

**BEFORE INDEPENDENT HEARING COMMISSIONERS
IN CHRISTCHURCH**

TE MAHERE Ā-ROHE I TŪTOHUA MŌ TE TĀONE O ŌTAUTAHI

UNDER the Resource Management Act 1991 (RMA)

AND

IN THE MATTER of the hearing of submissions on Plan Change 14
(Housing and Business Choice) to the Christchurch
District Plan

AND

IN THE MATTER of Canterbury Regional Council (submitter 689)

**SUMMARY OF STATEMENT OF EVIDENCE OF MEG BUDDLE ON BEHALF
OF THE CANTERBURY REGIONAL COUNCIL**

PLANNING

22 April 2024

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Summary Statement

- 1 My name is Meg Catherine Buddle. I am a Senior Planner at the Canterbury Regional Council (**Regional Council**) and have set out my qualifications and experience in my statement of evidence dated 20 September 2023.
- 2 I have prepared planning evidence in chief¹ on behalf of the Regional Council in relation to Plan Change 14 (PC14) to the Christchurch District Plan (CDP). My evidence in chief addresses: an overview of PC14 to the CDP, the airport noise contours, the low public transport accessibility qualifying matter, stormwater issues relating to Port Hills intensification, flooding issues relating to Halswell intensification, and tsunami management areas.
- 3 This summary statement provides updates on the following topics:
 - (a) New Port Hills stormwater qualifying matter (**QM**);
 - (b) New Halswell/Huritini stormwater QM; and
 - (c) Airport noise QM.

New Port Hills stormwater QM

- 4 A chronology of events relating to the new Port Hills stormwater QM is included in Appendix 1.

Corrections to my evidence in chief

- 5 I note two corrections to my evidence in chief:
 - (a) references to “Residential Hill Zone” should be “Residential Hill Zone and Residential Banks Peninsula Zone”. Based on the notified PC14 mapping, the Lyttelton township, which is currently zoned Residential Banks Peninsula, is eligible for medium density enablement. The same Port Hills stormwater quality and quantity concerns apply to Lyttelton sites, and I consider that any stormwater qualifying matter (and associated provisions) applied to the Residential Hill Zone should also be applied to the Residential Banks Peninsula Zone.

¹ Dated 20 September 2023

- (b) The last line of Paragraph 85 of my evidence in chief contains an error – it should read: “I suggest that all of the Port Hill suburbs be covered by a qualifying matter that retains the same density, and building coverage ~~and landscaping~~ standards as the operative CDP.”

Expert conferencing

- 6 I am a signatory to the Joint Witness Statement (**JWS**) by planning experts on Port Hills Stormwater Qualifying Matter, dated 11 December 2023. The 11 December JWS was the result of the first round of planning conferencing on a new Port Hills Stormwater QM.
- 7 I participated in a second round of planning conferencing on Friday 19 April, where we discussed possible plan provisions for a new Port Hills Stormwater QM. Three of the planners who participated in the first round of conferencing (representatives of Kāinga Ora, Red Spur Limited, and Cashmere Land Developments Ltd) did not to participate in the second round of conferencing, I understand this was because of instructions from their clients. At the time of lodging this summary statement, we have not finalised a JWS from the second round of conferencing. However, I can update the Panel orally at the hearing, if required.

Site-specific assessment

- 8 The legal submissions for the Regional Council set out the site-specific characteristics that make medium density enablement inappropriate on the Port Hills². I want to elaborate on one of the characteristics: the sloped nature of Port Hills suburbs.
- 9 Hill land is defined in the City Council's Comprehensive Stormwater Management Consent CRC231955 (**Global Stormwater Consent**) as any land where the average slope across the site exceeds 5 degrees.
- 10 In order to identify which sites are “hill land”, I rely on the existing boundaries of the Residential Hills Zone (**RHZ**) and Residential Banks Peninsula Zone (**RBPZ**), which correlate with the City's residential hill land.

² Paragraphs 13 and 17 of Regional Council legal submissions, dated 17 April 2024.

Relevance of High Soil Erosion Area from LWRP

- 11 The Regional Council's original submission related the erosion risk on the Port Hills to areas covered by the High Soil Erosion Risk Area (**HSER area**) in the Canterbury Land and Water Regional Plan. The HSER area identifies land susceptible to mass movement erosion, and uses presence of any 'soft' rock type and slope greater than 20 degrees. It was based on New Zealand Land Resource Inventory data.
- 12 Since its original submission, the Regional Council has produced a map showing the location of loess dominant soils. This loess soils map was provided to the City Council and included in Mr Kleynbos' rebuttal evidence.
- 13 Regarding erosion and sedimentation potential based on rock/soil type, the loess dominant soils map was developed specifically for the Port Hills area and for the presence of loess soils. Therefore, in my opinion it will more accurately show areas susceptible to sedimentation.
- 14 Maps showing the HSER area, loess dominant soils and the Residential Hills and Residential Banks Peninsula Zones are included at Appendix 2.

Proposed plan provisions

- 15 The following planning approaches have been proposed, either through expert conferencing or evidence, to address stormwater issues:
 - (a) **Option 1** - Retain the permitted status quo zoning and densities, with medium density activities a restricted discretionary activity and stormwater considerations included in the matters of discretion;
 - (b) **Option 2** - Permitted pathway with erosion and sediment control requirements;
 - (c) **Option 3** - Permitted pathway for multi-unit residential developments with an impervious surfaces cap, which is derived from the zone average effective impervious area percentages (**existing imperviousness**) from the City Council's Waterways, Wetlands and Drainage Guide that are included in Appendix 3; and
 - (d) **Option 4** - A combination of Options 2 and 3.
- 16 Regarding Option 1, I included this approach in my evidence in chief. This is still my preferred option, because both the permitted pathways

will likely encourage additional development on the Hills and therefore likely increase the amount of sediment discharged into receiving waterbodies.

- 17 Regarding Option 2, these draft plan provisions are being developed by Mr Kleynbos and I understand that he will include them in his Right of Reply. I generally support Mr Kleynbos' approach, based on my current knowledge of the rule framework. The only part I disagree with is the spatial area covered – I believe the entire Residential Hills Zone and the eligible Residential Banks Peninsula Zone (Lyttelton township) should be subject to the permitted activity standard, not just the area covered by loess dominant soil. As noted in evidence, all hill sites are more prone to erosion than flat sites. For instance, Ms Newlands in her summary statement references an Auckland study showing that the erosion rate triples as the slope doubles.
- 18 Regarding Option 3, I have included these draft plan provisions in Appendix 5. In summary, the proposed plan provisions impose permitted activity standards on multi-unit development that restrict operational-phase impervious surfaces to no more than existing assumed levels. There is an exemption to the impervious surface cap if the site can discharge into a stormwater facility with additional capacity. This exemption is further detailed at paragraph 23.
- 19 Ms Newlands', in her summary statement, describes the different water quantity pressures existing in different catchments affected by the proposed stormwater QM. All catchments would be impacted by an increase in impervious coverage (e.g. because of network/pipe constraints), but some are particularly sensitive.
- 20 I consider that my proposed plan provisions provide flexibility to permit discharges from some catchments (e.g. Lyttelton township) that do not have flood-capacity issues.
- 21 I note that it is not clear whether the impervious surface cap is achievable for typical multi-unit developments, however it is possible that developers devise innovative solutions to increase density while maintaining impervious surfaces at acceptable levels.
- 22 Regarding Option 4, this combination is my alternative preferred approach if the Panel does not accept Option 1.

