



Office Use Only
Application Number:

APPLICATION FOR RESOURCE CONSENT OR FAST-TRACK RESOURCE CONSENT

(Or Associated Consent Pursuant to the Resource Management Act 1991 (RMA))

(If applying for a Resource Consent pursuant to Section 87AAC or 88 of the RMA, this form can be used to satisfy the requirements of Form 9)

Prior to, and during, completion of this application form, please refer to Resource Consent Guidance Notes and Schedule of Fees and Charges – both available on the Council’s web page.

1. Pre-Lodgement Meeting

Have you met with a Council Resource Consent representative to discuss this application prior to lodgement? **Yes / No**

2. Type of Consent being applied for (more than one circle can be ticked):

- Land Use
- Extension of time (s.125)
- Consent under National Environmental Standard (e.g. Assessing and Managing Contaminants in Soil)
- Other (please specify) _____
- Fast Track Land Use*
- Change of conditions (s.127)
- Subdivision
- Change of Consent Notice (s.221(3))
- Discharge

***The fast track for simple land use consents is restricted to consents with a controlled activity status and requires you provide an electronic address for service.**

3. Would you like to opt out of the Fast Track Process? Yes / ~~No~~

4. Applicant Details:

Name/s: Maria Ann Vlug (Trustee of Breakwater Trust)

Electronic Address for Service (E-mail): _____

Phone Numbers: _____ Home: _____

Postal Address: _____
(or alternative method of service under section 352 of the Act)

Post Code: 0295

5. Address for Correspondence: Name and address for service and correspondence (if using an Agent write their details here).

Name/s: Northland Planning and Development

Electronic Address for Service (E-mail): info@northplanner.co.nz

Phone Numbers: Work: 09 408 1866 Home: _____

Postal Address: PO Box 526, Kaitaia
(or alternative method of service under section 352 of the Act)

Post Code: 0441

All correspondence will be sent by email in the first instance. Please advise us if you would prefer an alternative means of communication.

6. Details of Property Owner/s and Occupier/s: Name and Address of the Owner/Occupiers of the land to which this application relates (where there are multiple owners or occupiers please list on a separate sheet if required)

Name/s: Smith & Partners Trustee Co. Limited and Maria Ann Vlug

Property Address/
Location: 29 Koropewa Road, Waipapa

7. Application Site Details:

Location and/or Property Street Address of the proposed activity:

Site Address/
Location: 29 Koropewa Road, Waipapa

Legal Description: Lot 3 DP202022 Val Number: _____

Certificate of Title: NA129B/873
Please remember to attach a copy of your Certificate of Title to the application, along with relevant consent notices and/or easements and encumbrances (search copy must be less than 6 months old)

Site Visit Requirements:

Is there a locked gate or security system restricting access by Council staff? Yes/ No

Is there a dog on the property? Yes/ No

Please provide details of any other entry restrictions that Council staff should be aware of, e.g. health and safety, caretaker's details. **This is important to avoid a wasted trip and having to re-arrange a second visit.**

[REDACTED]

8. Description of the Proposal:

Please enter a brief description of the proposal here. Attach a detailed description of the proposed activity and drawings (to a recognized scale, e.g. 1:100) to illustrate your proposal. Please refer to Chapter 4 of the District Plan, and Guidance Notes, for further details of information requirements.

Proposal to undertake a staged subdivision of Lot 3 DP202022. Stage one will consist of Lots 1 to 4 being created. Stage 2 will consist of a further subdivision of Lot 4 (as part of Stage 1) to create seven additional rural-residential allotments and an esplanade reserve. A s243(e) certificate is also required to revoke an existing right of way due to access arrangements being altered as part of Stage 2. Variation to existing approved decision documents are also required pursuant to s127 of the RMA. Land Use consent across both stages for multiple rule breaches is also required. Consent under NESCS also required.

