERATION EACH SECTION OF PIPE WORK SHALL BE FLUSHED WITH CLEAN WATER AT A MINIMUM VELOCITY OF 1.0 m/s FOR A PERIOD OF TIME SUFFICIENT TO CHANGE THE WATER IN THE PIPE 3 TIMES.
- G13. PRESSURE TESTING OF THE WORKS
ALL PRESSURE TESTING SHALL BE COMPLETED IN ACCORDANCE WITH SECTION 2.13 OF WSA 01 - 2004 (POLYETHYLENE PIPELINE CODE).
- G14. SITE RESTORATION
A) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING UP THE SITE, REMOVING AND PROPERLY DISPOSING OF ALL DEBRIS AND EXCESS MATERIALS RESULTING FROM ITS ACTIVITIES.
B) THE CONTRACTOR SHALL LEAVE THE SITE IN A TIDY AND PRESENTABLE CONDITION, WHICH SHALL INCLUDE REINSTATEMENT OF ROADS, FOOTPATHS, STRUCTURES, VEGETATION OR OTHER FACILITIES THAT HAVE BEEN DISTURBED AS A CONSEQUENCE OF THE WORKS.
- G15. HANDOVER
AT THE COMPLETION OF THE COMMISSIONING OF THE WORKS THE CONTRACTOR SHALL HAVE A FORMAL HAND OVER MEETING WITH THE AUTHORITIES' OPERATIONS REPRESENTATIVE. TWO WEEKS PRIOR TO THE FINAL COMMISSIONING, THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT TO ORGANISE A "HAND OVER MEETING".
- G16. WORKS ON LIVE SEWERS
ONLY AUTHORITIES' APPROVED CONTRACTORS, APPROVED FOR WORK ON LIVE SEWERS, ARE PERMITTED TO BREAK INTO, ENTER OR CARRY OUT WORK ON LIVE SEWERS OR MHS. CURRENT CERTIFICATES ARE REQUIRED

- FOR ALL PERSONNEL INVOLVED WITH WORK ON LIVE SEWERS, THE CONTRACTOR SHALL COMPLY WITH THE AUTHORITIES' REQUIREMENTS FOR ANY LIVE SEWERS. WHEN WORKING IN LIVE SEWERS THE CONTRACTOR SHALL STRICTLY COMPLY WITH THE FOLLOWING:
- AUTHORITIES' CONFINED SPACE ENTRY - SAFE WORK PROCEDURE, AND
 - NEW ZEALAND CONFINED SPACES
- G17. ALIGNMENT OFF-SET
A) TYPICAL ALIGNMENT OFF-SET IS 15m FROM THE FRONT PROPERTY BOUNDARY. SINCE OTHER SERVICES ARE NOT SUPPLIED, ALIGNMENT CAN BE ALTERED TO SUIT.
B) BOUNDARY KIT LOCATIONS ARE INDICATIVE ONLY. BOUNDARY KITS TO BE INSTALLED WITHIN 1m OFFSET FROM FRONT BOUNDARY.

DRAWING SCHEDULE:

PSS-EW025-G-001	GENERAL NOTES, LOCALITY PLAN & DRAWING SCHEDULE	
PSS-EW025-G-002	SHEET LAYOUT	
PSS-EW025-G-003	PLAN LEGEND AND REFERENCE TABLES	
PSS-EW025-C-001	DESIGN PLAN	SHEET 1 OF 3
PSS-EW025-C-002	DESIGN PLAN	SHEET 2 OF 3
PSS-EW025-C-003	DESIGN PLAN	SHEET 3 OF 3



LOCALITY PLAN
NOT TO SCALE
MAP REFERENCE: CHRISTCHURCH, NEW ZEALAND

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.co.nz

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHALL BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

PRELIMINARY
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MELWAY REF: N/A SHEET SIZE: A1 (FULL SIZE PLOT) APPROVED: D. SULLIVAN

IOTA SERVICES
CASHMERE FIELDS PRESSURE SEWER SYSTEM
GENERAL NOTES, LOCALITY PLAN & DRAWING SCHEDULE

PLAN TYPE: GENERAL	
SCALE: N.T.S.	
DRAWING NUMBER	
PSS-EW025-G-001	P2
NUMERAL	REV

CADD FILE NAME: F:\1-Business\2-Projects\1.1-Completed\Projects\1.Christchurch\Cashmere Fields\Drawings\PSS-EW025-G-001.dwg ORIGINAL SIZE 41 PLOTTED @ 10/5/2023 8:19pm by Sisco

SHEET 3

SHEET 2

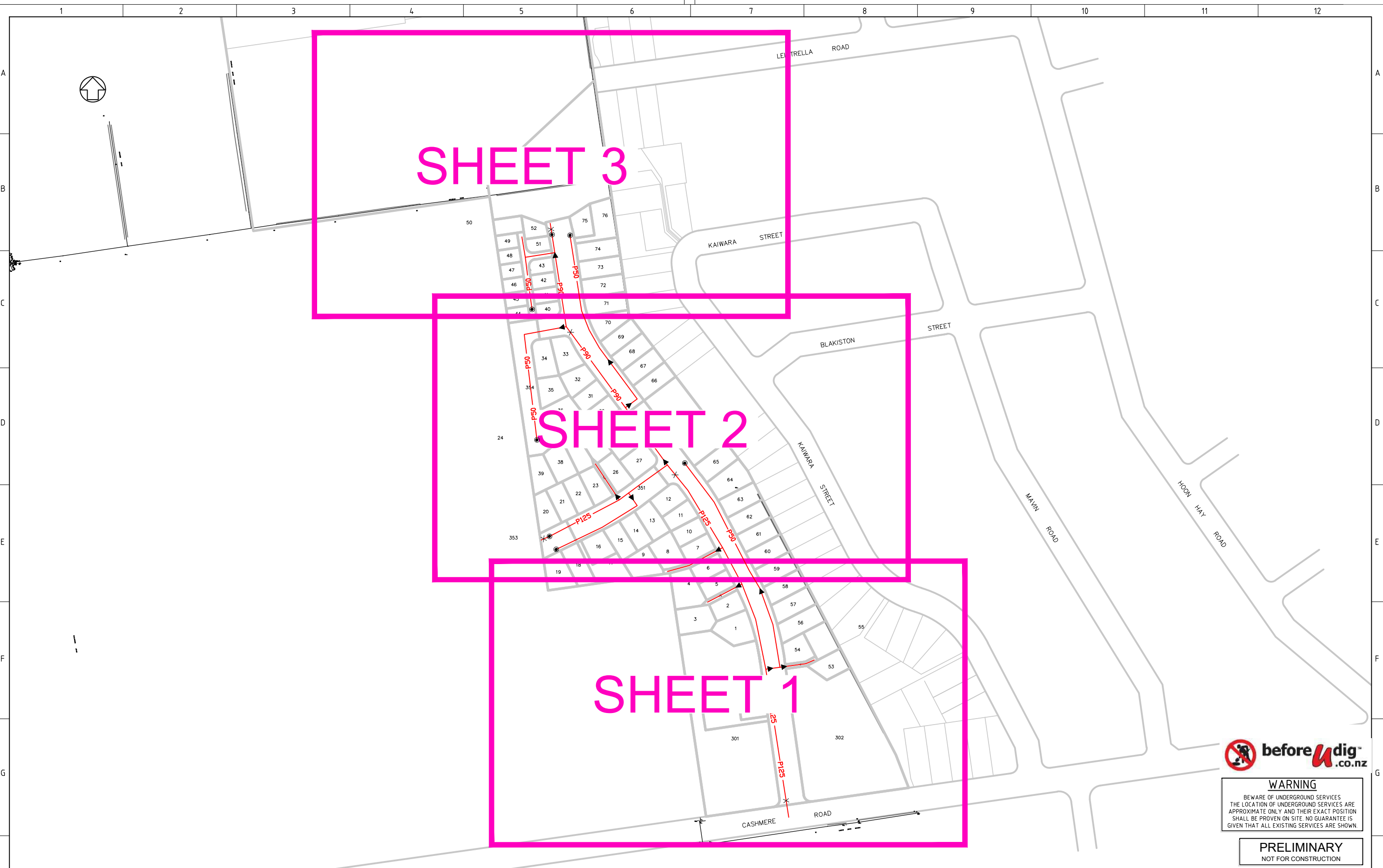
SHEET 1



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CAD FILE NAME: F:\1-Business\2-Projects\1.1-Completed Projects\1.1-Completed Projects\Cashmere Fields\Drawings\PSS-EW017-G-002.dwg
ORIGINAL SIZE: A1
200mm
DO NOT SCALE - P INDOUBT, ASK



REV	ZONE	DESCRIPTION	DATE	DESIGNED	DRAWN	DES. CHK.	DRAFT CHK.
P2		ADDITIONAL FUTURE 277 LOTS	10/05/23	SISCO	SISCO	E. CASEY	E. CASEY
P1		ADDITIONAL 60 LOTS	13/02/19	SISCO	SISCO	E. CASEY	E. CASEY
P0		PRELIMINARY ISSUE	12/06/18	SISCO	SISCO	E. CASEY	E. CASEY

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MELWAY REF: N/A SHEET SIZE: A1 (FULL SIZE PLOT) APPROVED: D. SULLIVAN

IOTA SERVICES
CASHMERE FIELDS PRESSURE SEWER SYSTEM
SHEET LAYOUT

PLAN TYPE: GENERAL	
SCALE: N.T.S.	
DRAWING NUMBER	
PSS-EW017-G-002	P2
NUMERAL	REV

LEGEND:

- P50 — P50 — NEW 50mm DIA. PRESSURE SEWER
- P63 — P63 — NEW 63mm DIA. PRESSURE SEWER
- P90 — P90 — NEW 90mm DIA. PRESSURE SEWER
- P125 — P125 — NEW 125mm DIA. PRESSURE SEWER

- NEW PRESSURE SEWER REDUCER
- NEW AVK DI GATE VALVE WITH PE- PN16 PIPES (SIZE AS SPECIFIED)
- PIPE SIZE AND LENGTHS FROM CIZ TO CIZ
- FLUSHING POINT
- FLOW DIRECTION

PE100 PN16 PIPE SCHEDULE	
SIZE OD(mm)	LENGTH (m)
PE50	667.3
PE63	154.7
PE90	201.2
PE125	430.6

ISOLATION VALVE SCHEDULE	
SIZE(mm)	No.
DN65 WITH 63mm POLYTAIL	1
DN80 WITH 90mm POLYTAIL	1
DN125 WITH 125mm POLYTAIL	3

FLUSHING POINT SCHEDULE	
VALVE	No.
END OF LINE	5
INTERMEDIATE	2

ORIGINAL SIZE A1
 CAD FILE NAME: F:\1-Business\2-Projects\1.1-Completed Projects\1.1.1-Cashmere Fields\Drawings\1-PSS-EW025-G-003.dwg
 DO NOT SCALE - P AND DIBBT, ASK
 200 mm
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 100
 50
 0
 10
 20
 30
 40
 50
 60
 70
 80
 90
 100



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PRELIMINARY
 NOT FOR CONSTRUCTION

REV	ZONE	DESCRIPTION	DATE	DESIGNED	DRAWN	DES. CHK.	DRAFT CHK.
P2		ADDITIONAL FUTURE 277 LOTS	10/05/23	SISCO	SISCO	E. CASEY	E. CASEY
P1		ADDITIONAL 60 LOTS	13/02/19	SISCO	SISCO	E. CASEY	E. CASEY
P0		PRELIMINARY ISSUE	12/06/18	SISCO	SISCO	E. CASEY	E. CASEY

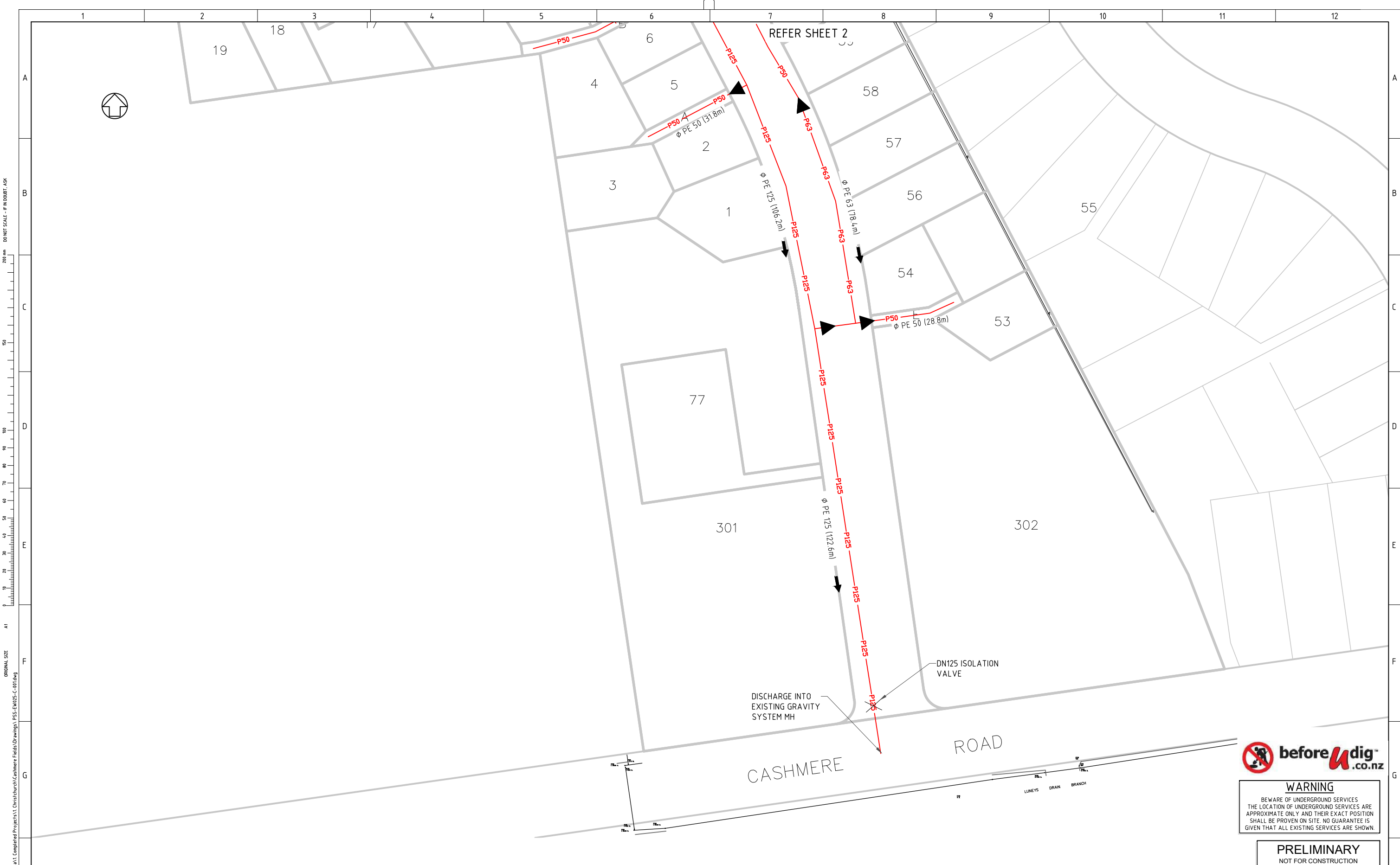
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MELWAY REF: N/A SHEET SIZE: A1 (FULL SIZE PLOT) APPROVED: D. SULLIVAN

IOTA SERVICES
 CASHMERE FIELDS PRESSURE SEWER SYSTEM
 PLAN LEGEND AND REFERENCE TABLES

PLAN TYPE: GENERAL	
SCALE: N.T.S.	
DRAWING NUMBER	
PSS-EW025-G-003	P2
NUMERAL	REV



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PRELIMINARY
NOT FOR CONSTRUCTION

PLAN TYPE: GENERAL	
SCALE: 1:500	
DRAWING NUMBER	
PSS-EW025-C-001	P2
NUMERAL	REV

CAD FILE NAME: F:\1-Business\2-Projects\1.1-Completed\Projects\1.1-Completed\Projects\Cashmere Fields\Drawings\PSS-EW025-C-001.dwg
 ORIGINAL SIZE: A1
 200 mm
 DO NOT SCALE - F INDOUBT, ASK
 Plotted @ 10/5/2023 8:05pm by Sisco

REV	ZONE	DESCRIPTION	DATE	DESIGNED	DRAWN	DES. CHK.	DRAFT CHK.
P2		ADDITIONAL TOTAL 277 LOTS	10/05/23	SISCO	SISCO	E. CASEY	E. CASEY
P1		ADDITIONAL 60 LOTS	13/02/19	SISCO	SISCO	E. CASEY	E. CASEY
P0		PRELIMINARY ISSUE	12/06/18	SISCO	SISCO	E. CASEY	E. CASEY

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MELWAY REF: N/A SHEET SIZE: A1 (FULL SIZE PLOT) APPROVED: D. SULLIVAN

IOTA SERVICES
CASHMERE FIELDS PRESSURE SEWER SYSTEM
DESIGN PLAN
SHEET 1 OF 3

THE ORIGINAL DRAWING WAS HAND SIGNED BY THE PERSON WHOSE NAME OR INITIALS APPEAR PRINTED AND MARKED THUS (H) IN THE SIGNATURE BLOCKS.




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PRELIMINARY
 NOT FOR CONSTRUCTION

CAD FILE NAME: F:\Business\2. Projects\A1. Completed Projects\Cashmere Fields\Drawings\PSS-EW025-C-002.dwg
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Our proposed Housing and Business Choice Plan Change (14)

Submitter Details

Submission Date: 11/05/2023

First name: Hao **Last name:** Ning Tan

On behalf of:

Preferred method of contact Email

Postal address: 1 Dorset Street

Suburb: Christchurch Central

City: Christchurch

Country: New Zealand

Postcode: 8013

Email: haoning911@hotmail.com

Daytime Phone:

I could not
 Gain an advantage in trade competition through this submission

I am not
 directly affected by an effect of the subject matter of the submission that :
 a. adversely affects the environment, and
 b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 94.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:

Original Point:

Points: 94.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:

Original Point:

Points: 94.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:

Original Point:

Points: 94.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 11/05/2023

First name: Logan **Last name:** Sanko

Preferred method of contact Email

Postal address: 31C Darvel Street

Suburb: Riccarton

City: Christchurch

Country: New Zealand

Postcode: 8011

Email: sanko.logan@gmail.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 95.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

My submission is that

The council will require 20% of new residential developments to be covered by trees, or otherwise pay a financial contribution to help the council plant more trees on public land. Christchurch has an appallingly low tree canopy cover rate of 13% compared to Auckland (18%) and Wellington (30%). Trees have a wide range of environmental, health, social and economic benefits and are important for the future of our city.

Original Submitter:

Original Point:

Points: 95.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

My submission is that

The council plans to restrict housing in some areas of the city because they are poorly serviced by the lack of current high frequency public transport routes. Some areas solely designated with this qualifying matter such as in Casebrook and Styx are close to rail corridors, existing commercial areas and are serviced by low frequency routes. In the future, these areas could see a boost in service by more buses on current routes or introduction of a commuter rail service.

Original Submitter:

Original Point:

Points: 95.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

My submission is that

There are many cities in the world that have high density and are further from the equator than Christchurch. Cities such as Vienna, Copenhagen, Toronto, Geneva, and Calgary are consistently ranked some of the most livable cities in the world. This qualifying matter would reduce the maximum height and size of medium residential buildings below what is legally required. This qualifying matter has been developed with the expressed purpose of protecting and increasing property values rather than increasing the amount of affordable housing for people.

Original Submitter:

Original Point:

Points: 95.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

My submission is that

The council is required by law to allow residential buildings of at least 6 storeys within a 1.2km radius of commercial centres such as malls and the city centre. The council plan to enable this, while also allowing up to 10 storeys for residential buildings closer to the city centre. This would enable a wider range of dense housing development options. It would also allow more people to live close to services and amenities.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 11/05/2023

First name: Hayley **Last name:** Woods

Preferred method of contact Email

Postal address: 465 Barbadoes Street

Suburb: Edgware

City: Christchurch

Country: New Zealand

Postcode: 8013

Email: hayleyjwadmore@gmail.com

Daytime Phone:

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Consultation Document Submissions

Original Submitter:

Original Point:

Points: 96.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

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I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:
Original Point:

Points: 96.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

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I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 96.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

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My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 96.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File
No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 11/05/2023

First name: Karl **Last name:** Moffatt-Vallance

Preferred method of contact Email

Postal address: 14 Longmuir Street

Suburb: Ilam

City: Christchurch

Country: New Zealand

Postcode: 8041

Email: moffattron9000@gmail.com

Daytime Phone:

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Would you like to present your submission in person at a hearing?

Yes

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Consultation Document Submissions

Original Submitter:

Original Point:

Points: 97.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

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Original Submitter:
Original Point:

Points: 97.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:
Original Point:

Points: 97.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

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Original Submitter:
Original Point:

Points: 97.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Please stop trying to stop intensification. You're just turning Christchurch into a crappy museum instead of a place to live.

Attached Documents

File

No records to display.

Our proposed Housing and Business Choice and Heritage Plan Changes (13 &14)

Submitter Details

Submission Date: 11/05/2023

First name: Caleb **Last name:** Sixtus

Preferred method of contact Email

Postal address: 46B Neville Street

Suburb: Spreydon

City: Christchurch

Country: New Zealand

Postcode: 8024

Email: cdsixtus@gmail.com

Daytime Phone:

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Note to person making submission:

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Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 98.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

Original Submitter:

Original Point:

Points: 98.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Low Public Transport Accessibility Area Qualifying Matter as I believe that the public transport layout and network will need changes to prepare and accommodate future growth. We should not define future growth in Christchurch based on these routes. This would also artificially limit future housing in our city. I seek that the council drop this qualifying matter.

Original Submitter:

Original Point:

Points: 98.3

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I oppose the Sunlight Access Qualifying Matter. There are many cities in the Northern Hemisphere that are further away from the equator and have a higher level of housing intensification than Christchurch. With a mix of medium and high density housing, these cities are considered some of the most livable cities in the world. This qualifying matter would restrict medium density housing height and size in such a way that would create a less efficient usage of land and limit future housing. I seek that the council drop this qualifying matter.

Original Submitter:

Original Point:

Points: 98.4

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

My submission is that

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

Attached Documents

File

No records to display.

Our proposed Housing and Business Choice Plan Change (14)

Submitter Details

Submission Date: 11/05/2023

First name: David **Last name:** Townshend

On behalf of:

Preferred method of contact: Email

Postal address: 4 Riverbank Road

Suburb: Northwood

City: Christchurch

Country: New Zealand

Postcode: 8051

Email: dstownshend@gmail.com

Daytime Phone: +64277743325

I could not
 Gain an advantage in trade competition through this submission

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 directly affected by an effect of the subject matter of the submission that :

- a. adversely affects the environment, and
- b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

- Yes
- I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Additional requirements for hearing:

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 99.1

Support

- Oppose
 Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

Refer attached submission

My submission is that

Refer attached submission and supporting documents

Attached Documents

File
DT20230511 Submission to Council re sunlight qualifying matter
Correspondence combined - release

Submission to the Christchurch City Council and the Independent Hearing Panel relating to PC14 notified by Christchurch City Council on 17/03/2023

Author: David Townshend (B Eng)

Date of submission: 11 May 2023

Definitions (relating to this submission):

‘CBA-MDRS’: ‘Cost-Benefit Analysis of proposed Medium Density Residential Standards’. A document created by PwC and Sense Partners as evidence to justify implementation of the density standards defined in Part 2 of Schedule 3A of ‘RMAA-EHS’. It includes a section analysing the cost of sunlight shading for each Tier 1 authority.

(<https://environment.govt.nz/assets/publications/Cost-benefit-analysis-of-proposed-MDRS-Jan-22.pdf>)

‘CCC’: ‘Christchurch City Council’ - Council staff or elected representatives acting on behalf of ratepayers and the wider community.

‘CRMDS’: ‘Christchurch Reduced Medium Density Standards’. These are the resulting density standards after applying the ‘Sunlight Qualifying Matter’ to medium density zoned sites. Bespoke standards created by ‘CCC’ which reduces the height at the boundary from 4m to 3m and reduce the recession plane angles to 50-60 degrees depending on site orientation relative to cardinal points. This enables less intensification than ‘MDRS’ per parcel of land.

‘CRHDS’: ‘Christchurch Reduced High Density Standards’. These are the resulting density standards after applying the ‘Sunlight Qualifying Matter’ to high density zoned sites. Bespoke standards created by ‘CCC’ which reduces the height at the boundary from 4m to 3m and reduce the recession plane angles to 50-60 degrees depending on site orientation relative to cardinal points. This enables less intensification than ‘MDRS’ recession planes would per parcel of land.

‘ISSP’: ‘Intensification Streamlined Planning Process’. A new planning process to support territorial authorities to implement the intensification policies in the National Policy Statement on Urban Development and include the Medium Density Residential Standards in their district plans.

(<https://environment.govt.nz/assets/publications/Files/Understanding-the-RMA-EHS-General-overview-July-2022.pdf>)

‘LGA 2002’: ‘Local Government Act 2002’,
(<https://www.legislation.govt.nz/act/public/2002/0084/latest/DLM170873.html>)

‘MDRS’: ‘Medium Density Residential Standards’, are a set of density standards defined in Part 2 of Schedule 3A of ‘RMAA-EHS’ enabling a minimum level of intensification as of right, without the need for resource consent.

(‘RMAA-EHS’ section 4. Amended Interpretation: “medium density residential standards or MDRS means the requirements, conditions, and permissions set out in Schedule 3A)

‘NPS-UD’: ‘National Policy Statement on Urban Development’
(<https://environment.govt.nz/acts-and-regulations/national-policy-statements/national-policy-statement-urban-development/>).

‘RMA’: ‘The Resource Management Act 1991’.
(<https://www.legislation.govt.nz/act/public/1991/0069/latest/DLM232582.html>)

‘RMAA-EHS’: ‘The Resource Management (Enabling Housing and Other Matters) Amendment Act 2021’, the legislation that requires territorial authorities to intensify. It details the minimum density standards that need to apply, when this needs to be done by and how.

(<https://www.legislation.govt.nz/act/public/2021/0059/latest/LMS566049.html>)

‘Sunlight Qualifying Matter’: “A city wide restriction of intensification, to protect sunlight access for homes.” This restriction enables less intensification than provided in ‘RMAA-EHS’, across all medium density and high density residential zones in Christchurch. Applying ‘Sunlight Qualifying Matter’ results in ‘CRMDS’ and ‘CRHDS’ depending on which zone it is applied to.

(<https://ccc.govt.nz/the-council/haveyoursay/show/531>)

Introduction

I am a resident of Christchurch, a ratepayer, a businessman and the director of a property investment company which purchases, builds, improves and maintains warm efficient and affordable housing for people to live in who are not willing or able to purchase their own.

This submission relates only to Christchurch City Councils ('CCC's) proposed 'Sunlight Qualifying Matter' recently created by them as part of their interpretation and implementation of The Resource Management (Enabling Housing Supply and Other Matters) Amendment Act 2021 ('**RMAA-EHS**').

Instead of implementing the Medium Density Residential Standards ('**MDRS**') defined in 'RMAA-EHS', 'CCC' has used a qualifying matter in a global fashion, implementing their own more restrictive density standards ('**CRMDS**' & '**CRHDS**') that apply to every residential site in the city. This avoids 'MDRS' from ever been used as a minimum intensification benchmark in Christchurch, on any site, which I propose does not meet the intention of the lawmakers.

This submission examines 'CCC's actions leading up to their decision to create a 'sunlight qualifying matter', their decisions after, and forms conclusions around the legitimacy of their process and resulting outcome with respect to impartiality, mandate, and the intensification requirements imposed by the Local Government Act 2002 ('**LGA 2002**'), the National Policy Statement on Urban Development ('**NPS-UD**'), the Resource Management Act 1991 ('**RMA**') and '**RMAA-EHS**'.

I am concerned around 'CCC's creation of (to use their words from their 1st March Public Meeting)

a "creative solution" which "is not what the Act ('**RMAA-EHS**') envisaged".
(bold text in brackets added for clarity)

Those statements, coupled with their internal email dialogue admitting a

"high risk of legal challenge"

highlights 'CCC's own belief they could be pushing the boundaries beyond the intent of the legislation.

'CCC' has claimed 'legal privilege' under the LGOIA to withhold its updated (substantially altered) independent legal advice they say they have obtained, that justifies their city-wide avoidance of 'MDRS'.

Not releasing information that was crucial in their decision making, does not appear to meet the obligations of transparency required by section 14 (Principles relating to local authorities) of the 'LGA 2002'. It is almost impossible to understand 'CCC's decision making without having access to their legal reasoning around their change of direction. 'CCC' should be transparent in their decision making and proactively release their legal experts' advice. The Ombudsman has opened an investigation into this matter.

I propose 'CCC's estimation of the restriction in capacity due to the 'sunlight qualifying matter' is subjective and woefully understated. However, whilst the degree of capacity constraint will always have a range of possibilities due to uncertainties in prediction, what is important to acknowledge is 'CCC's own evidence shows that its 'creative solution' will result in less intensification than 'RMAA-EHS' provides.

This is a different view than ‘CCC’ is advising in its advice to councillors, where it stated its ‘sunlight qualifying matter’ solution:

“meets ‘MDRS’”

(source: OIA response – ‘CCC’ slide presented to councillors 13th Dec 2022).

There can be no doubt that this statement is simply false since ‘MDRS’ is a defined set of density standards and anything which meets it would be the same, which ‘CRMDS’ is not.

As well as being misleading, it shows bias on behalf of CCC staff presenting to the elected representatives. It highlights ‘CCC’s re-framing of the narrative. It would have been more impartial (and honest) for ‘CCC’ to say something like:

‘CCC’ has created a ‘sunlight qualifying matter’ which is applied to all medium and high density residential sites in Christchurch.

The effect of this change is to replace the medium density residential standards (‘MDRS’) defined within ‘RMAA-EHS’ with Christchurch bespoke reduced medium density standards (‘CRMDS’) that are more restrictive (enabling less density).

‘CCC’s major change of direction on the application of ‘MDRS’ happened after the ‘no vote’ of the proposed Plan in September 2022. Prior to the vote, ‘CCC’ enabled ‘MDRS’ in full across most areas in the medium and high density residential zones of the city.

The ‘no vote’ by the councillors stemmed from one extreme end of ratepayers referring to:

“Daylight Robbery”

(source: placards on display at the September 2022 public meeting, <https://www.stuff.co.nz/the-press/news/129860070/christchurch-seeks-bespoke-plan-after-no-vote-on-housing-density>)

Balancing ‘CCC’s actions against the spirit or intent of the legislation, which considers the wellbeing of the whole community with a focus on intensification to allow access to more affordable housing, I am concerned ‘CCC’ staff have been focused on solving “inequity in sunlight access” (source: ‘CCC’ staff comment in email, refer appendix A) at the expense of the more financially vulnerable end of the community (renters and future property owners).

It is difficult to understand the mandate ‘CCC’ had to act in the interest of an extreme group of residents looking for a way to not implement central governments mandated ‘MDRS’. Especially when the view comes from existing property owners who are set to benefit financially from the large “transfer of wealth” over the longer term, to the detriment of renters and future property owners.

“We find the MDRS would have significant benefits

Projected benefits are large...

The primary economic benefit of the MDRS is the decline in house prices that generates a transfer between existing homeowners and would be homebuyers.

But the purpose of the policy goes beyond costs and benefits

But even within the housing market, the economic benefits are only part of the story. Rising house prices become a crisis not because they create net

economic losses to society, but because they accelerate transfers of wealth from those whose labour is their primary asset to those who own land and capital. If the MDRS succeeds in slowing the rise of house prices, its pure benefits outweigh its costs as shown above, but it also slows down this transfer of wealth from renters and first-time buyers to existing property owners. These distributional impacts matter, especially in the long-term, but are excluded from our calculation of the benefit-cost ratio since they are a transfer of welfare rather than a pure addition to net welfare.”

(page 13 & 14 of 'CBA-MDRS' report)

It is well predicted that some well-resourced resident associations will take this approach:

“Government officials warn well-resourced property owners, resident associations and developers may use covenants to limit intensification; Say 'further intervention' could be considered”

(<https://www.interest.co.nz/public-policy/113000/government-officials-warn-well-resourced-property-owners-resident-associations>)

‘CCC’s actions do not appear to be an impartial and unbiased approach to local government decision making.

Any opinions proposed within this submission are based on a layperson (not legally trained) understanding of the relevant Acts, government published information and ‘CCC’s information it has released. The reasons for any opinions (along with supporting evidence) have been provided, so the reader can come to their own conclusion(s) based on the information contained within (including any referenced information).

I respectfully suggest that the IHP should be able to read and consider this submission in full. In my view, given the negative effect ‘CCC’s ‘qualifying matter’ will have on renters and future property owners, who will be unlikely to engage as much as affected property owners, they are at risk of been under-represented. Compared with residents associations who are generally well-organised, well-resourced groups and vocal groups. If weighting is applied based on numbers of submissions, rather than quality of submissions, renters and future property owners will likely be disadvantaged. It is clear to me that they have been so far by ‘CCC’s process of decision making.

I would like to be heard during the IHP hearing process and will be able to respond to any questions relating to the content of this submission.

Background

Local Government Act 2002 ('LGA 2002')

This act sets out the principles and requirements that councils must follow when making decisions and carrying out their functions.

Regarding the consideration of interests, section 14 of the 'LGA 2002' states that one of the principles of local government is to

"promote the social, economic, environmental, and cultural well-being of communities, in the present and for the future."

This means that whilst councils must consider the interests of ratepayers when making decisions, they also must consider the overriding effect of their actions on the well-being of the whole community, now and in the future.

In terms of independence and impartiality, section 14 also requires that councils act in a way that is:

"open, transparent, and democratically accountable."

This means that councils must make decisions in a fair and impartial manner, avoid any conflicts of interest or bias and reflect on the different views in the community.

Overall, the Local Government Act 2002 requires that councils act in the best interests of their communities, while maintaining a high level of transparency and accountability in their decision-making processes.

'The National Policy Statement on Urban Development' ('NPS-UD')

Was put in place by central government in 2020 to address the challenges that arise from urban growth and development, particularly in terms of housing affordability, accessibility, and sustainability.

New Zealand's population has been growing rapidly in recent years, with the majority of the growth concentrated in urban areas. This has put pressure on the housing market and led to issues such as unaffordable housing, insufficient supply of housing, and unsustainable urban development patterns. The 'NPS-UD' was introduced in 2020 as a response to these challenges, with the aim of providing guidance and direction to territorial authorities for urban development in New Zealand.

The 'NPS-UD' sets out the government's expectations for urban development, including the need for more compact and connected urban areas, more affordable housing options, and greater protection for natural and cultural heritage. It also provides direction for local councils on how to plan and manage urban growth and development in a way that is consistent with these expectations.

The 'NPS-UD' adds to the 'LGA-2002' requirement to promote the wellbeing of communities, by reinforcing the emphasis on considering the whole community with relation to urban development.

"Wider Outcomes - Councils are directed to give greater consideration to ensuring that cities work for all people and communities. Particular focus is given to access, climate change, and housing affordability."

“Evidence and engagement - Councils must use a strong evidence base for their decision making and engage with Māori, developers and infrastructure providers.”

(<https://www.hud.govt.nz/our-work/national-policy-statement-on-urban-development/#:~:text=The%20National%20Policy%20Statement%20on,needs%20of%20our%20diverse%20communities.>)

To summarise:

The ‘NPS-UD’ was created to help New Zealand manage the challenges of urban growth and development, and to ensure that urban areas are developed in a way that is **sustainable, affordable, and supports the wellbeing of all residents**.

The Resource Management (Enabling Housing and Other Matters) Amendment Act 2021’ (‘RMAA-EHS’)

Was passed by the New Zealand government to assist with implementing ‘NPS-UD’, with the aim of making changes to the Resource Management Act 1991 (RMA) to help address the housing crisis in New Zealand. It was passed through parliament with support from the main opposition party. Together, the two supporting parties, the Labour Party and the National Party represented approximately 76% of the total votes cast in the NZ 2020 general election. The coming together of the two main opposing political parties in NZ to enact a piece of legislation is extremely rare.

The main purpose of ‘RMAA-EHS’ is to streamline and simplify the resource consent process for housing and urban development projects, to facilitate the construction of more homes and address the shortage of affordable housing. Two of the key changes introduced by the Act include:

1. The introduction of a new streamlined planning process for qualifying development projects, which will allow for faster and more efficient decision-making on resource consent applications. ‘RMAA-EHS’ directs the timing for territorial authorities to implement the intensification policies (policy 3 and 4, or policy 5) of the National Policy Statement on Urban Development
2. The ability for the government to issue national direction to local councils on planning and development matters, including directions on the provision of affordable housing and protection of natural and cultural heritage.

‘RMAA-EHS’ implements central governments direction to local councils on the provision of affordable housing, by prescribing a set of urban density standards, which create a minimum intensification benchmark that all Tier 1 territorial authorities must meet (‘MDRS’).

‘RMAA-EHS’ requires that ‘MDRS’ has immediate legal effect once the plan has been notified which must be done by 22 Aug 2022. Territorial authorities must allow developments that are within the design limits defined by ‘MDRS’, without the need for resource consent.

‘RMAA-EHS’ allows territorial authorities to allow developments that are more enabling of intensification than ‘MDRS’ (ref ‘RMAA-EHS’ s 77H). This section applies to ‘CCC’s High Density Zones, where they have applied ‘CRHDS’, which purports to be more enabling.

'RMAA-EHS' s77H states that any density standards may be removed or relaxed, but cannot be more restrictive than 'MDRS':

There is also a mechanism within 'RMAA-EHS', called 'qualifying matters', which allows less intensification than 'MDRS' allows, on a limited basis, which must be justified by adequate and relevant site-specific evidence (*ref 'RMAA-EHS' ss 77I, 77J, & 77L, relating to new qualifying matters providing less enablement than 'MDRS'*).

While 'qualifying matters' allow territorial authorities some discretion to apply less enabling standards than the MDRS on a site-specific basis, they must still ensure that their plans provide for a sufficient amount of medium-density housing development across their city to meet the minimum standards set by the Act and the 'MDRS'.

It would be a stretch to propose that qualifying matters were ever intended to be used by territorial authorities in a broad-brush manner to avoid 'MDRS' as enacted from ever applying to any residential site, as 'CCC' has applied them.

'RMAA-EHS' produced a major change in direction by telling local authorities what (baseline) density standards would apply by default. The lawmakers must not have intended that any territorial authority could use the limited discretion allowed by qualifying matters to apply less enabling standards than the 'MDRS' in a way that would **completely prevent the 'MDRS' level of intensification from ever being achieved on every residential site in their city.**

It is worth re-stating that CCC themselves agree 'RMAA-EHS' never envisaged that.

This opinion is backed up by the key government messaging when the Bill was first introduced):

1. "Red tape cut to boost housing supply";
2. "Bringing forward by at least one year the implementation of 'NPS-UD' that will enable more medium density housing";
3. "New Zealand's housing shortage is being made worse in our biggest cities by limits on the number and types of houses that can be built. These changes will enable more homes that are attractive to first home buyers to be built in areas closer to their work, public transport and community facilities.";
4. "The medium density residential standards (MDRS) will enable landowners to build up to three homes of up to three storeys on most sites up to 50% maximum coverage of the site without the need for a resource consent.";
5. "There will be exemptions in the medium density rules in areas where intensification is inappropriate, such as where there is a high risk of natural hazards, or a site has heritage value.";
6. "Working with National, on these changes delivers stable, enduring policy on urban density. This gives homeowners, councils, developers and investors certainty about enduring planning rules";
7. "Tier 1 councils will be required to adopt Medium Density Residential Standards (MDRS) Increasing the density of urban areas will give people more choices about where they can live affordably in a wider variety of housing types that have good access to jobs, transport, and community facilities.";

8. Exemptions to the MDRS will ensure intensification is in the right places Councils will be able to make zoning less permissive than the MDRS in areas where there are certain features. These features are referred to as qualifying matters and are currently listed in the NPS-UD. They include nationally significant infrastructure, natural hazards, open space provided for public use, heritage, and consistency with iwi participation legislation. Qualifying matters do not necessarily prohibit development. They allow councils to reduce the amount of development allowed so the feature is managed appropriately

(source: <https://www.beehive.govt.nz/release/red-tape-cut-boost-housing-supply>)

And the Housing Minister provides insight into the reason for taking some of the control away from existing property owners:

“However, a range of evidence – including the cost benefit analyses for the NPS-UD and Medium Density Residential Standards that were prepared for government – has shown that restrictions on development in highly desirable areas benefit the current owners of property at the expense of new home buyers and renters,”

(source: <https://www.stuff.co.nz/business/128832656/housing-minister-urges-auckland-council-to-cut-number-of-character-areas>)

Timeline of ‘CCC’s (relevant) actions

2021 Submission to central government on the proposed Bill:

During the development of the Bill (which led to ‘RMAA-EHS’), ‘CCC’ wrote a submission on the proposed intensification density standards. ‘CCC’ specifically put a case for lower height from boundary limits due to their different sunlight angles given their geographical location.