Differences between redevelopment of existing sites and greenfield development

- 23 As detailed in Ms Newlands summary statement, the stormwater quality and quantity effects from greenfield development of hill sites can in some instances be better managed than effects from redevelopment of hill sites, if:
- (a) Erosion and sediment risk is appropriately controlled, for instance via centralised sediment retention ponds; and
 - (b) Stormwater is discharged to a stormwater attenuation facility with enough capacity to accommodate the additional discharge (above the assumed imperviousness of the area).
- 24 Regarding sedimentation impacts, stormwater from greenfield hill development (e.g. on the Cashmere Estate site) may be managed differently to infill. However, I consider that the draft erosion and sediment control plan provisions discussed above can be used for greenfield and re-development alike. This guarantees that appropriate erosion and sediment control is also implemented at the individual site development stage.
- 25 I generally consider that the above impervious surfaces controls are also appropriate for greenfield development, however, there is value in allowing the opportunity for sites to have more impervious surface than the existing imperviousness, if (or when) stormwater facilities are available that can accommodate additional stormwater. Therefore, I suggest a permitted activity rule for developments breach the existing imperviousness average but meet the following standards:
- (a) Stormwater is discharged via an appropriately-sized conveyance network; and
 - (b) Stormwater is discharged to a stormwater attenuation facility with enough capacity to accommodate the additional discharge (above existing imperviousness); and
 - (c) The City Council agrees that the stormwater attenuation facility can accommodate the additional discharge, and approves the additional discharge.

Evidence to support Port Hills Stormwater QM

26 Numerous documents recognise that stormwater from Christchurch City hill land needs additional management compared with flat land, because of both stormwater quality and quantity impacts, including:

- (a) Evidence from Ms Newlands³;
- (b) Evidence lodged by City Council witnesses in the current PC14 hearings, including Brian Norton's evidence in chief⁴, which states at paragraph 78:

Any qualifying matter that reduces intensification (and disturbance) of hill land will be beneficial in terms of both water quality (flooding) and water quantity (sediment discharges, particularly during construction works).

- (c) The Joint Witness Statement of Infrastructure Experts⁵, which states at pages 5 and 6:

The Port Hills are overlain by loess soil which is fine grained, dispersive and highly erodible.

Discharge during construction: *Not possible to mitigate all sediment discharge from construction resulting from development in hill areas, especially infill development, due to the steep slopes and soil types that increase the risk when compared to flat Christchurch sites.*

Difficult also to manage this on the flats. In general risks are higher on hills because of topography and soil types.

Discharge after construction: *Stormwater runoff from increased impervious surface area on hill suburbs is difficult to collect and manage due to topographical constraints. Runoff may enter onto neighboring sites and therefore cause increased sediment discharge. Increased run-off from hills result in increased flows /higher peak flows into hill side outfalls and into waterways that increases the risk of erosion and scour.*

Most existing CCC stormwater facilities are upstream of much of the residential Port Hills areas and therefore there is limited opportunity for mitigation of these effects (volume and quality) in an integrated manner.

CCC compliance with comprehensive stormwater network consent is likely to be be negatively affected due to increase in discharges and quality of discharges.

- (d) The Global Stormwater Consent;
- (e) The City Council's Onsite Stormwater Mitigation Guide;
- (f) The City Council's Waterways, Wetlands and Drainage Guide; and

³ Evidence in chief dated 20 September 2023 and summary statement dated 22 April 2024.

⁴ Dated 11 August 2023.

⁵ Dated 27 September 2023

- (g) Evidence lodged by City Council witnesses in the Christchurch Replacement District Plan Hearings⁶.
- 27 Regarding stormwater quality, the available evidence demonstrates that:
- (a) The majority of the Port Hills is overlain by dominant loess soil, which is highly erodible and dispersive; and
 - (b) Regardless of soil type, hill sites are more prone to erosion. For instance, Ms Newlands in her summary statement references an Auckland study showing that the erosion rate triples as the slope doubles.
- 28 I consider that the proposed district plan controls are necessary because:
- (a) Of the evidence listed above;
 - (b) The current regional rule framework does not comprehensively address the potential issues arising from medium density development on the Port Hills. A list of the relevant regional rules is in Appendix 4;
 - (c) Allowing medium density development as a permitted activity would likely lead to either:
 - (i) Significant compliance issues for the City Council with its Global Stormwater Consent; or
 - (ii) The City Council refusing to grant new stormwater approvals for development on the Port Hills, in order to comply with its Global Stormwater Consent.

New Halswell/Huritini stormwater qualifying matter

Site-specific assessment

- 29 The legal submissions for the Regional Council, and Mr Surman's summary statement of evidence, set out the site-specific characteristics

⁶ Refer paragraphs 4.5 to 4.6 of Brian Norton's statement of evidence dated 15 August 2015 <https://chchplan.ihp.govt.nz/wp-content/uploads/2015/07/2123-CCC-Residential-Stage-2-Evidence-of-Mr-Brian-Norton-18-8-15.pdf>; and paragraph 6.5 of Sarah Oliver's statement of evidence dated 15 August 2015 [2123-CCC-Residential-Stage-2-Strategic-evidence-of-Ms-Sarah-Oliver-18-8-15.pdf](https://chchplan.ihp.govt.nz/wp-content/uploads/2015/07/2123-CCC-Residential-Stage-2-Strategic-evidence-of-Ms-Sarah-Oliver-18-8-15.pdf) (ihp.govt.nz).

that make medium density enablement inappropriate in the Halswell catchment.