If this is an application for an Extension of Time (s.125); Change of Consent Conditions (s.127) or Change or Cancellation of Consent Notice conditions (s.221(3)), please quote relevant existing Resource Consents and Consent Notice identifiers and provide details of the change(s) or extension being sought, with reasons for requesting them.

9. Would you like to request Public Notification

Yes/No

10. Other Consent required/being applied for under different legislation (more than one circle can be ticked):

- Building Consent (BC ref # if known) Regional Council Consent (ref # if known)
- National Environmental Standard consent Other (please specify)

11. National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health:

The site and proposal may be subject to the above NES. In order to determine whether regard needs to be had to the NES please answer the following (further information in regard to this NES is available on the Council's planning web pages):

Is the piece of land currently being used or has it historically ever been used for an activity or industry on the Hazardous Industries and Activities List (HAIL) yes no don't know

Is the proposed activity an activity covered by the NES? (If the activity is any of the activities listed below, then you need to tick the 'yes' circle). yes no don't know

- Subdividing land Changing the use of a piece of land
- Disturbing, removing or sampling soil Removing or replacing a fuel storage system

12. Assessment of Environmental Effects:

Every application for resource consent must be accompanied by an Assessment of Environmental Effects (AEE). This is a requirement of Schedule 4 of the Resource Management Act 1991 and an application can be rejected if an adequate AEE is not provided. The information in an AEE must be specified in sufficient detail to satisfy the purpose for which it is required. Your AEE may include additional information such as Written Approvals from adjoining property owners, or affected parties.

Please attach your AEE to this application.

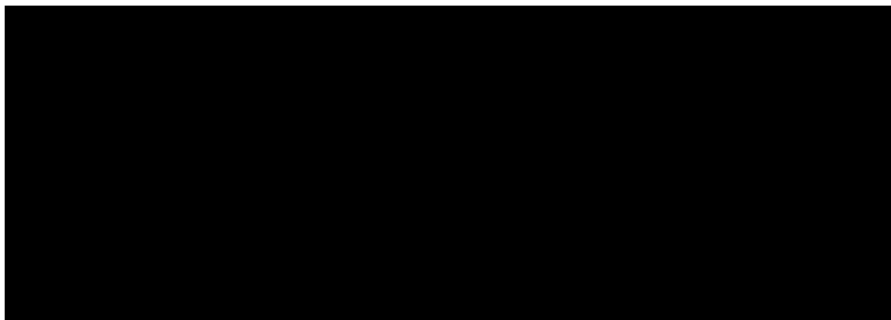
13. Billing Details:

This identifies the person or entity that will be responsible for paying any invoices or receiving any refunds associated with processing this resource consent. Please also refer to Council's Fees and Charges Schedule.

Name/s: (please write all names in full)

Email:

Postal Address:



Phone Numbers: Work: _____ Home: _____ Fax: _____

Fees Information: An instalment fee for processing this application is payable at the time of lodgement and must accompany your application in order for it to be lodged. Please note that if the instalment fee is insufficient to cover the actual and reasonable costs of work undertaken to process the application you will be required to pay any additional costs. Invoiced amounts are payable by the 20th of the month following invoice date. You may also be required to make additional payments if your application requires notification.

Declaration concerning Payment of Fees: I/we understand that the Council may charge me/us for all costs actually and reasonably incurred in processing this application. Subject to my/our rights under Sections 357B and 358 of the RMA, to object to any costs, I/we undertake to pay all and future processing costs incurred by the Council. Without limiting the Far North District Council's legal rights if any steps (including the use of debt collection agencies) are necessary to recover unpaid processing costs I/we agree to pay all costs of recovering those processing costs. If this application is made on behalf of a trust (private or family), a society (incorporated or unincorporated) or a company in signing this application I/we are binding the trust, society or company to pay all the above costs and guaranteeing to pay all the above costs in my/our personal capacity.

Name: _____ (please print)

Signature: _____ (signature of bill payer – **mandatory**) Date: 21st November 2023

14. Important Information:

Note to applicant

You must include all information required by this form. The information must be specified in sufficient detail to satisfy the purpose for which it is required.