(Source: Paragraph 23 & 24 of Part 2 Technical Matters of Christchurch City Council submission dated 16th November 2021 to the RM Amendment Bill 2021, <https://ccc.govt.nz/assets/Documents/The-Council/Request-information/2021/Christchurch-City-Council-submission-on-the-Resource-Management-Enabling-Housing-Supply-and-Other-Matters-Amendment-Bill.pdf>).

Following the select committees’ consideration of feedback and submissions, the final version of the Bill read into parliament had the height at the boundary reduced from the originally proposed 6m, to 4m.

It appears ‘CCC’s submission relating to different sunlight angles and the affect on recession planes were taken into consideration and changes were made to the proposed Bill (leading to ‘RMAA-EHS’).

Dec 2021- 7th September 2022 (up until ‘CCC’s ‘No’ vote):

‘CCC’ created a plan change, including PC14 which incorporates ‘MDRS’ (as defined by ‘RMAA-EHS’).

‘CCC’ publicly release the plan along with some advice, inviting public feedback.

The advice provided by 'CCC' to its constituents around 'The Act and 'MDRS' included (*this advice also appears on the 'CCC' submission page at the time of this submission*):

"We need to accept : Intensification provisions (incl. MDRS); timelines for notification; technical information and evidence thresholds; the Intensification Streamlined Planning Process."

'We can influence: The extend of some changes (e.g. building heights above new baselines, or the perimeter of the area) taking the technical evidence into account"

"Medium Density Residential Zone – the base-line for increasing housing. This zone is legally required by the Enabling Housing Act and must be applied to most residential areas of Ōtautahi-Christchurch. This Act introduced Medium Density Residential Standards (MDRS) that will allow development of up to three homes of up to 12 metres on a single property, without resource consent."

(source: May 2022 'CCC' webinar)

The timing of this plan change coincided with the build up to the 'CCC' local body elections. There was strong opposition from resident associations to the proposed changes of 'RMAA-EHS'. Following on *from* COVID, there was a strong anti-government mandate sentiment, within some factions of the community. Many local body candidates took issue with being told what to do by central government and platformed on the basis they would not cave to central governments demands for a one size fits all approach to intensification. This popular rhetoric won votes.

8th Sep 2022, 'CCC' vote 'no' to incorporating the Plan.

The plan change was put to a Councillor vote at a public meeting on the 8th September 2022. Many residents were present, with some vocal residents displaying placards with slogans alleging "daylight robbery".

(source: <https://www.rnz.co.nz/news/national/474708/christchurch-city-council-votes-against-introducing-government-housing-plan>)

In voting against implementing the legislation 'CCC' broke the law. This meant 'MDRS' did not have immediate legal effect as 'CCC's plan change (in accordance with 'RMAA-EHS' s86AB) would have provided.

9th Sep 2022 – 1st Mar 2023 – A new plan created.

Following the 'no' vote, 'CCC' went back and worked on revising their city plan.

As part of that revision, on or around the 2nd of December 2022, at the urging of councillors and to respond to petitioning by residents associations, council staff started working on a possible answer to the daylight robbery problem.

12th December 2022, 'CCC' received confirmation from their legal advisors (Buddle Findlay) that applying a 'sunlight qualifying matter' across the whole city was able to be done. Interestingly, this opinion was formed well before any evidence of the effect of the 'sunlight qualifying matter' was gathered or considered.

It appears the independent legal advice included, that the ‘sunlight qualifying matter’:

“must still ensure that three storey development is possible, in order to align with the outcomes of Schedule 3A of the Act (MDRS)”

(source: ‘CCC’ email to ‘RBK Residents Assoc’ on the 21st Dec 2022)

‘CCC’s position after receiving the legal advice their understanding of the risks, was:

1. Sunlight hours differ for Christchurch; and
2. Potential to be seen as a unique feature of the city; and
3. QM could be developed to apply to **all residential sites**; and
4. Would reduce recession plane angle; and
5. Would represent a significant shift in delivery of intensification; and
6. Would still achieve three story development – meets ‘MDRS’
7. High risk of legal challenge; and
8. Prevent ‘MDRS’ from taking immediate legal effect;

Potential additional QM – Sunlight access

<ul style="list-style-type: none"> • Christchurch is at a different latitude to North Island – sunlight hours differ • Potential for this to be seen as a unique feature of the city • QM could be developed to apply to all residential sites • Would reduce recession plane angle, potentially: <ul style="list-style-type: none"> • 4m >>> 3m • 60° >>> 50° 	<ul style="list-style-type: none"> • Would represent a significant shift in delivery of intensification • Would still achieve three storey development – meets MDRS • Would have proxy effect of preventing immediate legal effect upon notification • High risk of legal challenge
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(source: internal ‘CCC’ email dated 12 Dec 2022)

It appears the legal advice opined that as long as three dwellings of three stories ‘was possible’ (not sure if this is for most sites, or all sites), then the intent of the legislation which enacts ‘MDRS’ would be met. ‘CCC’ formed the opinion that three stories on three sites would be achievable, before the evidence had been gathered or analysed. This pre-formed conclusion shows bias.

13 Dec 2022 – Council briefing on PC14 Alternative Proposal

13 Dec 2022 – 31 April 2023, ‘CCC’ worked at compiling evidence to show how their new approach was justified.

26th Jan 2023 – advice to CCC staff on how to communicate the effects of the major shift in approach to the public. ‘CCC’s changes were so significant and introduced

enough risk, that they needed guidance from their ‘senior legal counsel – litigation’ on how to frame the change in direction for the wider audience:

From: Pizzey, Brent <Brent.Pizzey@ccc.govt.nz>

Sent: Thursday, 26 January 2023 1:01 pm

To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>

Cc: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>; Blair, Hermione <Hermione.Blair@ccc.govt.nz>

Subject: RE: Legal query - Weighting of MDRS

Hi Ike

[REDACTED]

Regards

Brent

Brent Pizzey
Senior Legal Counsel - Litigation
Legal Services

1st March 2023 - public meeting, ‘CCC’ describe their “creative solution” and offer that it “was not envisaged” by ‘RMAA-EHS’.

‘CCC’s ‘creative solution’ is a ‘sunlight qualifying matter’ which they have applied to all medium density zoned and high density zoned residential sites in Christchurch.

1st March 2023 – ‘CCC’ vote to notify the revised plan.

17th March 2023 – ‘CCC’ Notify the revised plan.

The revised plan includes the ‘Sunlight Qualifying Matter’ which applies to all Medium Density and High Density Zones in Christchurch.

An evaluation report is publicly released to justify the ‘Sunlight Qualifying Matter’.

(Source: <https://www.ccc.govt.nz/assets/Documents/The-Council/Plans-Strategies-Policies-Bylaws/Plans/district-plan/Proposed-changes/2023/PC14/Section-32-Appendices-1/PC14-s77-Evaluation-of-Sunlight-Access-Qualifying-Matter.pdf>)

19 April 2023 – ‘CCC’ respond to an information request to release all the information it has relating to its creation of the ‘sunlight qualifying matter’.

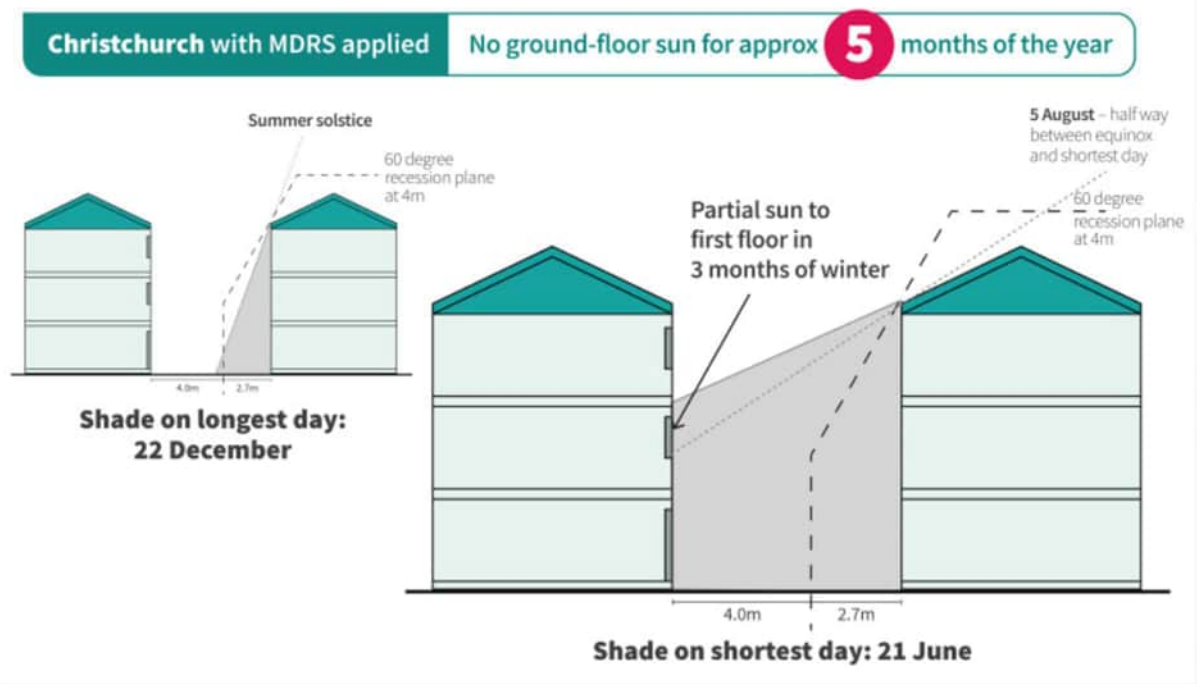
(refer Appendix A to this submission for the communications portion of the information release)

8th May 2023 – ‘CCC’ submissions website advice:

Sunlight access

We’re proposing a city-wide Qualifying Matter across all areas where the MDRS would otherwise apply. This Qualifying Matter relates to recession planes – the vertical angle typically applied at the boundary of a site to ensure buildings provide for sunlight access on neighbouring properties.

Recession plane angles are typically designed to take into account the sun approach angle relative to the local environment (such as a site’s latitude or topography). However, the MDRS applies a recession plane at the same angle across all Tier 1 councils (Auckland to Selwyn), regardless of latitude or a site’s orientation to the sun.



‘CCC’s advice is misleading as it proposes an example that is extreme and worst case. It presents a picture than any resident will likely feel more aggrieved by compared to a more central presentation of the likely effects.

It is not true to say that “No ground-floor sun for approx 5 months of the year” is typical. ‘CCC’ has produced no objective evidence to show that. The use of larger and red highlighted text for the ‘5’ shows bias in the presentation.

This representation is likely to result in an emotional response from some affected residents. This would include a fear of missing out (FOMO), compared to Auckland, and fear of losing direct sunlight. There is no balance in this representation.

Define the problem:

“Daylight Robbery”? or,

(source: aggrieved ratepayers view)

“Inequity caused by latitude”? or,

(source: ‘CCC’s report writers view)

“Negative effect on existing property values”?

(source: authors view of a possible reason for the strong pushback from some residents)

After considering the information ‘CCC’ have provided, one glaring observation I have is:

‘CCC’ has failed to establish a succinct and objective ‘problem definition’. Rather, they have listened to one extreme end of ratepayer views, and proceeded on the basis it is fact.

Forging ahead without a succinct and impartial ‘problem definition’ has had many flow-on effects, none the least, it is very difficult for anyone including ‘CCC’ to show how their solution fixes the problem.

If an aggrieved group of residents can still claim “daylight robbery” at public meetings, any fix is not suitable. Without any clear definition and quantification, ‘CCC’ have floundered to find evidence, needing to rest on gross assumptions and bias towards worst case scenarios lacking evidential basis.

Instead of listening to the rhetoric from the extreme end of ratepayers who would directly benefit from the outcome they were pushing, ‘CCC’ had an obligation and a duty to its community to take an objective and impartial approach to the issue.

Central lawmakers commissioned independent experts to provide evidence on the costs and benefits of the proposed ‘MDRS’ (‘CBS-MDRS’). The evidence includes clear and concise objectives. The ‘CBA-MDRS’ includes evidence on the effects ‘MDRS’ would have on communities, both positive and negative. It includes an analysis of the cost of shading, (though the analysis was completed before the recession planes were relaxed), considering each Tier 1 authority. It has references to research that can be seen and critiqued and peer reviewed. I proposed that any challenge to the law-making, should be equally central and impartial.

Rather than refer to, add to or critique the existing evidence, ‘CCC’ decided to gather their own.

The least subjective problem definition I can find in ‘CCC’ reporting is the following hypothesis:

“Due to the difference in latitude between the Upper North Island and Christchurch, recession planes in the Medium Density Residential Standards (MDRS) would have a more significant impact on solar access in Christchurch than in other tier 1 cities.”

Where ‘solar access’ is defined (by comparison to Auckland):

“as measured by the length of time a ground floor window would receive direct sunlight onto its surface”

One of the problems with this definition is, that it in no way links back to any consideration of the wellbeing on the whole community due to any impacts of sun angle, nor the full impact of the ‘sunlight qualifying matter’. It presumes “significant impact” without evidence. It is so focused on ‘inequity’ and ‘sun angle’ to define the problem, that it fails to consider other ways to increase ‘sun

access' that could be simpler and more cost effective. Furthermore, the claim of 'inequity' fails to consider the whole community and all of the factors, to determine if 'inequity' really does exist (in the context of the objectives of the law that is central to the new mandate of density standards).

Review of “Technical Report – Residential Recession Planes in Christchurch”

(source: <https://ccc.govt.nz/assets/Documents/The-Council/Plans-Strategies-Policies-Bylaws/Plans/district-plan/Proposed-changes/2023/PC14/Section-32-Appendices-1/PC14-QM-Sunlight-Access-Urban-Design-Rpt.pdf>)

What the report does

1. States the problem definition as:
 - a. “Due to the difference in latitude between the Upper North Island and Christchurch, recession planes in the Medium Density Residential Standards (MDRS) would have a more significant impact on solar access in Christchurch than in other tier 1 cities.”
 - b. “Steeper MDRS recession plane angles mean that housing built in medium density areas may be shaded for longer periods of the day in winter.”

2. Other information that sheds light on the problem definition:
 - a. The report was authored by a ‘CCC’ staff member who understood the issue to be solved as:

“the iniquity(*sic*) caused by latitude”

(source: ‘CCC’ staff member internal email dated 11 Jan 2023)
 - b. Difference of opinion between staff members on how to define and quantify ‘sunlight access’ and reflection from a supervisor to NIWA that assumptions made are “unambitious”.

“he wanted to see the impact on the receiving wall and used a benchmark that there should be 2 hours of sun over half the wall – which seems a bit unambitious. It was based on the level of sun allowed by the MDRS so is not a level of access I would see as being adequate.”

(source: ‘CCC’ staff member email to NIWA dated 14th Jan 2023)

3. Defines ‘Solar Access’ as:
 - a. “as measured by the length of time a ground floor window would receive direct sunlight onto its surface”

4. States the following objectives:
 - a. Introduction/Overview - “informs recommendations for a recession plane that could be applied in Christchurch as an alternative to the 4m and 60 degree recession plane used in the MDRS.”
 - b. Section 2 - “compares the level of solar access in Christchurch with that in Auckland for various site orientations at different times of the year”
 - c. Section 3 – to choose an alternative recession plane configuration than ‘MDRS’ “For Christchurch to receive a similar level of solar access to cities in the upper North Island”
 - d. Section 3 – “considers the impact of alternative recession planes on site capacity”

5. Method:
 - a. Section 2- “The analysis was designed to simulate the level of solar access provided to a **typical medium density house, that may be built in inner Christchurch now, or in future under MDRS, if a 3 storey MDRS compliant development** was to be

constructed next to it. What is being measured is the impact of the above model on its neighbour.” (bold for emphasis).

- b. Section 2- The model uses a dwelling with garage at ground level and living at second level as the ‘shade provider’, pushed as close to the southern boundary as ‘MDRS’ would allow, providing vehicle manoeuvring access to garaging. This is described as “
- c. Section 2 – The model uses a dwelling with living at ground floor as the ‘shade receiver’, positioned as close to the northern boundary as ‘MDRS’ will allow.
- d. Section 2 – ‘Sunlight Access’ is measured for the centre unit in the development, considered by the authors to be the ‘most shaded’ condition.



Figure 8: 3 storey MDRS development casting shadow on adjacent two storey model

6. Forms the following conclusions:
 - a. Introduction/Overview - “Our modelling has determined that for some sites there will be no solar access at certain times of the year.”
 - b. Section 2 – (by comparison to Auckland) “finds that there is a significantly lower amount of solar access in Christchurch (as measured by the length of time a ground floor window would receive direct sunlight onto its surface).”
 - c. Section 3 – The chosen reduced recession plane option is the 3m above the boundary, with 50-60 degree slope depending on cardinal points. This is based on the conclusion it will result in a capacity of 95% of an ‘MDRS’ enabled solution.
7. Appendix A - NIWA data relating to sunlight energy for different configurations does not appear to be considered in the report, or referenced from it.

Authors observations on the reporting (and associated background information):

1. Problem Definition:
 - a. The problem is not succinctly defined in this report.
 - b. There appears to be no agreed well defined ‘problem definition’.

- c. There are different understandings on what the ‘problem definition’ is and how to quantify it (supervisor, report author, NIWA scientist).
 - d. There is an assumption that the inequity between Auckland and Christchurch caused by different angles of the sun, sufficiently defines the problem. There is no reference back to any other baseline to show how that is the case.
 - e. There is no link from the problem stated to wellbeing of the community. It could exist elsewhere.
 - f. Without a succinct definition, it is difficult to understand how the report objectively determines the effects on wellbeing of the community due to ‘MDRS’.
 - g. Without a succinct definition, it is difficult to understand how the report objectively determines how the reduction in recession planes (by application of the ‘sunlight qualifying matter’) will affect the wellbeing of the community, with respect to loss of intensification.
 - h. Given the circumstances, it is impossible to simply accept the 95% capacity claim of ‘CCC’, since it can’t be adequately checked given the ‘subjective’ nature of the report.
2. Defines ‘Solar Access’:
- a. ‘Solar access’ is defined for the purposes of this reporting:
“as measured by the length of time a ground floor window would receive direct sunlight onto its surface”
 - b. There is evidence which provides a baseline of what an acceptable level of ‘solar access’ is. The only comparison used as a baseline is equivalent sunlight access in Auckland. It is difficult to determine the relevance of this to ‘wellbeing’ of the community.
 - c. There is no established link between ‘solar access’ (as defined) and the objectives and purpose of ‘RMAA-EHS’ (other than a proposed causal link on capacity, by making changes to density standards in an attempt to match ‘sunlight access’ to Auckland).
3. Some of the stated objectives are subjective:
- a. They propose to provide recommendations for a recession plane that **could be** applied to Christchurch, without any objective measurement against the objectives and policies of ‘RMAA-EHS’ or ‘NPS-UD’.
 - b. They propose a subjective comparison using Auckland as a baseline.
 - c. They propose to choose an alternative recession plane configuration than ‘MDRS’ to meet the subjective goal of: “For Christchurch to receive a similar level of solar access to cities in the upper North Island”
4. The method & data gathering is not central and unbiased. It introduces bias which tends to overstate the problem and understate the effects on density capacity of the proposed solution:
- a. The selection of development examples is crucial in getting sensible objective results from any reporting.
 - b. The report selects current dwelling configuration for the ‘shade receiver’ that is not justified by any assessment of its prevalence. The choice is stated as “**typical medium density house, that may be built in inner Christchurch now, or in future under MDRS**”;

- c. However, the report then selects what, could on that basis be described as **'non-typical'** for the 'shade giver'. They are significantly different dwelling designs, positioned very differently on the site.
 - d. This development selection for the model has biased the results in a way to show the worst case scenario, without quantifying the likelihood of it. The report has presented it as 'typical'. 'CCC' could have sought input from 'affordable housing providers'.
 - e. 'CCC' have not considered the effect of high-pitched roofs in their shading model. It appears they have avoided them since they observed they had "unintended consequences" on their modelling of the benefits of their solution (*source CCC internal email*).
 - f. There are a number of development configurations that have not been considered, which will materially alter the shading results, mostly reducing shading.
 - g. Most existing sites throughout the city that will be the subject of intensification, have only one dwelling on them currently. A large proportion of them are single level, with large (much greater than the 4m shown in the model) setbacks from boundaries. It is predicted that only a small proportion of them will be developed in the coming years. This means a large proportion of them will become the 'shade receiver'. This was in fact after all part of the argument formed by residents associations when pushing back against intensification. To not include these in the calculation highlights the high level of subjectiveness involved in the modelling.
 - h. The author has asserted that similar designed developments will be built in the future, under the new density standards. There is no evidence for this assumption. It does not seem to be a rational assertion. It presumes the industry will stay the same and not evolve to best utilise the new density standards when considering 'affordability' and 'sunlight access'. The reality is, there will a spectrum of response to the new density standards, and an amount of evolution in design and implementation. There is evidence in Auckland around what this might look like, following the changes that occurred following the introduction of the Unitary Plan.
 - i. Bias is introduced by only assessing 'Sunlight Access' for the centre unit in the development. This is not an objective choice.
 - d. There appears to be no link to or use of the NIWA data at the end of the report which shows little to no appreciable change in the sunlight energy levels between 'MDRS' in Christchurch and 'CRMDS' in Christchurch.
 - e. The model heights used for shading are higher than the model heights used for capacity estimates.
 - f. The selection of model and analysis of results does not consider designers ability to design for better solar gain (if this is a priority). This includes the use of solar panels, solar tubes, skylights, sun-light access through stairwells, change in position and shape of windows, change in position and orientation of buildings within the site (not necessarily orthogonal), conglomeration of outdoor spaces to maximise the sites own 'solar access' available from within any 'MDRS' recession planes.
5. The reports conclusions:
- a. The conclusion,

"Our modelling has determined that for some sites there will be no solar access at certain times of the year.",

is not factually true and is biased.

To be factually true it would say (additions in bold):

“Our modelling has determined that for **some units on** some sites there will be no ‘solar access’ at certain times of the year.”

(source: authors comment)

An impartial and objective conclusion would also add clarity to the comparison by including limitations in the reporting:

“The same could be said of the Auckland scenario comparison using ‘MDRS’ and the same model, however the amount of shading will be higher in Christchurch as we would expect from lower sun angles. We should make clear sun angle on its own does not enable a full assessment of useable sun energy reaching a site or dwelling as there are a multitude of other factors involved. There has been no attempt to determine what is the optimal level of ‘sunlight angle’ with respect to wellbeing as every user will be different and users do change their behaviours to suit their personal needs”

(source: authors comment)

- b. Do not reflect that the community will form its own value of ‘sunlight access’ and units that do suffer more shading effects will tend to be more affordable, and lived in by those who choose affordability over direct sunlight all of the time.
- c. Do not reflect that areas of high shade can be lived in without loss of wellbeing (Queenstown and Dunedin both shaded by the mountains in winter come to mind).
- d. Do not reflect that residents will adapt to better use the sunlight access they receive.
- e. Suffer from inherent bias in the data collection and method of analysis.
- f. Does not provide sufficient evidence meeting S77 evaluation reporting requirements.
- g. Do not reflect on other ways to increase balance the negative effects of shading and the cost and likelihood of achieving them.
- h. Suffer from trying to solve a problem that has not been adequately defined.
- i. Suffers from a lack of tie back to the purpose and objectives of ‘RMAA-EHS’ and ‘NPS-UD’ which looks to more affordable housing and consideration of the wider community.

And following reflection on the previous observations and points that follow below, it could also objectively state:

“The modelling likely overestimates or overstates the amount of shading in practice since the ‘giver’ and ‘receiver’ of shading have been chosen to show the more extreme level of shading, and there has been no consideration given to the variation in design choices (urban and building) that currently exist and that may evolve out of the new density standards which would tend to reduce any shading effect.”; and,

“Finally, this analysis does not consider any benefits on wellbeing the lower sunlight angle will provide, for example higher energy absorption onto vertical

surfaces as advised by NIWA and more affordable housing that will result from more intensification as explained in the ‘MDRS CBA’”

(source: authors comments)

6. What is the effect of the introduced bias by using worst case scenario in the modelling and what could be done to remove that effect (if any)?
 - a. It is difficult to say how much the selection and analysis has affected the result, however we can confidently state that due to the methods used, the estimate of shading is probably worst case, and an median level of shading (with 25th and 75th percentiles) would provide a more considered and impartial result.
 - b. Other ways to provide a more objective assessment would be:
 - i. Performing a simple calculation based on the other scenarios of layouts possible, compared to the examples given, would provide an idea of how much overstated the example is:
 - ii. Reversing the example given so the ‘shadow provider’ is the two storied development and the ‘shadow receiver’ is the three story one with garage on the bottom. The results of this would indicate a far more impartial view on its own.
 - iii. Including a proportion of the sites without garaging as the ‘shadow provider’.
 - iv. Including a proportion of sites without vehicle access and parking.
 - v. Including a proportion of sites where the designers choose to have more than the minimum outdoor space dimension.
 - vi. Present the results on a shading per unit basis, rather than a shading per site basis to remove the bias that exists from using the worst shaded centre unit as the example.
 - vii. Including a proportion of sites where the living might be on the second floor, which is a logical choice where the owner wants to maximise available solar gain.
 - viii. Including the expected proportion of sites that may have to have the living on the ground floor. These are currently not common in Christchurch in ‘MDRS’ type density zones.
 - c. To illustrate this bias effect, we can simply reverse the model they have used, to demonstrate ‘solar access’ if the three storied site in the example is the ‘shade receiver’ and the two storied is the ‘shade provider’. It is clear in this instance there is no ‘shading’ at all to the lower floor of the shadow receiver due to the garaging at the bottom level. There would also be no shading to any dwelling placed on that site, using the 4m setback. It would only reach roughly half way into the outdoor area



(source: owners diagram illustrating that an objective view of CCCs example 'typical' layout should also consider the two storied dwelling as the 'shade provider', giving the three bedroom site far more 'access to sunlight' that any proficient designer could make use of if that was one of the goals)

- d. If we further recognise that only around 10,950 sites (32,860 dwellings with estimated average 3 dwellings per site) are expected to be added to 'MDRS' zoned properties in Christchurch in the next 20 years, there will be many sites that the effect that CCC is showing for their 'typical site' will never happen.

Only a small proportion of existing sites will be affected and in a lessor way than CCC has portrayed.

Review of the evaluation report (relating only to 'sunlight qualifying matter').

1. The report is an internal CCC report, generated by staff who were tasked with solving a problem ("**Daylight Robbery**" due to lower sunlight angles causing a loss of wellbeing for some in the community, when compared with equivalent site layouts in Auckland).
2. There has been a basic assumption of "**iniquity caused by latitude**" (*sic*), driving the development of evaluation report, which does not consider the benefits to the wider community of intensification.

Sent: Wednesday, 11 January 2023 6:30 pm

To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Schroder, Josie <Josie.Schroder@ccc.govt.nz>

Subject: Revised Diagrams

Hi

Here are the revised diagrams with some changes related to comments. At the moment these could be used for the 24 planes. I have sent it as an svg because it is an easy way to handle the file. You can also get Inkscape from the software

The takeaway is meant to be that quite significant reductions can be made without much impact on capacity. We like 3r for 2 storeys than 4 and 45 (which does not match Auckland). It has 96% of the capacity for a typical development.

I am not trying to compare development envelopes because they don't give a good indication of likely development are all about 30% site coverage which sounds low but is typical – it would be about 45% if the parking were removed.

Josie these are only for shading. We are basing our argument around sun access so we can't say too much about how it :

I should probably add an RMD one – that would show the recession planes having more bite and pushing the buildings d my opinion because it is way more **than fixing up the iniquity caused by latitude** – but willing to listen to arguments abo

Cheers!

David

David Hattam
Senior Urban Designer
Urban Design

(source: 'CCC' email - report authors opinion)

3. The report is not built on a foundation of a range of voices from the community, including renters and future homeowners who might prioritise affordable housing over sun shading at certain times.
4. Comparing Christchurch with Auckland for sunlight angles alone, gives worst case comparison and a biased perspective. Who is to say Auckland has the 'ideal' amount of sunlight access related to optimum wellbeing. 'CCC' has produced no evidence to show that. A better comparison might have been Wellington?, or Queenstown, or another city in the world with comparative living standards and latitude?
5. There is no evidence provided for the negative effect on wellbeing of lower sunlight angles. If this were true, one would expect to see a lower level of wellbeing in Queenstown for example, which has quite severe shading (compared to Christchurch) relating to its geographical location and mountainous terrain. However, everyone knows this is not the full story, as those same mountains and environment provide uplifting visual stimulus, and the activities around Queenstown which are suited to the location and environment allow a great deal of access to the outdoors to those who are so minded. Clearly there are always other factors that weigh in on wellbeing that should be considered in any evaluation.
6. The report overstates the negative effects of shading because...
 - a. There is no evidenced based quantification of the loss of intensification caused by the 'sunlight qualifying matter' on a site by site basis. There are assumptions by using average site sizes and guesses and by modelling worst case scenarios. 'CCC' has produced no weighting for the sites which will have no appreciable adverse effects, like those next to non-residential zones, those on corner locations and those with north facing street frontages.; and

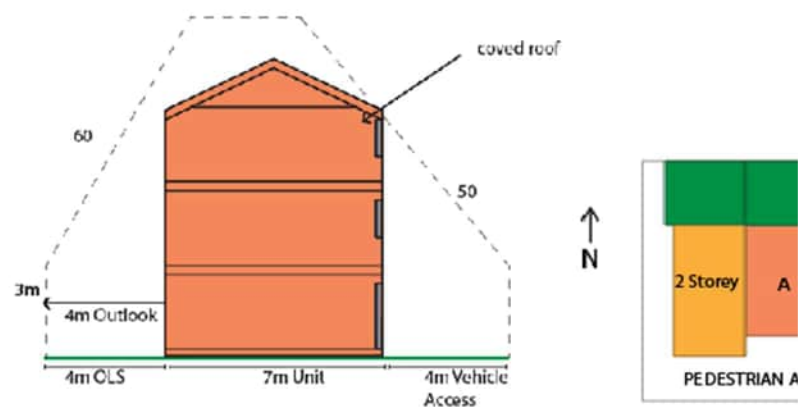
- b. The report identifies that by owner or developer choice, not all sites will be developed, and a proportion of those which are will only have two stories dwellings not three or more. However this consideration has not been reflected in the analysis of the effects of lower sun angles ('sunlight access'), which if it had, it would have lessened the impact; and,
- c. An assumption is that all sites will have maximum density applied, whereas analysis suggests Christchurch will gain an additional 11,501 (*ref 'CBA-MDRS'* -central estimate) dwellings due to 'MDRS' over the medium term. Existing sites with single dwellings, will be the more likely scenario in the medium term when considering the effects of shading. In that instance, if an owner of an existing site wants to maintain their access to sunlight, firstly they will not suffer to the same degree due to shading as portrayed in the report because the setbacks on those sites are larger, and secondly sunlight access is somewhat protected by their own positioning and orientation; and,
- d. No consideration is given that in the 'MDRS' enacted scenario, owners when developing can decide on positioning of buildings site orientation to gain more sunlight access for the buildings on their site if they desire. This may cost them in lost capacity, nonetheless that would be their choice to make; and
- e. No consideration is given that owners can use other design methods to maximise the use of the sunlight energy arriving at their site, including the use of window positioning and orientation, solar panels, solar tubes, skylights, and light shafts (in stairways for example); and
- f. There are different site orientations 'CCC' has not considered (either when they quantified the sunlight access problem or when they quantified the effect of 'MDRS' developments), which means many developments would not suffer from shading at all, or at least for the majority of the site most of the time. For example different layouts allow better use of sunlight access from within site and from site frontages.

In essence, 'MDRS' can be designed for in a far more diverse way than 'CCC' has evaluated, maximising sunlight access at different times of the day, which provides more interesting architecture as well as opportunities to remove any adverse effects of shading.

Following is a practical, real development, subject to a current Resource Consent application with 'CCC', designed to meet 'MDRS'. It is a N-S oriented site with north at the far end of the view. Sunlight access is designed for predominately at the Northern elevation, where the outdoor spaces are placed. This design does not overly rely on sunlight access/energy from the E-W-S elevations, though the units are able to gain good sunlight access from all elevations, which will never be blocked by shading due to adjacent 'MDRS' recession planes.

After 'CCC's 'sunlight qualifying matter' is applied, this developments capacity will be significantly reduced, resulting in the loss of one at least unit, at least one carpark and less capacity of the remaining units. The activity allowed under 'MDRS' on this site, is not allowed. The direct result, if it is even financially viable (not yet determined), will be less affordable housing and less rental accommodation for Christchurch. There is no reason why this result would not be typical. This is a vastly different outcome from the 96% capacity estimation 'CCC' has provided.:

- g. There has been no consideration that residents will gain access to sunlight by modifying habits and using spaces differently. An example of this by more use of reserves and outdoor recreation facilities; and
 - h. There has been no consideration of more social connectedness through shared use of reserves and common areas with good sunlight access which results from good urban design.
 - i. Shading on its own does not necessarily equate to a reduction in wellbeing, it must be considered in conjunction with all the negative effects of less intensification.; and
 - j. The evaluation report does not consider the increased shading effect of increased tree cover that 'CCC' is implementing in its plan change; and
 - k. 'CCC' has compared shading in the best case city (Auckland) against Christchurch without any assessment of the level of shading that is ideal or preferable for wellbeing. For example, if we considered Auckland with the middle east (without applying a benchmark), then the same argument could be put that Auckland requires lower recession plans for better sunlight access.
7. The report explains how 'CCC' has decided on the best option was chosen to be applied as 'sunlight qualifying matter'.
8. There is some unnecessary bias in the models 'CCC' have used to evaluate site placement and resulting density (capacity) effects. Firstly, 'CCC' has presented a house with a coved roof (which still breaks the recession plane boundary). Secondly, they have included vehicle access which is not required under 'MDRS'. These two effects mask the full effect the 'sunlight qualifying matter' has on the available building envelope, or, intensification capacity.



Above: Development envelope showing a 3 storey unit and possible site layout

Evaluation of options for provisions

The following provides an evaluation of the practical options to address the qu

(source: 'CCC' evaluation report page 23 showing their chosen option for 'CRMDS')

On the 'CCC' diagram above, it shows a 7m wide unit is achievable on the subject site. This is not correct for a normally constructed building (without roof coving), since the 50 degree southern boundary recession plane shown would meet the 8.3m allowable

building height (used by 'CCC') 4.447m in from the boundary, (not the 4m CCC have shown).

Calculation should be:

Building Height = 8.3m

Height at boundary = 3m

Recession plane angle = 50 degrees

Building setback off southern boundary = $(8.3-3)/(\tan(50)) = 5.3/1.19175 = 4.447\text{m}$

The corrected calculation of setback shows a maximum of 6.553m building depth will be achievable for their given scenario if normal construction is used (rather than using covered roofing). The resulting dwelling is locked in one position on the site to achieve three stories.

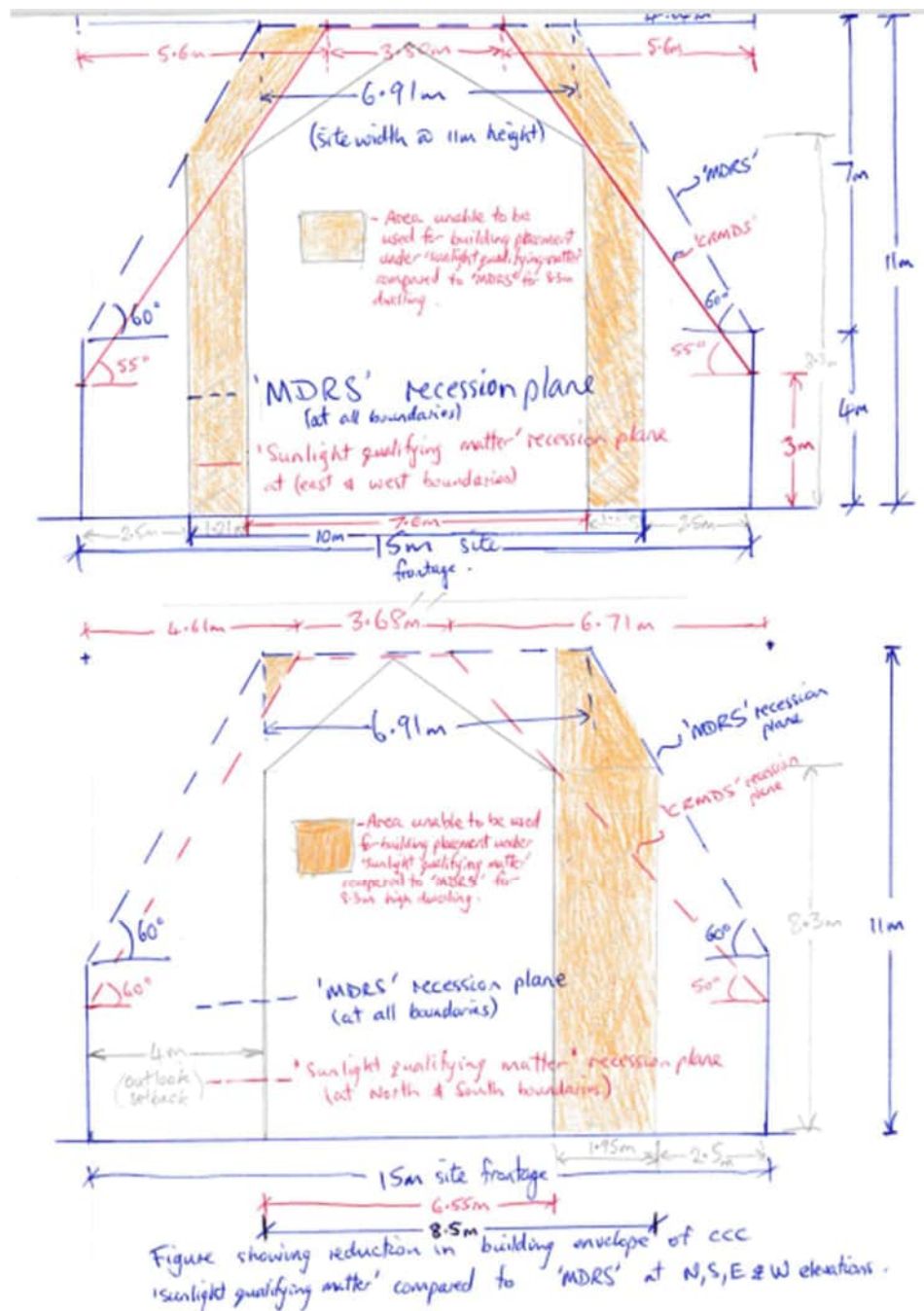
'CCC's approach here calls into question the objectivity of 'CCC's modelling and density estimates. It also calls into question any peer review or validation checking that has been completed. What was the benchmark checked against? To me it highlights the inherent bias that exists in the 'CCC' staff to solve a particular problem ("Daylight robbery") at the expense of impartial, rational and careful analysis benchmarked back to the legal duty that they have to consider all of the community now and in the future.

9. The following diagram illustrates the limitations of 'CCC's approach, by reproducing 'CCC's same example, without roof coving, and without vehicle access.