Proposed plan provisions

- 30 I consider the following planning approaches are available to address stormwater issues for the Halswell Catchment:
- (a) **Option 1** - Retain the permitted status quo zoning and densities, with medium density activities a restricted discretionary activity and stormwater considerations included in the matters of discretion. I included this Option in my evidence in chief;
 - (b) **Option 2** - Permitted pathway with an impervious surfaces cap, which is derived from the zone average effective impervious area percentages (**existing imperviousness**) from the City Council's Waterways, Wetlands and Drainage Guide that are included in Appendix 3. Draft plan provisions to implement this Option are included in Appendix 6.
- 31 Because of the statutory requirements for a new qualifying matter, I consider that Option 2 is the most appropriate option, as it enables more density than the existing plan provisions.
- 32 I note that it is not clear whether this standard is achievable for typical multi-unit developments, however it is possible that developers devise innovative solutions to increase density while maintaining impervious surfaces at acceptable levels.

Evidence to support Halswell Stormwater QM

- 33 Mr Surman's evidence in chief and summary statement of evidence provides the justification for this new Halswell stormwater QM.

Airport noise qualifying matter

- 34 My only update on the airport noise QM is to confirm that Environment Canterbury still intends to notify its proposed Regional Policy Statement in December 2024.



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Meg Buddle

22 April 2024

APPENDIX 1 – Chronology of events relating to Port Hills Stormwater QM

Event	Date	Description
Canterbury Regional Council's (CRC) original submission	12 May 2023	<p><i>CRC consider that the Christchurch District Plan should take into account Trangmar's erosion classes and exclude "severe" erosion class land from further subdivision and development....</i></p> <p><i>Excluding further subdivision on "severe" erosion class land would avoid additional sediment entering waterways from the land most likely to erode as a result of rainfall events. CRC consider that medium or high density development on the Port Hills would result in increased stormwater runoff as there is little attenuation capacity in some catchments. This could lead to more sediment loss into Cashmere Stream and the Heathcote/Ōpāwaho River and lead to gross sedimentation of waterways and the coast as well as stormwater networks and down-slope residents. Most of the Port hills are inside the High Soil Erosion Risk Zone under the Canterbury Land and Water Regional Plan. If such development occurs on these hills, there will be a need to require on-site attenuation. CRC understands that sedimentation is captured under Christchurch City Council bylaws, building consents, and in resource consent conditions, but notes that this is an opportunity to more holistically and strategically address the issue rather than relying on these other management mechanisms.</i></p>
Further submissions	30 June - 17 July 2023	<p>Three further submissions were received on this topic of CRC's original submission:</p> <ul style="list-style-type: none"> • Danne Mora Park Ltd – opposed CRC's original submission on seeking to restrict development because of stormwater issues – "We acknowledge the importance of the provision of appropriate stormwater management or mitigation measures, however we question how identifying stormwater management as a qualifying matter will provide a solution to the matters raised in this submission." • EQC Toka Tu Ake – supported CRC's proposal to exclude severe erosion-prone land from medium density enablement.

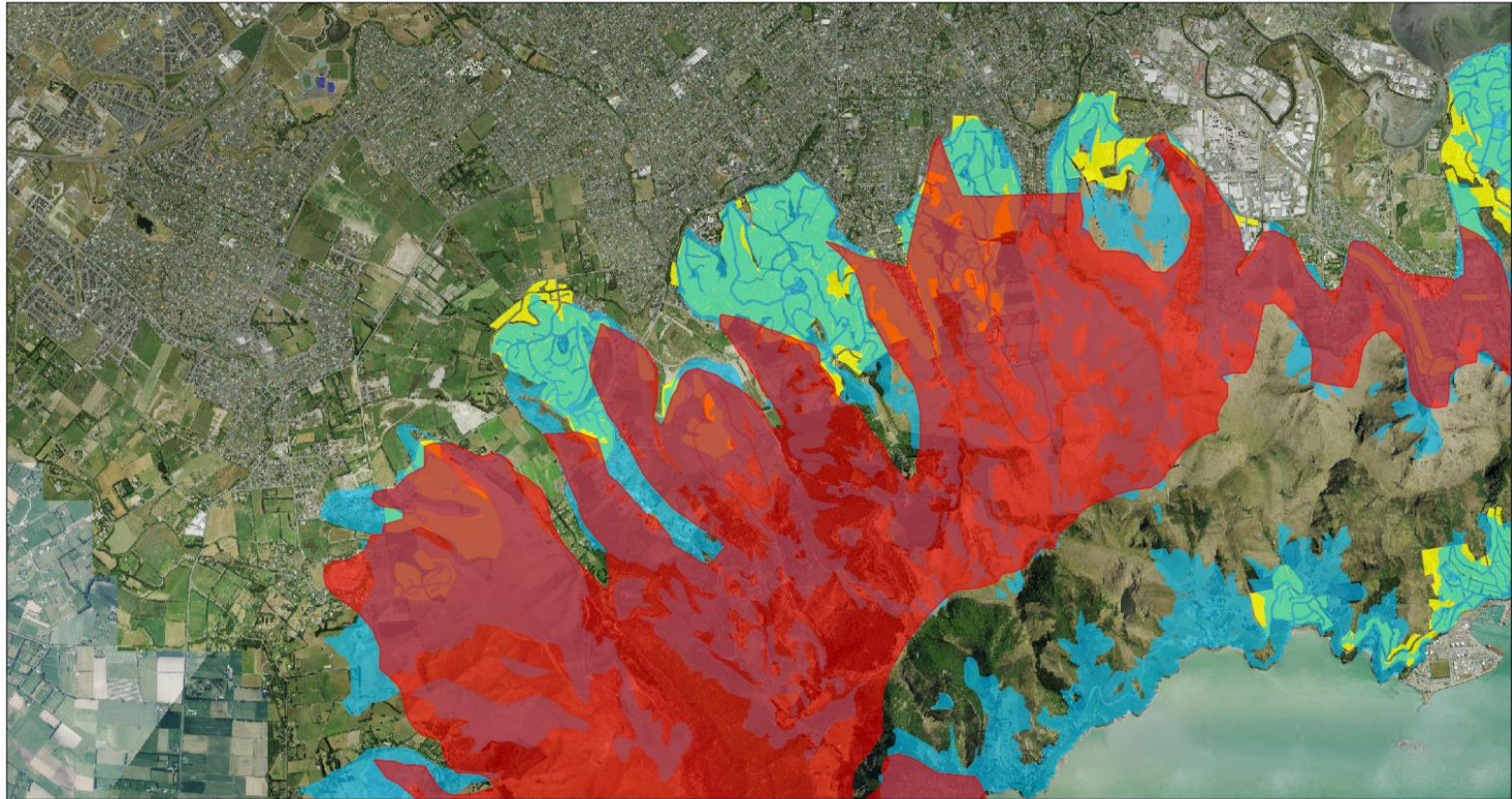
		<ul style="list-style-type: none"> • Kainga Ora – generally opposed the introduction of new qualifying matters. 						
Canterbury Regional Council’s evidence in chief, including evidence by Ms Buddle and Ms Newlands	20 September 2023	Ms Buddle suggested that all of the Port Hill suburbs be covered by a qualifying matter that retains the same density and building coverage standards as the operative CDP.						
Infrastructure expert conferencing, which Ms Newlands and Mr Norton attended	Conferencing occurred 27 September 2023, and a JWS was finalised on 5 October 2023	The experts discussed sediment and water quantity issues specific to the Port Hills.						
Meeting between Mr Kleynbos, Mr Norton, Ms Buddle and Ms Newlands to discuss stormwater issues on the Port Hills	5 October 2023	Mr Kleynbos summarises this meeting in his rebuttal evidence.						
Christchurch City Council’s rebuttal evidence by Ike Kleynbos	16 October 2023	Proposed a different Port Hills Stormwater QM response, using loess soils mapping, as an alternative to Ms Buddle’s evidence in chief.						
IHP information request during Hearing Week 4	2 November 2023	<p>Summary of IHP information request from CCC Memorandum of Counsel dated 10 November 2023:</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Panel information request</th> <th>Document containing response</th> </tr> </thead> <tbody> <tr> <td>47.</td> <td><i>Carry out further expert planners' conferencing on the most efficient and effective mechanism to give effect to a low public transport accessibility and / or stormwater-related qualifying matter (as noted in Mr Langman's summary at the residential hearing)</i></td> <td><i>To be provided.</i></td> </tr> </tbody> </table>	No.	Panel information request	Document containing response	47.	<i>Carry out further expert planners' conferencing on the most efficient and effective mechanism to give effect to a low public transport accessibility and / or stormwater-related qualifying matter (as noted in Mr Langman's summary at the residential hearing)</i>	<i>To be provided.</i>
No.	Panel information request	Document containing response						
47.	<i>Carry out further expert planners' conferencing on the most efficient and effective mechanism to give effect to a low public transport accessibility and / or stormwater-related qualifying matter (as noted in Mr Langman's summary at the residential hearing)</i>	<i>To be provided.</i>						
Email invitation by Mr Kleynbos to planners to participate in planning conferencing on Port Hills Stormwater QM	14 November 2023	<p>In response to the IHP’s information request, Mr Kleynbos invited the following 13 parties, “identified as relevant parties for conferencing”, to participate in planning conferencing:</p> <ul style="list-style-type: none"> • 853 Lyttelton Port Company Limited 						