You may apply for 2 or more resource consents that are needed for the same activity on the same form.

You must pay the charge payable to the consent authority for the resource consent application under the Resource Management Act 1991.

Fast-track application

Under the fast-track resource consent process, notice of the decision must be given within 10 working days after the date the application was first lodged with the authority, unless the applicant opts out of that process at the time of lodgement. A fast-track application may cease to be a fast-track application under section 87AAC(2) of the RMA.

Privacy Information:

Once this application is lodged with the Council it becomes public information. Please advise Council if there is sensitive information in the proposal. The information you have provided on this form is required so that your application for consent pursuant to the Resource Management Act 1991 can be processed under that Act. The information will be stored on a public register and held by the Far North District Council. The details of your application may also be made available to the public on the Council's website, www.fndc.govt.nz. These details are collected to inform the general public and community groups about all consents which have been issued through the Far North District Council.

Declaration: The information I have supplied with this application is true and complete to the best of my knowledge.

Name:  (please print)

Signature:  (signature)

Date: 21st November 2023

(A signature is not required if the application is made by electronic means)

Checklist (please tick if information is provided)

- Payment (cheques payable to Far North District Council)
- A current Certificate of Title (Search Copy not more than 6 months old)
- Copies of any listed encumbrances, easements and/or consent notices relevant to the application
- Applicant / Agent / Property Owner / Bill Payer details provided
- Location of property and description of proposal
- Assessment of Environmental Effects
- Written Approvals / correspondence from consulted parties
- Reports from technical experts (if required)
- Copies of other relevant consents associated with this application
- Location and Site plans (land use) AND/OR
- Location and Scheme Plan (subdivision)
- Elevations / Floor plans
- Topographical / contour plans

Please refer to Chapter 4 of the District Plan for details of the information that must be provided with an application. Please also refer to the RC Checklist available on the Council's website. This contains more helpful hints as to what information needs to be shown on plans.

Only one copy of an application is required, but please note for copying and scanning purposes, documentation should be:

UNBOUND

SINGLE SIDED

NO LARGER THAN A3 in SIZE

Combined Subdivision & Land Use Resource Consent Proposal

Breakwater Trust

29 Koropewa Road, Kerikeri

18 December 2023

Please find attached:

- an application form for a Subdivision and Land Use Resource Consent in the Rural Production Zone to complete a staged subdivision;
- an application under the National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health;
- Revoke ROW easement D513440.4 as part of Stage 2 under s243(e) as access to the sites under this easement document are altered as part of Stage 2;
- An application to change consent conditions under s127 of the RMA;
- an Assessment of Environmental Effects indicating the potential and actual effects of the proposals on the environment.

The proposed subdivision application has been assessed as a **Non-Complying Activity** under the Far North Operative District Plan and the Land Use consent has been assessed as a **Discretionary Activity**.

The application has also been assessed as a **Controlled Activity** under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health.

The change to consent under s127 of the RMA has been assessed as a **Discretionary Activity**.

If you require further information, please do not hesitate to contact us.

Regards,



Alex Billot
Resource Planner

Reviewed by:



Sheryl Hansford
Director/Senior Planner

NORTHLAND PLANNING & DEVELOPMENT 2020 LIMITED



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Attachments

1. **FNDC Application Signed**
2. **Certificate of Title – LINZ**
3. **Subdivision Plan Stage 1 – Donaldsons**
4. **Subdivision Plan Stage 2 - Donaldsons**
5. **Site Suitability Report – Wilton Joubert**
6. **Detailed Site Investigation – NZ Environmental Management**
7. **Soil Versatility Assessment – AgFirst**
8. **RC2230218 – Approved Decision FNDC**
9. **RC2300369 – Approved Decision FNDC**
10. **RC2300369 VAR/A – Approved Decision FNDC**
11. **Written Approval – Lot 2 DP168917**
12. **Written Approval – Lot 1 DP168917**
13. **Written Approval – Lot 1 DP202022**
14. **Written Approval – Lot 2 DP202022**
15. **Correspondence – NTA**
16. **Correspondence – Top Energy**
17. **Scheme Plan Overall – Donaldsons**
18. **RC224001 – Approved Decision FNDC**
19. **Overall Scheme Plan – Donaldsons**