Below are some observations which stem from this more balanced presentation. This is not intended to be an exhaustive list, nor does it cover the great range of site layouts that designers can choose to use, it only reflects on the layout 'CCC' chose to use in its evidence. Using the 'sunlight qualifying matter' (compared to using 'MDRS'):

- a. The available building placement envelope is reduced significantly by the introduction of the 'sunlight qualifying matter' (shown by the orange shaded areas); and
- b. The available width to use for building placement at ground level is reduced from 8.5-10m to between 6.55m-7.6m (dependent on site orientation); and
- c. The available width to use for building placement at 11m height is reduced from 6.91m to between 3.68m and 3.8m (depending on site orientation); and
- d. Designers choice on height of buildings, in most instances will be limited to the 8.3m or less (much less than the 11m allowed by 'MDRS'); and
- e. Designers will be motivated to use riskier and more expensive design techniques, like coved roofs, to achieve reasonable site coverage; and
- f. The placement of three storied dwellings more centrally located has a side-effect of less efficient and less effective use of perimeter areas of a site; and
- g. For sites of less than 17m width, the restrictions on buildability are far more pronounced. No site less than 13m width, will be able to have three stories, (assuming E-W site orientation, no additional costly or risky building methods, no vehicle access, a minimum 4.5m overall exterior width at top plate level, made up of a single 2.8m internal dimension living space, 1.1m for stairway, and 0.6m for external wall structure, cladding); and
- h. By restricting buildings to the centre of the site, will restrict designers ability to capture and use the available sunlight to their site.

For example, an owner who wants to build to three stories and provide their own sunlight access protection by setting back further than the minimum 4m at the North elevation, will be severely restricted in building size and placement. Instead of moving a similar sized building closer to the southern boundary as 'MDRS' would allow, they must reduce the dwelling size as a compromise further below the already restricted 6.55m 'CRMDS' dwelling depth shown. As well as limiting intensification below that allowed by 'MDRS', it would provide consistent looking and positioned dwellings in a cookie cutter style. This would not encourage modern, cohesive urban design.



(source: owners sketch indicating the effect the sunlight qualifying matter on the available building envelope provided by 'MDRS' at N, S, E and W elevations using 'CCC's inputs of 8.3m building height, and 4m outlook setback at the N elevation. 'CCC's inclusion of a covered roof and vehicle access is removed in this example since, though they are design choices that can

be made, they are not required by 'MDRS' and including them masks the real effect on the available volume designers/owners have to work with.)

10. The effect of applying the 'sunlight qualifying matter' to High Density Zones, will be far more pronounced than the diagrams above shows for Medium Density Zones. It will effectively remove the ability to build to anywhere near the height allowed in those zones unless the parcel of land is of significant width. 'CCC' has not provided evidence of the effect of this in terms of reduced density capacity and its full impact on the community.
11. The evaluation report does not include sufficient evidence relating to the reduced commercial viability resulting from the reduction in intensification.
12. 'CCC' has not consulted with any developers as it is required to.
13. 'CCC' have modelled the lower end of a three storied building height, at 8.3m when evaluating 'capacity, when 'MDRS' allows building up to 11m. Interestingly, they have used a higher height when assessing the effect of shading. This approach has overestimated the possible site density for many sites as well as understated the lost available building envelope, leading to inevitable restrictions in design choice and capacity.
14. 'CCC' by using averages and assumptions have not performed site-specific analysis of the effect of the 'sunlight qualifying matter'. One simple example of this is, there is a good argument that any site that adjoins a non-residential site should not have the 'sunlight qualifying matter' apply, as there will be zero shading of residential neighbours from activity on the site.
15. There is no reflection on a lot of the evidence ('CBA-MDRS') that was produced when 'MDRS' was enacted, which provides an extensive analysis and quantification of **the pros and cons** of implementing the new density standards.
16. The report has not provided any evidence of how all the objectives of the legislation are affected by the implementation of the 'sunlight qualifying matter', mostly notably accessibility to affordable housing.
17. The report has not provided evidence to show a net benefit of implementing the 'sunlight qualifying matter', either in financial terms or in relative terms (for example hard to quantify outcomes like wealth transfer between those who own property and those who don't, or social connectedness). Even if they did, due to the unbalanced analysis of available evidence, the answer would be nonsense.
18. The report has not reflected on alternative methods existing property owners have at their disposal to reduce the effects of lower sunlight access at their site. Including, designing for sunlight access, solar panels, building orientation and placement on the site, site density (if sunlight access is more important to them or their surrounding neighbourhood).
19. The evaluation report fails to consider that residents can modify their own access to sunlight by the way they live, which will lessen any negative impacts.
20. The report has failed to consult with developers on the likely impact of reduced height from boundaries. They make assumptions about this without consultation.

Further information which shines some light on 'CCC's processes:

21. Sunlight angle data from NIWA was used to attempt to justify 'CCC's pre-formed conclusions around the sunlight access. 'CCC' looked for data from NIWA to justify their positions which they had already formed (without any evidence as to how they were formed):

“and how much more important sunlight access is to our climatic conditions”

“the output would help us to determine the appropriate recession planes that should apply to enabling intensification”

“The aforementioned data we require would help to justify our position”

(source: ‘CCC’ email to NIWA - Jan 2023)

22. The report excludes evidence that does not support ‘CCC’s case to introduce the ‘sunlight qualifying matter’ (some reflected on by NIWA staff):

- a. Sunshine hours.
- b. Sunlight energy.
- c. Weather effects.
- d. Atmospheric opacity.
- e. Reflected solar energy.
- f. Topographical effects.
- g. Evidence that lower sunlight angles provide more sunlight energy absorption onto vertical surfaces.
- h. Breaks in building lines provide increased sunlight access which is not reflected in the choice of model or in the analysis.
- i. Oblique sunlight angles provide sunlight access to other elevations than those considered in the model data and subsequent analysis.

Hi Ike,

Yes, I have carefully read the draft reports and scope of work, and I have looked at what I might contribute.

An initial problem is that the time frame is too tight for normal NIWA processes, and that affects what sort of report I can provide. Our reports, and even proposals, are all reviewed for content and formatting and then approved by a higher echelon, and there would hardly be time for that if I had already done all the work and written the draft report. I can provide figures and information, but if you are needing NIWA’s imprimatur as some sort of authoritative declaration then I need to go through the above.

The other problem is again related to time to set up the representations needed to do some of the suggested calculations. I don’t have the means to quickly convert David’s representations of buildings into a form with which I could work, but I see that his software already does the ray-tracing. I tried to call him yesterday to learn more about how he made his calculations, to see if I could contribute to those. Specifically, for any given time of year, hour, and orientation of a surface, I can provide the average energy flux. Thus, if he tabulated the hours when surfaces were sunlit, it would be straightforward to convert sunlit hours to solar energy capture.

Within the topics that you list, my thoughts and possible contributions were:

Relative latitude and sunlight access

- a. The flat terrain, with very distant hills to the west and north, certainly means that, except in the hill suburbs and Lyttleton, the considerations apply equally to all of the highlighted areas. Hamilton, and much of Auckland, would be similar, but contrast sharply with Wellington or Dunedin.
- b. Maps of solar irradiance, including from satellite analyses, show no variation across the city. Radiation measurement sites in the area of interest are at Christchurch airport, NIWA in Kyle St, and Bromley near the coast. The accuracy of calibrations would be insufficient to say if there is a difference in mean irradiance, but there might be small differences in cloudiness by time of day, which I could quantify. Both the airport and Bromley also have records of sunshine hours, so I can look at whether there is any gradient in that across the city.

Relative climatic difference

- a. Passive solar heating is more valuable in colder climates, especially in winter. Of course, that actually means any recession plane is a problem. It was once routinely acknowledged that eaves should be designed to provide shade for high summer sun but let in the winter sun, but of course we abandoned that idea with the zero-overhang (and leaky) houses from the 1990s.
- b. When you do have direct sunlight, which is something I infer from the (hourly or 10-minute) irradiance data, it is more effective in passive heating when the sun is low and more nearly square on to vertical surfaces. We can quantify this, and the comparison with Auckland or Hamilton.

Sunlight access modelling

- a. As above, if David has recorded for each season and orientation the hours (or start and end) of when first or second storey windows or walls are sunlit, we can weight the hours by solar intensity for that surface and orientation to calculate kWh/m2 rather than sunlight hours.

(source: email response from NIWA to ‘CCC’)

23. A ‘CCC’ staff member created an excel spreadsheet with manually entered text, representing figures calculated by hand. As they pointed out to a colleague, this method of evaluation is not ideal. It does not allow any peer review or checking of the logic used. Given the time pressure ‘CCC’ staff have been under, there is a reasonable risk of errors by using this method. Any errors could have a material impact on ‘CCC’s evaluation. It is unlikely there could have been any detailed independent peer review of the calculations performed.

From: Hattam, David
Sent: Monday, 30 January 2023 6:10 PM
To: [REDACTED]
Cc: Kleynbos, Ike
Subject: Updated Spreadsheet
Attachments: MDRS Shading Hours Results.xlsx

Hi [REDACTED]

An updated spreadsheet is attached. I have checked the figures and made some changes.

The sheets are as follows:

CHCH MDRS – Tall : contains the start and finish time for solar access for Christchurch under the various orientations using MDRS model.

AUCK MDRS – Tall : contains the start and finish time for solar access for Auckland under the various orientations using MDRS model.

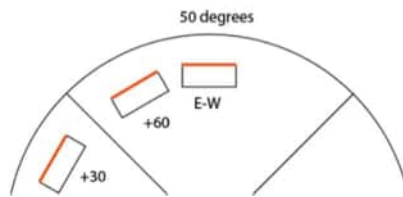
PROPOSED : contains the start and finish time for solar access for Auckland under the various orientations using MDRS model. Note some orientations have more than one table w recession plane was tested. Greyed out tables have been rejected (but there should be the same number of tests).

MDRS Comparison : Comparison of total number of hours between the scenarios. This is what I am looking at to determine sun access – ie a similar number of hours.

Note that this has been compiled by hand – I was having trouble with time formatting so some of the data is manually calculated and entered as a text string which isn't ideal.

Let me know if this makes sense – it may not!

Below is a diagram we use in the Plan to show how the boundary orientation works – it helps me to keep track of what I am looking at:



(source: CCC internal email)

24. With respect to the 'RMA' Section 32, 'CCC' have not adequately:
- a. Examined the extent to which the objectives of the proposed 'qualifying matter' are the most appropriate way of achieving the purpose; and
 - b. Examined that the proposed 'qualifying matter' are the most appropriate way to achieve the objectives; and
 - c. Provided a level of detail that corresponds to the scale and significance of the economic impacts that are anticipated from the implementation; and
 - d. Identified and assessed the benefits and costs; and
 - e. Quantified the benefits and costs; and
 - f. Provided the provisions and objectives of the 'sunlight qualifying matter' (amendment to 'MDRS'); and
 - g. Provided the objectives of 'MDRS'; and
 - h. Proposed how the restriction that 'sunlight qualifying matter' has on activity is justified in all of the circumstances where it is applied.
25. With respect to the 'sunlight qualifying matter' and 'MDRS', the evaluation report under S77J, 'CCC' have not adequately:
- a. demonstrated either, why the area proposed is subject to a qualifying matter, or why the qualifying matter is incompatible with the level of development permitted by 'MDRS'.
 - b. assessed the impact on development capacity and the costs and broader impacts.
 - c. included a description of how the provisions of the district plan allow the same or greater level of development than 'MDRS' and a description of how any modifications of 'MDRS' are limited to only those modifications necessary to address the qualifying matters.

Discussion

Overview of legal obligations

Relating to this submission, 'CCC' has two relevant statutory duties:

1. To give effect to its purpose under the 'LGA 2002'.
2. To comply with the revisions to the RMA to enable intensification, given by 'RMAA-EHS'.

This submission looks to whether on balance it can be stated that 'CCC' has failed in their statutory duty, or, broken the law by introducing its 'sunlight qualifying matter'.

The Mayor has admitted that 'CCC' has already broken the law by not notifying their new Plan when they should have:

“the Council is now technically in breach of our statutory obligations”

(ref <https://newslines.ccc.govt.nz/assets/GeneratedPDFs/Letter-from-Mayor-Lianne-Dalziel-to-Hon-David-Parker-Minister-for-the-Environment-re-Proposed-Plan-Change-14-Housing-and-Business-Choice-2022-09-20.pdf>)

Whilst at the time of writing, following government intervention (Minsters representative oversighting and reporting), 'CCC' have now notified a plan as 'RMAA-EHS' requires, they defiantly refuse to adopt 'MDRS' anywhere in the city.

'MDRS' has not come into immediate legal effect in Christchurch, which was one of the key provisions of the legislation. Every other relevant territorial authority in the country has notified their plan, incorporating 'MDRS' to most of their residential zones. 'CCC's 'sunlight qualifying matter' is delaying intensification in Christchurch to any new standards, which is not what the legislators intended.

Furthermore, 'CCC's 'sunlight qualifying matter' does not allow any residentially zoned site in Christchurch to ever utilise the new density standards ('MDRS') defined in 'RMAA-EHS' as of right.

It appears 'CCC' is continuing their recent track record of breaking the law, by developing a 'creative solution' that avoids the intent of 'RMAA-EHS'.

Whilst the legal fraternity often provide legal interpretation based on relevant case law, in this instance due to the novelty of 'RMAA-EHS', its intent is yet to be tested in the courts. However, the objectives, policies and thinking of the lawmakers given by their published information can provide important insight into 'intent' (beyond interpreting the wording itself).

Has 'CCC' met the Intent of 'RMAA-EHS' - with respect to implementing 'MDRS'?

The starting point to determine the intent of the legislation is by the plain meaning of the words contained within 'RMAA-EHS'.

But first, lets put it into context by describing how 'RMAA-EHS' has been applied.

There are two zones where CCC has applied the 'sunlight qualifying matter':

1. Medium Density Zones (under s77G of 'RMAA-EHS'):

'RMAA-EHS' s77G mandates the incorporation of 'MDRS' in all relevant residential zones.

77G Duty of specified territorial authorities to incorporate MDRS and give effect to policy 3 or 5 in residential zones

- (1) Every relevant residential zone of a specified territorial authority must have the MDRS incorporated into that zone.
- (2) Every residential zone in an urban environment of a specified territorial authority must give effect to policy 3 or policy 5, as the case requires, in that zone.
- (3) When changing its district plan for the first time to incorporate the MDRS and to give effect to policy 3 or policy 5, as the case requires, and to meet its obligations in section 80F, a specified territorial authority must use an IPI and the ISPP.
- (4) In carrying out its functions under this section, a specified territorial authority may create new residential zones or amend existing residential zones.
- (5) A specified territorial authority—
 - (a) must include the objectives and policies set out in clause 6 of Schedule 3A;
 - (b) may include objectives and policies in addition to those set out in clause 6 of Schedule 3A, to—
 - (i) provide for matters of discretion to support the MDRS; and
 - (ii) link to the incorporated density standards to reflect how the territorial authority has chosen to modify the MDRS in accordance with section 77H.
- (6) A specified territorial authority may make the requirements set out in Schedule 3A or policy 3 less enabling of development than provided for in that schedule or by policy 3, if authorised to do so under section 77I.
- (7) To avoid doubt, existing provisions in a district plan that allow the same or a greater level of development than the MDRS do not need to be amended or removed from the district plan.
- (8) The requirement in subsection (1) to incorporate the MDRS into a relevant residential zone applies irrespective of any inconsistent objective or policy in a regional policy statement.

S77G (1) is the primary subsection which mandates 'MDRS'.

It states:

"Every relevant residential zone of a specified territorial authority must have MDRS incorporated into that zone."

Applying a qualifying matter across all residential zones which prevents 'MDRS' from being incorporated, would nullify this subsection. The effect is, 'CCC' has not incorporated 'MDRS' in any residential zone in Christchurch which means in effect, s77G(1) is not satisfied (in any zone, for any site).

'CCC' states that they can apply a qualifying matter to over-ride 'MDRS' in this way, by the use of subsection (6).

The question to ask and answer is:

"Does 'CCC's application of a qualifying matter to apply to every residentially zoned site in the city, which replaces 'MDRS' with a less enabling version, 'CRMDS', meet the intent of the legislation?"

Just interpreting the wording, it would appear the intent of 'RMAA-EHS' has not been satisfied because no site in any residential zone in Christchurch will ever have 'MDRS' incorporated. 'CCC' could have applied the 'sunlight qualifying matter' to some sites under specific circumstances, but they didn't. 'CCC's has used qualifying matters in a blanket fashion, which overrides the very subsection which applies to the primary duty, to implement specific density standards. On that basis, I say this approach does not meet the intent of the legislation.

However, should this opinion be wrong, there are other matters to consider.

Qualifying Matters (under ss 77I & 77J of 'RMAA-EHS):

77I Qualifying matters in applying medium density residential standards and policy 3 to relevant residential zones

A specified territorial authority may make the MDRS and the relevant building height or density requirements under policy 3 less enabling of development in relation to an area within a relevant residential zone only to the extent necessary to accommodate 1 or more of the following qualifying matters that are present:

- (a) a matter of national importance that decision makers are required to recognise and provide for under section 6;
- (b) a matter required in order to give effect to a national policy statement (other than the NPS-UD) or the New Zealand Coastal Policy Statement 2010;
- (c) a matter required to give effect to Te Ture Whaimana o Te Awa o Waikato—the Vision and Strategy for the Waikato River;
- (d) a matter required to give effect to the Hauraki Gulf Marine Park Act 2000 or the Waitakere Ranges Heritage Area Act 2008;
- (e) a matter required for the purpose of ensuring the safe or efficient operation of nationally significant infrastructure;
- (f) open space provided for public use, but only in relation to land that is open space;
- (g) the need to give effect to a designation or heritage order, but only in relation to land that is subject to the designation or heritage order;
- (h) a matter necessary to implement, or to ensure consistency with, iwi participation legislation;
- (i) the requirement in the NPS-UD to provide sufficient business land suitable for low density uses to meet expected demand;
- (j) any other matter that makes higher density, as provided for by the MDRS or policy 3, inappropriate in an area, but only if section 77L is satisfied.

A territorial authority can make “**an area within a relevant residential zone**” less enabled than ‘MDRS’ provides, “**only to the extent necessary to accommodate any qualifying matters**” (examples listed above). The first bold text implies this section is not intended to apply to the whole zone, rather, a portion of it. The second bolded portion of text is especially relevant here, as many sites across the city can’t shade residential neighbours on some boundaries, since they have none.

The ‘sunlight qualifying matter’ therefore breaches this section since it applies to a greater extent than necessary.

‘CCC’ is relying on s77I(j) – other matters, which require an evaluation report.

Subsection 77I(j) can’t have been intended to be a way for territorial authorities to avoid any of the density standards applying, stemming from disgruntled views of existing property owners, which would come at the cost of renters and future property owners. This subsection was to account for any unknowns that might be justified. Sunlight angles and ‘CCC’s views around sunlight access was known. Pushback from existing property owners around intensification was known.

The evaluation report must meet the requirements of section 32 of the Resource Management Act 1991:

32 Requirements for preparing and publishing evaluation reports

- (1) An evaluation report required under this Act must—
 - (a) examine the extent to which the objectives of the proposal being evaluated are the most appropriate way to achieve the purpose of this Act; and
 - (b) examine whether the provisions in the proposal are the most appropriate way to achieve the objectives by—
 - (i) identifying other reasonably practicable options for achieving the objectives; and
 - (ii) assessing the efficiency and effectiveness of the provisions in achieving the objectives; and
 - (iii) summarising the reasons for deciding on the provisions; and
 - (c) contain a level of detail that corresponds to the scale and significance of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the proposal.
- (2) An assessment under subsection (1)(b)(ii) must—
 - (a) identify and assess the benefits and costs of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the provisions, including the opportunities for—
 - (i) economic growth that are anticipated to be provided or reduced; and
 - (ii) employment that are anticipated to be provided or reduced; and
 - (b) if practicable, quantify the benefits and costs referred to in paragraph (a); and
 - (c) assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions.

and the following additional requirements of 'RMAA-EHS' s77J:

77J Requirements in relation to evaluation report

- (1) This section applies if a territorial authority is amending its district plan (as provided for in section 77G).
- (2) The evaluation report from the specified territorial authority referred to in section 32 must, in addition to the matters in that section, consider the matters in subsections (3) and (4).
- (3) The evaluation report must, in relation to the proposed amendment to accommodate a qualifying matter,—
 - (a) demonstrate why the territorial authority considers—
 - (i) that the area is subject to a qualifying matter; and
 - (ii) that the qualifying matter is incompatible with the level of development permitted by the MDRS (as specified in Schedule 3A) or as provided for by policy 3 for that area; and
 - (b) assess the impact that limiting development capacity, building height, or density (as relevant) will have on the provision of development capacity; and
 - (c) assess the costs and broader impacts of imposing those limits.
- (4) The evaluation report must include, in relation to the provisions implementing the MDRS,—
 - (a) a description of how the provisions of the district plan allow the same or a greater level of development than the MDRS;
 - (b) a description of how modifications to the MDRS as applied to the relevant residential zones are limited to only those modifications necessary to accommodate qualifying matters and, in particular, how they apply to any spatial layers relating to overlays, precincts, specific controls, and development areas, including—
 - (i) any operative district plan spatial layers; and
 - (ii) any new spatial layers proposed for the district plan.
- (5) The requirements set out in subsection (3)(a) apply only in the area for which the territorial authority is proposing to make an allowance for a qualifying matter.
- (6) The evaluation report may for the purposes of subsection (4) describe any modifications to the requirements of section 32 necessary to achieve the development objectives of the MDRS.

Have 'CCC' met the evidence requirements to show the change is (on balance) justified when considering the objectives (1,2 & 4) and policies (1, 3, 6 & 7) of the 'NPS-UD'?

Has 'CCC' considered all the community?

Has 'CCC' acted in an impartial and unbiased way?

Has 'CCC' followed due process?

These questions will be further explored below.

2. Rules on density standards, applying to a High Density Zone (under ss 77G & 77H):

'RMAA-EHS', s77G and s77H combined allows a territorial authority to put in place rules which enable a greater level of development than provided for by the 'MDRS':

77H Requirements in Schedule 3A may be modified to enable greater development

- (1) In addition to giving effect to policy 3 or policy 5, a specified territorial authority may enable a greater level of development than provided for by the MDRS by—
 - (a) omitting 1 or more of the density standards set out in Part 2 of Schedule 3A:
 - (b) including rules that regulate the same effect as a density standard set out in Part 2 of Schedule 3A, but that are more lenient than provided for by the MDRS.
- (2) To avoid doubt, **more lenient** means the rule (including a requirement, condition, or permission) permits an activity that the MDRS would restrict.
- (3) A specified territorial authority is considered to have met its obligations under section 77G(1) by acting in accordance with subsection (1) of this section.
- (4) A specified territorial authority may choose not to incorporate 1 or more density standards set out in Part 2 of Schedule 3A into its district plan, but, in that case, the authority may not (in its district plan) regulate the same effect as the density standard.
- (5) To avoid doubt, if a density standard is incorporated into a specified territorial authority's district plan under subsection (1), the density standard does not have immediate legal effect under section 86B when an IPI incorporating the density standard is notified.

'CCC' have either omitted the density standard (height to boundary) defined in Part 2 Schedule 3A (and replaced with their own version), or modified it below that allowed by 'MDRS'.

Either way, by their introduction of a rule, they have chosen not to incorporate the height from boundary density standard set out in Part 2 of Schedule 3A, but instead regulate to the same effect as the density standard. This is a breach of s77H(4).

At the time of writing, it is unclear if 'CCC' believe they have created this rule under s77H(1) or not.

If 'CCC' have applied their more restrictive (than 'MDRS') recession plane rule relying on s77H(1), then they are also in breach of s77H(1)(b).

'CCC' by creating a qualifying matter that regulates to the same effect as a standard, but is more restrictive, does not appear to meet with the intent of the law contained in s77H.

To understand the practical implications of 'CCC' applying the 'sunlight qualifying matter' to High Density Zones, I outline here a real example of a site which is the subject of a live resource consent application:

1. The site is proposed High Density Zone.
2. The development has been designed to meet 'MDRS', which it does comply with.
3. When 'CCC's new recession plane rules are applied, the design does not comply due to recession plane intrusions.

The result of this practical, live example, can be summarised as:

"CCC's application of their 'sunlight qualifying matter' to a site in a High Density Zone, for an activity that 'MDRS' would permit, is now not permitted due to recession plane incursions."

(source: Owners comment - The author can provide the above referenced resource application for consideration to the Council and IHP.

The question that needs to be answered is:

"By 'CCC' applying a qualifying matter to all sites in all High Density Zones, which creates a rule that restricts a standard defined in Part 2 of Schedule 3A so that it prevents an activity 'MDRS' would allow, has it breached s77H of the RMA?"

I propose, for the real life example I have, the answer to this question is 'yes'.

It appears 'CCC's application of 'sunlight qualifying matter' to all High Density Zones, does not meet the intent of 'RMAA-EHS' since it does not comply with the wording of s77H which requires it to apply the same or more enabling standards to the whole zone, rather than less enabling standards.

This examination of the effects of the 'sunlight qualifying matter' adds weight to the view it is 'CCC's blanket application of the qualifying matter, that does not meet the intent of the legislation.

Other information available to determine intent:

Whilst the starting point to determine the intent of the legislation is by the plain meaning of the words contained within 'RMAA-EHS', we can also look to what 'RMAA-EHS' changed and the other dialogue around the time the Bill was introduced and 'RMAA-EHS' was enacted.

1. The reason for introducing minimum density standards, 'MDRS' (from the general wording and structure of 'RMAA-EHS').

The intent of wording of 'RMAA-EHS' with respect to the 'sunlight qualifying matter' can be further broken down into the intent of two crucial elements.

- 1.1. **Intent of introducing the new density standards, 'MDRS'.** 'RMAA-EHS' takes the decision of what baseline (minimum) residential density standards are applied away from relevant territorial authorities.

'MDRS' is a set of measurable standards, defined in an explicit and clear manner within 'RMAA-EHS'.

By local mandate, territorial authorities can enable a greater level of intensification, but there is only limited ability to reduce the density standards, by the use of qualifying matters.

- 1.2. **Intent of qualifying matters (the only available way to restrict 'MDRS').** The intent is for qualifying matters to be applied in a limited way, where less enablement of intensification is justified against the objectives and policies of 'RMAA-EHS' and 'NPS-UD'. Territorial authorities have a heavy burden of providing adequate evidence on a site-by-site basis, to

support their application, applying a balanced approach to assess the costs and benefits of limiting intensification. There are listed examples of what can be included as a qualifying matter, plus an ability to add others (when accompanied by sufficient evidence).

It is clear that qualifying matters were not created to allow a territorial authority to avoid (city-wide), 'MDRS' (or parts of 'MDRS).

2. We can gain an appreciation of the intent by reflecting on the various messaging and commentary around the time 'RMAA-EHS' was created and enacted.

This includes commentary/messaging from central government, commentary from outside (legal expert) observers, and messaging/commentary from territorial authorities tasked with implementing it:

2.1. Government messaging/commentary

Includes the primary reason of access to sustainable and affordable housing to benefit the whole community. This proposed a major shift of control of minimum density standards, by implementation of specific and consistent standards across the country.

Specific messaging in relation to 'MDRS' itself includes:

"The Act requires councils in the greater urban areas of Auckland, Hamilton, Tauranga, Wellington, Christchurch, and Rotorua Lakes district to apply the MDRS to most of their existing residential areas as part of their plans from August 2022."

"Tier 1 council and Rotorua Lakes district plans must include the MDRS shown in the table below (or standards that enable more intensification than these) from August 2022."

"Councils across Auckland, Hamilton, Tauranga, Wellington and Christchurch, and Rotorua Lakes district are now required to use the ISPP to incorporate the MDRS into their plans. The MDRS will have immediate legal effect by August 2022."

(source: <https://environment.govt.nz/what-government-is-doing/areas-of-work/urban-and-infrastructure/housing-intensification-enabled-by-rma-amendment-act/#:~:text=The%20MDRS%20will%20have%20immediate%20legal%20effect%20by%20August%202022.>)

- 2.2. The commentary of independent (truly independent in the sense that they are not commenting on behalf of any client) legal experts when 'RMAA-EHS' was passed:

Duncan Cotterill

Headline:

"The Resource Management (Enabling Housing Supply and Other Matters) Amendment Act 2021 (Amendment Act) requires Tier 1 Councils (being Councils within the urban environments of Auckland, Hamilton, Tauranga, Wellington, and Christchurch) to change their planning rules to ensure that

development is enabled in accordance with the Medium Density Residential Standards (MDRS).”

Further information relating to MDRS and qualifying matters:

“Where do the Medium Density Residential Standards apply?

The MDRS will apply in every ‘relevant residential zone’. This is defined broadly to include ‘all residential zones’ except:

- a large lot residential zone;
- an area predominantly urban in character that the 2018 census recorded as having a resident population of less than 5,000, unless a local authority intends the area to become part of an urban environment; and
- A settlement zone.

Unless these specific exemptions apply, the presumption is that the MDRS will apply to a residentially zoned site.

However, ‘qualifying matters’ may also apply to a site, which allows Council(s) to impose restrictions on the application of the MDRS. Qualifying matters include but are not limited to:

- enabling the safe and efficient operation of nationally significant infrastructure, including the State highway network, rail corridors and utility structures such as the national grid;
- the protection of natural and physical resources including preservation of natural character, natural features and landscapes, historic heritage, customary rights, and management of significant risks from natural hazards;
- compliance with the directives contained in the National Policy Statement for Urban Development and the New Zealand Coastal Policy Statement; and
- a catch-all provision which provides a pathway for Council(s) to restrict development in ‘inappropriate’ areas subject to a site-specific analysis. This evaluation report must identify why a departure from the MDRS can be justified when assessed against the national significance of urban development.

While the direction contained in the Amendment Act must enable development in accordance with MDRS, a landowner/developer is not required to build to the maximum density. For this reason, the development opportunity created by MDRS should be treated as development ‘potential’ only. Uptake of MDRS will be subject to a number of factors, including motivation of landowners to intensify built form on existing sites, costs associated with development, and market demand for high density living.”

(<https://duncancotterill.com/publications/enabling-housing-supply-amendment-act-%E2%80%93-what-are-the-medium-density-residential-standards>)

Buddle Findlay

What does the Bill propose?

While the NPS-UD sets a powerful policy direction for improving housing supply in New Zealand's urban areas, it would take until at least August 2024 under the current framework to unlock additional housing development capacity. Given the significance of the housing crisis across New Zealand, the Bill has been earmarked to help expedite the implementation of the NPS-UD.

To assist, the following key changes are proposed:

- **The introduction of Medium Density Residential Standards (MDRS) via a new streamlined planning process.** The MDRS will enable three dwellings of up to three storeys on each residential site as of right, removing the need for resource consent. Proposals for more than three dwellings or that do not comply with the specified building standards will be a restricted discretionary activity. Building consent for all proposed developments will still be required. Generally, the MDRS are intended to have legal effect from the time councils notify their plan changes once introduced via the streamlined process. This is intended to accelerate the intensification goals of the NPS-UD. **The implementation of the MDRS will be mandatory for every Tier 1 territorial authority and will apply to most residential areas unless any qualifying matters apply such as heritage or special character features.** As for Tier 2 territorial authorities, they could be required to use the streamlined process to adopt the MDRS by Order in Council for areas where the Minister determines there are acute housing needs.
- **A new Intensification Planning Instrument (IPI).** The Bill proposes a new planning instrument to be specifically used to enable plan changes/variations to incorporate the MDRS, give effect to relevant NPS-UD policies (Tier 1: Policy 3

(source: <https://www.buddlefindlay.com/insights/is-the-resource-management-enabling-housing-supply-and-other-matters-amendment-bill-a-sign-of-things-to-come/>)

Holland Beckett Law

“As of 21 December 2021, the Resource Management (Enabling Housing Supply and Other Matters) Amendment Act 2021 came into force amending the Resource Management Act 1991 (RMA) to set new medium density residential standards (MDRS) and make other amendments to the RMA that are set to change the future of housing development in New Zealand.”

(source: <https://hobec.co.nz/news-resources/2022/march/housing-intensification-the-solution-to-new-zealand-s-housing-crisis>)

2.3. The messaging of territorial authorities to their constituents:

Auckland Council

“There are two significant central government planning reforms that we are required to implement. 1. ‘NPS-UD’..., 2. The government’s Medium Density Residential Standards (MDRS)”

“The MDRS changes are part of the Resource Management (Enabling Housing Supply and Other Matters) Amendment Act 2021. The law requires us to enable a greater supply of housing. The Act also requires us to replace our design rules for development including height-to-boundary ratios and outdoor space provisions.”

“The changes set out in the NPS-UD and the MDRS are not optional.”

(source: <https://ourauckland.aucklandcouncil.govt.nz/news/2022/08/auckland-s-changing-planning-rules-what-you-need-to-know/>)

Wellington District Council

<p>Issue 2:</p> <p>Need to Implement the requirements of the NPS-UD and the RMA (enabling Housing Supply and Other Matters) Amendment Act.</p>	<ul style="list-style-type: none"> • These higher order documents require the provision of sufficient housing development capacity to meet community needs. This includes enabling higher densities in identified locations. • Wellington City Council as a Tier 1 authority must incorporate the MDRS and give effect to Policy 3 of the NPS-UD through an ISPP process that must be notified before 20 August 2022. • The Operative District Plan does not give effect to these requirements. 	<ul style="list-style-type: none"> • The new Medium and High Density Residential Zones include enabling standards to provide for intensification and increased housing opportunities in accordance with the requirements of the NPS-UD. • The MDRS are incorporated into the new residential zones. • As required by Policy 3 of the NPS-UD, the HRZ enables building heights of at least six storeys within a 10 minute walkable catchment of the City Centre Zone, Johnsonville Metropolitan Centre, and the Kenepuru and Tawa railway stations.
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(source: <https://wellington.govt.nz/>)

Christchurch City Council

Medium Density Residential Zone – the base-line for increasing housing

This zone is legally required by the Enabling Housing Act and must be applied to most residential areas of Ōtautahi-Christchurch. This Act introduced Medium Density Residential Standards (MDRS) that will allow development of up to three homes of up to 12 metres on a single property, without resource consent.

Qualifying Matters

We can use **Qualifying Matters** to reduce intensification in some areas – however, they aren't a way to negate any/all intensification.

- They only apply in areas of MDRS intensification and NPS-UD intensification areas (commercial & residential). Standard overlays can manage features elsewhere.
- There's a high threshold for inclusion as a Qualifying Matter, with strong evidence required.

(source: <https://www.ccc.govt.nz/the-council/plans-strategies-policies-and-bylaws/plans/christchurch-district-plan/changes-to-the-district-plan>)

Summary of the consistent elements of the messaging/commentary above shows:

1. There is a legal obligation to implement the requirements of 'NPS-UD' and 'RMAA-EHS'; and,
 2. 'MDRS' is mandated as a minimum set of density standards; and,
 3. All 'tier 1' territorial authorities must implement 'MDRS' on or before 22 August 2022 by notifying their plan; and,
 4. 'MDRS' will have immediate legal effect when the plan is enabled; and,
 5. 'MDRS' will need to be applied to most residential sites in Tier 1 cities; and,
 6. Territorial authorities can enable areas to a lesser extent, on a limited basis using qualifying matters; and,
 7. There is a burden on territorial authorities to provide sufficient evidence on a site-by-site basis where qualifying matters are proposed.
3. We can gain additional insight into 'CCC's opinion of their change in direction and the associated risk of the 'sunlight qualifying matter' not meeting the intent of 'RMAA-EHS' from two revelations:

"Creative solution" that 'RMAA-EHS' "did not envisage" (statements made by 'CCC' staff at 1 March 2023 public meeting); and

"High risk of legal challenge" (internal 'CCC' dialogue when the idea was proposed, ref Appendix A)

Each of the three points above support the view that 'CCC' by creating the 'Sunlight Qualifying Matter' which avoids 'MDRS' applying anywhere in the city, they have not met the intent of 'RMAA-EHS'.

Taken together, they are compelling.

Even if it is found that by applying qualifying matters in a blanket fashion across the city can be done, to meet intent, 'CCC' then needs to have taken an impartial approach using appropriate evidence showing that their proposed qualifying matter makes higher density inappropriate in

the area they are applying it to (in this case the whole city). This must be justified against the purpose and objectives of 'NPS-UD'

Lower sunlight angles in and of itself, does not make intensification inappropriate. Further evidence is required to show this. In a practical sense, if low sunlight angles made intensification inappropriate, then no other city in the world of similar sunlight angles would be more intensified than Christchurch, or cities that have, would have far worse wellbeing. Neither of these propositions have been proposed by 'CCC'.

'CCC's mandate to respond to the "daylight robbery" problem

For a change as significant as replacing the density standards defined in 'RMAA-EHS', with bespoke ones across a whole city, 'CCC' needs a clear mandate. They need to know how much of the community want this change and they need to know if the community values this change over the wider social costs that less affordable housing would inevitably lead to (refer 'CBA-MDRS' report).

It is true that 'CCC' are required to listen to the views of its ratepayers. 'CCC' have acted due to pressure from those residents who had a strong view about the compulsory direction being forced on local councils from government, imposing 'one size fits all' density standards. Though the pushback was generally against intensification, one particular focus of this has been around sunlight shading.

With intensification comes shading. This is a known and well documented outcome. It is clear some residents do not like the prospect of losing any value of sunlight on their site. Whilst this is an understandable position, it does not reflect the view of all ratepayers, nor of all residents.

It appears 'CCC' has conducted no survey of its ratepayers or its residents to determine how widespread these extreme views are, and how the community considers they should be balanced against the cost to the community of less intensification. 'NPS-UD' requires that the need is justified, before the change is made.

Any feedback prior to the first proposed plan change cannot be seen as legitimate consultation to determine a mandate or a need. At that time 'CCC' was not contemplating that 'MDRS' could be altered city wide. To the contrary, they advised it couldn't be. If 'CCC' had proposed that, then CCC would likely have received relevant feedback (like this one) relating to that proposition, but on the side of the argument that doesn't support the change. On that basis, 'CCC' claiming they had a lot of feedback supporting the issue, does not equate to mandate nor quantify the problem.

A sensible process would be for 'CCC' to first describe the problem and quantify it (in an impartial way), then look to see understand if they have a clear mandate for change, before the change is incorporated into the plan. That process is outlined in the NPS-UD. 'CCC' have not done that.

'CCC' has created the 'sunlight qualifying matter' without defining and quantifying the problem determining, and before confirming a clear mandate for change.

Even if 'CCC' could show it had a mandate of local residents, that does not represent a mandate to change the intent of 'RMAA-EHS'. Central government had the mandate to enact the legislation to fix a problem that existed.

'CCC' could never claim any legitimate mandate (from its local residents) which over-rides central government law-making. That would be unconstitutional.

'CCC' had an opportunity to submit on sunlight angles during the law-making which it did.

Those views were considered and the Bill was altered as a result.

'CCC's changing legal opinion.

One aspect that is worthy of detailed examination, is 'CCC's significantly altered view on what the legislation requires of them.

Every dispute that ends up in court has two expert legal opinions, but only one of them is correct. In that instance, the judiciary decides which one is correct. Clearly, one can seek and obtain a legal opinion that supports their position even if it is not correct. All that is required is enough funds and a willingness on the part of the expert legal team to take on the challenge of finding and backing an argument.

In respect of 'MDRS', 'CCC' has recently informed its staff, elected representatives and the public that the creation and implementation of the 'Sunlight Qualifying Matter' does meet the intent of the legislation. They say they have a legal opinion to back this statement up (it should be noted they also had legal advice for their first, substantially different opinion).

The latest advice 'CCC' obtained has come from one of the firms who published an unbiased view when 'RMAA-EHS' was put in place (refer above), Buddle Findlay. It appears their legal opinion has changed, following 'CCC' approaching them to get an opinion on their 'creative solution'.

This signifies a significant reversal of legal position following the 'No' vote, after which elected representatives placed pressure on 'CCC' to come up with a fix to the "Daylight Robbery" problem.

It appears the updated legal advice has led 'CCC' to take the position that as long as they are enabling three, three-storied dwellings on a site then they are meeting the intent of the legislation. This is a simplistic view. If it were true, central government needn't have gone to the effort of defining specific minimum density standards for territorial authorities to meet. Instead, they could have just said that territorial authorities need only enable three houses of three stories for each site.