		<ul style="list-style-type: none"> • 834 Kainga Ora – Homes and Communities • 854 Orion New Zealand Limited (Orion) • 878 Transpower New Zealand Limited • 842 Fire and Emergency • 259 Ara Poutama Aotearoa • 443 Summerset Group Holdings Limited • 881 Red Spur Ltd • 689 Canterbury Regional Council • 257 Cashmere Developments Limited • FS2089 Four Star Developments Limited and Gould Developments Limited • 681 Andrew McCarthy • 751 CCC
First planning expert conferencing on new Port Hills Stormwater QM	Conferencing occurred on 22 November 2023, and a JWS was finalised on 11 December 2023	<p>Planners conferenced on possible planning approaches to address the issues raised in Ms Buddle and Mr Kleynbos' evidence. The planners who attended were:</p> <ul style="list-style-type: none"> • Mr Kleynbos as s42A Reporting Officer • Ms Buddle for CRC • Ms Jackson for Cashmere Land Developments Ltd • Mr Joll for Kāinga Ora • Ms Aston for Red Spur Limited • Mr Langman for CCC (as submitter #751)
Second planning expert conferencing on new Port Hills Stormwater QM	Conferencing occurred on 19 April 2024, and a JWS is yet to be finalised	<p>Follow up conferencing on possible planning approaches. The planners who attended were:</p> <ul style="list-style-type: none"> • Mr Kleynbos as s42A Reporting Officer • Ms Buddle for CRC • Mr Langman for CCC (as submitter #751)
Canterbury Regional Council's summary statements, including summaries by Ms Buddle and Ms Newlands	22 April 2024	<p>Further discussion of potential approaches for stormwater management on the Port Hills.</p> <p>As noted above, includes a correction to Ms Buddle's evidence in chief that mentions of "Residential Hill Zone" should be "Residential Hill Zone and Residential Banks Peninsula Zone",</p>

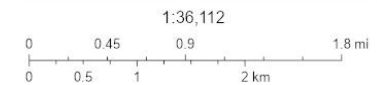
thus including Lyttelton within the area to be covered by a Port Hills stormwater QM.

APPENDIX 2 – Maps of High Soil Erosion Risk Area, loess dominant soils and the Residential Hills and Residential Banks Peninsula Zones

Figure 1 - Map showing the location of the High Soil Erosion Risk Area (red), loess dominant soils (blue) and the Residential Hills and Residential Banks Peninsula Zones (yellow)