Even if a site can meet the three houses of three stories, using 'CCC's 'sunlight qualifying matter' will enable less intensification, which may not be commercially viable, and which in some instances will make the reduced recession planes the limiting factor (rather than upper height limits or site density or setbacks).

The revised legal position, interpreted from the change in messaging and the effect of the 'creative solution', means:

1. 'CCC' can avoid applying 'MDRS' on any site by the use of a city wide 'qualifying matter';
2. 'CCC' can modify 'MDRS' by replacing it with their own (more restrictive) density standards, 'CRMDS' across the whole city.
3. 'MDRS' will not take immediate effect after notification. 'CRMDS' will take effect only if it is adopted after the 'ISSP' involving community feedback and independent hearings.
4. 'CRMDS' (or 'Sunlight Qualifying Matter') has a high risk of legal challenge.

Since the two legal positions (pre no-vote and post no-vote) are almost opposite in respect of the legal obligations to apply 'MDRS', only one of the legal positions can be correct.

There may be a reasonable argument from 'CCC' to show why they believe they have met the intent of 'RMAA-EHS'. However, as at the time of writing, they are withholding their reasons. This does not appear a transparent approach to encourage public engagement and debate in an efficient manner.

I propose that of the two disparate legal positions, the more reasonable and central one is the (first) one 'CCC' came up with, before they were pressured into trying to solving a problem ("daylight robbery"), that may not even exist (in the context of the overarching RMA need to assess all the costs and benefits). The first opinion matches the interpretation and actions of every other territorial authority in the country, matches the messaging of central government, and the messaging (legal opinions) of well respected legal experts on RMA matters at a time they were not directly instructed to assist with a 'creative solution'.

Meeting the LGA 2002

In respect of the LGA 2002, relating to this submission there are two duties that are relevant:

1. Impartiality representing the views of its ratepayers; and
2. Considering the impact on wellbeing of the community.

I propose that by representing a minority view, that is not backed up by analysis of how widespread it is, and strongly pushing to accommodate these views, 'CCC' has not acted impartially.

An impartial process would have (in this order):

1. Defined the problem by impartially examining the evidence of its existence; and
2. Explored whether a mandate existed to respond; and
3. If the problem exists and there is a mandate for change - design the change; and
4. Impartially gather evidence to understand the effect of the change on the whole community; and
5. Independently assess whether the change met the intent of 'RMAA-EHS' and other legislation.
6. Notify for feedback.....etc

I propose that the process 'CCC' has followed looks nothing like this and the evidence CCC has produced is severely biased, since it was created to justify a position, that they firmly held, before the evidence was even gathered.

If it were unbiased, it would include matters that do not support the argument for 'sunlight qualifying matter' and investigate the cost of them (financial cost as well as to the cost to wellbeing). It considers none that readily come to mind, even for someone who is not an urban planner.

If it were unbiased, it would not have looked to the worst-case scenario to justify the change. It has not been established for example that Auckland level of sunlight angles is a correct baseline to use. Without any evidence to the contrary, Christchurch sunlight angles could very well be sufficient to maintain wellbeing, when other relevant factors are taken into proper consideration.

It is biased to not adequately consider matters relating to increased intensification, that increase wellbeing. In order to make a well-informed impartial decision, a broader perspective should be taken into account, which includes factors such as the affordability and accessibility of housing.

Additionally, opposing viewpoints from academic experts who warn of the negative effects on wellbeing that could arise from reducing recession planes could also be considered:

“In contrast, low-density development throughout the city is bad for several reasons. There is evidence to show that it negatively affects the mental health and development of children (who are exposed to monotonous environments and are completely dependent on their parents to access activities).

It negatively impacts the mental and physical health of adults and the elderly, requiring time investment to travel that could better be spent on social or physical activities. Traffic congestion detracts from the functioning of our public transport system and increases water and air pollution. Overall, it is bad for our physical and mental health, as well as that of our environment.

Low-density is also extremely expensive to both build and maintain. The rates rises we all dread come about because of inefficient use of our infrastructure. Regular flooding arises because we are unable to maintain or improve the infrastructure.”

(Source: “ Dr Tom Logan” a senior lecturer of civil systems engineering and the co-director of the cluster for community and urban resilience at the University of Canterbury. For the full article ref <https://www.stuff.co.nz/opinion/131348606/density-done-well-can-bring-the-vision-of-many-residents-to-life-for-christchurch>)

CCC's process of legal advice, evidence gathering and justification has been aimed at supporting the view that “daylight robbery” exists, and is not an impartial examination of all of the evidence that exists.

CCC's opinion that the ‘sunlight qualifying matter’ is legal, is not tested. It is simply an opinion formed before the solution was developed, and the evidence was gathered. It is concerning to me that this legal opinion forms the cornerstone for CCC's radical change in direction, but they refuse to be transparent on what they asked of their legal experts, and the advice that was given.

On this basis, I can confidently observe that ‘CCC’ has not met its obligations under the LGA 2002 to act represent its community in an unbiased manner. Furthermore, by not disclosing its thinking behind its change in direction, ‘CCC’ are not maintaining a high level of transparency and accountability in their decision-making processes. To the contrary, it appears to be an exercise in obfuscation orchestrated by their chief legal counsel in charge of litigation.

‘CCC’ not having a say in the central government new density standards?

It has been proposed by some (1st Mar 2023 public meeting leading to the ‘no’ vote) that central government has ignored the views of Christchurch property owners. This view is misguided and disingenuous. Anyone who proposes this is not presenting an honest and fair appraisal of the process of the law making in this instance.

Whilst the law-making was completed under urgency, ‘CCC’ had the opportunity to make a submission to central government lawmakers on sunlight angles, which it did. The Bill subsequently relaxed the recession planes that had been initially proposed.

Had this been made clear by those elected officials and Council staff who were at the 1st Mar 2023 meeting and who were aware of this, then the outcome of the resident pushback (resulting in a ‘no’ vote at that meeting) might have been different.

'CCC' was involved in the central law-making process, by submitting to the select committee on their views on sunlight angles, which resulted in a reduction in the proposed height from boundary standard in the final Bill. 'CCC's evidence was considered and acted on. To attempt to have another go at reducing the recession planes, based on the incorrect assertion that Christchurch residents have not been listened to, seems a fundamental breach of due process.

Summary

'CCC's approach has been biased towards an agenda to solve a problem of "sunlight robbery".

'CCC' did not objectively define the problem and check for a mandate. Instead they assumed 'inequity due to lower sunlight angle'.

'CCC' has gathered evidence to support their subjective belief of 'inequity due to sunlight angle', without due consideration of the wider community.

'CCC's estimate of shading is woefully overstated due to the use of worst case models, methods and assumptions which favoured their subjective belief.

'CCC' has provided no credible evidence of why the 'sunlight qualifying matter' is necessary or justified.

Though 'CCC's evidence around the effects of 'sunlight qualifying matter' on capacity massively understates the likely impact, importantly, it shows a reduction in capacity. We can see from the evidence ('CBA-MDRS'), less intensification leads to less affordable homes and reduced benefit when compared to 'MDRS'. 'CCC' has provided no evidence which contradicts this.

'CCC' has provided no evidence of how they will enable a similar level of development to 'MDRS' by any other changes they are making.

'CCC' have not provided site specific analysis as 'RMAA-EHS' requires. There are sites in Christchurch which could never be adversely affected by low sunlight angles, which 'CCC' have applied the 'sunlight qualifying matter' to. This includes sites bordering non-residential land parcels, sites where their sun access elevations face street frontages and sites that have neighbours who have recently developed,¹ locking in greater than 'MDRS' setbacks for at least 50 years.

As a result, 'CCC' has failed in its statutory duty to give effect to 'RMAA-EHS' and act in accordance with the 'LGA-2002'. It has failed to meet its' evidentiary burden.

Conclusion

By succumbing to the wishes of a minority of the community, without a clear mandate, 'CCC's' processes have failed. In addition, they appear to not meet the basic tests of 'transparency', 'impartiality' and 'consideration of the whole community' that is required by the 'LGA 2002'. On that basis alone, the whole process and their decision making which has led to the creation of their "creative solution" that "'RMAA-EHS' never envisaged", is called into question and the 'sunlight qualifying matter' should be abolished.

In the unlikely event it is found that 'CCC' had a mandate, and it is found they adequately considered the whole community, then this submission provides further evidence that councils proposed application of a city-wide qualifying matter applying to every site, does not fit within the intent of the legislation and can therefore be considered 'a breach of the rule of law'.

'CCC's' 'sunlight qualifying matter' does not meet the intent of 'RMAA-EHS' where it replaces 'MDRS' for every 'Medium Density Residential Zone'. On that basis, the 'sunlight qualifying matter' should be abolished, unless two criteria can be met. Firstly, that applying a qualifying matter to a whole city is found to meet the intent of 'RMAA-EHS' (by independent legal experts, impartially briefed), and secondly, only if there is balanced and unbiased examination of all the relevant evidence as 'The Act requires'. This would include an equal consideration of the pros and cons to the wellbeing of the community relating to any proposed restriction of intensity. Given they have had a chance to do this already and failed, the more efficient and logical option would be to completely dispose of the 'sunlight qualifying matter' altogether.

This submission shows that CCCs 'sunlight qualifying matter', when applied to 'High Density Residential Zones', does not meet the specific wording of 'RMAA-EHS' applying to enablement of higher densities, and can therefore be considered a 'breach of the law'. On that basis it should be removed from High Density Zones.

By failing to consider many of the adverse effects of the 'sunlight qualifying matter', and by concentrating on and conflating the perceived negative effects of Christchurch lower sunlight angles (which was already considered and responded to when 'RMAA-EHS' was put in place), CCC has failed to meet the evidential threshold that 'RMAA-EHS' and 'NPS-UD' requires when implementing a qualifying matter. On this basis alone, its 'sunlight qualifying matter' should be removed.

Looked at from a high level, this submission highlights a basic failure in local government decision making here. 'CCC', by overtly focusing on fixing the wants of one extreme view of the community (vocal members of resident associations), have been blinded to the major change in direction that occurred due to the introduction of 'RMAA-EHS' by central government. This change in direction shifted the decision-making on the minimum density standards territorial authorities must apply for new developments (as a default), from local government to central government.

'CCC' can be seen to have actively encouraged these (by not objectively defining the problem for example) extreme community views that 'RMAA-EHS' was designed to overcome. As a starting point, 'CCC' should be considering the whole community, and seeking the opinions of the vulnerable residents and ask them if they would prioritise sun shading now and then over more affordable housing. It should be impartially describing and quantifying the problem and weighing any change against the costs and benefits of the change. 'CCC' have failed to do this.

One of the reasons for this major shift in the legislation was to prevent resident associations and developers from restricting intensity by claiming individual property rights, resulting in less

affordable housing. As well as costing the community more money to operate, there is a more insidious and much larger economic effect at the more financially vulnerable end of the community. A greater increase in property values is a direct outcome of less intensification. This causes a large transfer of wealth away from renters and property owners and towards existing property owners which increases over time. (ref 'CBA-MDRS')

'CCC' has enabled one of the very outcomes new legislation was put in place to prevent, the major transfer in wealth over time due to the over emphasis of existing property rights. Which is colloquially termed 'NIMBYISM'.

For clarity, based on the evidence presented by 'CCC' to date, this submission objects to:

1. 'CCC's 'sunlight qualifying matter' contained in PC14, as applied in a blanket fashion to all High Density and Medium Density Zones, on the following grounds:
 - a. It breaches the wording and intent of 'RMAA-EHS'; and,
 - b. It breaches the wording and intent of the 'RMA'; and,
 - c. It breaches the intent of the 'NPS-UD', defined by its objectives and policies; and,
 - d. 'CCC' processes, including their lack of objectivity when creating the 'sunlight qualifying matter', have breached the 'LGA-2002', 'RMAA-EHS', the 'RMA' and 'NPS-UD'; and,
 - e. 'CCC' by not adequately considering the wellbeing of the community has breached the relevant legislation; and,
 - f. 'CCC' has not provided sufficient, relevant evidence as the legislation requires them to; and,
 - g. 'CCC' has not consulted as the legislation requires them to; and,
 - h. 'CCC' has not performed adequate site-specific analysis as the legislation requires them to; and,
 - i. 'CCC's approach to try and change height from boundary when they had already submitted on the Bill (relating to sunlight matters), is a failure of due process and lacked a mandate. It could be termed 'unconstitutional'.
2. 'CCC's inappropriate characterisation of the problem, its obligations and the likely effects of its proposed fix, which tend to show favour to and support the "Daylight Robbery" proposition.

Proposed Actions:

1. 'CCC' remove 'sunlight qualifying matter' from the proposed plan, to prevent it applying to either medium or high density sites.
2. 'CCC' publicly clarify that 'MDRS' has immediate legal effect to all medium and high density residential zones.
3. 'CCC' remove any biased information they have put in the public domain and replace it with objective and impartial information regarding the proposed problem and **its likely effect on the whole community**. This includes the removal of any emotive dialogue around Christchurch residents missing out, when compared to the residents of Auckland which has zero relevance to the legislation.

Appendix A – All CCC communications relating to the creation of the ‘sunlight qualifying matter’

(as received from CCC in response to an information request and attached as a separate file to the electronic submission)

From: Daly, Sian
Sent: Tuesday, 31 January 2023 9:53 AM
To: Oliver, Sarah; Pizzey, Brent
Subject: FW: Legal review of PC14 alternative

599

From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Sent: Monday, 30 January 2023 1:53 pm
To: Daly, Sian <Sian.Daly@ccc.govt.nz>
Cc: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
Subject: Legal review of PC14 alternative

Hi Sian,

In terms of legal review of our alternative proposal, my thoughts are that only the substantive new QMs would ideally have some legal oversight. The material that we are just tweaking from the Sept 22 proposal had undergone thorough review and don't think extra legal review is really a priority.

BF have provided guidance on the sunlight QM, which we have acted upon. It would be good to see whether they believe what we have done fits what they provided advice on, but I don't think it is as high a priority as the PT Access QM. For me, this has the highest priority for legal oversight as it has not been tested to date.

The other QMs have also not been interrogated, but the city-wide QM are the most significant and should be prioritised. Note that there may be very little time for this to be assessed, let alone us to implement the review comments, so it is important we set expectations for both Brent and ourselves. It would be good to know that timeframe Brent/BF are able to work to.

Many thanks,

Ike Kleynbos
Principal Advisor – Planning
City Planning (E)


Ike.Kleynbos@ccc.govt.nz
Te Hononga Civic Offices, 53 Hereford Street, Christchurch
PO Box 73012, Christchurch 8154
ccc.govt.nz

Christchurch
City Council 

From: Kleynbos, Ike
Sent: Wednesday, 18 January 2023 9:18 AM
To: Hattam, David
Subject: FW: DRAFT Scope of Work – Sunlight Access reporting – Plan Change 14

Hi David – can I please leave it with you to get in touch with [redacted] and discuss further?

From: [redacted] <[redacted]>
Sent: Wednesday, 18 January 2023 9:13 am
To: Kleynbos, Ike <ike.Kleynbos@ccc.govt.nz>
Cc: Hattam, David <David.Hattam@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
Subject: Re: DRAFT Scope of Work – Sunlight Access reporting – Plan Change 14

Hello Ike,

Yes, I am certainly happy to contribute to a subsequent full report. I was not trying to say I couldn't do anything now, but that the time was insufficient for the formal processes of proposal and report. I am happy to do what I can to help David in the short term.

Besides the formal proposal and reporting, the other thing that would take too long is replication of David's work with other tools. You are right that I need to talk to him to see what I can do with what he has.

[Large redacted section containing multiple paragraphs of blacked-out text]



From: [redacted] <[redacted]>
Sent: Tuesday, 17 January 2023 10:12 am
To: Kleynbos, Ike <ike.Kleynbos@ccc.govt.nz>
Cc: Hattam, David <David.Hattam@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
Subject: Re: DRAFT Scope of Work – Sunlight Access reporting – Plan Change 14

Hi Ike,

Yes, I have carefully read the draft reports and scope of work, and I have looked at what I might contribute.

An initial problem is that the time frame is too tight for normal NIWA processes, and that affects what sort of report I can provide. Our reports, and even proposals, are all reviewed for content and formatting and then approved by a higher echelon, and there would hardly be time for that if I had already done all the work and written the draft report. I can provide figures and information, but if you are needing NIWA's imprimatur as some sort of authoritative declaration then I need to go through the above.

The other problem is again related to time to set up the representations needed to do some of the suggested calculations. I don't have the means to quickly convert David's representations of buildings into a form with which I could work, but I see that his software already does the ray-tracing. I tried to call him yesterday to learn more about how he made his calculations, to see if I could contribute to those. Specifically, for any given time of year, hour, and orientation of a surface, I can provide the average energy flux. Thus, if he tabulated the hours when surfaces were sunlit, it would be straightforward to convert sunlit hours to solar energy capture.

Within the topics that you list, my thoughts and possible contributions were:

Relative latitude and sunlight access

- a. The flat terrain, with very distant hills to the west and north, certainly means that, except in the hill suburbs and Lyttleton, the considerations apply equally to all of the highlighted areas. Hamilton, and much of Auckland, would be similar, but contrast sharply with Wellington or Dunedin.
- b. Maps of solar irradiance, including from satellite analyses, show no variation across the city. Radiation measurement sites in the area of interest are at Christchurch airport, NIWA in Kyle St, and Bromley near the coast. The accuracy of calibrations would be insufficient to say if there is a difference in mean irradiance, but there might be small differences in cloudiness by time of day, which I could quantify. Both the airport and Bromley also have records of sunshine hours, so I can look at whether there is any gradient in that across the city.

Relative climatic difference

- a. Passive solar heating is more valuable in colder climates, especially in winter. Of course, that actually means any recession plane is a problem. It was once routinely acknowledged that eaves should be designed to provide shade for high summer sun but let in the winter sun, but of course we abandoned that idea with the zero-overhang (and leaky) houses from the 1990s.

b. When you do have direct sunlight, which is something I infer from the (hourly or 10-minute) irradiance data, it is more effective in passive heating when the sun is low and more nearly square on to vertical surfaces. We can quantify this, and the comparison with Auckland or Hamilton.

Sunlight access modelling

- a. As above, if David has recorded for each season and orientation the hours (or start and end) of when first or second storey windows or walls are sunlit, we can weight the hours by solar intensity for that surface and orientation to calculate kWh/m2 rather than sunlight hours.
- b. Given enough time, I could set up the ability to calculate whether surfaces are shaded, but we obviously don't have that time. Instead, I can providing a weighting for each hour by day of year, for vertical or horizontal planes, or indeed any other. That would combine with the calculations David has already done.
- c. Any further averaging, or cumulative totals, are a simple adjunct to the above. It might also make sense to apply some value function that accounts for the greater value of passive heating by season or, quite readily, by air temperature.

From: "Kleynbos, Ike" <Ike.Kleynbos@ccc.govt.nz>
Date: Monday, 16 January 2023 at 18:07
To: [REDACTED]
Cc: "Hattam, David" <David.Hattam@ccc.govt.nz>, "Stevenson, Mark" <Mark.Stevenson@ccc.govt.nz>
Subject: RE: DRAFT Scope of Work – Sunlight Access reporting – Plan Change 14

Hi [REDACTED]
I'm following up on the below – did you have a chance to look over the scope?
Feel free to give me a call tomorrow morning if you'd like to discuss further.

Many thanks,
Ike Kleynbos
Principal Advisor – Planning
City Planning (E)
Ex: [REDACTED]

From: Kleynbos, Ike
Sent: Saturday, 14 January 2023 12:56 pm
To: [REDACTED]
Cc: Hattam, David <David.Hattam@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
Subject: DRAFT Scope of Work – Sunlight Access reporting – Plan Change 14

Hi [REDACTED]
Please find attached our draft of the Scope of Work outlining the sunlight access modelling work we required. Let me know if there are any points that you need adjusted or further clarified – happy to discuss further on Monday, if required.

Once you're satisfied with the scope, it would be great if you could please provide us with a price cost estimate for us to generate a PO. We are able to progress this for any piece of work <\$20k without the need of a formal contract (as per the work with Emily).
I've copied in David and Mark, mentioned in the SoW. David has also provided some of his work he has done for the high density zone, as attached.

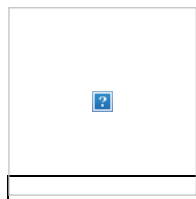
In this report, he was testing 5 different scenarios, and was looking at the impact of these on the wall of a typical existing building – which would be what we still expect developers to construct in most places for the foreseeable future. For that exercise, he wanted to see the impact on the receiving wall and used a [REDACTED] benchmark that there should be 2 hours of sun over half the wall – which seems a bit unambitious. It was based on the level of sun allowed by the MDRS so is not a level of access I would see as being adequate.

Hopefully this all give you a good steer for what we're after, but feel free to get in touch.
Many thanks,

Ike Kleynbos
Principal Advisor – Planning
City Planning (E)
[REDACTED]
Ike.Kleynbos@ccc.govt.nz
Te Hononga Civic Offices, 53 Hereford Street, Christchurch
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From: Higgins, John
Sent: Thursday, 15 December 2022 3:40 PM
To: Stevenson, Mark; Kleynbos, Ike
Subject: FW: BusinessDesk: intensification plan change process

599

Fyi

From: Higgins, John
Sent: Thursday, 15 December 2022 3:34 pm
To: Ritchie, Jocelyn <Jocelyn.Ritchie@ccc.govt.nz>
Cc: de Leijer, Kim <Kim.deLeijer@ccc.govt.nz>
Subject: RE: BusinessDesk: intensification plan change process

Hi Joss

See answers below.

Can I also emphasise that the proposal to introduce the recession plane qualifying matter is in its early days. While we wanted to let people know we are investigating that option, there is still work to be completed before it can be included in the draft plan change to be considered by the Council.

For clarity, the qualifying matter would introduce a new recession plane which would replace the MDRS recession plane.

Regards
John

From: Ritchie, Jocelyn <Jocelyn.Ritchie@ccc.govt.nz>
Sent: Thursday, 15 December 2022 2:48 pm
To: Higgins, John <John.Higgins@ccc.govt.nz>
Cc: de Leijer, Kim <Kim.deLeijer@ccc.govt.nz>
Subject: Fwd: BusinessDesk: intensification plan change process

Hi John

Are you able to assist with this media enquiry?

His deadline is 11am tomorrow.

Joss

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From: [REDACTED]
Sent: Thursday, December 15, 2022 2:44 PM
To: Ritchie, Jocelyn <Jocelyn.Ritchie@ccc.govt.nz>; Media Enquiries <MediaEnquiries@ccc.govt.nz>
Subject: BusinessDesk: intensification plan change process

Hi Joss,

Keen to get clarification on a few things in this public briefing video on next steps for the intensification plan change: <https://www.youtube.com/watch?v=98huLSCVMhU>

There were references to a couple of different dates in the video, which confused me.

Questions below:

1. Staff are working on an alternative intensification plan change. Is that meant to go to councillors to vote on in February or March next year? **1st March 2023 is pencilled in for Council to consider notification of the plan change.**
2. Are staff working on a potential new 'qualifying matter' around sunlight with the possibility of applying that to all residential areas? Why? If so, how would this amend the existing recession plane rules in the MDRS? **Yes staff are working on a new qualifying matter relating to recession plane measurements used. This work was initiated because of concern relating to the impact of the recession planes used in the Medium Density Residential Standards (MDRS). These recession planes are being applied across Tier 1 Council's but Christchurch is the furthest south in latitude where the recession plane angle applies. Staff are therefore considering a case to apply a more restrictive recession plane as a qualifying matter (this would replace the MDRS recession plane where this qualifying matter applied). It is important to note that a more restrictive recession plane does not prevent intensification, but it would better protect access to sunlight for neighbouring properties.**
3. If councillors/the council progress the sunlight qualifying matter, how would this affect the operative date of the medium density residential standards? By the sounds of things, it would mean that they wouldn't take effect until the plan itself became operative, some time in 2024? Is that correct? **Where a qualifying matter applies, the MDRS provisions do not have effect (they are not applied) when the plan change is notified. This would happen around March 2024 when a decision is anticipated to be made on the plan change. However, what recession plane angles apply would be part of the decision.**
4. Does the council intend to notify a new intensification plan change? **This will be considered when a report is presented to Council (1st March 2023).**
5. When is the independent mediator due to report back - mid March? **Council understand Mr Hardie is likely to report back early to mid-March 2023 following the Council meeting which will consider the plan changes.**

Thank you. Please let me know when you get this and if you can provide a response by 11am tomorrow. I'm on 0274041446.

Cheers,
[REDACTED]

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From: Daly, Sian
 Sent: Monday, 12 December 2022 11:57 AM
 To: Kleynbos, Ike
 Cc: Stevenson, Mark; Higgins, John
 Subject: FW: Briefings for Tuesday

Hi Ike,

When you have the sunlight slide looking the way you want along with the caveat/disclaimer just let me know. I can send up to Sean the presentation version 2 (or is it 1?). They may just replace the version currently on the BTC to update and send an email to Councillors noting the addition of a slide in the Plan Change 14 presentation package.

Ngā mihi
 Sian

From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Sent: Monday, 12 December 2022 11:15 am
 To: Higgins, John <John.Higgins@ccc.govt.nz>; Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Daly, Sian <Sian.Daly@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>
 Cc: Pizzey, Brent <Brent.Pizzey@ccc.govt.nz>
 Subject: Re: Briefings for Tuesday

I agree with including the slide and having a caveat which probably goes with all the QMs we are talking to.

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From: Higgins, John <John.Higgins@ccc.govt.nz>
 Sent: Monday, December 12, 2022 11:08:20 AM
 To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Daly, Sian <Sian.Daly@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>
 Cc: Pizzey, Brent <Brent.Pizzey@ccc.govt.nz>
 Subject: RE: Briefings for Tuesday

What does it look like in terms of being able to meet the evidential requirements?

If you think we can, then perhaps include with a disclaimer that there's work to do and that we will report back in the new year.

Regards
 John

From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
 Sent: Monday, 12 December 2022 11:00 am
 To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Daly, Sian <Sian.Daly@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>
 Cc: Pizzey, Brent <Brent.Pizzey@ccc.govt.nz>
 Subject: RE: Briefings for Tuesday
 Importance: High

Hi all,

The legal advice appears to be favourable for progressing with sunlight access as a QM, despite potentially an onerous requirement for evidence.

We need to decide if we want to include the slide on sunlight access. This is currently:

Potential additional QM – Sunlight access

- | | |
|---|--|
| <ul style="list-style-type: none"> Christchurch is at a different latitude to North Island – sunlight hours differ Potential for this to be seen as a unique feature of the city QM could be developed to apply to all residential sites Would reduce recession plane angle, potentially: <ul style="list-style-type: none"> 4m >>> 3m 60° >>> 50° | <ul style="list-style-type: none"> Would represent a significant shift in delivery of intensification Would still achieve three storey development – meets MDRS Would have proxy effect of preventing immediate legal effect upon notification High risk of legal challenge |
|---|--|

PC14 Alternative - Council Briefing

12 December 2022

Christchurch City Council

It would be good to get thoughts on this so we can go back to Sean.

Many thanks,

Ike Kleynbos
 Principal Advisor – Planning
 City Planning (E)
 Ex: [REDACTED]

From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Sent: Friday, 9 December 2022 2:52 pm
 To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Daly, Sian <Sian.Daly@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>; Gregg, Helaina <Helaina.Gregg@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>
 Subject: Re: Briefings for Tuesday

Thanks very much everyone for pulling these together and getting them finished and to the CE.

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From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
 Sent: Friday, December 9, 2022 1:51:45 PM
 To: Daly, Sian <Sian.Daly@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>; Gregg, Helaina <Helaina.Gregg@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>
 Subject: RE: Briefings for Tuesday

Ike Kleynbos**Principal Advisor – Planning**
City Planning (E)


 Ike.Kleynbos@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
 ccc.govt.nz



From: Daly, Sian <Sian.Daly@ccc.govt.nz>
 Sent: Friday, 9 December 2022 1:31 pm
 To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>; Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Gregg, Helaina <Helaina.Gregg@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>
 Subject: RE: Briefings for Tuesday

Kia ora koutou

Thanks everyone. All four presentation packs and the additional GCP Committee slide pack on the Urban Growth Programme have been sent up to OCE.

Sian

Siân Daly

Programme Manager, Land Use and Growth


 Sian.Daly@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
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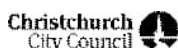
From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Sent: Friday, 9 December 2022 12:34 pm
 To: Daly, Sian <Sian.Daly@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>
 Subject: RE: Briefings for Tuesday

Just to clarify that we send the slides on GCP to OCE today, and ask for Attachment B of the GCP pack to go on the BTC

Mark Stevenson

Manager Planning


 Mark.Stevenson@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
 ccc.govt.nz



From: Daly, Sian <Sian.Daly@ccc.govt.nz>
 Sent: Friday, 9 December 2022 12:29 PM
 To: Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>
 Cc: Higgins, John <John.Higgins@ccc.govt.nz>; Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Gregg, Helaina <Helaina.Gregg@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Subject: RE: Briefings for Tuesday

Thanks Sarah.

Are we putting the full GCSP slide pack up today? Maybe I'm confused about which briefing Mark was referring to – I thought he meant our briefing.

Could you ask Nadja to split attachment B off and send it through for circulation to EMS? They probably have the software to edit PDFs in the OCE but if Nadja can send what you need, that's probably easiest.

From: Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>
 Sent: Friday, 9 December 2022 12:13 pm
 To: Daly, Sian <Sian.Daly@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>; Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Gregg, Helaina <Helaina.Gregg@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Subject: RE: Briefings for Tuesday

I have made my edits to the PC14 – Ike is doing the final

Here is the link again to the GCP – its finalised. We need to put the Full GCSP slide pack attached uploaded to the Big Tin Can and have the Councillors advised of this – but I think it needs splitting off somehow from the PDF i.e. only include Attachment B.

From: Daly, Sian <Sian.Daly@ccc.govt.nz>

Sent: Friday, 9 December 2022 12:00 pm

To: Higgins, John <John.Higgins@ccc.govt.nz>; Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>; Gregg, Helaina <Helaina.Gregg@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>

Subject: RE: Briefings for Tuesday

Hi

There have been a lot of emails flying around so to ensure I am sending the final authorised document I will send through to OCE when I have:

1. John's response to whether Jane Davis needs to see the slide packs
2. Confirmation of the TRIM reference being the FINAL document ready to send.
 - a. PC14 – Ike
 - b. PC programme - Mark
 - c. RM Reform – Helaina
 - d. GCP - Sarah

Please do your final check and indicate it is ready to go by your name. I will pick it up from Content Manager.

Ike, if we are doing a 'save as' without the sunlight slide, would you do that please and send me the version to be sent up to OCE?

Thanks

Topic	Status
PC14 (1 hr) 22/1705486	Ike to finalise subject to any changes from Sarah
Plan Change Programme (30 min) 22/1720924	Finalised and reviewed by John – I will email shortly John
RM Reform (45 min) 22/1708509	Finalised and reviewed by John
GCP briefing (30 min) 22/1710819	Finalised and reviewed by John Addition of HBCA to be made on slide re. other work we do

From: Stevenson, Mark
Sent: Thursday, 9 February 2023 7:56 AM
To: Hattam, David; Oliver, Sarah
Subject: Evaluation of QM on sunlight access
Attachments: DRAFT – s77 Evaluation of Sunlight Access Qualifying Matter.docx

Hi David

Before Ike went on leave, he prepared the attached evaluation under s77. I am sharing it to

1. Provide context of what Ike has covered to avoid duplication/ inconsistency with a report I understand you are preparing
2. Ask if you can please address the gaps where Ike has indicated that your input is required (refer to comments).
3. Advise on the appropriate alternatives to evaluate, having regard to the options Ike has identified on page 14 - 15.

The appendix that covers the site export and all of the journal articles is in the Sunlight Access folder in my OneDrive: [Sunlight Access](#)

Sarah – From page 15 is where Ike intended to complete an evaluation of alternatives. If Abby can assist from Monday with completing this, that would be appreciated. Otherwise I will help write it. That is after David has confirmed the alternatives.

Thanks

Mark

Mark Stevenson
Manager Planning


 Mark.Stevenson@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
 ccc.govt.nz

Christchurch
City Council 

From: Kleynbos, Ike
Sent: Friday, 13 January 2023 3:41 PM
To: Hattam, David
Cc: Stevenson, Mark
Subject: DRAFT Scope of Work – Sunlight Access reporting – Plan Change 14.docx
Attachments: DRAFT Scope of Work – Sunlight Access reporting – Plan Change 14.docx

Importance: High

Hi David,

Following our meeting with [REDACTED] from NIWA, I've drafted a SOW for the work we would like him to complete – could you please quickly review the attached so we can pass it on to him?

Mark, have copied you in to keep you in the loop. We need to affirm this SOW by Monday to have any chance for NIWA to complete sunlight access reporting to support the QM.

Many thanks,

Ike Kleynbos

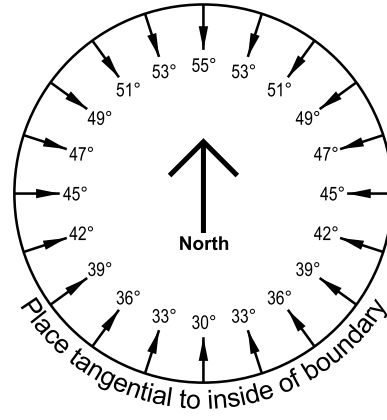
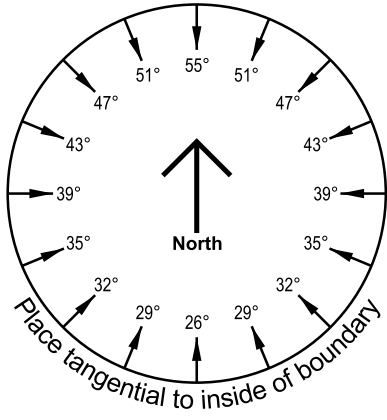
Principal Advisor – Planning

City Planning (E)

Ex: [REDACTED]

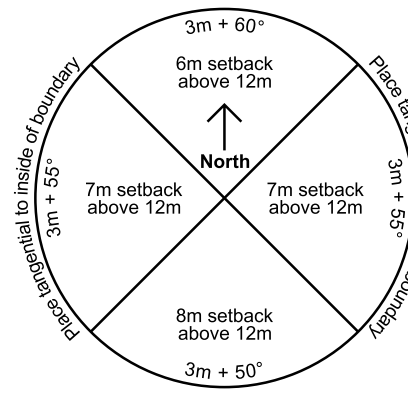
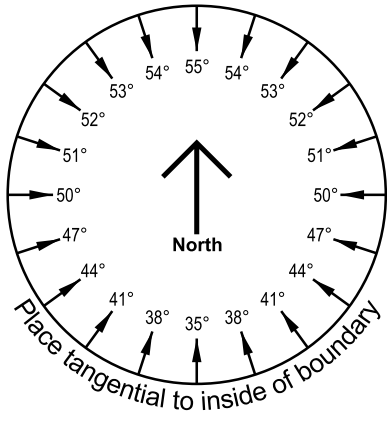
Appendix 14.16.2 - Recession Planes

Note: North is true north



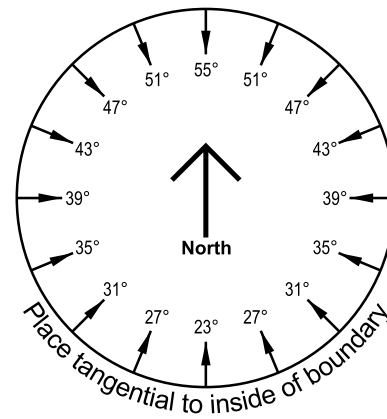
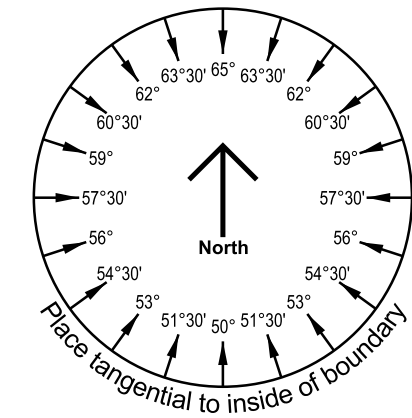
- A** Applicable to all buildings:
- in the Residential Suburban Zone
 - on sites in other non residential zones that adjoin the Residential Suburban Zone
 - in the Residential Small Settlement Zone Kainga Overlay Areas 1 and 2 and Spencerville Overlay Area

- B** Applicable to all buildings:
- in the Residential Suburban Density Transition Zone
 - on sites in other non residential zones that adjoin the Residential Suburban Density Transition Zone
 - in the Residential Hills Zone and on Māori land within the Papakāinga / Kāinga Nohoanga zone



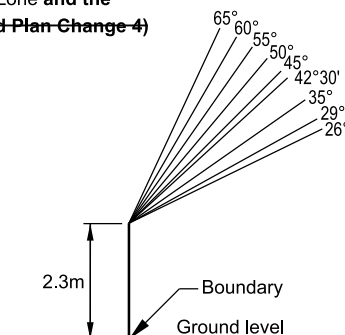
- C** Applicable to all buildings:
- in the Residential Medium Density Zone
 - on sites in other non residential zones that adjoin the Residential Medium Density Zone
 - in the Residential New Neighbourhood Zone
 - In the Future Urban Zone

- D** Applicable to all buildings:
- in the Medium Density Residential Zone (MRZ) and High Density Residential Zone (HRZ) higher height limit zones
 - on sites in other non residential zones that adjoin the Residential zones medium density higher height limit zones
 - in the medium density higher height limit zones (except those buildings over 11 metres in height)
 - on sites in other non residential zones that adjoin the medium density (except those buildings over 11 metres in height)



- E** Applicable to all buildings:
- over 11 metres in height in the medium density higher height limit zones
 - over 11 metres in height on sites in other non residential zones that adjoin the medium density higher height limit zones
 - in the Residential Visitor Accommodation Zone and the Residential Central City Zone (Proposed Plan Change 4) (Plan Change 4 Council Decision)

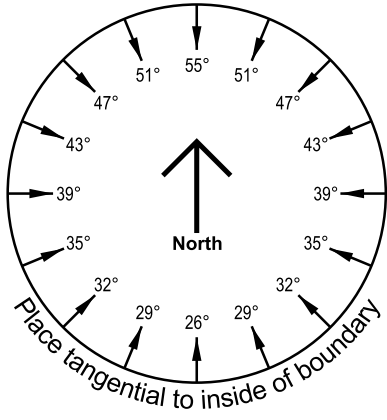
- F** Applicable to all buildings:
- in the Residential Large Lot Zones



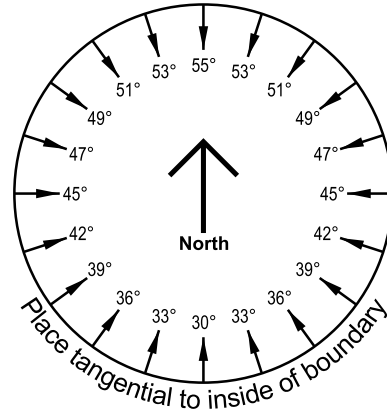
Recession Plane Measurement Example

Appendix 14.16.2 - Recession Planes

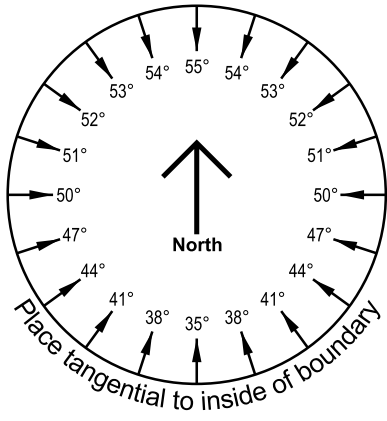
Note: North is true north



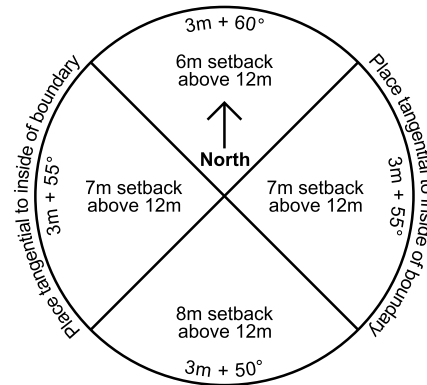
- A** Applicable to all buildings:
- in the Residential Suburban Zone
 - on sites in other non residential zones that adjoin the Residential Suburban Zone
 - in the Residential Small Settlement Zone Kainga Overlay Areas 1 and 2 and Spencerville Overlay Area



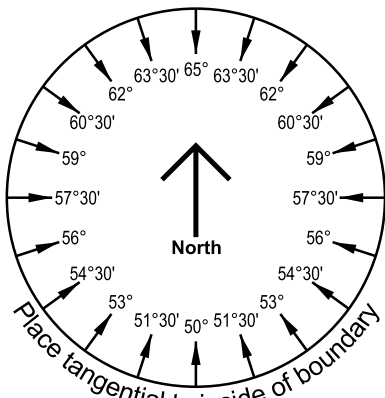
- B** Applicable to all buildings:
- in the Residential Suburban Density Transition Zone
 - on sites in other non residential zones that adjoin the Residential Suburban Density Transition Zone
 - in the Residential Hills Zone and on Māori land within the Papakāinga / Kāinga Nohoanga zone



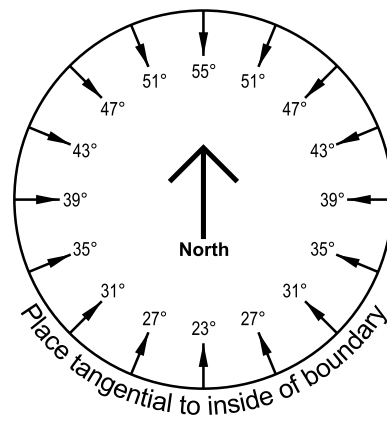
- C** Applicable to all buildings:
- in the Residential Medium Density Zone
 - on sites in other non residential zones that adjoin the Residential Medium Density Zone
 - in the Residential New Neighbourhood Zone
 - In the Future Urban Zone



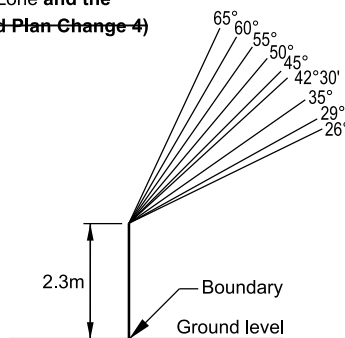
- D** Applicable to all buildings:
- in the medium density higher height limit zones
 - on sites in other non residential zones that adjoin the Residential zones
 - medium density higher height limit zones
 - in the medium density higher height limit zones (except those buildings over 11 metres in height)
 - on sites in other non residential zones that adjoin the medium density (except those buildings over 11 metres in height)



- E** Applicable to all buildings:
- over 11 metres in height in the medium density higher height limit zones
 - over 11 metres in height on sites in other non residential zones that adjoin the medium density higher height limit zones
 - in the Residential Visitor Accommodation Zone and the Residential Central City Zone (Proposed Plan Change 4) (Plan Change 4 Council Decision)



- F** Applicable to all buildings:
- in the Residential Large Lot Zones



Recession Plane Measurement Example

From: Hattam, David
 Sent: Thursday, 9 February 2023 2:12 PM
 To: Lightbody, Kirk; Blair, Hermione
 Cc: Kleynbos, Ike
 Subject: Changes made to final rainbow version for notification
 Attachments: District Plan Appendix 14.16.2 Recession Planes - pp104101 - DRAFT Issue 2023-02-09.pdf

Hi Kirk

These are the changes I am making to the residential zone:

High Density Zone

- 14.6.2.1 D add "trees and" in front of shrubs
- 14.6.2.8 b ii – replace "street facing façade" with "residential unit"
- 14.6.2.6 – see recession plane dial I am sending (integrate it with the appendix) and please update the rule to implement it.

Medium Density Zone

- 14.6.2.6 – see recession plane dial I am sending (integrate it with the appendix) and please update the rule to implement it.
- 14.5.2.10 Windows to street – replace "street facing façade" with "residential unit"

Kirk what's your view on this building length 30m dimension in an assessment matter? I am requesting the following change which applies it generally to all developments over 4 units, which Ike is in agreement with – but Hermione usually does not prefer assessment matters written as rules. It is important to me to have the dimension in the plan because we are failing to limit the continuous lengths of buildings at the moment because there is no guidance as to what the dimension should be. I would prefer a rule, but as long as the dimension is in the plan then I am satisfied.

14.15.1(e) ii

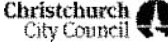
~~A places building bulk at the street front and otherwise limits the continuous lengths of buildings and rooflines to avoid excessive building bulk or unusually long buildings, particularly avoiding building lengths or widths exceeding 30m;~~

~~E where buildings are higher than 12 metres from ground level:~~

~~...
 2 buildings that contain for or more residential units have a maximum building length~~

David Hattam
 Senior Urban Designer
 Urban Design


 David.Hattam@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
 ccc.govt.nz

 Christchurch
 City Council

Subject: CCC work on Sunlight Access
Location: Microsoft Teams Meeting

Start: Fri 13/01/2023 1:30 PM
End: Fri 13/01/2023 2:30 PM
Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: Kleynbos, Ike
Required Attendees: [REDACTED] Hattam, David

Great, let's pencil in 1.30pm this afternoon to catch-up via Teams.

A bit of an Agenda for our discussion:
Introductions, MDRS & PC14 overview
Evidence requirements for qualifying matters
Rationale for different sunlight controls
Work completed to date
Reporting requirements: sunlight model (latitudinal variation); recession plane angles (compass approach)
Timeframes & contracts

Look forward to meeting this afternoon,

Ike Kleynbos
Principal Advisor – Planning
City Planning (E)
Ex: [REDACTED]

Microsoft Teams meeting

Join on your computer, mobile app or room device
[Click here to join the meeting](#)

Meeting ID: 435 891 759 405
Passcode: Ujbw3d
[Download Teams](#) | [Join on the web](#)

[Learn More](#) | [Meeting options](#)

From: [REDACTED] <[REDACTED]>
Sent: Friday, 13 January 2023 9:07 am
To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Subject: Re: CCC work on Sunlight Access

Yes, any time until about 3:00 p.m. today or 4:30 Monday.

From: "Kleynbos, Ike" <Ike.Kleynbos@ccc.govt.nz>
Date: Friday, 13 January 2023 at 08:48
To: [REDACTED] <[REDACTED]>
Subject: RE: CCC work on Sunlight Access

That's great [REDACTED] thanks. Would you be available sometime either today or Monday?

Many thanks,

Ike Kleynbos
Principal Advisor – Planning
City Planning (E)
Ex: [REDACTED]

From: [REDACTED] <[REDACTED]>
Sent: Thursday, 12 January 2023 8:58 pm
To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Subject: Re: CCC work on Sunlight Access

Hi Ike,

Yes, happy to talk, probably by Teams. I am also available most of this month.

From: "Kleynbos, Ike" <Ike.Kleynbos@ccc.govt.nz>
Date: Thursday, 12 January 2023 at 16:58
To: [REDACTED] <[REDACTED]>
Cc: "Hattam, David" <David.Hattam@ccc.govt.nz>
Subject: RE: CCC work on Sunlight Access

Hi [REDACTED]

Good to hear that you would be able to offer some support to this. Yes, it has been in the media lately, and since that time think we have found a proposed solution in terms of alternative recession plane.

It would be good to discuss this with you, perhaps via a Microsoft Teams meeting or via the phone? Let me know what you would prefer. The timeframes a fairly short unfortunately for reporting, so it would be good to know what your availability is like over the next month.



Many thanks,

Ike Kleynbos

Principal Advisor – Planning
City Planning (E)


Ike.Kleynbos@ccc.govt.nz
Te Hononga Civic Offices, 53 Hereford Street, Christchurch
PO Box 73012, Christchurch 8154
ccc.govt.nz



From:  < >
Sent: Thursday, 12 January 2023 4:37 pm
To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Cc: Hattam, David <David.Hattam@ccc.govt.nz>
Subject: Re: CCC work on Sunlight Access

Hi Ike,

Yes, I expect that I can help with sunlight access modelling. I had noted with interest a news item that said that thought was being given to the difference that southern locations would necessitate in considering recession planes. I'll be interested to hear what considerations apply.



From: "Kleynbos, Ike" <Ike.Kleynbos@ccc.govt.nz>
Date: Thursday, 12 January 2023 at 12:02
To:  < >
Cc: "Hattam, David" <David.Hattam@ccc.govt.nz>
Subject: CCC work on Sunlight Access

Hi 

I've been provided your details through Emily Lane here in Christchurch who is doing some work for Council for us.

We are currently contemplating how to give effect to government direction for greater urban intensification. One of the specific elements we're considering is sunlight access, how this differs from Councils in the North Island, and how much more important sunlight access is to our climatic conditions. I've previously used some of your solar access modelling (through Sense Partners) and wondered whether sunlight access modelling is something you would be able to help with.

What we're effectively seeking is data on sunlight access across urban Christchurch, whether there are differences across the city, including how this changes seasonally. The output would help us to determine the appropriate recession planes that should apply to enabling intensification. Our Senior Urban Designer, David Hattam (copied in), has begun work to model various recession plane angles and the aforementioned data we require would help to justify our position.

It would be great to hear whether the above is something you would be able to help with.

Please feel free to call me if you'd like to discuss this further.

Many thanks,

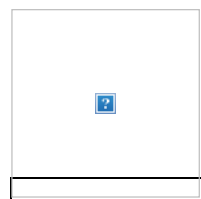
Ike Kleynbos

Principal Advisor – Planning
City Planning (E)


Ike.Kleynbos@ccc.govt.nz
Te Hononga Civic Offices, 53 Hereford Street, Christchurch
PO Box 73012, Christchurch 8154
ccc.govt.nz



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Atmospheric Scientist


National Institute of Water & Atmospheric Research Ltd (NIWA)
State Highway 85 Omakau New Zealand

From: Hattam, David
Sent: Wednesday, 8 February 2023 3:11 PM
To: [REDACTED]
Subject: Attachments from last email
Attachments: Spec for [REDACTED].svg

Hi [REDACTED]

See attachment missing from last email

David Hattam
Senior Urban Designer
Urban Design

-  [REDACTED]
-  David.Hattam@ccc.govt.nz
-  Te Hononga Civic Offices, 53 Hereford Street, Christchurch
-  PO Box 73012, Christchurch 8154
-  ccc.govt.nz



From: Kleynbos, Ike
Sent: Tuesday, 20 December 2022 7:22 PM
To: Oliver, Sarah
Cc: Stevenson, Mark
Subject: Work on sunlight OM
Attachments: solar modelling; RE: recession planes

Hi Sarah – sorry I forgot to send you the stuff that David has done so far. See attached for the emails with some images of testing. He’s quite happy to talk about it, so I’m sure you can ask him for more detail if needed for Thursday’s meeting.

Anyway, back to the holiday. Hope you have a great Christmas! See you next year ☺

Ike Kleynbos

Principal Advisor – Planning
City Planning (E)

-  
-  Ike.Kleynbos@ccc.govt.nz
-  Te Hononga Civic Offices, 53 Hereford Street, Christchurch
-  PO Box 73012, Christchurch 8154
-  ccc.govt.nz



From: Hattam, David
Sent: Monday, 30 January 2023 6:10 PM
To: [REDACTED]
Cc: Kleynbos, Ike
Subject: Updated Spreadsheet
Attachments: MDRS Shading Hours Results.xlsx

Hi [REDACTED]

An updated spreadsheet is attached. I have checked the figures and made some changes.

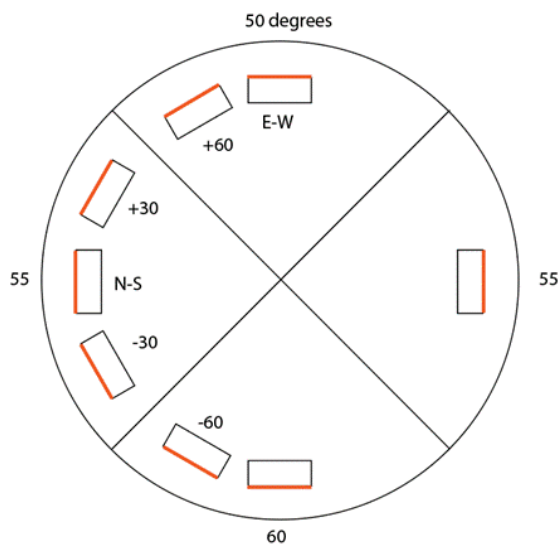
The sheets are as follows:

- CHCH MDRS – Tall : contains the start and finish time for solar access for Christchurch under the various orientations using MDRS model.
- AUCK MDRS – Tall : contains the start and finish time for solar access for Auckland under the various orientations using MDRS model.
- PROPOSED : contains the start and finish time for solar access for Auckland under the various orientations using MDRS model. Note some orientations have more than one table where more than one recession plane was tested. Greyed out tables have been rejected (but there should be the same number of tests).
- MDRS Comparison : Comparison of total number of hours between the scenarios. This is what I am looking at to determine sun access – ie a similar number of hours.

Note that this has been compiled by hand – I was having trouble with time formatting so some of the data is manually calculated and entered as a text string which isn't ideal.

Let me know if this makes sense – it may not!

Below is a diagram we use in the Plan to show how the boundary orientation works – it helps me to keep track of what I am looking at:



David Hattam
Senior Urban Designer
Urban Design

- [REDACTED]
- David.Hattam@ccc.govt.nz
- Te Hononga Civic Offices, 53 Hereford Street, Christchurch
- PO Box 73012, Christchurch 8154
- ccc.govt.nz

From: Kleynbos, Ike
Sent: Wednesday, 25 January 2023 12:27 PM
To: Hattam, David
Subject: Testing sunlight access QM effects

Hi David,

In my email yesterday (see below) I made reference to a summary report of the GIS output of residential parcels that make up intensified residential zones. The purpose of this summary is to provide an indication of what parcels need to be tested in order to confidently state that the outcomes of our alternative recession plane are more or less the same across the MRZ and HRZ areas; it seeks to address the site specific criteria evaluation threshold that needs to be met for 'other' QMs such as this.

Based on this, I think we need to find real sites in Christchurch that meet the following criteria:

Grade	Site size (m ²)	Road frontage (m)	Orientation
Flat	450-500	16-17	In-situ, then hypothetical N-S and E-W orientations
Flat	500-600	17-19	In-situ, then hypothetical N-S and E-W orientations
Flat	600-700	18-20	In-situ, then hypothetical N-S and E-W orientations
Flat	700-800	18-20	In-situ, then hypothetical N-S and E-W orientations
Slope	700-800	18-20	In-situ
Flat	800-900	19-21	In-situ, then hypothetical N-S and E-W orientations
Slope	800-900	19-21	In-situ
Slope	Around 1,000	In-situ	In-situ

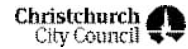
In each one of these MDRS should also tested as a baseline. Some slope sites have been added, as some of these will still be able to be developed.

Let me know what you think.

Many thanks,

Ike Kleynbos
Principal Advisor – Planning
City Planning (E)


 Ike.Kleynbos@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
 ccc.govt.nz

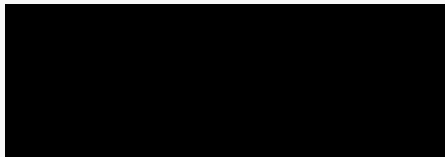



From: Kleynbos, Ike
Sent: Tuesday, 24 January 2023 5:56 pm
To: DelaRue, Ceciel <Ceciel.DelaRue@ccc.govt.nz>; Hattam, David <David.Hattam@ccc.govt.nz>
Subject: Kleynbos, Ike shared the folder "Sunlight Access" with you.



Kleynbos, Ike shared a folder with you

Hi both - as an insurance policy, I've enabled access to this folder for you, which contains that sunlight access QM work. Within this is also a brief summary of parcel make-up for testing purposes, which I'll send a follow-up email on shortly. Cheers, Ike



 This link only works for the direct recipients of this message.

Open

From: Stevenson, Mark
Sent: Tuesday, 21 February 2023 8:57 PM
To: Hattam, David
Cc: Oliver, Sarah
Subject: Sunlight access QM
Attachments: NIWA Climate Data_ALL_1972to2022.xlsx

H Dave

In looking back at the email below from Ike to make sure we captured everything, I am looking at the one drive folder highlighted – do you think the attached and the literature in the folder needs to be included as an appendix or have you referenced the relevant material in your report,

Thanks

Mark

From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Sent: Sunday, February 5, 2023 4:41:37 PM
To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>
Subject: Action Stations

Hi both,

Looks like we're in action at home with contractions starting. Luckily, I have worked yesterday and today to get the s32/s77 for sunlight access QM in a good state, see here:
[DRAFT – s77 Evaluation of Sunlight Access Qualifying Matter.docx](#)

I'm happy with the reporting/papers that have been referenced (and those that will come) in terms of justifying the QM. It was particularly fun extracting 90,000 lines of climate data from the NIWA climate data base... but hey, it's there!

You'll see that most of the content is there, with a number of references to forthcoming reporting. **The appendix that covers the site export and all of the journal articles is in the Sunlight Access folder in my OneDrive: [Sunlight Access](#)**

Once the options at the end of the assessment are drafted, I imagine the rest should flow relatively nicely. Depending on Abby's availability, could be something she does? As it seems most others are at capacity.

I think all other aspects of what I've been dealing with are on schedule: residential is done (please accept all track changes to s32 and rainbow docs once looked over); Glenda knows what is happening with SP Zones; Anita knows what is happening with SP OARC; Peter/Ian have been informed on the latest info for PT Access QM.

A lot has also been done for consultation also: Word doc updated with elements I know; customer services doc updated/reviewed. The letter and the map pop-ups need attention – the latter most notably because ILE is lost through the QM and descriptions of the QMs.

All things being equal, you won't see me until the 27th of Feb. I've completed my timesheet for the next two weeks; the final week I'll need to take as leave. If there is anything urgent, you're welcome to text or call me on 0273374153. I can't promise the quickest response, but I will respond.

All the best with the final preparations! And good luck with the briefings and webinar.

Many thanks,

Ike Kleynbos

Principal Advisor – Planning
City Planning (E)


 Ike.Kleynbos@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
 ccc.govt.nz

Christchurch
City Council 

From: Hattam, David
Sent: Monday, 9 January 2023 1:28 PM
To: Kleynbos, Ike
Subject: Stuff to do

599

Hi Ike

Just for clarity and so I have a record. This is what I am expecting to do over the next few weeks for recession planes:

- 1 Finish Urban design analysis on capacity and theoretical sunlight access to support preferred recession planes.
- 2 Include analysis of trees / canopy cover
- 3 Include some brief analysis of sun angles relative to other cities

We also need to think about

- 4 Modelling needed for solar access per site– eg GIS?
- 5 Impacts on solar heating (ask architectus or met solutions for advice)
- 6 Climate - what difference does it make (ask architectus or met solutions for advice)
- 7 What is the value of sunlight (eg can we get advice from a developer or architectus)
- 8 Analysis of different sites – based on GIS identifying sites, and then us picking orientations – what impact would it have?

I will contact Architectus next (they are not there this week) and met solutions. I will also get in touch with [REDACTED] from Waimak.

David Hattam
Senior Urban Designer
Urban Design

[REDACTED]
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Christchurch
City Council 

From: Hattam, David
Sent: Monday, 16 January 2023 3:48 PM
To: Kleynbos, Ike
Subject: Some words and diagrams
Attachments: MDRS 1.pptx; Recession Planes - Effects on Capacity.docx

Hi Ike

Here is a draft report on capacity and also my diagrams comparing us to Auckland in case these are useful for you at Council next week.

David Hattam
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From: Hattam, David
Sent: Monday, 19 December 2022 1:16 PM
To: Kleynbos, Ike
Subject: solar modelling

599

Hi Ike



David Hattam
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-  PO Box 73012, Christchurch 8154
-  ccc.govt.nz



From: Hattam, David
Sent: Wednesday, 11 January 2023 6:30 PM
To: Kleynbos, Ike; Schroder, Josie
Subject: Revised Diagrams
Attachments: Combined Recession Planes Diags 1.svg

Hi

Here are the revised diagrams with some changes related to comments. At the moment these could be used for the 24 Jan briefing if desired but will be part of a document to justify proposed recession planes. I have sent it as an svg because it is an easy way to handle the file. You can also get Inkscape from the software centre which allows you to edit these.

The takeaway is meant to be that quite significant reductions can be made without much impact on capacity. We like 3m and 50 because it matches Auckland sun access days and hours – it works better for 2 storeys than 4 and 45 (which does not match Auckland). It has 96% of the capacity for a typical development.

Ike I am not trying to compare development envelopes because they don't give a good indication of likely development outcomes, when all the other things have a significant impact. Incidentally, these are all about 30% site coverage which sounds low but is typical – it would be about 45% if the parking were removed.

Josie these are only for shading. We are basing our argument around sun access so we can't say too much about how it also helps with privacy.

I should probably add an RMD one – that would show the recession planes having more bite and pushing the buildings down and back to the point where 3 storey may not be possible. It is going too far in my opinion because it is way more than fixing up the iniquity caused by latitude – but willing to listen to arguments about why it may be appropriate.

Cheers!

David

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From: Stevenson, Mark
Sent: Friday, 27 January 2023 4:35 PM
To: Stevenson, Mark; Oliver, Sarah
Subject: Residential chapter

UPDATE 27/1
Residential

Provisions

- Recession plane rule to be amended.
- Appendix to be checked – preliminary diagram – recession plane included.
 - █ from NIWA to validate whether it is right
- Fire access width – Transport chapter
 - Forwarded latest to Julia
 - Potential need to define hose length – FENZ says the NZS is wrong.
 - Email sent to █

S32 completed

However, done in track changes so accept first.

If memo, narrative required of differences,

Sunlight access

- Overview sent to Robert is far as it is
- Evaluation to be done under s77 using skeleton from One drive (combined evaluation of I, L and J)
- Need to grab reporting that David H has done and incl. options
- David working with █ to validate his stuff
- David (a lot on) – to update UD assessment for residential, reporting analysis for sunlight QM
- Site specific assessment – 77L –
 - Buddle Findlay advice
 - Kyle has provided statistical breakdown – summary report has been prepared
- David H to do an assessment using different types of sites

Specific Purpose Hospital

No change – all in TRIM

Mark Stevenson

Manager Planning

█
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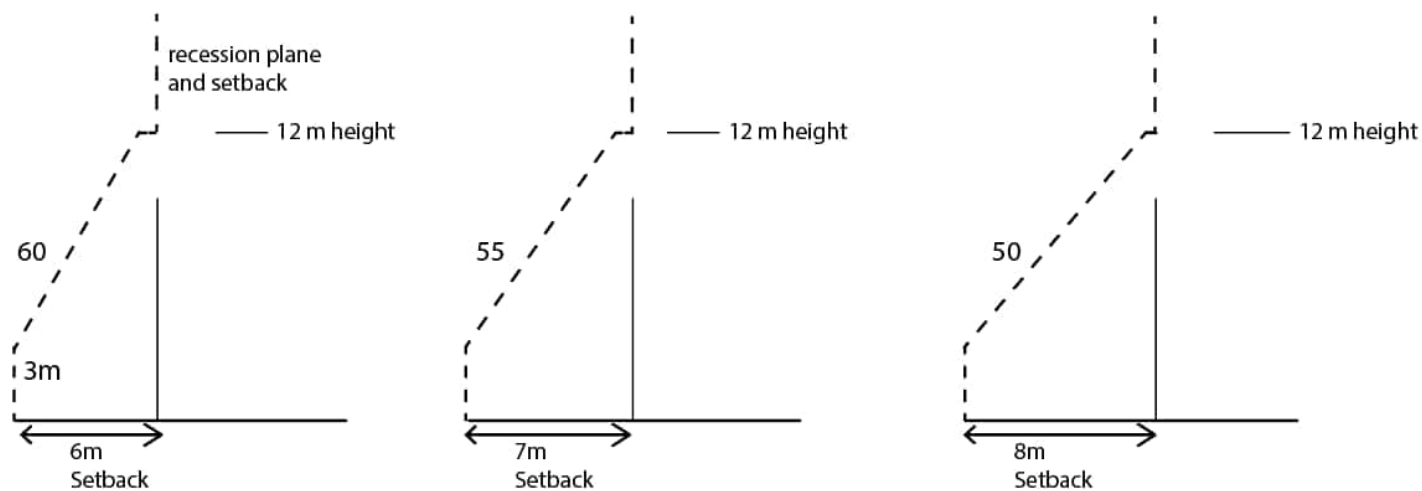
Hi Mark

Recession planes are not that effective at height – because the winter sun is below the building height – they need to be quite shallow to make a difference.

The best way to get sun is to have gaps in the building line.

So building length is limited to 30m, with a 10m gap, and the recession planes turn vertical above MDRS (as for Carlton Mill area in the current plan).

This means that a combination of recession planes and setbacks apply as shown below:



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City Council 

From: Stevenson, Mark
Sent: Friday, 17 February 2023 11:38 AM
To: Lightbody, Kirk; Hattam, David
Subject: Recession plane rules for MRZ and HRZ

599

For your review and inclusion in the Residential chapter and relevant zones in the Commercial chapter

Sunlight and outlook at boundary in the MRZ

- a. Where an internal **boundary** adjoins a **residential zone**, no part of any **building** shall project beyond a 50° building envelope along the southern boundary, 55° building envelope along the east and western boundaries and 60° building envelope along the northern boundary, contained by a recession plane measured from any point 3 metres above the internal **boundary**.
- b. Any application arising from this rule shall not be publicly notified.

Sunlight and outlook at boundary in the HRZ

- a. Where an internal **boundary** adjoins a **residential zone**, no part of any **building** shall project beyond a 50° building envelope along the southern boundary, 55° building envelope along the east and western boundaries and 60° building envelope along the northern boundary, contained by a recession plane measured from any point 3 metres above the internal **boundary**.
- b. For any part of a building above 12m,
 - i. the recession plane under (a) shall not apply
 - ii. A 6 metre setback shall apply on the northern boundary
 - iii. A 7 metre setback shall apply on the eastern and western boundaries
 - iv. A 8 metre setback shall apply on the southern boundary
- c. Any application arising from this rule shall not be publicly notified.

From: Scallan, John
Sent: Friday, 17 February 2023 10:06 AM
To: Stevenson, Mark
Cc: Hattam, David
Subject: RE: s77 evaluation sunlight QM

Hi Mark,

I sent through some text end of last week to answer Ike's comment at page 14. It looks like this has been inserted in page 10 following the David's diagrams and discussion on design outcomes.

I note your comment at page 11:

A sample of sites was selected based on current site boundaries and zoned under the Operative Christchurch District Plan as Residential Suburban (RS), and between 300m2 and 2000m2 in size, providing a sample size of 76,000 sites (approximately 98% of RS zoned site). This is a large sample of 77,000 sites, comprising the majority of sites to be rezoned MRZ.

The key point here is to convey the size and composition of the sample sites tested for the proposed QM. Otherwise, if the references to the operative zones etc are inconsistent they can be changed.

Thanks,
John.

From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
Sent: Thursday, 16 February 2023 5:46 pm
To: Scallan, John <John.Scallan@ccc.govt.nz>; Hattam, David <David.Hattam@ccc.govt.nz>
Subject: s77 evaluation sunlight QM

Hi
Attached is the s77 evaluation for the QM on sunlight access.

David – There is one comment of a minor nature for your attention
John – There is one comment for you unless it has been addressed David?

Can you please assist tomorrow?
Thanks
Mark

[contentmanager://record/?DB=CC&Type=6&Items=1&\[Item1\]&URI=25050724](https://contentmanager://record/?DB=CC&Type=6&Items=1&[Item1]&URI=25050724)

Mark Stevenson

Manager Planning


 Mark.Stevenson@ccc.govt.nz
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From: Lightbody, Kirk
 Sent: Monday, 13 February 2023 9:00 PM
 To: Hattam, David
 Subject: RE: Rule 14.6.2.2v

Hi David, let's talk about this tomorrow morning and explain it to me please!

Thanks, Kirk

Kirk Lightbody

Policy Planner CP
 City Planning (W)

03 941 6262
Kirk.Lightbody@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
ccc.govt.nz



From: Hattam, David <David.Hattam@ccc.govt.nz>
 Sent: Monday, 13 February 2023 6:07 pm
 To: Lightbody, Kirk <Kirk.Lightbody@ccc.govt.nz>
 Subject: Rule 14.6.2.2v

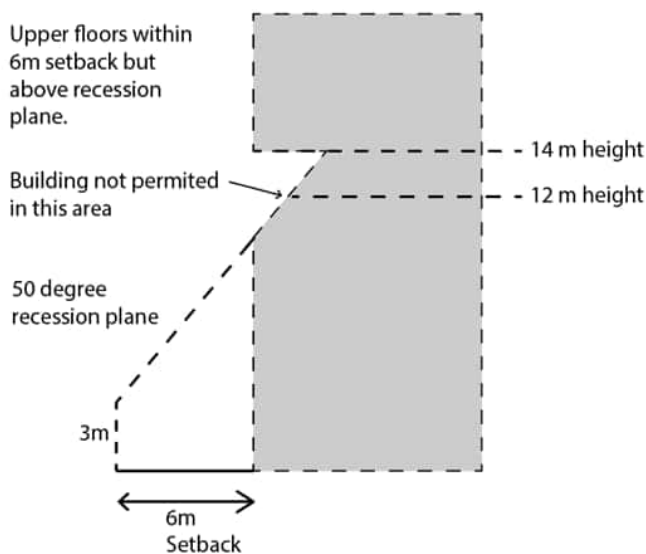
Hi Kirk

Can we have a quick chat about this rule? A change has been made and it has created a complication and I am just working through the implications.

The rule is an exception to recession planes allowing them to become vertical above a certain height to accommodate tall buildings (there is a 6m setback at a certain height, instead of a recession plane).

It used to state that the recession plane does not apply above 12m. This now states 14m. The issue is that a proportion of the building above 14m could overhang as shown in the cross section below. This has become a problem due to the proposed new recession planes.

I suggest the 14m is changed back to 12m – this would solve most of the issue.



I also (tentatively) suggest that there is a 7.5m setback for the south recession plane quartile (instead of 6m) as this would more closely tie in with the recession plane (turning it vertical at approx. 12m high). This is mostly about plan administration – if there is a big overhang permitted, then it creates a permitted baseline argument for going through the recession plane for other developments. However this is a more complicated change.

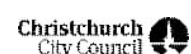
Sorry about finding this now - I tested whether the setback makes much of a difference to sun received (it doesn't) but I didn't consider the baseline argument – what do you think as a planner?

Come and see me if its quicker to explain in person.

David Hattam

Senior Urban Designer
 Urban Design

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From: Schroder, Josie
 Sent: Thursday, 12 January 2023 8:45 AM
 To: Hattam, David
 Subject: RE: Revised Diagrams

Hi Dave,

Thanks for sending through the options previously.

Could you have a chat to Amanda and William so they can look at the implications on the work they are doing.

I think for the briefing you need to show the actual difference in shading as recession plane angles are too technical to understand the impacts from. Did you intend to do this?

I was also not considering privacy as the issue, but the additional impacts of balconies or overhangs etc on shading.

Josie Schroder
 Principal Advisor Urban Design
 Urban Design



Josie.Schroder@ccc.govt.nz
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 PO Box 73012, Christchurch 8154
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Christchurch
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From: Hattam, David <David.Hattam@ccc.govt.nz>
 Sent: Wednesday, 11 January 2023 6:30 pm
 To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Schroder, Josie <Josie.Schroder@ccc.govt.nz>
 Subject: Revised Diagrams

Hi

Here are the revised diagrams with some changes related to comments. At the moment these could be used for the 24 Jan briefing if desired but will be part of a document to justify proposed recession planes. I have sent it as an svg because it is an easy way to handle the file. You can also get Inkscape from the software centre which allows you to edit these.

The takeaway is meant to be that quite significant reductions can be made without much impact on capacity. We like 3m and 50 because it matches Auckland sun access days and hours – it works better for 2 storeys than 4 and 45 (which does not match Auckland). It has 96% of the capacity for a typical development.

Ike I am not trying to compare development envelopes because they don't give a good indication of likely development outcomes, when all the other things have a significant impact. Incidentally, these are all about 30% site coverage which sounds low but is typical – it would be about 45% if the parking were removed.

Josie these are only for shading. We are basing our argument around sun access so we can't say too much about how it also helps with privacy.

I should probably add an RMD one – that would show the recession planes having more bite and pushing the buildings down and back to the point where 3 storey may not be possible. It is going too far in my opinion because it is way more than fixing up the iniquity caused by latitude – but willing to listen to arguments about why it may be appropriate.

Cheers!

David

David Hattam
 Senior Urban Designer
 Urban Design



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Christchurch
 City Council 

From: Daly, Sian
Sent: Monday, 23 January 2023 1:28 PM
To: Gregg, Helaina; Stevenson, Mark
Subject: RE: Request for comments: CEAG & SOG agenda pack 24 January 2023
Attachments: CEAG notes on PC14.tr5; CEAG notes on PC14.DOCX

Kia ora

Attached, the speaking notes for Dawn on PC14. Sorry they're a bit late Helaina.

Hope they're okay. Mark, there are some yellow highlighted parts with associated questions/comments for you.

Cheers
Sian

From: Gregg, Helaina <Helaina.Gregg@ccc.govt.nz>
Sent: Friday, 20 January 2023 4:08 pm
To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Daly, Sian <Sian.Daly@ccc.govt.nz>; Cameron, Jane <Jane.Cameron@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>
Subject: Request for comments: CEAG & SOG agenda pack 24 January 2023

Got the agenda earlier than usual, so thought I'd send this out on a Friday afternoon. Requests for comments below.

Part A

Item 3 – Urban Growth Partnership

Do we have anything specific on the Urban Growth Partnership material? Mark / Jane / Sarah

Note staff are providing advice into the engagement material – anything specific we'd like to raise on this?

Previously we have expressed that staff are continuing to be mindful of GCP engagement and how it relates to CTP and OCP etc. Do we want to express this again to Dawn?

Item 4 – PC14 update

Sian to provide points to be incorporated into briefing – thanks Sian ☺

Item 5 – Public transport futures

Any specific comments Jane noting that it's a verbal update

Part B

Item 6 – Discussion on next steps regarding matters arising from GCP sub-group Dec 2022

Noting no pre material circulated do we have any specific comments to include?

Have a lovely weekend ☺

Cheers
Helaina

From: Grabner-Thornley, Nadja <Nadja.GrabnerThornley@GreaterChristchurch.org.nz>
Sent: Friday, 20 January 2023 3:40 pm

Subject: FW: CEAG & SOG agenda pack 24 January 2023

Kia ora koutou,

For your information.

Ngā mihi,
Nadja

From: Grabner-Thornley, Nadja
Sent: Friday, 20 January 2023 3:34 pm

Subject: CEAG & SOG agenda pack 24 January 2023

Kia ora koutou,

Happy new year and I hope you had a wonderful break.

Please find attached the CEAG & SOG agenda pack 24 January 2023.

Ngā mihi,
Nadja

Nadja Grabner-Thornley

Programme and Relationship Lead | Greater Christchurch
Partnership

PO Box 73012, Christchurch 8154
nadja.grabnerthornley@greaterchristchurch.org.nz

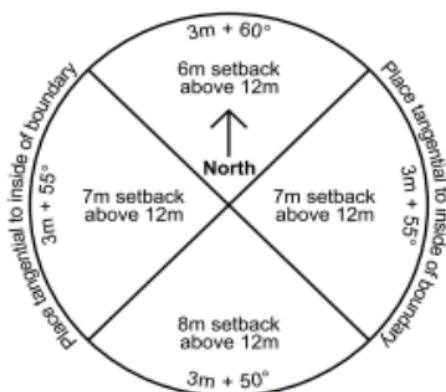


I think we need to discuss this with David. This is how it is captured in the MRZ chapter (only in LCIP):

iv. **within the Local Centre Intensification Precinct:**

- A. **for the construction of two or more residential units, any part of a building along the first 20 metres of a side boundary measured from the road boundary, or 60% of the site depth, measured from the road boundary, whichever is lesser.**
1. **For corner sites, depth is taken from individual adjoining boundaries, perpendicular to the boundary. See Figure 1, below.**
- B. **For any part of a building above 12m, the recession plane under (a) shall not apply, and the following setbacks shall apply, as shown in Appendix 14.16.2 diagram D:**
- i. **A 6 metre setback shall apply on the northern boundary**
 - ii. **A 7 metre setback shall apply on the eastern and western boundaries**
 - iii. **A 8 metre setback shall apply on the southern boundary**

But the appendix covers both zones, entirely:



- D Applicable to all buildings:
- in the **Medium Density Residential Zone (MRZ)** and **High Density Residential Zone (HRZ)** **higher height limit zones**
 - on sites in other non residential zones that adjoin the **Residential zones** **medium density higher height limit zones**
 - ~~in the medium density higher height limit zones (except those buildings over 11 metres in height)~~
 - ~~on sites in other non residential zones that adjoin the medium density (except those buildings over 11 metres in height)~~

From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
Sent: Monday, 27 February 2023 3:21 pm
To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Subject: FW: Recession planes

See below. I understood this was in the context of the HRZ.

From: Hattam, David <David.Hattam@ccc.govt.nz>
Sent: Wednesday, 15 February 2023 2:06 PM
To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
Subject: Recession planes

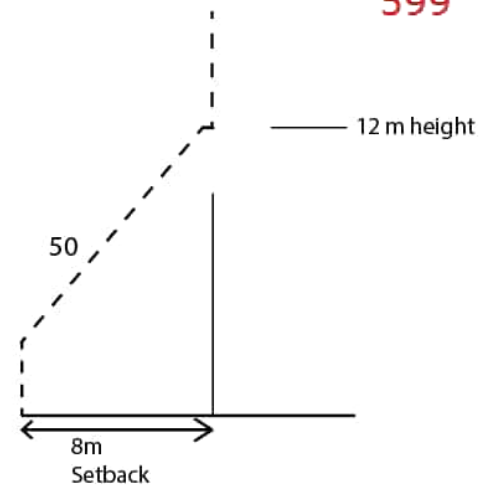
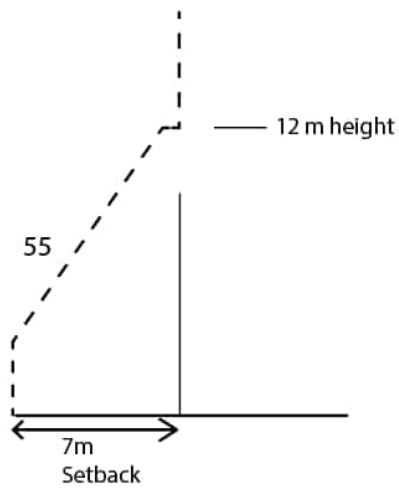
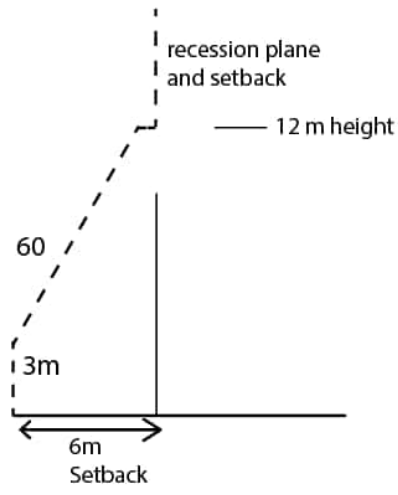
Hi Mark

Recession planes are not that effective at height – because the winter sun is below the building height – they need to be quite shallow to make a difference.

The best way to get sun is to have gaps in the building line.

So building length is limited to 30m, with a 10m gap, and the recession planes turn vertical above MDRS (as for Carlton Mill area in the current plan).