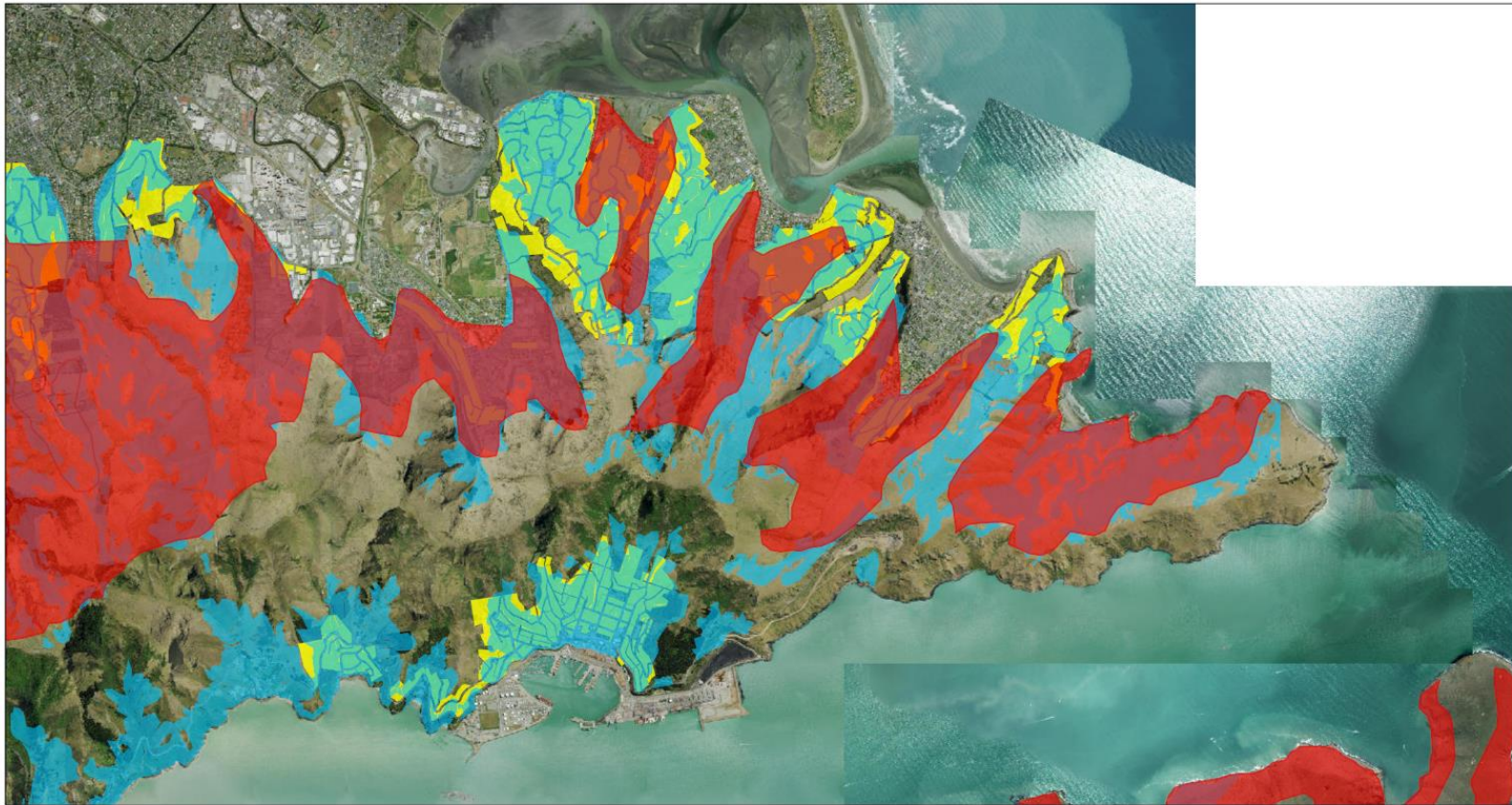


April 21, 2024

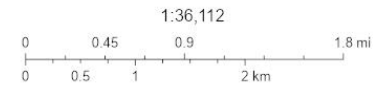


Land Information New Zealand, Environment Canterbury

Figure 2 - Map showing the location of the High Soil Erosion Risk Area (red), loess dominant soils (blue) and the Residential Hills and Residential Banks Peninsula Zones (yellow)



April 21, 2024



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Meg Buddle
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APPENDIX 3 – Assumed imperviousness table

The City Council's Waterways, Wetlands and Drainage Guide (WWDG, 2003 and updates) provides the following parameters (see below Table 21-6) for impervious surface coverage, derived from studies of aerial photographs of representative neighbourhoods. A sizing of a stormwater pipe network in a Residential Suburban zone, for example, has been calculated on the assumption that its catchment has an overall imperviousness of 50%.

Table 21-6: Zone average effective pervious and impervious area percentages. Refer to the Christchurch District Plan maps, (See Table 21.5 for zone abbreviations).

Table 21-6: Pervious and Impervious Area% and %Contribution				
<i>District Zone</i>	<i>Pervious Area%</i>	<i>Pervious Contribution</i>	<i>Impervious Area%</i>	<i>Impervious Contribution</i>
	<i>pv%</i>	<i>%PvContrib</i>	<i>im%</i>	<i>%ImContrib</i>
Residential: RS	50%	30%	50%	90%
Residential: RSDT	35%	25%	65%	90%
Residential: RNN	30%	25%	70%	100%
Residential RMD	20%	25%	80%	100%
Residential: RH	55%	50%	45%	90%
Business (industrial/commercial)	10%	50%	90%	100%

APPENDIX 4 – Relevant rules from Canterbury Land and Water Regional Plan

Rule from Canterbury Land and Water Regional Plan	Paraphrase of rule (NOT verbatim)	Relevance
Stormwater and other discharges of contaminants		
Rule 5.93A	<p>Operational or construction-phase stormwater that is discharged into a reticulated network is permitted if the discharge is approved by the owner of the reticulated system (the City Council).</p> <p>Activities within the Christchurch City boundary that cannot meet Rule 5.93A are non-complying under Rule 5.97.</p>	Stormwater from medium density developments would be permitted under this rule, assuming the developer obtains a stormwater approval from the City Council (done via the Stormwater Bylaw).
Rule 5.94A	<p>Construction-phase stormwater that is not discharged into a reticulated network is permitted if:</p> <ul style="list-style-type: none"> a. The area of disturbed land is less than: <ul style="list-style-type: none"> i. 1000 m² on High Soil Erosion Risk land; or ii. two hectares on any other land; b. The concentration of TSS in the discharge does not exceed these standards: <ul style="list-style-type: none"> i. For Spring-fed rivers, Banks Peninsula Rivers, or lakes - 50g/m³; ii. For any other river, or for artificial watercourses - 100g/m³; or iii. For “muddy waterways” where the background TSS levels already exceed the relevant standard (50/100 g/m³) – the visual clarity standards in Schedule 5 of the CLWRP. c. The discharge does not increase the flow of the receiving waterbody by more than 1% of a flood event with an Annual Exceedance Probability of 20%; d. The discharge is not from contaminated land; e. The discharge does not contain a hazardous substance; f. The discharge is not within a Community Drinking-water Protection Zone. <p>Activities that cannot meet Rule 5.94A are restricted discretionary under Rule 5.94B.</p>	This rule is not directly relevant if stormwater is discharged into the City Council’s reticulated network. However, it demonstrates the kind of regulation for construction-phase stormwater discharges in the Canterbury Land and Water Regional Plan (CLWRP).