This means that a combination of recession planes and setbacks apply as shown below:

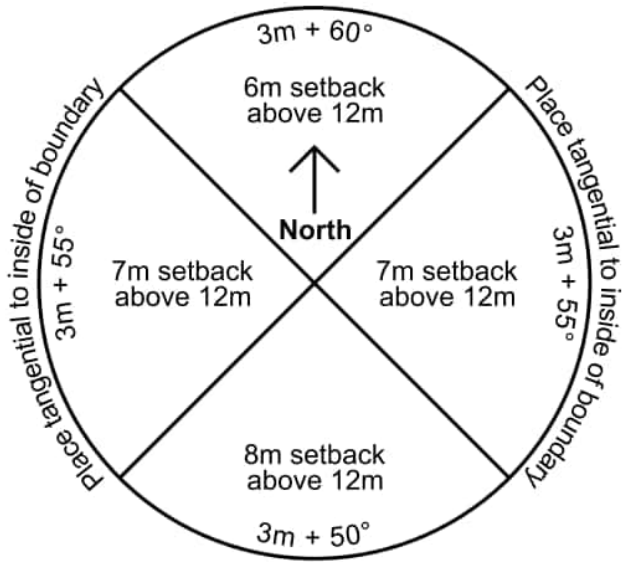


David Hattam
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From: Hattam, David
Sent: Wednesday, 15 February 2023 2:21 PM
To: Stevenson, Mark
Subject: RE: Recession planes

Yes it's the same but with the allowance for additional height if setback:



From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
Sent: Wednesday, 15 February 2023 2:19 pm
To: Hattam, David <David.Hattam@ccc.govt.nz>
Subject: RE: Recession planes

Thanks David. With ref to the diagram, is an orientation based approach for HRZ proposed like MRZ?

Mark Stevenson
Manager Planning

- [Redacted]
- Mark.Stevenson@ccc.govt.nz
- Te Hononga Civic Offices, 53 Hereford Street, Christchurch
- PO Box 73012, Christchurch 8154
- ccc.govt.nz



From: Hattam, David <David.Hattam@ccc.govt.nz>
Sent: Wednesday, 15 February 2023 2:06 PM
To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
Subject: Recession planes

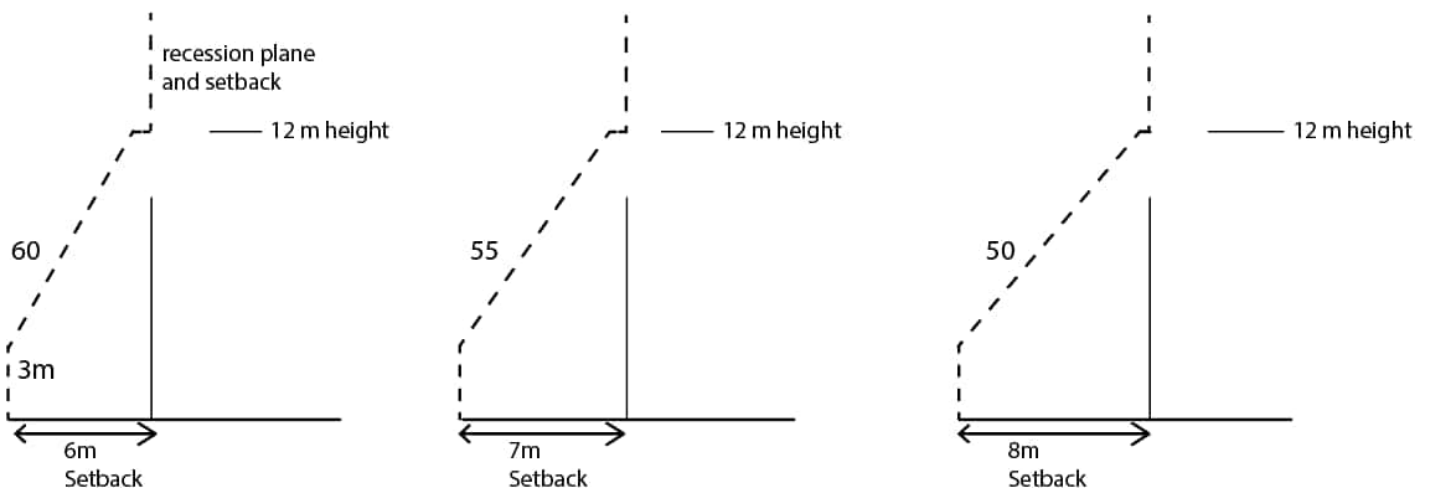
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Senior Urban Designer
Urban Design



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 PO Box 73012, Christchurch 8154

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From: Hattam, David
Sent: Monday, 19 December 2022 9:45 AM
To: Kleynbos, Ike
Subject: RE: recession planes

Hi Ike

Yes I tend to agree with you – it is 2030 and that is a long time and then there is all the existing building stock which has been constructed with solar access in mind. It is also such an important driver of design.

All buildings are supposed to be upgraded by 2050 but that is beyond our time horizon (and I can't see it happening in reality as you basically have to rebuild them)

From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Sent: Monday, 19 December 2022 9:42 am
To: Hattam, David <David.Hattam@ccc.govt.nz>
Subject: RE: recession planes

Thanks for following up with Jullie, David. Do you mean 2023?

Also, it is worth remembering that this would only apply to new dwellings. Changing the recession plane also changes how it affects established housing surrounding developments, which may be at a much lower level of insulation and dependent on sunlight access. So I think the argument still stacks up. I think there are about 130k residential parcels, with demand being about 35k for the next 30 years, so the sum will still be established dwellings.

Cheers,

Ike Kleynbos
Principal Advisor – Planning
City Planning (E)
Ex: [REDACTED]

From: Hattam, David <David.Hattam@ccc.govt.nz>
Sent: Friday, 16 December 2022 2:21 pm
To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Subject: recession planes

Hi Ike

[REDACTED]

David Hattam
Senior Urban Designer
Urban Design

- [REDACTED]
- David.Hattam@ccc.govt.nz
- Te Hononga Civic Offices, 53 Hereford Street, Christchurch
- PO Box 73012, Christchurch 8154
- ccc.govt.nz



From: Hattam, David
Sent: Friday, 17 February 2023 12:43 PM
To: Stevenson, Mark; Lightbody, Kirk
Subject: RE: Recession plane rules for MRZ and HRZ
Attachments: District Plan Appendix 14.16.2 Recession Planes - pp104101 - Issue 2023-02-15.pdf

Hi Kirk and Mark

The rule should refer to appendix 14.16.2, which I have attached an amended version for (which needs to be included in the plan).

I would recommend keeping the wording the same as what we have now or using wording similar to the MDRS as per the below. The underlining is a change from Marks wording.

From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
Sent: Friday, 17 February 2023 11:38 am
To: Lightbody, Kirk <Kirk.Lightbody@ccc.govt.nz>; Hattam, David <David.Hattam@ccc.govt.nz>
Subject: Recession plane rules for MRZ and HRZ

For your review and inclusion in the Residential chapter and relevant zones in the Commercial chapter

Sunlight and outlook at boundary in the MRZ

- a. Where an internal boundary adjoins a residential zone, no part of any building shall project beyond a building envelope constructed by recession planes shown in Appendix 14.16.2 diagram D, from points 3m above ground level along all boundaries. Where the boundary forms part of a legal right of way, entrance strip, access site or pedestrian access way, the height in relation to boundary applies from the farthest boundary of that legal right of way, entrance strip, access site or pedestrian access way.
- b. This standard does not apply to...
- c. ~~50- building envelope along the southern boundary, 55- building envelope along the east and western boundaries and 60- building envelope along the northern boundary, contained by a recession plane measured from any point 3 metres above the internal boundary as shown in Appendix 14.16.2 diagram D.~~
- d. Any application arising from this rule shall not be publicly notified.

Sunlight and outlook at boundary in the HRZ

- a. Where an internal boundary adjoins a residential zone, no part of any building below a height of 12m shall project beyond a building envelope constructed by recession planes shown in Appendix 14.16.2 diagram D from points 3m above ground level along all boundaries. Where the boundary forms part of a legal right of way, entrance strip, access site or pedestrian access way, the height in relation to boundary applies from the farthest boundary of that legal right of way, entrance strip, access site or pedestrian access way.
- b. For any part of a building above 12m, the recession plane under (a) shall not apply, and the following setbacks shall apply, as shown in Appendix 14.16.2 diagram D:
 - i. A 6 metre setback shall apply on the northern boundary
 - ii. A 7 metre setback shall apply on the eastern and western boundaries
 - iii. A 8 metre setback shall apply on the southern boundary
- b. This standard does not apply to...
- c. Any application arising from this rule shall not be publicly notified.

From: Kleynbos, Ike
Sent: Monday, 16 January 2023 12:24 PM
To: Blair, Hermione
Cc: Hattam, David
Subject: RE: Potential alternative PC14 recession plane

Hi Hermione – welcome back! I trust you had a good break.

Yes, the idea is that it will be applied in the same way current diagrams are – we just wanted to hear from you whether you thought it was an easy way to apply it for consenting. Agree with the change to the text, noting that the method will be as per MDRS, and all of the recession plane exemptions we've drafted would still apply.

David has done some great modelling to show how this would apply and seems to deliver the most balanced approach. We are looking to commission NIWA to do expert reporting on the sunlight access, which should have us in good stead for evaluation reporting.

I've just about finished the updates to provisions after our last meeting. I'll send this round alongside a meeting invite later today, with the idea that this will be the final meeting before I affirm my s32 drafting.

Many thanks,

Ike Kleynbos
Principal Advisor – Planning
City Planning (E)
Ex: [redacted]

From: Blair, Hermione <Hermione.Blair@ccc.govt.nz>
Sent: Monday, 16 January 2023 10:58 am
To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Cc: Hattam, David <David.Hattam@ccc.govt.nz>
Subject: RE: Potential alternative PC14 recession plane

Hi

I see this is a bit of a combination of existing higher height limit RMD and RCC, but with a higher starting point and without the gradations. Is it envisaged that this would work in the same way as our current RP diagrams i.e. include the wording "Place tangential to inside of boundary" – otherwise we will need the angle from north where the segments change identified.

It would also need to be amended to refer to "all boundaries other than road boundaries"

I'd be interested to see how the solar modelling and testing works out, in particular with the southern recession plane, as while it is reduced from MDRS it is still significantly more generous than our current approach.

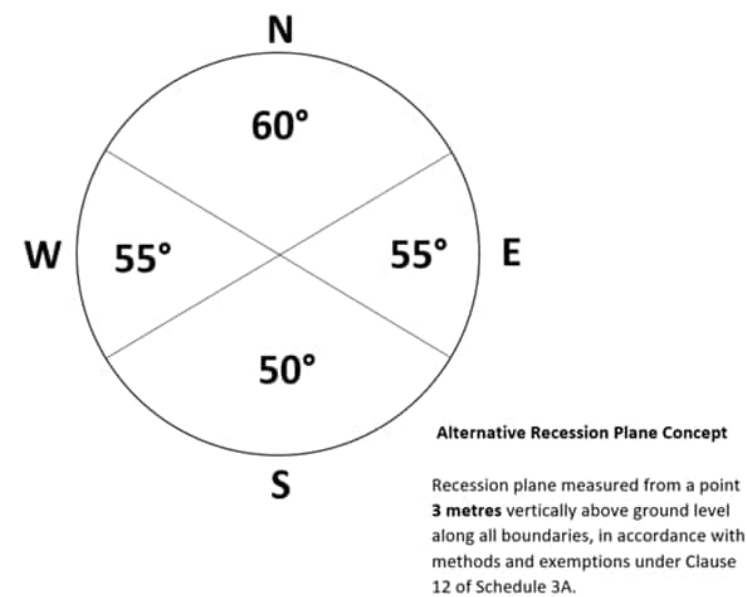
Cheers

Hermione

From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Sent: Tuesday, 10 January 2023 5:16 pm
To: Blair, Hermione <Hermione.Blair@ccc.govt.nz>
Cc: Hattam, David <David.Hattam@ccc.govt.nz>
Subject: Potential alternative PC14 recession plane

Hi Hermione,

David and I have been working through various alternatives to the MDRS recession plane. The approach that seems to hold the most water at this stage is one that does reflect the orientation of sites and builds on the 'compass approach' used in the DP. It would apply the following approach:



We are planning to discuss this further with Architectus next week and hope to engage NIWA to provide further solar modelling. However, in the meantime, we'd be keen to get your views on the approach from the perspective of consenting practicalities. The concept is to make the current compass approach simpler, whilst still achieving site-specific outcomes.

Keen to hear your thoughts.

Many thanks,

Ike Kleynbos
Principal Advisor – Planning
City Planning (E)

From: Kleynbos, Ike
 Sent: Friday, 2 December 2022 3:15 PM
 To: Stevenson, Mark; Oliver, Sarah; Higgins, John
 Subject: RE: Possible QM for recession plane

Apologies, some text fixed in the table below...

From: Kleynbos, Ike
 Sent: Friday, 2 December 2022 3:11 pm
 To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>
 Subject: Possible QM for recession plane

Hi all,

The unique shading effects of ChCh continues to be a point of contention, which has been raised by Councillors. Addressing this, the interest of John to see this notified, and the fact that we are actually at a different latitude, it would be good to explore whether entertaining this is a viable option.

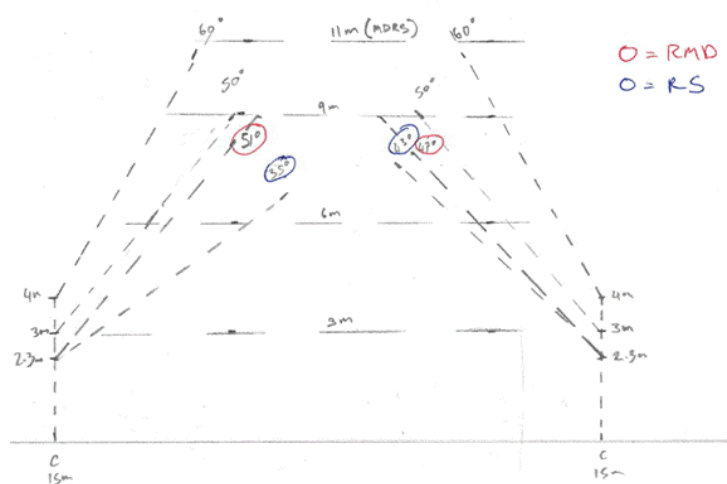
This would fall under the 'other matter' umbrella and require a good evidence basis to be justified, notwithstanding that it would be a QM that would apply across the whole city (thinking about s86BA here). On the face of it, the most significant elements we would need to justify are:

- Loss of development capacity;
- Boarder costs of approach;
- NPS-UD Obs justification;
- Site-specific evaluation of:
 - Specific characteristic – (all sites at similar latitude? Show mapping of change in sun angle across city?)
 - Range of options to address this (different feasibility/yield tests on various sites as examples?)

In terms of options, and before we dive into this too far, I'd like to test in John Scallan's model what the impact would be of changes to feasibility with changes to planes. I've summarised 3 options below:

Zone / Option	Recession plane	Comment
RS Zone	2.3m at -35-45°	Unlikely to be suitable to achieving MDRS. Max building height likely at two storey.
RMD Zone	2.3m at -45-55°	RMD has seldomly seen three storey development, so would struggle to be justified. Upper floor plate in test is only just over 3m.
MDRS	4m at 60°	Widely unsupported, does not align with the latitudinal difference ChCh has (being 7° different to Auckland), does not adjust to the orientation of parcels.
Bespoke – Option 1	4m at 50°	Reduced angle, but unlikely to cut height by much and does not respond to site orientation or the issue of bulk/shadow at the boundary (4m), but aligns well with MDRS.
Bespoke – Option 2	3m at 50°	Reduced angle and height, reducing the bulk at the boundary, reducing potential for shading. Does not respond to site orientation, but approach similar to MDRS. Upper floor plate in test shows floor at just over 5m (achieves 3 storeys).
Bespoke – Option 3	3m at -45-55°	Adaptive angle based on feasible RMD model, increasing approach height by 0.7m (reduced down by 1m compared to MDRS). Would be adaptive to site orientation.
Bespoke – Option 4??		

I've tested some of this, as per below, based on an average frontage of 15m:



I think my preferred option would be Option 3, only applying this to MRZ. However, speaking to John, bespoke site orientation modelling is quite complex, so if this has support, I think it would be best to test Option 2 in the model. This will give us a good indication what impact of an alternative. Fundamental to this is that we believe that 3 storeys are achievable in a height less than MDRS, but as long as we can show that in most cases 3 storeys is achievable, then we can confidently say that we're still meeting the intent of the Act.

I'd like some views on this before I ask John to do some initial modelling.

Many thanks

Ike Kleynbos
 Principal Advisor – Planning
 City Planning (E)

From: Stevenson, Mark
Sent: Tuesday, 24 January 2023 9:20 AM
To: Templeton, Sara
Cc: Office of the CE
Subject: RE: Plan Change 14 query

Kia ora

Thanks for your email. Tom has also made contact directly and we will set up a time to meet and discuss further,
Thanks
Kind Regards

Mark Stevenson

From: Templeton, Sara <Sara.Templeton@ccc.govt.nz>
Sent: Monday, 23 January 2023 6:21 pm
To: Office of the CE <OfficeoftheCE@ccc.govt.nz>
Subject: Plan Change 14 query

Kia ora,

I see we have a briefing tomorrow so some of this may be covered – but please pass on to staff involved.

I'm really interested in the work being done at the University of Canterbury on the MDRS (Dr Tom Logan etc) and its impact on things like developability, environment, affordability etc. Is it possible to get hold of some of it to support the work that staff are doing – I really want us to get this right and not have unintended consequences. I'm also concerned about delays in planned developments of social housing etc if the sunlight QM goes ahead.

Ngā Mihi,

Sara.

Sara Templeton

Councillor for Heathcote
Climate Change Portfolio Lead
Director Christchurch City Holdings Ltd

Ko ngā pae tawhiti whaia kia tata. Ko ngā pae tata, whakamaua kia tina - The potential for tomorrow is determined by what we do today.

 021 036 7672
 sara.templeton@ccc.govt.nz
 Civic Offices, 53 Hereford Street, Christchurch 8013
 PO Box 73016, Christchurch 8154
 www.saratempleton.nz

From: Kleynbos, Ike
Sent: Friday, 17 March 2023 3:42 PM
To: Stevenson, Mark
Subject: RE: PC 14

599

Hi Mark,

This alternative interpretation has not come up in other instances. The advice we have received to date is quite clear that the Sunlight Access QM nullifies ILE due to proposing a qualifying matter across the city – notwithstanding the fact that the Act never anticipated a TA would apply a city-wide QM.

S86BA directs that the rules in Part 2 of Schedule 3A (MDRS) do not apply upon notification if they are within a qualifying matter “area” – in our case, all relevant residential zones. S77M goes into further detail about consenting upon notification and takes the same approach.

Many thanks,

Ike Kleynbos
Principal Advisor – Planning
City Planning (E)
Ex: [REDACTED]

From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
Sent: Friday, 17 March 2023 3:27 pm
To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Subject: FW: PC 14

Hi
Just to make you aware, I am in correspondence with Joe Colgan re. the effect of the sunlight QM. As per earlier correspondence below, he appears to be interpreting section 86BA that the QM only affects one rule in the MDRS and therefore the balance of the MDRS should take effect.

Has this come up through other correspondence?

Thanks

Mark

From: [REDACTED]
Sent: Friday, 17 March 2023 2:58 PM
To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
Subject: Re: PC 14

Mark it is not a matter of interpretation...the words in the act are very clear...you admit that in your opening line. They are clear enough for Wellington council to take the time to differentiate those that do take immediate effect from those that don't.

They are marked by a red gavel.

There is a vast difference between rules taking immediate effect and them being delayed until next year. It seems this is an arbitrary subjective decision to defer intensification for as long as possible.

I can work with existing recession planes rules but the more relaxed site density/ coverage rules of MDRS make a huge difference to what was Residential Suburban zoning.

The council has had ample latitude in respect of this issue...yet you continue to ignore the law as written, simply because it suits you.

I will challenge this as far as I can take it.

Sent from [Outlook for Android](#)

From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
Sent: Friday, March 17, 2023 2:24:39 PM
To: [REDACTED]
Subject: RE: PC 14

Hi [REDACTED]

That is correct that MDRS takes effect from notification where a qualifying matter does not apply. Under Plan Change 14, we have proposed a qualifying matter with effect across the Medium and High Density Residential zones that delays the effect of MDRS.

This is based on our interpretation of the legislation and I accept that you have a different interpretation.

We have notified the plan change today and you have the opportunity to make a submission and pursue this further through the forthcoming process.

The plan change is now live here – <https://www.ccc.govt.nz/the-council/plans-strategies-policies-and-by-laws/plans/christchurch-district-plan/changes-to-the-district-plan/proposed-changes-to-the-district-plan/pc14/>

The mapping is also live, which allows you to zoom in/ out and search by property –

<https://christchurchcity.maps.arcgis.com/apps/webappviewer/index.html?id=ad65227f17a8492aa9191f4c665a3d0a#Propertymaps>

Thanks

Mark Stevenson
Manager Planning

[REDACTED]
Mark.Stevenson@ccc.govt.nz
Te Hononga Civic Offices, 53 Hereford Street, Christchurch
PO Box 73012, Christchurch 8154
ccc.govt.nz

Christchurch
City Council

From: [REDACTED]
Sent: Friday, 17 March 2023 2:21 PM
To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
Subject: Re: PC 14

Hi Mark. Are you able to clarify this please.

Both Auckland council and Wellington have cited those rules not classified as qualifying matters as having immediate effect.

That is clearly the intention of the law as written. I cannot see why Christchurch should be any different.

Regards

Sent from [Outlook for Android](#)

From: [REDACTED]
 Sent: Wednesday, March 1, 2023 9:14:16 AM
 To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Subject: RE: PC 14

Hi Mark, sorry to labour the point...I understand that the recession planes are a QM that affects pretty much every site in Christchurch, but the density standard (i.e. 50% site coverage) isn't, nor are some of the other schedule 3A rules, so why do they not take immediate effect?

Regards

From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Sent: Wednesday, March 1, 2023 8:42 AM
 To: [REDACTED]
 Subject: RE: PC 14

Hi [REDACTED]

The proposed Sunlight access qualifying matter applies to all residential zoned properties subject to Plan Change 14, which for the purpose of clause 86BA(1)(c)(ii) is a qualifying matter area. Notwithstanding this, there remains the ability to apply for resource consent for a non-compliance with the operative District Plan, before decisions are made on MDRS, Thanks

Kind Regards

Mark Stevenson
 Manager Planning

[REDACTED]
Mark.Stevenson@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
ccc.govt.nz

Christchurch
 City Council 

From: [REDACTED]
 Sent: Monday, 27 February 2023 10:14 PM
 To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Subject: RE: PC 14

Hi, Mark, further to earlier exchanges, on review of the relevant section of the RMA, as outlined below,

86BA Immediate legal effect of rules in IPI prepared using ISPP

Immediate legal effect: general

(1)

A rule in a proposed plan has immediate legal effect if the rule meets all of the following criteria:

(a)

the rule is in an IPI prepared using the ISPP:

(b)

the rule authorises as a permitted activity a residential unit in a relevant residential zone in accordance with the density standards set out in [Part 2](#) of Schedule 3A:

(c)

the rule does not apply to either of the following areas:

(i)

a new residential zone:

(ii)

a qualifying matter area.

I don't see how your interpretation can be correct; there are 18 separate rules, so surely, any rule that meets *all* the criteria of 86BA, would be implemented immediately? That would effectively mean anything that wasn't classified as a qualifying matter area, such as rules 10 and 14 of Schedule 3A would qualify.

The mere fact that a rule is not classified in any way as qualifying matter, is a tacit acceptance of it by the council so what is the point of bundling it into a deferral with those rules that are. It won't be subject to review by the hearings panel so it becomes pointless to combine it with issues that will be.

The interpretation you seem to have put upon it is to say that the existence of *any* qualifying matter, automatically means that the entire suite of rules fails to meet the requirements of the clause as written, but that's not what the act says.

Other than it defers intensification, I cannot see any justification for the council's approach.

Regards

[REDACTED]

From [REDACTED]
 Sent: Friday, February 24, 2023 2:12 PM
 To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Subject: RE: PC 14

Hi Mark, thank you for the prompt response.

I understand the MDRS rules in general and in particular, the high density zones will be more permissive than the MD rules under the extant district plan but there were *always* going to be qualifying matters, be they heritage or natural hazard related; it makes the statements given (on my interpretation) that the implementation of intensification would only be delayed only until March, disingenuous to say the least.

The council seems quite happy to rely upon the RMA rules when it suits them but fails to notify the plan change as required by law, when it doesn't.

Seems like hypocrisy to me.

I see no reason why the rules that aren't subject to qualifying matters should be delayed; clearly the council has no issue with them.

It would mean that some existing district plan rules would remain in place, others would be modified but that's not unmanageable. It allows some intensification but addresses the major issue of sunlight through modified recession planes; higher density per se, doesn't seem to be an issue, height is the major one.

Regards

[REDACTED]



[REDACTED]

From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Sent: Friday, February 24, 2023 12:52 PM
 To: Joe Colgan [REDACTED]
 Subject: RE: PC 14

Hi [REDACTED]

Thank you for your email.

Section 86BA of the Resource Management Act prescribes that the rules do not have immediate legal effect if affected by a qualifying matter. It is not specific in regard to the aspects of MDRS subject to a qualifying matter or not.

The forthcoming process will enable the testing of qualifying matters, which the NPS-UD and enabling housing legislation prescribes as the method by which intensification can be restricted, including MDRS. I also note that the legislation enables the plan change to be more enabling than MDRS so the rules for the Medium Density Residential Zone and High Density Residential Zone may ultimately differ from what is prescribed in the legislation.

Subject to Council's approval, you will have the opportunity to make a submission and present to an Independent Hearings Panel.

Thanks
 Kind Regards

Mark Stevenson
 Manager Planning

[REDACTED]
Mark.Stevenson@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
ccc.govt.nz

From: [REDACTED]
Sent: Friday, 24 February 2023 9:31 AM
To: Resource Consent applications <CCCResourceconsentapplications@ccc.govt.nz>
Cc: Megan Woods (MIN) <m.woods@ministers.govt.nz>; d.clarke@ministers.govt.nz; johnhardiemediator@gmail.com
Subject: PC 14

Hi, your latest update notes that the MDRS rules won't take effect until 2024 because you have made changes to the recession planes a qualifying matter. I understand the import of that.

But if you haven't made the density rules (site coverage of 50%) a qualifying matter, why does that not take effect when the plan change is ratified by the council on 17th March?

Surely the whole point of having the discretion to make certain issues a qualifying matter, is a clear indication that you make a selective choice about what can be implemented unilaterally and what needs further consultation and the formal hearing to be concluded before it can be implemented.

If by having one qualifying matter, the entire suite of new rules is deferred, you have disingenuously avoided the intensification intent of the law as passed and which should have become operable as part of the new district plan last September. I can see no reason for this other than a desire to procrastinate.

Those elements of the new rules that are not qualifying matters should become operable in March. Why the deferral?

For those cc'd in here, I'd like a response from at least one you given the scenario that this creates for developers such as myself.

[REDACTED]



[REDACTED]

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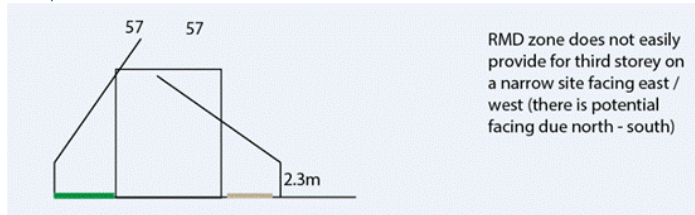
From: Kleynbos, Ike
 Sent: Monday, 9 January 2023 2:58 PM
 To: Stevenson, Mark
 Subject: RE: Our questions following the council-sponsored webinars on proposed PC14 amendments

Great, thanks for that, Mark. I happy to respond directly to Tony, if you like. Before I do, please see below for some responses to your queries, with additional text in blue below.

QM on PT Accessibility – good point, have updated text below to be clear on what I'm referring to.

PT corridor – have accepted the change and added in some additional text.

Current recession planes – the work that David has done shows that it is difficult to achieve 3 storeys in RMD, not possible in RS/Hills/s RSDT, but could be done in RCC (only, really). See RMD example below:



CBA effects assessment - instead of the SIA, I've referred to the work that MRCagney did to support MDRS that I mentioned this morning. This will hopefully address many of the supplementary questions – see text below.

Let me know what you think.

Many thanks,

Ike Kleynbos
 Principal Advisor – Planning
 City Planning (E)
 Ex: [REDACTED]

From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Sent: Monday, 9 January 2023 2:30 pm
 To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
 Subject: RE: Our questions following the council-sponsored webinars on proposed PC14 amendments

Thanks Ike. I have made additions with comments (italicised) – all highlighted. If happy, please reply directly to Tony Simons unless you would prefer I do it.
 Mark

From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
 Sent: Thursday, 5 January 2023 11:19 AM
 To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Subject: RE: Our questions following the council-sponsored webinars on proposed PC14 amendments

Kia ora Mark,

Not a problem – please see below for my draft response within Tony's email in red text. Happy to discuss this further on your return, noting your email back to Tony regarding timeframes.

Many thanks,

Ike Kleynbos
 Principal Advisor – Planning
 City Planning (E)
 Ex: [REDACTED]

From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Sent: Thursday, 22 December 2022 11:52 am
 To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
 Subject: RE: Our questions following the council-sponsored webinars on proposed PC14 amendments

Hi Ike
 Can you please prepare a response to the following on your return. I will respond to advice that we will provide a full response upon our return in early January
 Thanks
 Mark

From: John Hardie <[REDACTED]>
 Sent: Wednesday, 21 December 2022 10:55 am
 To: Higgins, John <John.Higgins@ccc.govt.nz>
 Subject: Fwd: Our questions following the council-sponsored webinars on proposed PC14 amendments

Sent from my iPhone

Begin forwarded message:

From: RBK Residents Assoc <rbkresidents@gmail.com>
Date: 21 December 2022 at 9:12:59 AM NZDT
To: Tessa.Zant@ccc.govt.nz
Subject: Our questions following the council-sponsored webinars on proposed PC14 amendments

Thank you for organising these webinars Tessa. They were very informative. Mr Hardie made abundantly clear what his role was not, which is why these following clarification questions are directed to you.

Reference was made to a number of proposed amendments to PC14. We understand the detail around those changes is being developed but hope some of these questions will be helpful in signalling our position and can be answered, in general terms, as soon as possible.

1. It appears from the slide [Proposal to Restrict MDRS] it is planned to significantly reduce the overall size of the urban residential area that will be subject to MDRS intensification. Which areas originally proposed for MDRS in PC14 are now proposed will be excluded? Is it possible to show them clearly on a map?

Council is proposing to introduce a qualifying matter to limit the extent of where MDRS applies, largely based on 10-minute accessibility to core bus routes. It is estimated that

approximately a third of medium density residential zoned areas will have this QM applied. Mapping is currently being drafted, however at this stage it appears that the following suburbs would either have the QM partially or entirely applied: Prestons; Parklands; North New Brighton; Travis; Avondale; Dallington; Avonside; North New Brighton; Southshore; Bromley; Scarborough; Lyttelton; Sumner; Richmond Hill; Clifton; Redcliffs; McCormacks Bay; Mt Pleasant; St Andrews Hill; Heathcote Valley; Hillsborough; Huntsbury; Cashmere Hills; Westmorland; Hoon Hay; South Halswell; Wigram; Hei Hei; Yaldhurst; Casebrook; Harewood; West Belfast; Styx; and North St Albans.

2. Another slide talks about more protections for green space and public land. Does this include more restrictive rules in areas adjacent to or near to such spaces? If so, what will those restrictions be? For example the original PC14 allowed for 6-storeys and higher at and near the Mona Vale boundary. Is that still the case?

This new QM merely seeks to protect existing public open space areas captured in the District Plan that lie within catchments directed by Policy 3 of the NPS-UD. No additional controls for adjoining properties have been considered. Six storey development is still enabled in areas around Mona Vale, south of the Avon River, noting the influence of waterbody and railway setbacks in this area.

3. We are pleased to see restrictions are proposed (as a QM) around Riccarton Bush and between the bush/grounds and the Riccarton commercial area. What are those restrictions and where exactly might they be applied.

Reporting has been completed that recommends a cascading height response of two and three storeys being enabled, with the commercial zone being unaffected. The spatial extend and cascading heights are as follows:



4. We note development restrictions are proposed along the Papanui Road and Riccarton Road boundaries to allow future widening. Specifically, what restrictions to commercial development are proposed along the north side of Riccarton Road from Konini Street east to the railway line.

This is in the early stage of development. The concept at this stage is to restrict development along the road frontage, increasing the MDRS-directed setback of 1.5m to 4.5m to allow for the possibility of any required future widening for public space / amenity enhancements in response to any prospective future public transport enhancements. This would only apply to residential properties and the commercial zone would be unaffected.

5. We are very happy to see Council staff proposing a QM should be applied to preserve access to sunlight. Given that fact, is it possible the current DP set-back rules for medium density development might be retained, given they were developed relatively recently after extensive feedback and consultation. Or is it proposed they be more restrictive but only by an amount that makes their shading effect equal to the shading effect in Auckland?

We would very strongly favour the former, taking into account

- our topography
- our need to grow tree canopy
- our garden city status
- our aspirations to become a national park city
- the fact that the current rules are bespoke for Christchurch

This is in the early stage of development. Any alternative recession plane that Council proposes must still ensure that three storey development is possible, in order to align with the outcomes of Schedule 3A of the Act (MDRS). Recession planes captured in the current District Plan do not envision the development of three storey and therefore any alternative proposal is unlikely to propose retaining current controls. Note that recession planes are taken at ground level at boundaries, so adapt to topographical variation, whilst significant tree protections and tree canopy cover controls also required to be met for any prospective development.

6. It appears the walking distances from the boundaries of centres have been reviewed. Is this correct? What changes have been made and why? Also:

Have centre boundaries been reviewed for appropriateness?

Does the council have its own definition of a walkable catchment in the Christchurch context?

Have actual walking times been measured from each centre's boundaries under different conditions, and how has it been determined what walking times are appropriate in each centre area?

Do these walking times take account of the needs of elderly or differently-abled residents? If not, why not?

The approach to walking catchments taken thus far has simply been reviewed and found to be adequate. The catchment approach is directed by Policy 3 of the NPS-UD, taking an approach which focuses on commensurate scale and accessibility. Walking time is translated to distance, with distance measured from the edge of a commercial centre zone, not its centre – as per Ministry guidance. The distance measured is a 'network distance' rather than 'as the crow flies', meaning it follows the roading network. Council has the ability to extend this as we see fit, when aligning with the outcomes of the NPS-UD. Distance is not adjusted to differently-abled persons, with reference made to [Aotearoa Urban Street Planning & Design Guide \(Waka Kotahi\)](#) and [Understanding and Implementing Intensification Provisions for the National Policy Statement on Urban Development \(Ministry for the Environment\)](#).

7. In the webinar Mark Stevenson stated the council is required under the RMA to do its own evaluation of the economic, social, cultural and environmental effects of any plan changes proposed. Specifically, what social, cultural and environmental evaluations of the effects of the proposed levels of increased intensification on Christchurch and its residents have been undertaken or are proposed to be undertaken, and will these be available for Council to consider before the amended PC14 is notified?

This is a requirement of Section 32 of the Act. The required evaluation report will be made available as part of the plan change material that will be released within the Agenda for the meeting requesting to notify Plan Change 14. It is currently anticipated that this will be publicly available in late February. It is also noted that the cost and benefits of intensification were evaluated as part of the government's work to update housing regulation. Reference is made to the 'The costs and benefits of urban development' report by MRCagney commissioned by the Ministry for the Environment.

8. A huge amount of work was done after the earthquakes that informed planning decisions and this work appears to have been largely ignored by the government when it passed its intensification legislation. Just one example is the mental health impacts on our rangitahi which are now becoming obvious. So, have the environmental and social impacts of intensification following the earthquakes been properly evaluated, and has consideration therefore been given to making the earthquakes a Qualifying Matter?

The Act provides a narrow scope of what is able to be considered as a QM, which seek to limit place limits on density when intensification is considered inappropriate under the Act. No QM has been evaluated in respect of mental wellbeing caused by earthquakes and their influence on density.

From: Kleynbos, Ike
Sent: Monday, 30 January 2023 4:46 PM
To: Blair, Hermione; Pizzey, Brent
Cc: Stevenson, Mark; Oliver, Sarah
Subject: RE: Legal query - Weighting of MDRS

Hi Brent,

Thanks for the below. I understand what you've stated below – just to confirm whether there will be a formal response from you/Cedric, or if the below should be interpreted as this?

I would put forward the argument that it can be neigh on guaranteed that there will be submissions on the Sunlight Access QM. In which case, would it be fair to state:
In no case would MDRS or IPI recession plane provisions have weight (104 and notification); and
Only those specific MDRS/IPI provisions (e.g. site coverage, setbacks, height, etc) that do not have any submission points *would* have weighting in consenting.

Overall, it does appear that operative Plan provisions will have the most weighting, considering the degree of submissions we can anticipate.

Keen to hear your thoughts on the above.

Many thanks,

Ike Kleynbos
Principal Advisor – Planning
City Planning (E)
Ex: [Redacted]

From: Blair, Hermione <Hermione.Blair@ccc.govt.nz>
Sent: Friday, 27 January 2023 9:52 am
To: Pizzey, Brent <Brent.Pizzey@ccc.govt.nz>; Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Cc: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>
Subject: RE: Legal query - Weighting of MDRS

Hi Brent

From a consents perspective, if a submission seeks the expansion of or a new qualifying matter for a particular area, then could the rules be treated as operative everywhere outside that area if there are no other relevant submissions?

Thanks

Hermione

From: Pizzey, Brent <Brent.Pizzey@ccc.govt.nz>
Sent: Thursday, 26 January 2023 1:01 pm
To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Cc: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>; Blair, Hermione <Hermione.Blair@ccc.govt.nz>
Subject: RE: Legal query - Weighting of MDRS

Hi Ike

[Redacted]

Regards
Brent

Brent Pizzey
Senior Legal Counsel - Litigation
Legal Services

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From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Sent: Tuesday, 24 January 2023 6:16 pm
To: Pizzey, Brent <Brent.Pizzey@ccc.govt.nz>
Cc: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>; Blair, Hermione <Hermione.Blair@ccc.govt.nz>
Subject: Legal query - Weighting of MDRS

Hi Brent,

[Redacted]

Many thanks,

Ike Kleynbos

Principal Advisor – Planning
City Planning (E)

-  Ike.Kleynbos@ccc.govt.nz
-  Te Hononga Civic Offices, 53 Hereford Street, Christchurch
-  PO Box 73012, Christchurch 8154
-  ccc.govt.nz



From: Daly, Sian
Sent: Monday, 23 January 2023 3:48 PM
To: Gregg, Helaina
Subject: RE: Internal or External Memos Briefing note for Chief Executives Advisory Group meeting Tuesday 24 January 2023 31 January 2023 Report
Attachments: replacement section.docx

599

From: Gregg, Helaina <Helaina.Gregg@ccc.govt.nz>
Sent: Monday, 23 January 2023 3:39 pm
To: Daly, Sian <Sian.Daly@ccc.govt.nz>
Subject: Internal or External Memos Briefing note for Chief Executives Advisory Group meeting Tuesday 24 January 2023 31 January 2023 Report

-----< Content Manager Record Information >-----

Record Number: 23/81093
Title: Internal or External Memos Briefing note for Chief Executives Advisory Group meeting Tuesday 24 January 2023 31 January 2023 Report

From: Hattam, David
Sent: Friday, 17 February 2023 12:08 PM
To: Stevenson, Mark
Subject: RE: Enquiry re. recession plane

599

Do you mean the exemptions at the front of the site? ie recession planes do not apply within 20m of a road in HRZ? These still apply but we reduced the height to 14m (then the setback applies).

We did at one point have a similar rule in the MRZ but I don't think this was notified. In any case it has been removed.