Rule from Canterbury Land and Water Regional Plan	Paraphrase of rule (NOT verbatim)	Relevance
Rule 5.95	<p>Operational-phase stormwater that is not discharged into a reticulated network (for surface water effects) is permitted if:</p> <ul style="list-style-type: none"> a. The discharge is not from contaminated land; b. The discharge is not into a water race, wetland (other than a stormwater wetland), or waterbody that is Natural State (unless the discharge was lawfully established before November 2013); c. The discharge does not increase the flow of the receiving waterbody by more than 1% of a flood event with an Annual Exceedance Probability of 20%; d. The discharge, meets the water quality standards in Schedule 5 (after reasonable mixing with the receiving waters) e. The concentration of TSS in the discharge does not exceed these standards: <ul style="list-style-type: none"> iv. For Spring-fed rivers, Banks Peninsula Rivers, or lakes - 50g/m³; v. For any other river, or for artificial watercourses - 100g/m³; or vi. For “muddy waterways” where the background TSS levels already exceed the relevant standard (50/100 g/m³) – the visual clarity standards in Schedule 5 of the CLWRP. f. The discharge is not within a Community Drinking-water Protection Zone. g. The discharge does not occur where there is an available reticulated stormwater system. <p>Activities within the Christchurch City boundary that cannot meet Rule 5.95 are non-complying under Rule 5.97.</p>	This rule is not directly relevant if stormwater is discharged into the City Council’s reticulated network. However, it demonstrates the kind of regulation for operational-phase stormwater discharges in the CLWRP.
Rule 9.5.17	<p>Stormwater discharges within the Avon/Otakaro or Heathcote catchments that are not:</p> <ul style="list-style-type: none"> a. authorised by a consented stormwater management plan; or b. into a reticulated stormwater system <p>are discretionary activities.</p>	This rule is not directly relevant if stormwater is discharged into the City Council’s reticulated network.
Rule 5.99	<p>Discharges of non-classified contaminants are permitted if [only includes relevant standards, not all content from the rule]:</p>	Flocculant/coagulant chemicals are considered separately from

Rule from Canterbury Land and Water Regional Plan	Paraphrase of rule (NOT verbatim)	Relevance
	<p>a. The discharge does not contain any hazardous substance, hazardous waste or added radioactive isotope.</p> <p>Activities that cannot meet Rule 5.99 are discretionary under Rule 5.100.</p>	<p>stormwater or construction phase stormwater. As flocculants/coagulants meet the definition of a “hazardous substance” they do not comply with the conditions of Rule 5.99, and are considered as a discretionary activity under Rule 5.100.</p>
Earthworks, excavation and deposition		
<p>Rule 5.168</p>	<p>Earthworks in the riparian margin (within 5-10 m of a waterbody), and associated sediment discharges, are permitted if [only includes relevant standards, not all content from the rule]:</p> <p>a. The earthworks in the riparian margin do not exceed either: an area of 500 m², or 10% of the area (whichever is the lesser) or, if the area is High Soil Erosion Risk, a volume of 10 m³.</p> <p>b. The concentration of TSS in the discharge does not exceed these standards:</p> <p>vii. For Spring-fed rivers, Banks Peninsula Rivers, or lakes - 50g/m³;</p> <p>viii. For any other river, or for artificial watercourses - 100g/m³; or</p> <p>ix. For “muddy waterways” where the background TSS levels already exceed the relevant standard (50/100 g/m³) – the visual clarity standards in Schedule 5 of the CLWRP.</p> <p>Activities that cannot meet Rule 5.168 are restricted discretionary under Rule 5.169.</p>	<p>This rule would apply to earthworks associated with medium density development, however only if the earthworks were within the relevant riparian margin.</p>
<p>Rule 5.170</p>	<p>Earthworks within the High Soil Erosion Risk area (excluding any works for which a building consent has been obtained from the relevant local authority), and any associated sediment discharges, are permitted if [only includes relevant standards, not all content from the rule]:</p> <p>a. The volume is less than 10m³ per site or per hectare (whichever is larger); and</p> <p>b. The maximum depth of cut or fill is 0.5 m; and</p>	<p>This rule only applies to earthworks that are not linked to an approved building consent.</p>

Rule from Canterbury Land and Water Regional Plan	Paraphrase of rule (NOT verbatim)	Relevance
	<p>c. Cleared areas are stabilised;</p> <p>d. The concentration of TSS in the discharge does not exceed these standards:</p> <ul style="list-style-type: none"> i. For Spring-fed rivers, Banks Peninsula Rivers, or lakes - 50g/m³ ii. For any other river, or for artificial watercourses - 100g/m³ iii. Or, for “muddy waterways” where the background TSS levels already exceed the relevant standard (50/100 g/m³) – the visual clarity standards in Schedule 5 of the CLWRP. <p>Activities that cannot meet Rule 5.170 are restricted discretionary under Rule 5.171.</p>	
Rule 5.175	<p>Excavation over aquifers is a permitted activity if [only includes relevant standards, not all content from the rule]:</p> <ul style="list-style-type: none"> a. The volume of material excavated is less than 100 m³; or b. The volume of material excavated is more than 100 m³ and: <ul style="list-style-type: none"> i. There is more than 1 m of undisturbed material between the deepest part of the excavation and the seasonal high water table level; and ii. The excavation does not occur within 50 m of any surface waterbody. <p>Activities that cannot meet Rule 5.175 are restricted discretionary under Rule 5.176.</p>	It is assumed that most medium density developments on the Port Hills could comply with this Rule.

APPENDIX 5 – Draft plan provisions for impervious surface control for Port Hills stormwater QM

Overview

These provisions are described as Option 3 at paragraph 18 of this summary statement.

The area within the Port Hills Impervious Surface Management Area would retain the current status quo zoning and rules, with the addition of the below provisions. The Port Hills Impervious Surface Management Area would cover the entire Residential Hill Zone, and any areas of the Residential Banks Peninsula Zone that would otherwise have medium density enabled (Lyttelton only).

The below provisions would be applied in addition to erosion and sediment management provisions for the same Port Hills area (described as Option 2 at paragraph 17 of this summary statement).

Permitted activity rule

Within the **Port Hills Impervious Surface Management Area**, *multi-unit residential development* [new definition added] of no more than three units per site is a permitted activity if either:

1. The *impervious surface* coverage on the site does not exceed the *existing imperviousness average* of 45%. For the purpose of this standard the definition of impervious surface:
 - a. Includes shade, tunnel or greenhouses that have an impervious roof; and
 - b. Excludes pervious pavement and vegetated 'green' roofs that are regularly maintained to ensure performance; or
2. If the *impervious surface* coverage on the site exceeds the *existing imperviousness average* of 45%;
 - a. Either stormwater is discharged to a stormwater facility with enough capacity to accommodate the additional discharge (above existing imperviousness), or stormwater is discharged into coastal waters; and
 - b. The discharge is approved by the owner of the reticulated system (the Council); and
 - c. Stormwater is conveyed to the stormwater facility via an appropriately-sized stormwater network.

Restricted discretionary rule

Multi-unit residential development of no more than three units per site that does not comply with the standards in Rule XXX [PA rule above] is a restricted discretionary activity.

Matters of discretion

The Council's discretion is limited to the following matters:

- a. The actual or potential effects, including cumulative effects, of the discharge on flooding and peak discharge increases;
- b. The actual or potential effects, including cumulative effects, of the discharge on water quality, stream erosion and scour;
- c. Design, sizing and location of onsite stormwater management devices;
- d. Methods to reduce the flow and/or volume of stormwater discharging into the network; and
- e. Methods to increase stormwater infiltration, such as infiltration systems or rain gardens or landscape-based storage or disposal systems.
- f. Methods to increase stormwater evapotranspiration.

Policies

Note that the below Policy would be included in sub-chapter 14.2 Objectives and Policies, and would apply to the impervious surface controls on the Port Hills and for Halswell, regardless of the relevant residential zone (e.g. Residential Hills Zone, Residential Suburban, Residential Banks Peninsula).

Policy 14.2.4.X – Stormwater from impervious surfaces

- a. Manage *impervious surface* coverage on residential sites on the Port Hills and within the Halswell Catchment to ensure that:
 - i. The volume or rate of stormwater discharges do not exceed the capacity of the relevant stormwater network and stormwater facilities.
 - ii. For the Port Hills, any adverse effects on flooding, water quality, stream erosion and scour are avoided, remedied or mitigated.

- iii. For the Halswell catchment, any adverse effects on flooding and downstream properties are avoided, remedied or mitigated.
- b. Encourage innovative approaches to minimising impervious surfaces and maximising onsite stormwater evapotranspiration and or infiltration.

Definitions

[existing] Impervious surface means a continuous surface of concrete, bitumen, paving (with slabs, bricks, 'gobi' or similar blocks) or hardfill (excluding gravel or other loose stone surfaces that have not been mechanically compacted) that effectively puts a physical barrier on the surface of any part of a site. It excludes shade, tunnel or greenhouses that do not have solid floors.

[new] multi-unit residential development means any residential development, whether of attached or detached structures or a combination thereof, which provides for the existence or establishment of more than one unit on a site.

APPENDIX 6 – Draft plan provisions for impervious surface control for Halswell stormwater QMOverview

These provisions are described as Option 2 at paragraph 28 of this summary statement.

The area within the Halswell Impervious Surface Management Area would retain the current status quo zoning and rules, with the addition of the below provisions. The Halswell Impervious Surface Management Area would cover the entire Halswell catchment, shown on the below Figures 1 and 2 (included in Ms Buddle's evidence in chief dated 20 September 2023).

Figure 1 - Map of the northern residential areas in the Upper Halswell Catchment, as proposed to be modified by PC14, and the boundary of the Halswell Catchment drawn in navy blue. Source – notified PC14 planning maps.

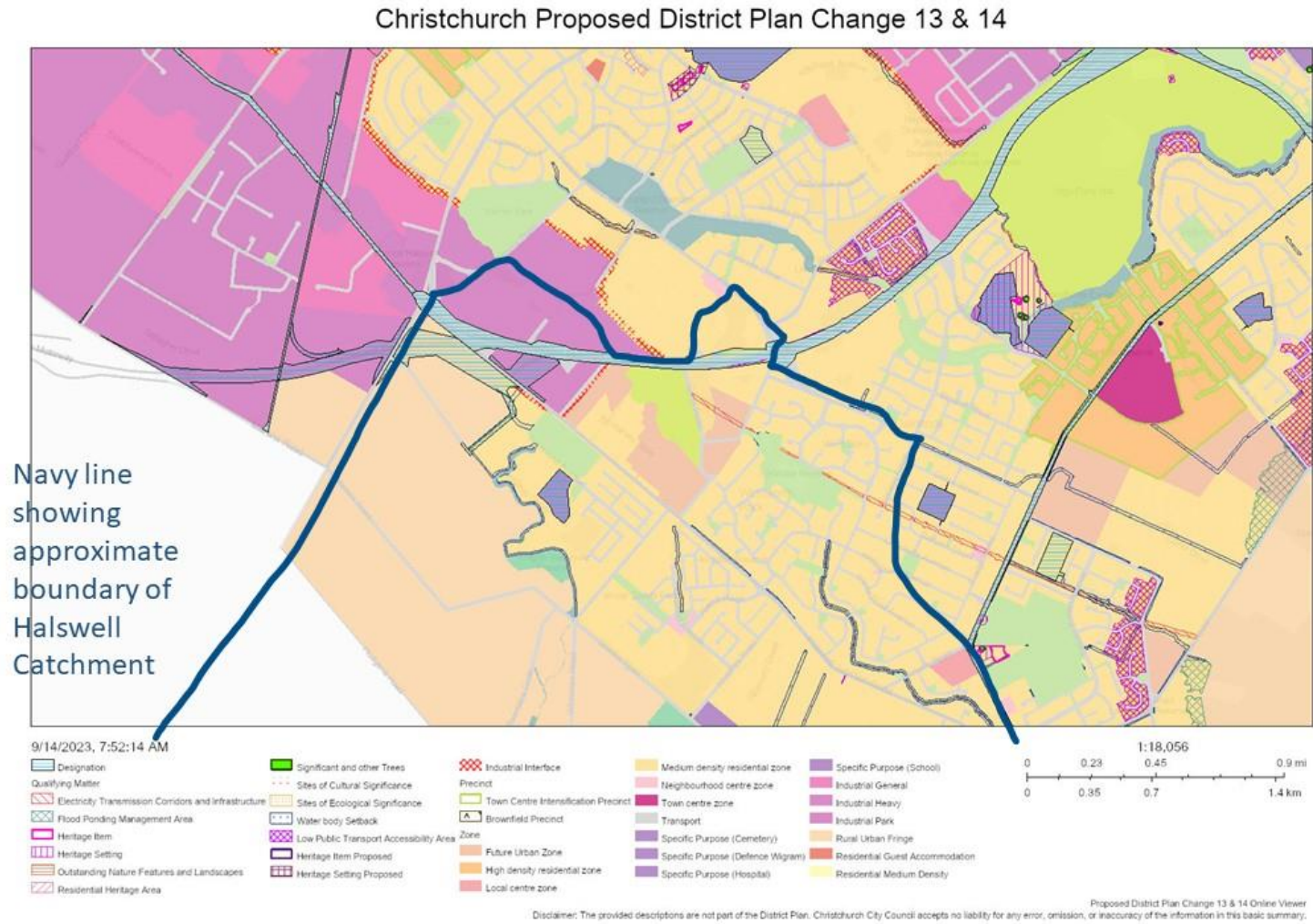
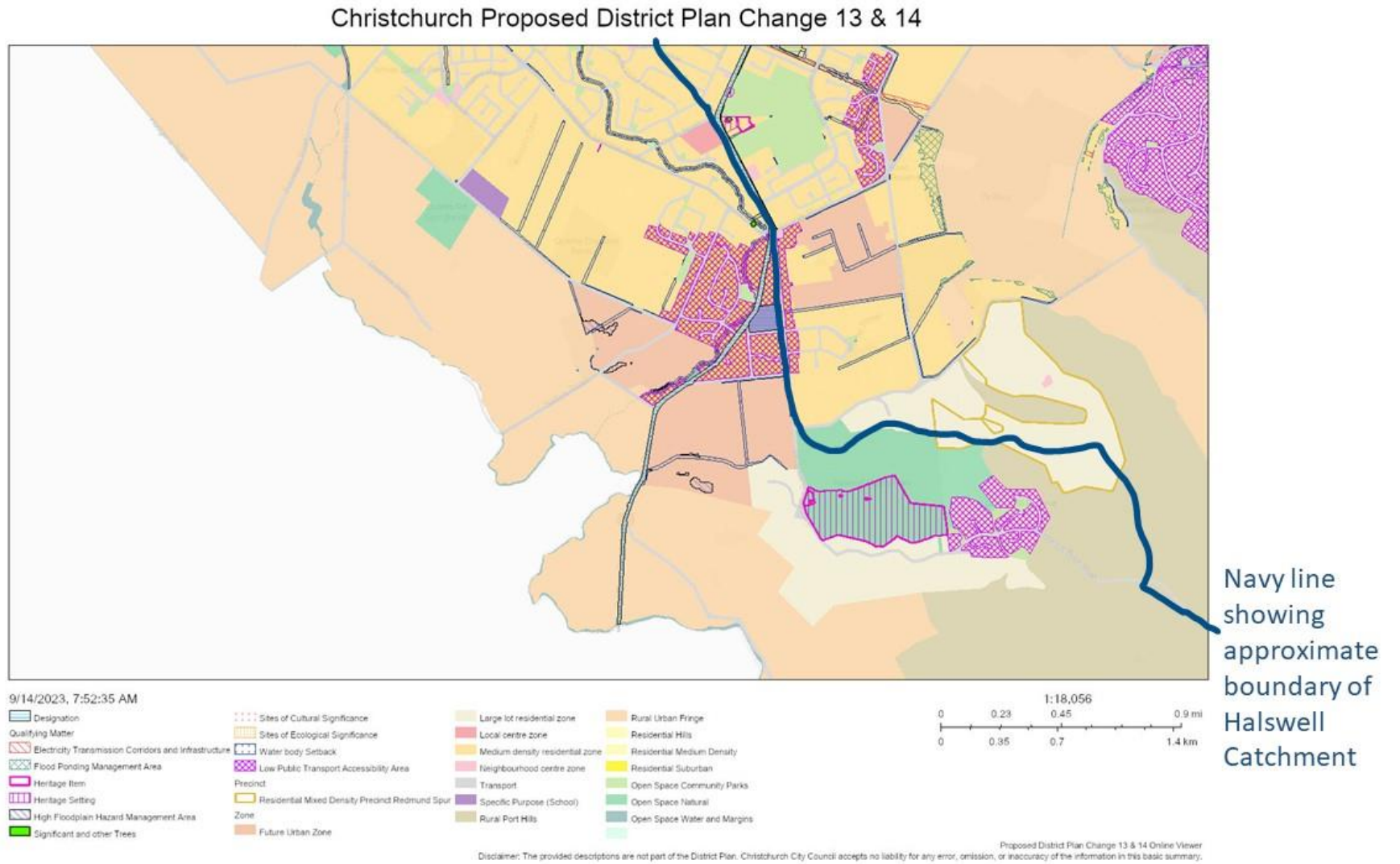