From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
Sent: Friday, 17 February 2023 11:07 am
To: Hattam, David <David.Hattam@ccc.govt.nz>
Subject: RE: Enquiry re. recession plane

Hi Dave
Can I confirm the exemptions from the recession plane are being deleted? I understand this was the case in September before the QM was proposed,
Thanks
Mark

From: [REDACTED]
Sent: Friday, 17 February 2023 9:48 AM
To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
Subject: Re: Enquiry re. recession plane

Morning Mark
I have another question regarding the new recession planes, if notified will there still be the existing exemptions for recession plane intrusion eg gables?
Thanks
[REDACTED]

On 16/02/2023, at 7:09 PM, [REDACTED] wrote:

Hi Mark
Thanks for your reply. I have previously been told by Ike from CCC that a development that complies with these new recession planes may be able to proceed (after notification) through a resource consent. (Rather than having to wait until the end of the Hearings Panel process in 2024) . There has been no mention of this in the webinars so I'm wondering when this info will be available?
Thanks

On 16/02/2023, at 5:47 PM, Stevenson, Mark <Mark.Stevenson@ccc.govt.nz> wrote:

Hi

The orientation based approach described in the webinar means that the angle used for the recession plane varies according to the direction ie. On the northern boundary, the angle is 60 degrees while on the southern boundary, the angle is 50 degrees.

<image011.png>

<image010.png>

Thanks
Mark

Mark Stevenson
Manager Planning

<image013.jpg>

<image014.png> [REDACTED]

<image015.png> Mark.Stevenson@ccc.govt.nz

<image016.png> Te Hononga Civic Offices, 53 Hereford Street, Christchurch

<image017.png> PO Box 73012, Christchurch 8154

<image018.png> ccc.govt.nz

<image019.png>

-----Original Message-----

From: Peter <jpeter777@snap.net.nz>
Sent: Thursday, 16 February 2023 4:19 pm
To: Engagement <engagement@ccc.govt.nz>
Subject: Recession plane changes

Hi there
Can you please explain what is meant by an orientation based approach rather than static angle as mentioned in your slides today?
Regards
Peter

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From: Stevenson, Mark
Sent: Friday, 13 January 2023 4:02 PM
To: Kleynbos, Ike; Hattam, David
Subject: RE: DRAFT Scope of Work – Sunlight Access reporting – Plan Change 14.docx

599

I will review and be available on Monday to sign off,

Mark


Mark Stevenson
Manager Planning


 Mark.Stevenson@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
 ccc.govt.nz

Christchurch
City Council 


From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Sent: Friday, 13 January 2023 3:41 PM
To: Hattam, David <David.Hattam@ccc.govt.nz>
Cc: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
Subject: DRAFT Scope of Work – Sunlight Access reporting – Plan Change 14.docx
Importance: High

Hi David,

Following our meeting with  from NIWA, I've drafted a SOW for the work we would like him to complete – could you please quickly review the attached so we can pass it on to him?

Mark, have copied you in to keep you in the loop. We need to affirm this SOW by Monday to have any chance for NIWA to complete sunlight access reporting to support the QM.

Many thanks,

Ike Kleynbos
Principal Advisor – Planning
City Planning (E)
Ex: 

From: [REDACTED]
 Sent: Wednesday, 18 January 2023 9:13 AM
 To: Kleynbos, Ike
 Cc: Hattam, David; Stevenson, Mark
 Subject: Re: DRAFT Scope of Work – Sunlight Access reporting – Plan Change 14

Hello Ike,

Yes, I am certainly happy to contribute to a subsequent full report. I was not trying to say I couldn't do anything now, but that the time was insufficient for the formal processes of proposal and report. I am happy to do what I can to help David in the short term.

Besides the formal proposal and reporting, the other thing that would take too long is replication of David's work with other tools. You are right that I need to talk to him to see what I can do with what he has.

[REDACTED]

[REDACTED]

[REDACTED]

 Christchurch
City Council

From: [REDACTED]
 Sent: Tuesday, 17 January 2023 10:12 am
 To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
 Cc: Hattam, David <David.Hattam@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Subject: Re: DRAFT Scope of Work – Sunlight Access reporting – Plan Change 14

Hi Ike,

Yes, I have carefully read the draft reports and scope of work, and I have looked at what I might contribute.

An initial problem is that the time frame is too tight for normal NIWA processes, and that affects what sort of report I can provide. Our reports, and even proposals, are all reviewed for content and formatting and then approved by a higher echelon, and there would hardly be time for that if I had already done all the work and written the draft report. I can provide figures and information, but if you are needing NIWA's imprimatur as some sort of authoritative declaration then I need to go through the above.

The other problem is again related to time to set up the representations needed to do some of the suggested calculations. I don't have the means to quickly convert David's representations of buildings into a form with which I could work, but I see that his software already does the ray-tracing. I tried to call him yesterday to learn more about how he made his calculations, to see if I could contribute to those. Specifically, for any given time of year, hour, and orientation of a surface, I can provide the average energy flux. Thus, if he tabulated the hours when surfaces were sunlit, it would be straightforward to convert sunlit hours to solar energy capture.

Within the topics that you list, my thoughts and possible contributions were:

Relative latitude and sunlight access

- The flat terrain, with very distant hills to the west and north, certainly means that, except in the hill suburbs and Lyttleton, the considerations apply equally to all of the highlighted areas. Hamilton, and much of Auckland, would be similar, but contrast sharply with Wellington or Dunedin.
- Maps of solar irradiance, including from satellite analyses, show no variation across the city. Radiation measurement sites in the area of interest are at Christchurch airport, NIWA in Kyle St, and Bromley near the coast. The accuracy of calibrations would be insufficient to say if there is a difference in mean irradiance, but there might be small differences in cloudiness by time of day, which I could quantify. Both the airport and Bromley also have records of sunshine hours, so I can look at whether there is any gradient in that across the city.

Relative climatic difference

- Passive solar heating is more valuable in colder climates, especially in winter. Of course, that actually means any recession plane is a problem. It was once routinely acknowledged that eaves should be designed to provide shade for high summer sun but let in the winter sun, but of course we abandoned that idea with the zero-overhang (and leaky) houses from the 1990s.
- When you do have direct sunlight, which is something I infer from the (hourly or 10-minute) irradiance data, it is more effective in passive heating when the sun is low and more nearly square on to vertical surfaces. We can quantify this, and the comparison with Auckland or Hamilton.

Sunlight access modelling

- As above, if David has recorded for each season and orientation the hours (or start and end) of when first or second storey windows or walls are sunlit, we can weight the hours by solar intensity for that surface and orientation to calculate kWh/m² rather than sunlight hours.
- Given enough time, I could set up the ability to calculate whether surfaces are shaded, but we obviously don't have that time. Instead, I can providing a weighting for each hour by day of year, for vertical or horizontal planes, or indeed any other. That would combine with the calculations David has already done.

From: "Kleynbos, Ike" <Ike.Kleynbos@ccc.govt.nz>
Date: Monday, 16 January 2023 at 18:07
To: [REDACTED]
Cc: "Hattam, David" <David.Hattam@ccc.govt.nz>, "Stevenson, Mark" <Mark.Stevenson@ccc.govt.nz>
Subject: RE: DRAFT Scope of Work – Sunlight Access reporting – Plan Change 14

Hi [REDACTED]

I'm following up on the below – did you have a chance to look over the scope?

Feel free to give me a call tomorrow morning if you'd like to discuss further.

Many thanks,

Ike Kleynbos
Principal Advisor – Planning
City Planning (E)
Ex: [REDACTED]

From: Kleynbos, Ike
Sent: Saturday, 14 January 2023 12:56 pm
To: [REDACTED]
Cc: Hattam, David <David.Hattam@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
Subject: DRAFT Scope of Work – Sunlight Access reporting – Plan Change 14

Hi [REDACTED]

Please find attached our draft of the Scope of Work outlining the sunlight access modelling work we required. Let me know if there are any points that you need adjusted or further clarified – happy to discuss further on Monday, if required.

Once you're satisfied with the scope, it would be great if you could please provide us with a price cost estimate for us to generate a PO. We are able to progress this for any piece of work <\$20k without the need of a formal contract (as per the work with Emily).

I've copied in David and Mark, mentioned in the SoW. David has also provided some of his work he has done for the high density zone, as attached.

In this report, he was testing 5 different scenarios, and was looking at the impact of these on the wall of a typical existing building – which would be what we still expect developers to construct in most places for the foreseeable future. For that exercise, he wanted to see the impact on the receiving wall and used a [REDACTED] mark that there should be 2 hours of sun over half the wall – which seems a bit unambitious. It was based on the level of sun allowed by the MDRS so is not a level of access I would see as being adequate.

Hopefully this all give you a good steer for what we're after, but feel free to get in touch.

Many thanks,

Ike Kleynbos
Principal Advisor – Planning
City Planning (E)

[REDACTED]
Ike.Kleynbos@ccc.govt.nz
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PO Box 73012, Christchurch 8154
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From: Elvidge, Catherine
Sent: Thursday, 16 March 2023 2:52 PM
To: Blair, Hermione; Gregg, Jonathan; Lowe, Paul; Higgins, John
Cc: Kleynbos, Ike; Stevenson, Mark
Subject: RE: Draft newsletter article on RC processing re PC14 provisions

Follow Up Flag: Follow up
Flag Status: Completed

Hi Brent,

I've made a few comments below in red – see what you think and let me know if you want to discuss.

Thanks,
Catherine

From: Pizze, Brent <Brent.Pizze@ccc.govt.nz>
Sent: Tuesday, 14 March 2023 4:07 pm
To: Elvidge, Catherine <Catherine.Elvidge@ccc.govt.nz>; Blair, Hermione <Hermione.Blair@ccc.govt.nz>; Gregg, Jonathan <Jonathan.Gregg@ccc.govt.nz>; Lowe, Paul <Paul.Lowe@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>
Cc: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
Subject: Draft advice on processing resource consent applications with regard to the MDRS after notification of PC13 and PC14

Afternoon all

[Redacted content]

Regards
Brent

Brent Pizze
Senior Legal Counsel - Litigation
Legal Services

 Brent.Pizze@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73015, Christchurch 8154
 ccc.govt.nz

From: Hattam, David
 Sent: Thursday, 23 February 2023 12:30 PM
 To: DelaRue, Ceciel; Stevenson, Mark
 Cc: Schroder, Josie
 Subject: RE: Diagrams for The Press

Hi All

Its might be worth adjusting this because it varies by orientation – or make it clear that it is an example not universal.

A unit to the south of an MDRS unit could lose ground floor sun for about 5 months of the year (it is dependent on exactly what is built so cannot be precise – eg eaves height / ridge height). The key is that the QM saves us about 6 weeks of ground floor sun access – which makes us similar to Auckland. This is the “headline” argument and seems quite compelling.

A unit to the east or west of an MDRS unit could lose half an hour of winter sun (and be reduced to about an hour and twenty minutes on the shortest day). This is also important and significant but not quite as memorable.

The testing is on expected unit types effects on each other – not existing houses with generous grounds.

I have made a couple of suggestions in yellow.

Nga mihi

David

From: DelaRue, Ceciel <Ceciel.DelaRue@ccc.govt.nz>
 Sent: Thursday, 23 February 2023 11:11 am
 To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Cc: Schroder, Josie <Josie.Schroder@ccc.govt.nz>; Hattam, David <David.Hattam@ccc.govt.nz>
 Subject: RE: Diagrams for The Press

Hi Mark

Suggest remove the 2nd red text.
 Don't think we can be that precise with the statement relative to Auckland (i.e. similar rather than the same), and with the 4 month figure.

The other sentences were intended to cover it i.e. about aligning outcomes for tier 1 cities while meeting the intent of the MDRS in relation to development capacity.

Ceciel

From: Richardson, James <James.Richardson@ccc.govt.nz>
 Sent: Thursday, 23 February 2023 9:33 am
 To: DelaRue, Ceciel <Ceciel.DelaRue@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Cc: Schroder, Josie <Josie.Schroder@ccc.govt.nz>; Ritchie, Jocelyn <Jocelyn.Ritchie@ccc.govt.nz>
 Subject: RE: Diagrams for The Press

Many thanks for this Ceciel

Mark, could you please review and let me know if you're happy for the PDFs and below messages to go to The Press? I've tweaked the messages slightly, as I recall Tina was struggling to understand the comparison during the briefing. Thanks


The proposed Qualifying Matter will align Christchurch with northern Tier 1 cities in relation to sunlight access, taking into account the latitude and climatic differences, and recognising that every hour of sunlight is important and desirable in Christchurch given our climate.

When the MDRS is applied to Christchurch (without the Qualifying Matter) it would mean some units could have more than 5 months with no sunlight access to ground-floor living. With the Qualifying Matter applied, it reduces this to 4 months by about 6 weeks (the same as applying the MDRS in Auckland).

To achieve a comparable living environment in Christchurch it is proposed to reduce the recession plane angle height from 4m to 3m, apply a recession plane of 50 to 60 degrees, and take into account the orientation of a site. This can be achieved without affecting the number of units that can be built on a site.

James Richardson
 Senior Communications Advisor
 Strategic Communications

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 James.Richardson@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73016, Christchurch 8154
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 Christchurch City Council

From: DelaRue, Ceciel <Ceciel.DelaRue@ccc.govt.nz>
 Sent: Wednesday, 22 February 2023 6:30 pm
 To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Richardson, James <James.Richardson@ccc.govt.nz>
 Cc: Schroder, Josie <Josie.Schroder@ccc.govt.nz>
 Subject: RE: Diagrams for The Press

Kia ora Mark, James

Please find attached diagrams as requested. Updated slightly from the presentation material to address feedback.

Query if all four images are useful – perhaps just the Auckland and Christchurch latitude ones needed.

When providing these you may want to take the opportunity to reiterate key messages provided in the media briefing? Something like the below?

Thanks
 Ceciel

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599

From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
Sent: Wednesday, 22 February 2023 2:48 pm
To: DeLaRue, Ceciel <Ceciel.DeLaRue@ccc.govt.nz>; Schroder, Josie <Josie.Schroder@ccc.govt.nz>
Subject: Diagrams for The Press

With Dave away, can you please advise if the images in the attached slides can be shared with the Press and whether you have the individual images as JPEG/ PD

Mark

From: DelaRue, Ceciel
Sent: Thursday, 23 February 2023 1:29 PM
To: Stevenson, Mark
Cc: Schroder, Josie
Subject: RE: Diagrams for The Press

599

Excluding the comparison text

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From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
Sent: Thursday, 23 February 2023 1:02 pm
To: DelaRue, Ceciel <Ceciel.DelaRue@ccc.govt.nz>
Cc: Schroder, Josie <Josie.Schroder@ccc.govt.nz>
Subject: RE: Diagrams for The Press

Are you happy for me to go back with Dave's amendments. James is already chasing me

Mark Stevenson

Manager Planning


 Mark.Stevenson@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
 ccc.govt.nz



From: Hattam, David <David.Hattam@ccc.govt.nz>
Sent: Thursday, 23 February 2023 12:30 PM
To: DelaRue, Ceciel <Ceciel.DelaRue@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
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Sent: Thursday, 23 February 2023 9:33 am
To: DelaRue, Ceciel <Ceciel.DelaRue@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
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James Richardson

Senior Communications Advisor
Strategic Communications



James.Richardson@ccc.govt.nz



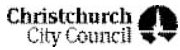
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PO Box 73016, Christchurch 8154



ccc.govt.nz



From: DelaRue, Ceciel <Ceciel.DelaRue@ccc.govt.nz>

Sent: Wednesday, 22 February 2023 6:30 pm

To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Richardson, James <James.Richardson@ccc.govt.nz>

Cc: Schroder, Josie <Josie.Schroder@ccc.govt.nz>

Subject: RE: Diagrams for The Press

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Thanks

Ceciel

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From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>

Sent: Wednesday, 22 February 2023 2:48 pm

To: DelaRue, Ceciel <Ceciel.DelaRue@ccc.govt.nz>; Schroder, Josie <Josie.Schroder@ccc.govt.nz>

Subject: Diagrams for The Press

With Dave away, can you please advise if the images in the attached slides can be shared with the Press and whether you have the individual images as JPEG/ PD

Mark

From: Kleynbos, Ike
 Sent: Thursday, 26 January 2023 3:47 PM
 To: Stevenson, Mark; Robert Love
 Subject: RE: Details for NIWA sunlight expert
 Attachments: Sunlight Access QM – Overview.docx

Hi Robert,

I've attached the over doc I created for the QM, which covers the core rational, evidence we would use, and a skeleton s77 overview. This should give you a good idea for where we're headed.

Our Senior Urban Designer has been doing all of the shading and development modelling. He is currently working with [REDACTED] at NIWA to test all of his sunlight models (effectively validating the SketchUp model). [REDACTED] is anticipated to provide a brief memo of the sunlight modelling undertaken, alongside an overview of the climate differences between ChCh and northern Councils. This is all he is able to produce in the 2 weeks we have available to complete technical reports in order to feed these into the s32 for a March notification.

The detail described in the full SoW is something that [REDACTED] will provide at a later date as expert evidence for the hearing.

Hope this helps for now. Let me know if you want to get in touch with our Urban Designer.

Many thanks,

Ike Kleynbos

Principal Advisor – Planning
 City Planning (E)

[REDACTED]
 Ike.Kleynbos@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
 ccc.govt.nz



From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Sent: Thursday, 26 January 2023 2:47 pm
 To: Robert Love <Robert.Love@selwyn.govt.nz>
 Cc: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
 Subject: RE: Details for NIWA sunlight expert

Hi
 We could certainly share it,
 Thanks

Mark Stevenson

Manager Planning

[REDACTED]
 Mark.Stevenson@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
 ccc.govt.nz



From: Robert Love <Robert.Love@selwyn.govt.nz>
 Sent: Thursday, 26 January 2023 2:06 PM
 To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Subject: RE: Details for NIWA sunlight expert

Hey all,

Given the time constraints for SDC on this one, what are the chances of please getting our hands on the evidence you are getting prepared?

Cheers,

From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
 Sent: 24 January 2023 15:11
 To: Robert Love <Robert.Love@selwyn.govt.nz>
 Cc: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Subject: Details for NIWA sunlight expert

Hi Robert,

Thought I would pass on the details of our NIWA scientist that we're looking to use, alongside WDC. [REDACTED] is his name, details below:

[REDACTED]
 Atmospheric Scientist
 [REDACTED]

National Institute of Water & Atmospheric Research Ltd (NIWA)
 State Highway 85 Omakau New Zealand

I've also attached the draft SoW we put together for what we were ideally after. As I said, a fortnight simply wasn't enough to produce this, but I'd estimate a month or so to enable full NIWA peer-

Happy to chat further.

Many thanks,


Ike Kleynbos
Principal Advisor – Planning
City Planning (E)

-  
-  Ike.Kleynbos@ccc.govt.nz
-  Te Hononga Civic Offices, 53 Hereford Street, Christchurch
-  PO Box 73012, Christchurch 8154
-  ccc.govt.nz



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Robert Love
HEAD OF STRATEGY AND POLICY




2 Norman Kirk Drive, Rolleston 7643
PO Box 90, Rolleston
Phone: (03) 347 2800 or 03 318 8338
Fax: (03) 347 2799

www.selwyn.govt.nz | www.selwynlibraries.co.nz
www.selwyn.getsready.net | m.selwyn.govt.nz

From: Hattam, David
Sent: Tuesday, 14 February 2023 11:45 AM
To: Stevenson, Mark
Subject: RE: Council briefing today

Hi Mark

I think the key messages are (you can pick and choose as you see fit!):

Under the MDRS, Chch would have significantly less sun than north island cities in terms of hours per day and days per year, but the QM would make this the same.

East west sites – low sun angles mean that there is a period of the year where there may be no sunlight access if a compliant development is build next door.– under the MDRS this is 3 and a half months in Auckland in 5 and a half in Chch. The new recession planes means Christchurch will match Auckland.

North South sites – in Auckland on the shortest day, these can expect 2 hours of sun, but under MDRS we would get about 25 minutes less. The new proposal also equalises this.

The changes would have the effect of pushing the buildings away from boundaries – most similar to the central city (RCC zone) in terms of current zoning.

Modelling shows it preserves 95% of MDRS capacity (not 96% - not a big deal I think) [its not the feasible building envelope as such].

From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
Sent: Tuesday, 14 February 2023 11:17 am
To: Hattam, David <David.Hattam@ccc.govt.nz>
Subject: Council briefing today

Hi David

Today, we have a Council briefing today on PC14. It is the last briefing following an earlier briefing and I will only briefly talk to the QM on sunlight.

See below a link to the slides (finalised).

[contentmanager://record/?DB=CC&Type=6&Items=1&\[Item1\]&URI=25038580](contentmanager://record/?DB=CC&Type=6&Items=1&[Item1]&URI=25038580)

I propose to say the following in the context of Slide 5.

Sunlight Access:

Validated by NIWA's Atmospheric Science department

Feasible building envelope achieves 96% of MDRS

Responds to community concerns with sound evidence base

Analysis by our urban design team on a range of scenarios to understand capacity loss in lieu of individual analysis of every site

Is there anything you have to add, noting the last presentation Council had incl. more detail (see attached slides from last time)

[contentmanager://record/?DB=CC&Type=6&Items=1&\[Item1\]&URI=24893393](contentmanager://record/?DB=CC&Type=6&Items=1&[Item1]&URI=24893393)

Thanks

Mark

Mark Stevenson
Manager Planning


 Mark.Stevenson@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
 ccc.govt.nz

Christchurch
City Council 

From: Daly, Sian
Sent: Friday, 20 January 2023 10:35 AM
To: Kleynbos, Ike; Stevenson, Mark
Subject: RE: Council briefing # 3 on Plan Change (PC14) Alternative Proposal 24 January 2023

Kia ora,

Who else is still to review the slides, Ike? Would you let me know when they're ready to send through to Jane Davis for her review?

Thanks
Sian

From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Sent: Friday, 20 January 2023 10:00 am
To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Daly, Sian <Sian.Daly@ccc.govt.nz>
Subject: RE: Council briefing # 3 on Plan Change (PC14) Alternative Proposal 24 January 2023

Thanks Mark. I've made the change below and some other minor changes. Have also had a chat with Kirk and we've concluded that MUZ would be a better response for Milton Street.

Thanks,

Ike Kleynbos
Principal Advisor – Planning
City Planning (E)
Ex: [REDACTED]

From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
Sent: Friday, 20 January 2023 7:41 am
To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Daly, Sian <Sian.Daly@ccc.govt.nz>
Subject: RE: Council briefing # 3 on Plan Change (PC14) Alternative Proposal 24 January 2023

Hi both

Thanks for your work. I have reviewed the slides, my only changes/ comments being as follows -

Slide 4
Can you clarify the ref to 'higher value' -
Climatic characteristics mean each hour of sunlight has a higher value

Slide 7
I have amended "Reduce sunlight access **by for** about 2 months of the year"
Can we add how many minutes/ hours of the day there would be a difference in sunlight between the options of MDRS and the recommended option.

Slide 10
I have added "Areas of highest propensity **to use PT**"

Slide 13
I have added a point - *Options to be investigated for industrial side as separate PC*

Thanks
Mark

From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Sent: Thursday, 19 January 2023 5:01 PM
To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>; Dixon, Glenda <Glenda.Dixon@ccc.govt.nz>
Cc: Lightbody, Kirk <Kirk.Lightbody@ccc.govt.nz>; Hansbury, Anita <Anita.Hansbury@ccc.govt.nz>; Daly, Sian <Sian.Daly@ccc.govt.nz>
Subject: Council briefing # 3 on Plan Change (PC14) Alternative Proposal 24 January 2023

Hi all,

Please find attached the current draft of the slides for the Council briefing.

I'm fairly happy with the content, though there are some things I still need to check-up on (red text) and where I think some slides can be removed to reduce length (with red strike through). The latter slides I think are fine, but may be best for the Feb 14th briefing as an overall reminder.

Glenda – it would be good if you could cast your eye over this to check if there are any heritage factors that need to be added.

Many thanks,

Ike Kleynbos
Principal Advisor – Planning
City Planning (E)

[REDACTED]
Ike.Kleynbos@ccc.govt.nz
Te Hononga Civic Offices, 53 Hereford Street, Christchurch
PO Box 73012, Christchurch 8154
ccc.govt.nz

From: Rainey, Sean
Sent: Monday, 12 December 2022 1:39 PM
To: Daly, Sian
Cc: Office of the CE; Kleynbos, Ike; Stevenson, Mark; Higgins, John
Subject: RE: Content Manager Outwards/Internal Document : 22/1705486 : Council briefing on PC14 Alternative Proposal 13 December 2022

Thanks.

All updated.

From: Daly, Sian <Sian.Daly@ccc.govt.nz>
Sent: Monday, 12 December 2022 1:13 PM
To: Rainey, Sean <Sean.Rainey@ccc.govt.nz>
Cc: Office of the CE <OfficeoftheCE@ccc.govt.nz>; Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>
Subject: Content Manager Outwards/Internal Document : 22/1705486 : Council briefing on PC14 Alternative Proposal 13 December 2022

Kia ora

I have attached the slide pack that we want to use for tomorrow's briefing on the PC14 alternative proposal.

These have been updated to include an additional slide on sunlight access as a potential qualifying matter. (We were waiting on some legal advice so didn't include this on Friday.) I have also had to update the next steps timeline to amend the potential date for a Council meeting to approve notification of the Plan Change.

Would you be able to replace the current slide pack on the BTC or otherwise make the updated version available to Councillors?

Nga mihi

Sian Daly

Programme Manager, Land Use and Growth


 Sian.Daly@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
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Programme Manager, Land Use and Growth


 Sian.Daly@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
 ccc.govt.nz

Christchurch
City Council 

From: Daly, Sian
 Sent: Friday, 9 December 2022 12:30 PM
 To: Kleynbos, Ike
 Subject: RE: Briefings for Tuesday

Thanks Ike

From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
 Sent: Friday, 9 December 2022 12:23 pm
 To: Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>; Daly, Sian <Sian.Daly@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>; Gregg, Helaina <Helaina.Gregg@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Subject: RE: Briefings for Tuesday

Presentation has been updated. The attached represents VERSION 2 – which does not include the sunlight access slide. This is ready to send to Sean now.

Subject to the advice, we can add in the sunlight slide on Monday.

Sian – let me know if there's anything further.

Many thanks,

Ike Kleynbos
 Principal Advisor – Planning
 City Planning (E)
 Ex: [REDACTED]

From: Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>
 Sent: Friday, 9 December 2022 12:13 pm
 To: Daly, Sian <Sian.Daly@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>; Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Gregg, Helaina <Helaina.Gregg@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Subject: RE: Briefings for Tuesday

I have made my edits to the PC14 – Ike is doing the final

Here is the link again to the GCP – its finalised. We need to put the Full GCSP slide pack attached uploaded to the Big Tin Can and have the Councillors advised of this – but I think it needs splitting off somehow from the PDF i.e. only include Attachment B.

From: Daly, Sian <Sian.Daly@ccc.govt.nz>
 Sent: Friday, 9 December 2022 12:00 pm
 To: Higgins, John <John.Higgins@ccc.govt.nz>; Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>; Gregg, Helaina <Helaina.Gregg@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
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There have been a lot of emails flying around so to ensure I am sending the final authorised document I will send through to OCE when I have:

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2. Confirmation of the TRIM reference being the FINAL document ready to send.
 - a. PC14 – Ike
 - b. PC programme - Mark
 - c. RM Reform – Helaina
 - d. GCP - Sarah

Please do your final check and indicate it is ready to go by your name. I will pick it up from Content Manager.

Ike, if we are doing a 'save as' without the sunlight slide, would you do that please and send me the version to be sent up to OCE?

Thanks

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Plan Change Programme (30 min) 22/1720924	Finalised and reviewed by John – I will email shortly John
RM Reform (45 min) 22/1708509	Finalised and reviewed by John
GCP briefing (30 min) 22/1710819	Finalised and reviewed by John Addition of HBCA to be made on slide re. other work we do

From: Daly, Sian
 Sent: Monday, 12 December 2022 12:28 PM
 To: Kleynbos, Ike; Stevenson, Mark; Higgins, John; Oliver, Sarah
 Cc: Pizzey, Brent
 Subject: RE: Briefings for Tuesday

Okay, thanks Ike
 Sian

From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
 Sent: Monday, 12 December 2022 12:24 pm
 To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>; Daly, Sian <Sian.Daly@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>
 Cc: Pizzey, Brent <Brent.Pizzey@ccc.govt.nz>
 Subject: RE: Briefings for Tuesday

Yes, the slide is pitched as something that *could* have potential, and we will emphasise that it is subject to being able to justify this through evidence. We can report back to them in the new year and confirm if we're proposing to progress with it.

The main evidence we need to come up with is why MDRS recession planes do not suit our environment. It depends on what evidence already exists for what MDRS controls would be based on. The main work is urban design modelling to show different sunlight access examples across the city.

Sarah also raised whether we could progress with it via Council submission. This could potentially also deal with the immediate legal effect issue. I will ask Cedric to add more detail in his advice on this.

Sian – this slide is included in the original presentation under 22/1705486. I think this would be fine to send to Sean as an updated preso.

Many thanks,

Ike Kleynbos
 Principal Advisor – Planning
 City Planning (E)
 Ex: [REDACTED]

From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Sent: Monday, 12 December 2022 11:15 am
 To: Higgins, John <John.Higgins@ccc.govt.nz>; Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Daly, Sian <Sian.Daly@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>
 Cc: Pizzey, Brent <Brent.Pizzey@ccc.govt.nz>
 Subject: Re: Briefings for Tuesday

I agree with including the slide and having a caveat which probably goes with all the QMs we are talking to.

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From: Higgins, John <John.Higgins@ccc.govt.nz>
 Sent: Monday, December 12, 2022 11:08:20 AM
 To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Daly, Sian <Sian.Daly@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>
 Cc: Pizzey, Brent <Brent.Pizzey@ccc.govt.nz>
 Subject: RE: Briefings for Tuesday

What does it look like in terms of being able to meet the evidential requirements?

If you think we can, then perhaps include with a disclaimer that there's work to do and that we will report back in the new year.

Regards
 John

From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
 Sent: Monday, 12 December 2022 11:00 am
 To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Daly, Sian <Sian.Daly@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>
 Cc: Pizzey, Brent <Brent.Pizzey@ccc.govt.nz>
 Subject: RE: Briefings for Tuesday
 Importance: High

Hi all,

The legal advice appears to be favourable for progressing with sunlight access as a QM, despite potentially an onerous requirement for evidence.

We need to decide if we want to include the slide on sunlight access. This is currently:

Potential additional QM – Sunlight access

- | | |
|---|--|
| <ul style="list-style-type: none"> • Christchurch is at a different latitude to North Island – sunlight hours differ • Potential for this to be seen as a unique feature of the city • QM could be developed to apply to all residential sites • Would reduce recession plane angle, potentially: <ul style="list-style-type: none"> • 4m >>> 3m • 60° >>> 50° | <ul style="list-style-type: none"> • Would represent a significant shift in delivery of intensification • Would still achieve three storey development – meets MDRS • Would have proxy effect of preventing immediate legal effect upon notification • High risk of legal challenge |
|---|--|

It would be good to get thoughts on this so we can go back to Sean.

Many thanks,

Ike Kleynbos
 Principal Advisor – Planning
 City Planning (E)
 Ex: [REDACTED]

From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>

Sent: Friday, 9 December 2022 2:52 pm

To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Daly, Sian <Sian.Daly@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>; Gregg, Helaina <Helaina.Gregg@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>

Subject: Re: Briefings for Tuesday

Thanks very much everyone for pulling these together and getting them finished and to the CE.

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From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>

Sent: Friday, December 9, 2022 1:51:45 PM

To: Daly, Sian <Sian.Daly@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>; Gregg, Helaina <Helaina.Gregg@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>

Subject: RE: Briefings for Tuesday

Brilliant – thanks Sian!

Ike Kleynbos

Principal Advisor – Planning
City Planning (E)


 Ike.Kleynbos@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
 ccc.govt.nz



From: Daly, Sian <Sian.Daly@ccc.govt.nz>

Sent: Friday, 9 December 2022 1:31 pm

To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>; Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Gregg, Helaina <Helaina.Gregg@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>

Subject: RE: Briefings for Tuesday

Kia ora koutou

Thanks everyone. All four presentation packs and the additional GCP Committee slide pack on the Urban Growth Programme have been sent up to OCE.

Sian

Siân Daly

Programme Manager, Land Use and Growth


 Sian.Daly@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
 ccc.govt.nz



From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>

Sent: Friday, 9 December 2022 12:34 pm

To: Daly, Sian <Sian.Daly@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>

Subject: RE: Briefings for Tuesday

Just to clarify that we send the slides on GCP to OCE today, and ask for Attachment B of the GCP pack to go on the BTC

Mark Stevenson

Manager Planning


 Mark.Stevenson@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
 ccc.govt.nz



From: Daly, Sian <Sian.Daly@ccc.govt.nz>
 Sent: Friday, 9 December 2022 12:29 PM
 To: Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>
 Cc: Higgins, John <John.Higgins@ccc.govt.nz>; Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Gregg, Helaina <Helaina.Gregg@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Subject: RE: Briefings for Tuesday

Thanks Sarah.

Are we putting the full GCSP slide pack up today? Maybe I'm confused about which briefing Mark was referring to – I thought he meant our briefing.

Could you ask Nadja to split attachment B off and send it through for circulation to EMs? They probably have the software to edit PDFs in the OCE but if Nadja can send what you need, that's probably easiest.

From: Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>
 Sent: Friday, 9 December 2022 12:13 pm
 To: Daly, Sian <Sian.Daly@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>; Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Gregg, Helaina <Helaina.Gregg@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
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Thanks Ike

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Plan Change Programme (30 min) 22/1720924	Finalised and reviewed by John – I will email shortly John
RM Reform (45 min) 22/1708509	Finalised and reviewed by John
GCP briefing (30 min) 22/1710819	Finalised and reviewed by John Addition of HBCA to be made on slide re. other work we do

From: Daly, Sian
 Sent: Monday, 12 December 2022 12:28 PM
 To: Kleynbos, Ike; Stevenson, Mark; Higgins, John; Oliver, Sarah
 Cc: Pizzey, Brent
 Subject: RE: Briefings for Tuesday

Okay, thanks Ike
 Sian

From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
 Sent: Monday, 12 December 2022 12:24 pm
 To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>; Daly, Sian <Sian.Daly@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>
 Cc: Pizzey, Brent <Brent.Pizzey@ccc.govt.nz>
 Subject: RE: Briefings for Tuesday

Yes, the slide is pitched as something that *could* have potential, and we will emphasise that it is subject to being able to justify this through evidence. We can report back to them in the new year and confirm if we're proposing to progress with it.

The main evidence we need to come up with is why MDRS recession planes do not suit our environment. It depends on what evidence already exists for what MDRS controls would be based on. The main work is urban design modelling to show different sunlight access examples across the city.

Sarah also raised whether we could progress with it via Council submission. This could potentially also deal with the immediate legal effect issue. I will ask Cedric to add more detail in his advice on this.

Sian – this slide is included in the original presentation under 22/1705486. I think this would be fine to send to Sean as an updated preso.

Many thanks,

Ike Kleynbos
 Principal Advisor – Planning
 City Planning (E)
 Ex: [REDACTED]

From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Sent: Monday, 12 December 2022 11:15 am
 To: Higgins, John <John.Higgins@ccc.govt.nz>; Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Daly, Sian <Sian.Daly@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>
 Cc: Pizzey, Brent <Brent.Pizzey@ccc.govt.nz>
 Subject: Re: Briefings for Tuesday

I agree with including the slide and having a caveat which probably goes with all the QMs we are talking to.

Get [Outlook for iOS](#)

From: Higgins, John <John.Higgins@ccc.govt.nz>
 Sent: Monday, December 12, 2022 11:08:20 AM
 To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Daly, Sian <Sian.Daly@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>
 Cc: Pizzey, Brent <Brent.Pizzey@ccc.govt.nz>
 Subject: RE: Briefings for Tuesday

What does it look like in terms of being able to meet the evidential requirements?

If you think we can, then perhaps include with a disclaimer that there's work to do and that we will report back in the new year.

Regards
 John

From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
 Sent: Monday, 12 December 2022 11:00 am
 To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Daly, Sian <Sian.Daly@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>
 Cc: Pizzey, Brent <Brent.Pizzey@ccc.govt.nz>
 Subject: RE: Briefings for Tuesday
 Importance: High

Hi all,

The legal advice appears to be favourable for progressing with sunlight access as a QM, despite potentially an onerous requirement for evidence.

We need to decide if we want to include the slide on sunlight access. This is currently:

Potential additional QM – Sunlight access

- | | |
|---|--|
| <ul style="list-style-type: none"> • Christchurch is at a different latitude to North Island – sunlight hours differ • Potential for this to be seen as a unique feature of the city • QM could be developed to apply to all residential sites • Would reduce recession plane angle, potentially: <ul style="list-style-type: none"> • 4m >>> 3m • 60° >>> 50° | <ul style="list-style-type: none"> • Would represent a significant shift in delivery of intensification • Would still achieve three storey development – meets MDRS • Would have proxy effect of preventing immediate legal effect upon notification • High risk of legal challenge |
|---|--|

It would be good to get thoughts on this so we can go back to Sean.

Many thanks,

Ike Kleynbos
 Principal Advisor – Planning
 City Planning (E)
 Ex: [REDACTED]

From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>

Sent: Friday, 9 December 2022 2:52 pm

To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Daly, Sian <Sian.Daly@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>; Gregg, Helaina <Helaina.Gregg@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>

Subject: Re: Briefings for Tuesday

Thanks very much everyone for pulling these together and getting them finished and to the CE.

Get [Outlook for iOS](#)

From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>

Sent: Friday, December 9, 2022 1:51:45 PM

To: Daly, Sian <Sian.Daly@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>; Gregg, Helaina <Helaina.Gregg@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>

Subject: RE: Briefings for Tuesday

Brilliant – thanks Sian!

Ike Kleynbos

Principal Advisor – Planning
City Planning (E)


 Ike.Kleynbos@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
 ccc.govt.nz



From: Daly, Sian <Sian.Daly@ccc.govt.nz>

Sent: Friday, 9 December 2022 1:31 pm

To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>; Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Gregg, Helaina <Helaina.Gregg@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>

Subject: RE: Briefings for Tuesday

Kia ora koutou

Thanks everyone. All four presentation packs and the additional GCP Committee slide pack on the Urban Growth Programme have been sent up to OCE.

Sian

Siân Daly

Programme Manager, Land Use and Growth


 Sian.Daly@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
 ccc.govt.nz



From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>

Sent: Friday, 9 December 2022 12:34 pm

To: Daly, Sian <Sian.Daly@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>

Subject: RE: Briefings for Tuesday

Just to clarify that we send the slides on GCP to OCE today, and ask for Attachment B of the GCP pack to go on the BTC

Mark Stevenson

Manager Planning


 Mark.Stevenson@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
 ccc.govt.nz



From: Daly, Sian <Sian.Daly@ccc.govt.nz>
 Sent: Friday, 9 December 2022 12:29 PM
 To: Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>
 Cc: Higgins, John <John.Higgins@ccc.govt.nz>; Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Gregg, Helaina <Helaina.Gregg@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Subject: RE: Briefings for Tuesday

Thanks Sarah.

Are we putting the full GCSP slide pack up today? Maybe I'm confused about which briefing Mark was referring to – I thought he meant our briefing.

Could you ask Nadja to split attachment B off and send it through for circulation to EMs? They probably have the software to edit PDFs in the OCE but if Nadja can send what you need, that's probably easiest.

From: Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>
 Sent: Friday, 9 December 2022 12:13 pm
 To: Daly, Sian <Sian.Daly@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>; Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Gregg, Helaina <Helaina.Gregg@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Subject: RE: Briefings for Tuesday

I have made my edits to the PC14 – Ike is doing the final

Here is the link again to the GCP – its finalised. We need to put the Full GCSP slide pack attached uploaded to the Big Tin Can and have the Councilors advised of this – but I think it needs splitting off somehow from the PDF i.e. only include Attachment B.

From: Daly, Sian <Sian.Daly@ccc.govt.nz>
 Sent: Friday, 9 December 2022 12:00 pm
 To: Higgins, John <John.Higgins@ccc.govt.nz>; Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>; Gregg, Helaina <Helaina.Gregg@ccc.govt.nz>; Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Subject: RE: Briefings for Tuesday

Hi

There have been a lot of emails flying around so to ensure I am sending the final authorised document I will send through to OCE when I have:

1. John's response to whether Jane Davis needs to see the slide packs
2. Confirmation of the TRIM reference being the FINAL document ready to send.
 - a. PC14 – Ike
 - b. PC programme - Mark
 - c. RM Reform – Helaina
 - d. GCP - Sarah

Please do your final check and indicate it is ready to go by your name. I will pick it up from Content Manager.