Figure 2 -Map of the southern residential areas in the Upper Halswell Catchment, as proposed to be modified by PC14, and the boundary of the Halswell Catchment drawn in navy blue.
 Source – notified PC14 planning maps.



Permitted activity rule

Within the **Halswell Impervious Surface Management Area**, multi-unit residential development of no more than three units per site is a permitted activity if either:

1. The *impervious surface coverage* on the site does not exceed the *existing imperviousness average* [new definition included below].
For the purpose of this standard the definition of *impervious surface*:
 - a. Includes shade, tunnel or greenhouses that have an impervious roof; and
 - b. Excludes pervious pavement and vegetated 'green' roofs that are regularly maintained to ensure performance; or
2. If the *impervious surface coverage* on the site exceeds the *existing imperviousness average*;
 - a. Stormwater is discharged to a stormwater facility with enough capacity to accommodate the additional discharge (above existing imperviousness); and
 - b. The discharge is approved by the owner of the reticulated system (the Council); and
 - c. Stormwater is conveyed to the stormwater facility via an appropriately-sized stormwater network.

Restricted discretionary rule

Multi-unit residential development of no more than three units per site that does not comply with the standards in Rule **XXX [PA rule above]** is a restricted discretionary activity.

Matters of discretion

The Council's discretion is limited to the following matters:

- a. The actual or potential effects, including cumulative effects, of the discharge quantity on flooding, peak discharge and volume increases;
- b. The actual or potential effects, including cumulative effects, of the discharge quantity on downstream properties;

- c. Design, sizing and location of onsite stormwater management devices;
- d. Methods to reduce the flow and/or volume of stormwater discharging into the network; and
- e. Methods to increase stormwater infiltration, where appropriate, such as infiltration systems or rain gardens or landscape-based storage or disposal systems.
- f. Methods to increase stormwater evapotranspiration.

Policies

Note that the below Policy would be included in sub-chapter 14.2 Objectives and Policies, and would apply to the impervious surface controls on the Port Hills and for Halswell, regardless of the relevant residential zone (e.g. Residential Hills Zone, Residential Suburban, Residential Banks Peninsula).

Policy 14.2.4.X – Stormwater from impervious surfaces

- a. Manage *impervious surface* coverage on residential sites on the Port Hills and within the Halswell Catchment to ensure that:
 - i. The volume or rate of stormwater discharges do not exceed the capacity of the relevant stormwater network and stormwater facilities.
 - ii. For the Port Hills, any adverse effects on flooding, water quality, stream erosion and scour are avoided, remedied or mitigated.
 - iii. For the Halswell catchment, any adverse effects on flooding and downstream properties are avoided, remedied or mitigated.
- b. Encourage innovative approaches to minimising impervious surfaces and maximising onsite stormwater evapotranspiration and or infiltration.

Definitions

[existing] Impervious surface means a continuous surface of concrete, bitumen, paving (with slabs, bricks, 'gobi' or similar blocks) or hardfill (excluding gravel or other loose stone surfaces that have not been mechanically compacted) that effectively puts a physical barrier on the surface of any part of a site. It excludes shade, tunnel or greenhouses that do not have solid floors.

[new] Existing imperviousness average means the zone average effective impervious area percentages measured for each district zone type, based on the zoning of the site as at **[xx date prior to any PC14 rezoning]**:

<i>District zone</i>	<i>Impervious Area%</i>
Residential: RS	50%
Residential: RSDT	65%
Residential: RNN	70%
Residential RMD	80%
Residential: RH	45%