Ike, if we are doing a 'save as' without the sunlight slide, would you do that please and send me the version to be sent up to OCE?

Thanks

Topic	Status
PC14 (1 hr) 22/1705486	Ike to finalise subject to any changes from Sarah
Plan Change Programme (30 min) 22/1720924	Finalised and reviewed by John – I will email shortly John
RM Reform (45 min) 22/1708509	Finalised and reviewed by John
GCP briefing (30 min) 22/1710819	Finalised and reviewed by John Addition of HBCA to be made on slide re. other work we do

From: Pratt, Steve
Sent: Wednesday, 15 February 2023 6:45 AM
To: Kleynbos, Ike
Cc: Hattam, David
Subject: RE: Appendix - Recession Plane - 14.16.2 - amendment needed
Attachments: District Plan Appendix 14.16.2 Recession Planes - pp104101 - Issue 2023-02-15.pdf

Hi Ike

Attached is the updated plan with your requested change (first bullet point) below.

Regards
Steve

From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Sent: Friday 27 January 2023 11:36 AM
To: Pratt, Steve <Steven.Pratt@ccc.govt.nz>
Cc: Lightbody, Kirk <Kirk.Lightbody@ccc.govt.nz>
Subject: RE: Appendix - Recession Plane - 14.16.2 - amendment needed

Great, thanks Steve. Looking good – a few more comments for me:
For D, can you please have the first bullet point as: in the Medium Density Residential Zone (MRZ) and High Density Residential Zone (HRZ)?
For D, can you please make the dial more in similar to the other dials, including the “Place tangential...” text?
Note that this diagram may yet change
Note that we may still re-introduce the first two bullet points on diagram A, TBC

By the ‘other appendices’ do you mean the ODP plans?

Many thanks,

Ike Kleynbos
Principal Advisor – Planning
City Planning (E)
Ex: [REDACTED]

From: Pratt, Steve <Steven.Pratt@ccc.govt.nz>
Sent: Friday, 27 January 2023 11:25 am
To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Subject: RE: Appendix - Recession Plane - 14.16.2 - amendment needed

Hi Ike

Thanks for the SAP time charging info.
Attached is the update for Appendix 14.16.2 – Recession Planes to date.
I've put the new section D diagram in red to signify it's a work in progress.
I'm assuming the other appendices will need to be updated using the strike outs etc. in due course?

Regards
Steve

From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Sent: Friday, January 27, 2023 11:12 AM
To: Pratt, Steve <Steven.Pratt@ccc.govt.nz>
Subject: RE: Appendix - Recession Plane - 14.16.2 - amendment needed

Hi Steve,

Yes, the Cost Centre for the plan change is 6910032530 and the charge code 501628.

Many thanks,

Ike Kleynbos
Principal Advisor – Planning
City Planning (E)
Ex: [REDACTED]

From: Pratt, Steve <Steven.Pratt@ccc.govt.nz>
Sent: Friday, 27 January 2023 11:08 am
To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Subject: RE: Appendix - Recession Plane - 14.16.2 - amendment needed

Hi Ike

I've just gone into my timesheet and it appears the previous WBS (181/121/37) I used from Clare doesn't work any longer.
Can you please let me know the WBS I need to use for this work.

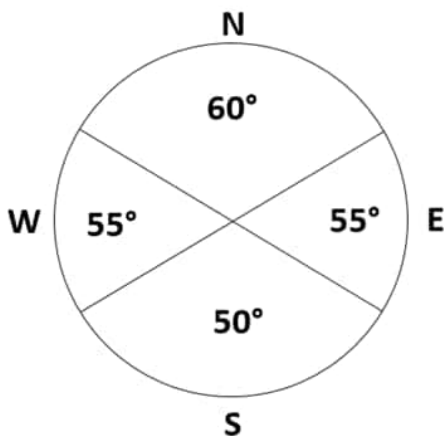
Thanks
Steve

From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Sent: Wednesday, January 25, 2023 10:41 AM
To: Pratt, Steve <Steven.Pratt@ccc.govt.nz>
Cc: Hattam, David <David.Hattam@ccc.govt.nz>
Subject: RE: Appendix - Recession Plane - 14.16.2 - amendment needed

Hi Steve,

Thanks for following this up. There has been some further thinking about recession planes since I provided the comments to Clare in October. You may have heard that we are looking to progress with a sunlight access restriction, further reducing the MDRS recession plane – which is true.

This is being drafted, but the current draft is as follows:



This will effectively replace Diagram D, as per the latest draft I of the appendix I saw. The exact angles are yet to be confirmed, but I am hoping that our David (copied in) will be able to confirm this within the next week.

This mean that in terms of your other questions:

1. Diagram E can remain;
2. The unnamed diagram – I'm unsure about its genesis, but I suspect that it is an explanation of recession plane measurement. Based on this, I'd say the following title would be fine: "Recession Plane Measurement Example"
3. Due to the above, the currently titled 'MRZ Recession Plane Diagram' can be removed
4. As above, the above dial (or similar) should replace diagram D

Hope that help – let me know if you have any other questions.

Many thanks,

Ike Kleynbos

Principal Advisor – Planning
City Planning (E)


 Ike.Kleynbos@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
 ccc.govt.nz

 Christchurch
City Council

From: Pratt, Steve <Steven.Pratt@ccc.govt.nz>
 Sent: Tuesday, 24 January 2023 2:13 pm
 To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
 Subject: FW: Appendix - Recession Plane - 14.16.2 - amendment needed

Hi Ike

With regard to updating 14.16.2 I was hoping you can clarify the following as per your comments below:

1. Existing diagram E being removed (i.e. crossed out) and diagram F being renamed to E.
2. The unnamed diagram (bottom left) requires a new title. "F: Recession Plane Diagram" if not this please let me know what you want for it.
3. The current MRZ Recession Plane Diagram renamed to "G: MDRS Recession Plane Diagram"

The other comments below I understand and can action as per your instructions.

Regards
Steve

From: Piper, Clare <Clare.Piper@ccc.govt.nz>
 Sent: Wednesday, January 18, 2023 1:43 PM
 To: Pratt, Steve <Steven.Pratt@ccc.govt.nz>
 Cc: Pollisco JP, Marie <Marie.Pollisco@ccc.govt.nz>; Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
 Subject: RE: Appendix - Recession Plane - 14.16.2 - amendment needed

Hi Steve,

I'm not really working on this project anymore, and am just tidying up some things – this one being one of them.

Please work with Marie or Ike on the details this request, as there may need to be changes to quite a few things to have this shown.

Kia manahau!

Clare Piper

From: Pratt, Steve <Steven.Pratt@ccc.govt.nz>
 Sent: Tuesday, 17 January 2023 1:59 pm
 To: Piper, Clare <Clare.Piper@ccc.govt.nz>
 Subject: RE: Appendix - Recession Plane - 14.16.2 - amendment needed

Hi Clare

I require some clarification on what changes are to be "striked out"
 Are we talking about the differences between the current District Plan appendix and the changed version?

From: Piper, Clare <Clare.Piper@ccc.govt.nz>
Sent: Monday, January 9, 2023 3:05 PM
To: Pratt, Steve <Steven.Pratt@ccc.govt.nz>
Subject: FW: Appendix - Recession Plane - 14.16.2 - amendment needed

Hey Steve,

Totally forgot about this!

Can you update as per Ike's requests below?

Kia manahau!

Clare Piper



From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Sent: Wednesday, 5 October 2022 1:27 pm
To: Piper, Clare <Clare.Piper@ccc.govt.nz>
Subject: RE: Appendix - Recession Plane - 14.16.2 - amendment needed

Hi Clare,


I've looked back on my comments I originally send through and there are still a few discrepancies:

- Diagram D – still doesn't make sense: why would this apply to MRZ or HRZ? It would mean that eastern, western, and southern boundaries have less than 60° applied to them.
Suggest removing first bullet point
- Diagram E - The suggestion was that this is removed, as it will be the same as MRZ and HRZ. Still believe this is a better option.
What is shown as "MRZ Recession Plane Diagram" should instead be (after E is removed) – "F: MDRS Recession Plane Diagram" (at the moment it just ties to the medium density residential zone)
There is no label for the diagram on the bottom left of the page

Importantly, changes made to the appendix need to be shown as strike-throughs – just like other chapters.

Let me know if there are further queries.

Many thanks,

Ike Kleynbos
Principal Advisor – Planning
City Planning (E)
Ex: 

From: Piper, Clare <Clare.Piper@ccc.govt.nz>
Sent: Wednesday, 5 October 2022 12:29 pm
To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Subject: FW: Appendix - Recession Plane - 14.16.2 - amendment needed

FYI – Happy?

Kia manahau!

Clare Piper

C: 021 344 212
DDI: 03 941 6470

From: Pratt, Steve <Steven.Pratt@ccc.govt.nz>
Sent: Thursday, 29 September 2022 7:23 am
To: Piper, Clare <Clare.Piper@ccc.govt.nz>
Subject: RE: Appendix - Recession Plane - 14.16.2 - amendment needed

Hi Clare

Attached is the updated appendix 14.16.2 – recession plane plan.
I have put a "title" on the MRZ recession plane diagram.
Let me know if anything further requires changing.

Regards
Steve

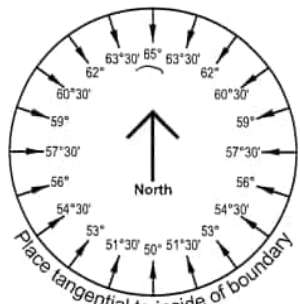
From: Piper, Clare <Clare.Piper@ccc.govt.nz>
Sent: Wednesday, September 28, 2022 2:00 PM
To: Pratt, Steve <Steven.Pratt@ccc.govt.nz>
Subject: RE: Appendix - Recession Plane - 14.16.2 - amendment needed

Oh yes! Woops.

D: Should read:

"Applicable to all buildings
on sites in the Medium Density (MRZ) and High Density (HRZ) residential zones
on sites in other non-residential zones that adjoin residential zones"

Retain E: with the following deletions:



E Applicable to all buildings:

- ~~• over 11 metres in height in the medium density higher height limit zones~~
- ~~• over 11 metres in height on sites in other non residential zones~~
- ~~• that adjoin the medium density higher height limit zones~~
- ~~• in the Residential **Guest Visitor** Accommodation Zone and the~~
- ~~• Residential Central City Zone (Plan Change 4 Council Decision)~~

Kia manahau!

Clare Piper



From: Pratt, Steve <Steven.Pratt@ccc.govt.nz>
 Sent: Wednesday, 28 September 2022 10:53 am
 To: Piper, Clare <Clare.Piper@ccc.govt.nz>
 Subject: RE: Appendix - Recession Plane - 14.16.2 - amendment needed

Hi Clare

Under D you appear to have the same note twice now or am I missing something?

Regards
 Steve

From: Piper, Clare <Clare.Piper@ccc.govt.nz>
 Sent: Wednesday, September 28, 2022 10:13 AM
 To: Pratt, Steve <Steven.Pratt@ccc.govt.nz>
 Subject: Appendix - Recession Plane - 14.16.2 - amendment needed

Hi Steve,

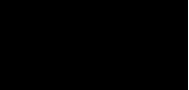
Noted that we missed also updating appendix 14.16.2 – Recession Planes.

Please find attached changes sought.

Let me know if you have any questions.

Kia manahau!

Clare Piper



From: Pratt, Steve
Sent: Wednesday, 15 February 2023 6:45 AM
To: Kleynbos, Ike
Cc: Hattam, David
Subject: RE: Appendix - Recession Plane - 14.16.2 - amendment needed
Attachments: District Plan Appendix 14.16.2 Recession Planes - pp104101 - Issue 2023-02-15.pdf

Hi Ike

Attached is the updated plan with your requested change (first bullet point) below.

Regards
Steve

From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Sent: Friday 27 January 2023 11:36 AM
To: Pratt, Steve <Steven.Pratt@ccc.govt.nz>
Cc: Lightbody, Kirk <Kirk.Lightbody@ccc.govt.nz>
Subject: RE: Appendix - Recession Plane - 14.16.2 - amendment needed

Great, thanks Steve. Looking good – a few more comments for me:
For D, can you please have the first bullet point as: in the Medium Density Residential Zone (MRZ) and High Density Residential Zone (HRZ)?
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Note that this diagram may yet change
Note that we may still re-introduce the first two bullet points on diagram A, TBC

By the ‘other appendices’ do you mean the ODP plans?

Many thanks,

Ike Kleynbos
Principal Advisor – Planning
City Planning (E)
Ex: [REDACTED]

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Hi Ike

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Steve

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Hi Steve,

Yes, the Cost Centre for the plan change is 6910032530 and the charge code 501628.

Many thanks,

Ike Kleynbos
Principal Advisor – Planning
City Planning (E)
Ex: [REDACTED]

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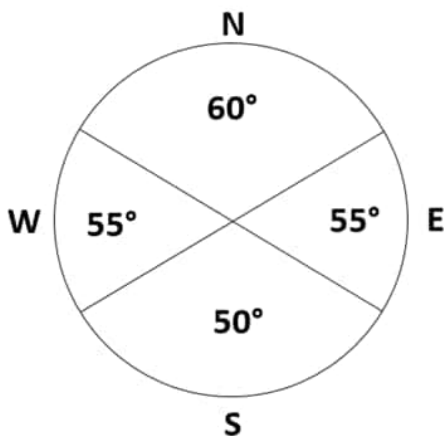
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Cc: Hattam, David <David.Hattam@ccc.govt.nz>
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This mean that in terms of your other questions:

1. Diagram E can remain;
2. The unnamed diagram – I'm unsure about its genesis, but I suspect that it is an explanation of recession plane measurement. Based on this, I'd say the following title would be fine: "Recession Plane Measurement Example"
3. Due to the above, the currently titled 'MRZ Recession Plane Diagram' can be removed
4. As above, the above dial (or similar) should replace diagram D

Hope that help – let me know if you have any other questions.

Many thanks,

Ike Kleynbos

Principal Advisor – Planning
City Planning (E)


 Ike.Kleynbos@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
 ccc.govt.nz

 Christchurch
City Council

From: Pratt, Steve <Steven.Pratt@ccc.govt.nz>
 Sent: Tuesday, 24 January 2023 2:13 pm
 To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
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1. Existing diagram E being removed (i.e. crossed out) and diagram F being renamed to E.
2. The unnamed diagram (bottom left) requires a new title. "F: Recession Plane Diagram" if not this please let me know what you want for it.
3. The current MRZ Recession Plane Diagram renamed to "G: MDRS Recession Plane Diagram"

The other comments below I understand and can action as per your instructions.

Regards
Steve

From: Piper, Clare <Clare.Piper@ccc.govt.nz>
 Sent: Wednesday, January 18, 2023 1:43 PM
 To: Pratt, Steve <Steven.Pratt@ccc.govt.nz>
 Cc: Pollisco JP, Marie <Marie.Pollisco@ccc.govt.nz>; Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
 Subject: RE: Appendix - Recession Plane - 14.16.2 - amendment needed

Hi Steve,

I'm not really working on this project anymore, and am just tidying up some things – this one being one of them.

Please work with Marie or Ike on the details this request, as there may need to be changes to quite a few things to have this shown.

Kia manahau!

Clare Piper

From: Pratt, Steve <Steven.Pratt@ccc.govt.nz>
 Sent: Tuesday, 17 January 2023 1:59 pm
 To: Piper, Clare <Clare.Piper@ccc.govt.nz>
 Subject: RE: Appendix - Recession Plane - 14.16.2 - amendment needed

Hi Clare

I require some clarification on what changes are to be "striked out"
 Are we talking about the differences between the current District Plan appendix and the changed version?

From: Piper, Clare <Clare.Piper@ccc.govt.nz>
Sent: Monday, January 9, 2023 3:05 PM
To: Pratt, Steve <Steven.Pratt@ccc.govt.nz>
Subject: FW: Appendix - Recession Plane - 14.16.2 - amendment needed

Hey Steve,

Totally forgot about this!

Can you update as per Ike's requests below?

Kia manahau!

Clare Piper



From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Sent: Wednesday, 5 October 2022 1:27 pm
To: Piper, Clare <Clare.Piper@ccc.govt.nz>
Subject: RE: Appendix - Recession Plane - 14.16.2 - amendment needed

Hi Clare,

I've looked back on my comments I originally send through and there are still a few discrepancies:

- Diagram D – still doesn't make sense: why would this apply to MRZ or HRZ? It would mean that eastern, western, and southern boundaries have less than 60° applied to them.
Suggest removing first bullet point
- Diagram E - The suggestion was that this is removed, as it will be the same as MRZ and HRZ. Still believe this is a better option.
What is shown as "MRZ Recession Plane Diagram" should instead be (after E is removed) – "F: MDRS Recession Plane Diagram" (at the moment it just ties to the medium density residential zone)
There is no label for the diagram on the bottom left of the page

Importantly, changes made to the appendix need to be shown as strike-throughs – just like other chapters.

Let me know if there are further queries.

Many thanks,

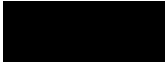
Ike Kleynbos
Principal Advisor – Planning
City Planning (E)
Ex:

From: Piper, Clare <Clare.Piper@ccc.govt.nz>
Sent: Wednesday, 5 October 2022 12:29 pm
To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
Subject: FW: Appendix - Recession Plane - 14.16.2 - amendment needed

FYI – Happy?

Kia manahau!

Clare Piper



From: Pratt, Steve <Steven.Pratt@ccc.govt.nz>
Sent: Thursday, 29 September 2022 7:23 am
To: Piper, Clare <Clare.Piper@ccc.govt.nz>
Subject: RE: Appendix - Recession Plane - 14.16.2 - amendment needed

Hi Clare

Attached is the updated appendix 14.16.2 – recession plane plan.
I have put a "title" on the MRZ recession plane diagram.
Let me know if anything further requires changing.

Regards
Steve

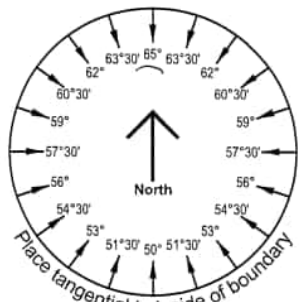
From: Piper, Clare <Clare.Piper@ccc.govt.nz>
Sent: Wednesday, September 28, 2022 2:00 PM
To: Pratt, Steve <Steven.Pratt@ccc.govt.nz>
Subject: RE: Appendix - Recession Plane - 14.16.2 - amendment needed

Oh yes! Woops.

D: Should read:

"Applicable to all buildings
on sites in the Medium Density (MRZ) and High Density (HRZ) residential zones
on sites in other non-residential zones that adjoin residential zones"

Retain E: with the following deletions:



E Applicable to all buildings:

- ~~over 11 metres in height in the medium density higher height limit zones~~
- ~~over 11 metres in height on sites in other non residential zones~~
- ~~that adjoin the medium density higher height limit zones~~
- ~~in the Residential **Guest Visitor** Accommodation Zone and the~~
- ~~Residential Central City Zone (Plan Change 4 Council Decision)~~

Kia manahau!

Clare Piper

From: Pratt, Steve <Steven.Pratt@ccc.govt.nz>
 Sent: Wednesday, 28 September 2022 10:53 am
 To: Piper, Clare <Clare.Piper@ccc.govt.nz>
 Subject: RE: Appendix - Recession Plane - 14.16.2 - amendment needed

Hi Clare

Under D you appear to have the same note twice now or am I missing something?

Regards
 Steve

From: Piper, Clare <Clare.Piper@ccc.govt.nz>
 Sent: Wednesday, September 28, 2022 10:13 AM
 To: Pratt, Steve <Steven.Pratt@ccc.govt.nz>
 Subject: Appendix - Recession Plane - 14.16.2 - amendment needed

Hi Steve,

Noted that we missed also updating appendix 14.16.2 – Recession Planes.

Please find attached changes sought.

Let me know if you have any questions.

Kia manahau!

Clare Piper

From: Stevenson, Mark
Sent: Thursday, 23 February 2023 1:32 PM
To: Richardson, James
Subject: QM sunlight text

599

Here is amended text, reflecting input from Ceciel
Thanks
Mark

The proposed Qualifying Matter will align Christchurch with northern Tier 1 cities in relation to sunlight access, taking into account the latitude and climatic differences, and recognising that every hour of sunlight is important and desirable in Christchurch given our climate.

When the MDRS is applied to Christchurch (without the Qualifying Matter) it would mean some units could have more than 5 months with no sunlight access to ground-floors.

To achieve a comparable living environment in Christchurch it is proposed to reduce the recession plane angle height from 4m to 3m, apply a recession plane of 50 to 60 degrees, and take into account the orientation of a site. This can be achieved without affecting the number of units that can be built on a site.

From: Hattam, David
Sent: Monday, 30 January 2023 11:29 AM
To: [Redacted]
Cc: Kleynbos, Ike
Subject: Preliminary results
Attachments: Shading Hours Modelling Results.xlsx

Hi [Redacted]

Some preliminary results are attached, in the sheet MDRS Comparison.

By way of clarification, the diagram below indicates the facades being tested in each case. Hopefully that clarifies things a bit. An assumption has been made that east and west facades are broadly similar in terms of sunlight received (time and intensity) because that is how the recession planes conventionally work (you can let me know the validity of this!).

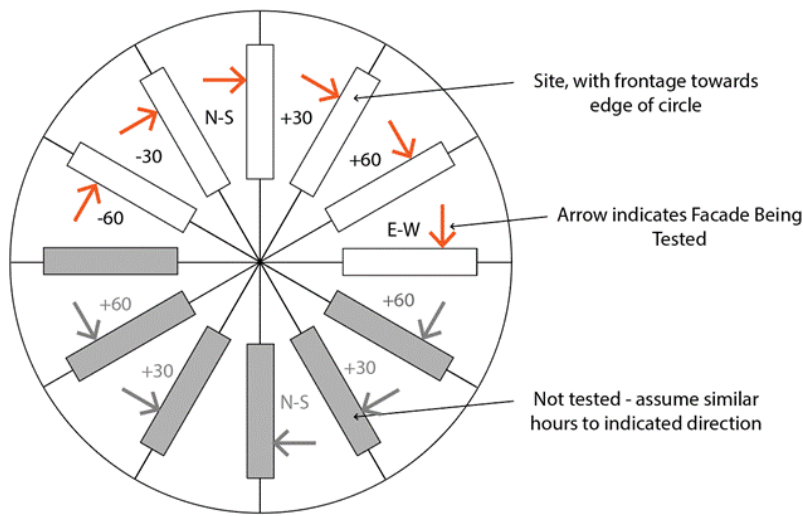
I need to do some checking and I am concerned that the model I have used has a flaw which I need to check (the roof pitch is too steep which makes more of an impact than I thought – quite an interesting finding but inconvenient!). This may lead to revised figures later today.

The hours shown on the spreadsheet generally indicate at least 1m2 of sun on the windows of the model (per floor); or that half the outdoor living space is clear of shading. At this stage I think we do not need much analysis on the outdoor space (it could be interesting to have a kilojoules estimate but I think hours is enough).

For the building itself, its probably sufficient to indicate the kilojoules falling on 1m2 of façade / window on the days and times indicated for a façade at the indicated angle. This should give us something to go on.

I feel there should be a better way to do this, but I also think this is a useful exercise for now.

Let me know if you have any thoughts on this. I am here most of the day.



David Hattam
Senior Urban Designer
Urban Design

[Redacted]
David.Hattam@ccc.govt.nz
Te Hononga Civic Offices, 53 Hereford Street, Christchurch
PO Box 73012, Christchurch 8154
ccc.govt.nz



From: Hattam, David
Sent: Friday, 23 December 2022 2:41 PM
To: Kleynbos, Ike
Subject: Possible recession planes
Attachments: Possible recession planes.png

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Ike

Here is a quick diagram showing possible recession planes. Apart from RMD, these would all allow typical 3 storey development on most sites easily and which to adopt comes down to what is easiest to use and understand – and the preference for variable recession planes to maximise sun in the best locations.

Not optimising them means that if you want to protect sun access, you have to compromise other aspects of the development and so it is not creating more efficiency or capacity (because ultimately it is just moving the building around the site within the site coverage limit). I might need to draw this.

David Hattam
Senior Urban Designer
Urban Design

-  
-  David.Hattam@ccc.govt.nz
-  Te Hononga Civic Offices, 53 Hereford Street, Christchurch
-  PO Box 73012, Christchurch 8154
-  ccc.govt.nz



From: Kleynbos, Ike
 Sent: Friday, 2 December 2022 3:11 PM
 To: Stevenson, Mark; Oliver, Sarah; Higgins, John
 Subject: Possible QM for recession plane

Hi all,

The unique shading effects of ChCh continues to be a point of contention, which has been raised by Councillors. Addressing this, the interest of John to see this notified, and the fact that we are actually at a different latitude, it would be good to explore whether entertaining this is a viable option.

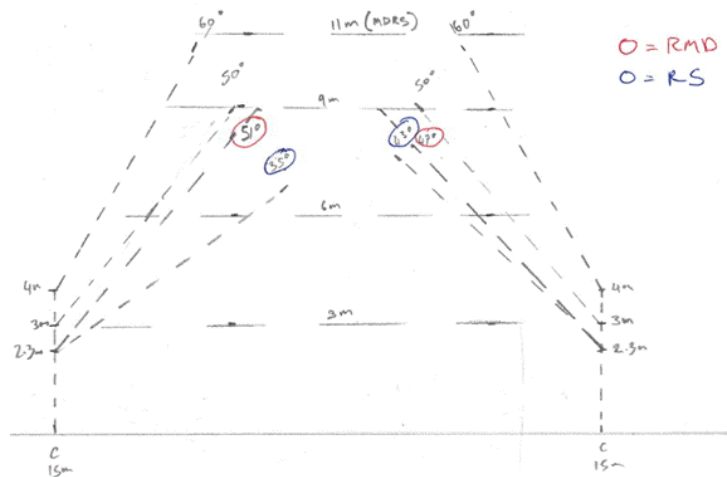
This would fall under the 'other matter' umbrella and require a good evidence basis to be justified, notwithstanding that it would be a QM that would apply across the whole city (thinking about s86BA here). On the face of it, the most significant elements we would need to justify are:

- Loss of development capacity;
- Boarder costs of approach;
- NPS-UD Obs justification;
- Site-specific evaluation of:
 - Specific characteristic – (all sites at similar latitude? Show mapping of change in sun angle across city?)
 - Range of options to address this (different feasibility/yield tests on various sites as examples?)

In terms of options, and before we dive into this too far, I'd like to test in John Scallan's model what the impact would be of changes to feasibility with changes to planes. I've summarised 3 options below:

Zone / Option	Recession plane	Comment
RS Zone	2.3m at -35-45°	Unlikely to be suitable to achieving MDRS. Max building height likely at two storey.
RMD Zone	2.3m at -45-55°	RMD has seldomly seen three storey development, so would struggle to be justified. Upper floor plate in test is only just over 3m.
MDRS	4m at 60°	Widely unsupported, does not align with the latitudinal difference ChCh has (being 7° different to Auckland), does not adjust to the orientation of parcels. Upper floor plate in test shows floor at just over 5m.
Bespoke – Option 1	4m at 50°	Reduced angle, but unlikely to cut height by much and does not respond to site orientation or the issue of bulk/shadow at the boundary (4m), but aligns well with MDRS.
Bespoke – Option 2	3m at 50°	Reduced angle and height, reducing the bulk at the boundary, reducing potential for shading. Does not respond to site orientation, but approach similar to MDRS.
Bespoke – Option 3	3m at -45-55°	Adaptive angle based on feasible RMD model, increasing approach height by 0.7m (reduced down by 1m compared to MDRS). Would be adaptive to site orientation.
Bespoke – Option 4??		

I've tested some of this, as per below, based on an average frontage of 15m:



I think my preferred option would be Option 3, only applying this to MRZ. However, speaking to John, bespoke site orientation modelling is quite complex, so if this has support, I think it would be best to test Option 2 in the model. This will give us a good indication what impact of an alternative. Fundamental to this is that we believe that 3 storeys are achievable in a height less than MDRS, but as long as we can show that in most cases 3 storeys is achievable, then we can confidently say that we're still meeting the intent of the Act.

I'd like some views on this before I ask John to do some initial modelling.

Many thanks

Ike Kleynbos
 Principal Advisor – Planning
 City Planning (E)


 Ike.Kleynbos@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
 ccc.govt.nz

From: Hattam, David
Sent: Thursday, 12 January 2023 11:23 AM
To: Kleynbos, Ike
Subject: New recession plane diagrams - explaining the impact
Attachments: Explanation - [redacted]fit of Proposed 3+50.svg

Hi Ike

These diagrams should show the impact of the proposed change – why it is worthwhile - and hopefully are easy to understand.

David Hattam
Senior Urban Designer
Urban Design

-  [redacted]
-  David.Hattam@ccc.govt.nz
-  Te Hononga Civic Offices, 53 Hereford Street, Christchurch
-  PO Box 73012, Christchurch 8154
-  ccc.govt.nz



From: Hattam, David
Sent: Friday, 13 January 2023 5:20 PM
To: [REDACTED]
Cc: Kleynbos, Ike
Subject: Modelling for Recession Planes
Attachments: Site Layout Implications of MDRS.docx; Full NC 2.svg

Hi [REDACTED]

It was interesting to speak to you earlier. Ike is working on a proposal.

In the meantime, I am sending a summary of some previous work I have carried out which estimated the hours of sunlight received under different circumstances (orientations and buildings). This seems a bit crude but also was very helpful. We are looking at defining the impact of a building envelope at different orientations at different latitudes.

Based on our conversation, it seems that the best way of doing this would be by quantifying sun hours / energy levels at different points on the building and site. This would then give us a way to show the difference between the locations and the various development envelopes.

I am envisaging a test where we have a model that we rotate around the compass at intervals (probably of 30 degrees) from East-West, to see the impact of shading at different angles. In my previous work I produced the diagrams in "Full NC 2" attached. These show the number of metres of a 40m long building which fail to meet a specified benchmark (2 hours/day of direct sun) which was measured in Sketchup (using Sunhours), at 15 degree orientations. That process is labour intensive and I was not confident in its accuracy so I have not repeated it here.

I think what we need is something that shows: the hours of sun access / kwh of heat on windows and in garden areas for different house orientations on key dates; and cumulative totals. The aim is to highlight the differences but Christchurch and other cities, and to see if our proposed recession plane outcomes would rebalance it (or if it needs to be fine-tuned).


Ike will be in touch early next week.

Kind Regards

David

David Hattam
Senior Urban Designer
Urban Design

[REDACTED]
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PO Box 73012, Christchurch 8154
ccc.govt.nz

Christchurch
City Council 

From: Hattam, David
Sent: Tuesday, 14 February 2023 12:09 PM
To: Lightbody, Kirk
Subject: FW: Recession Plane Diagram
Attachments: District Plan Appendix 14.16.2 Recession Planes - pp104101 - DRAFT Issue 2023-02-14.pdf

Hi Kirk

This is the revised diagram from Steve

From: Pratt, Steve <Steven.Pratt@ccc.govt.nz>
Sent: Tuesday, 14 February 2023 11:55 am
To: Hattam, David <David.Hattam@ccc.govt.nz>
Subject: RE: Recession Plane Diagram

Hi David

Attached is the updated plan.

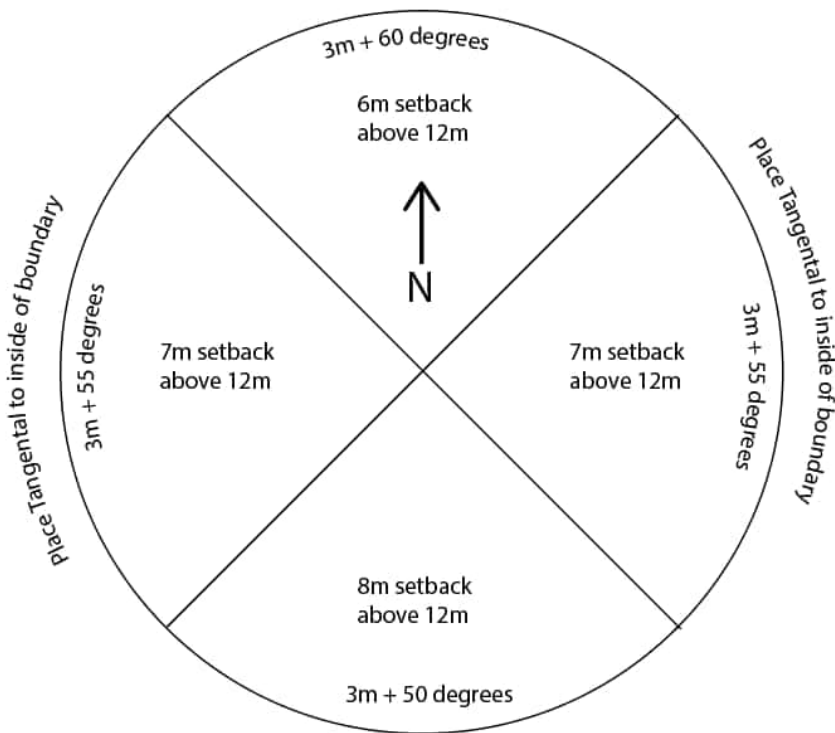
Regards
Steve

From: Hattam, David <David.Hattam@ccc.govt.nz>
Sent: Tuesday 14 February 2023 11:02 AM
To: Pratt, Steve <Steven.Pratt@ccc.govt.nz>
Cc: Lightbody, Kirk <Kirk.Lightbody@ccc.govt.nz>
Subject: Recession Plane Diagram

Hi Steve

We have found a problem with the plan. Can you change the recession plane diagram in line with the below – so it incorporates the setbacks.

Thanks!



David Hattam
Senior Urban Designer
Urban Design

David.Hattam@ccc.govt.nz
Te Hononga Civic Offices, 53 Hereford Street, Christchurch
PO Box 73012, Christchurch 8154
ccc.govt.nz



From: Kleynbos, Ike
 Sent: Monday, 5 December 2022 3:03 PM
 To: Scallan, John
 Cc: Oliver, Sarah
 Subject: FW: Possible QM for recession plane

Hi John,

Following up on our conversation on Friday, I have looked further into the potential to run a QM for an alternate recession plane. For now, there seems to be support for testing to see what change in feasibility there is when adopting a recession plane of 3m and 50°.

This would apply for all residential parcels, noting that in HRZ no recession plane would apply to about the first 20m of parcel depth, or when setback 6m from side and rear boundaries when above 14m in height.


I think we discussed comparing 'apples for apples' in the model, meaning that the basis for PC14 status quo needs to be the same as the alternate test. When running the model, I think it would be best to adopt the PT access QM as well (since this already takes about 25% of feasible capacity). The end result should therefore compare what the effect of the PT access QM is, compared to *also* adding the recession plane QM.

Would it be possible to have an output complete by the end of this week? We are presenting to Council on 13 Dec and having this figures would be very useful for the discussion of whether this should be adopted.

Many thanks,

Ike Kleynbos
 Principal Advisor – Planning
 City Planning (E)


 Ike.Kleynbos@ccc.govt.nz
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Christchurch
 City Council 

From: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>
 Sent: Monday, 5 December 2022 7:59 am
 To: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
 Cc: Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>
 Subject: RE: Possible QM for recession plane

Hi Ike

Thanks for putting some time into this.

I think it is a good way forward and addresses the issues raised in the deputation by VNA to Council and likely to be raised by others. For ease of modelling, I agree with testing Option 2 while recognising that Option 3 has merit,
 Thanks

Mark

Mark Stevenson
 Manager Planning


 Mark.Stevenson@ccc.govt.nz
 Te Hononga Civic Offices, 53 Hereford Street, Christchurch
 PO Box 73012, Christchurch 8154
 ccc.govt.nz

Christchurch
 City Council 

From: Kleynbos, Ike <Ike.Kleynbos@ccc.govt.nz>
 Sent: Friday, 2 December 2022 3:15 PM
 To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>
 Subject: RE: Possible QM for recession plane

Apologies, some text fixed in the table below...

From: Kleynbos, Ike
 Sent: Friday, 2 December 2022 3:11 pm
 To: Stevenson, Mark <Mark.Stevenson@ccc.govt.nz>; Oliver, Sarah <Sarah.Oliver@ccc.govt.nz>; Higgins, John <John.Higgins@ccc.govt.nz>
 Subject: Possible QM for recession plane

Hi all,

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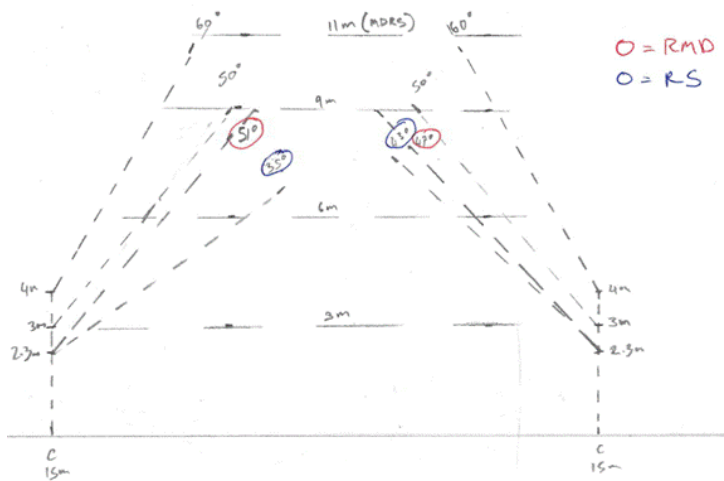
This would fall under the 'other matter' umbrella and require a good evidence basis to be justified, notwithstanding that it would be a QM that would apply across the whole city (thinking about s86BA here). On the face of it, the most significant elements we would need to justify are:

- Loss of development capacity;
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I'd like some views on this before I ask John to do some initial modelling.

Many thanks

Ike Kleynbos

Principal Advisor – Planning
City Planning (E)

Ike.Kleynbos@ccc.govt.nz

Te Hononga Civic Offices, 53 Hereford Street, Christchurch

PO Box 73012, Christchurch 8154

ccc.govt.nz



Our proposed Housing and Business Choice and Heritage Plan Changes (13 & 14)

Submitter Details

Submission Date: 11/05/2023

First name: Maggie **Last name:** Lawson

Preferred method of contact Email

Postal address: 23 Medina Crescent

Suburb: Parklands

City: Christchurch

Country: New Zealand

Postcode: 8083

Email: maggie.lawson.in.nz@gmail.com

Daytime Phone:

I could not
Gain an advantage in trade competition through this submission

I am not
directly affected by an effect of the subject matter of the submission that :
a. adversely affects the environment, and
b. does not relate to the trade competition or the effects of trade competitions.

Note to person making submission:

If you are a person who could gain an advantage in trade competition through the submission, your right to make a submission may be limited by clause 6(4) of Part 1 of Schedule 1 of the Resource Management Act 1991

Would you like to present your submission in person at a hearing?

Yes

I do NOT wish to speak in support of my submission and ask that the following submission be fully considered.

Consultation Document Submissions

Original Submitter:

Original Point:

Points: 00.1

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

I support the Tree Canopy Cover rules and Financial Contributions to restore our tree canopy. Trees are important in reducing emissions, providing shade and temperature control in the summer, alongside the other wide range of economic, health and social effects. I seek that the council retains the tree canopy requirement and contributions plan.

My submission is that

The council will require 20% of new residential developments to be covered by trees, or otherwise pay a financial contribution to help the council plant more trees on public land. Christchurch has an appallingly low tree canopy cover rate of 13% compared to Auckland (18%) and Wellington (30%). Trees have a wide range of environmental, health, social and economic benefits and are important for the future of our city.

Original Submitter:

Original Point:

Points: 00.2

- Support
- Oppose
- Seek Amendment

I seek the following decision from the Council

If seeking to make changes to a specific site or sites, please provide the address or identify the area

I support high-density housing near the city and commercial centres. We need to allow more people to live near services and amenities to reduce car dependency. This would allow more people to take active and public transport to commute, shop and play. I seek that the council enable 6 to 10 storeys for residential buildings near commercial centres.

My submission is that

The council is required by law to allow residential buildings of at least 6 storeys within a 1.2km radius of commercial centres such as malls and the city centre. The council plan to enable this, while also allowing up to 10 storeys for residential buildings closer to the city centre. This would enable a wider range of dense housing development options. It would also allow more people to live close to services and amenities.

Attached Documents

File
No records to display.