Assessment of Environment Effects Report

1.0 Description of the Proposed Activity

Subdivision

- 1.1 The applicant seeks to undertake a staged subdivision of Lot 3 DP202022. Stage 1 will consist of Lots 1 to 4 being created, as depicted in Figure 1 below. Lots 1-3 will range in size from 2150m² to 3510m², with Lot 4 being the balance lot at over 5.4 hectares.
- 1.2 Stage 2 will consist of a further subdivision of Lot 4 as part of Stage 1, to create seven additional rural-residential allotments ranging in size from 2150m² to 2920m². An esplanade reserve (Lot 12) is also to be created along the boundary with Kerikeri River. Lot 12 will be the balance lot at over 3.6 hectares. Stage 2 is shown in Figure 2 below.

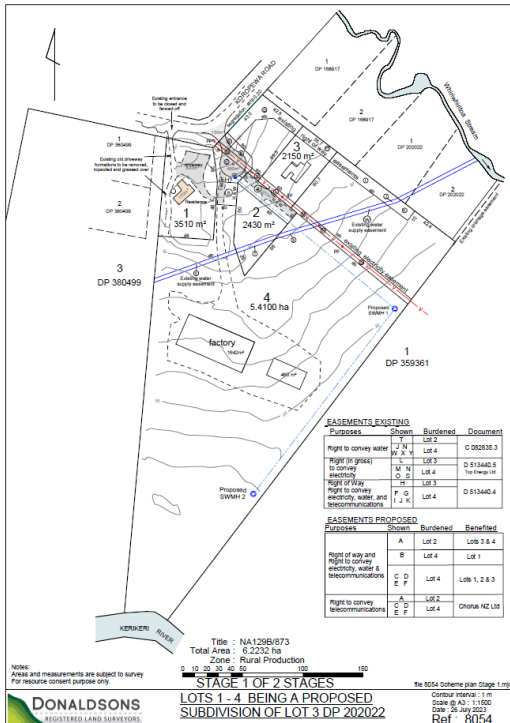


Figure 1: Stage 1 Scheme Plan

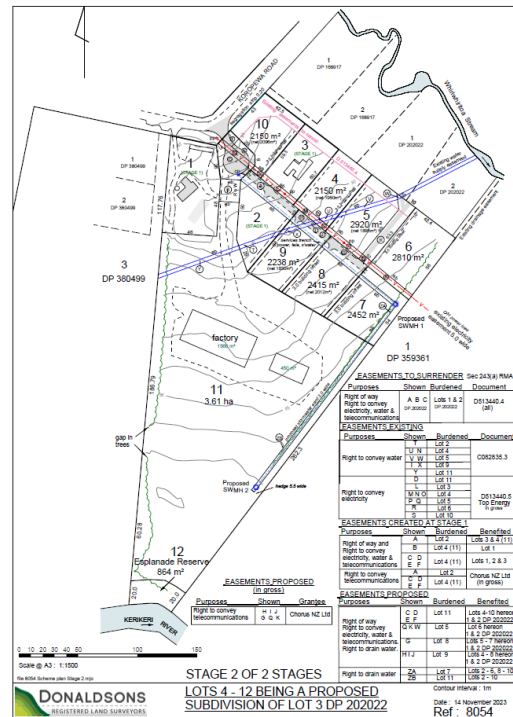


Figure 2: Stage 2 Scheme Plan

- 1.3 The balance lot in both stages will contain the existing, consented boat building business and associated infrastructure. The applicant operates the boat building business and has been trying to find workers. As there is a lack of workers in the far north with this profession, the applicant has had to search outside of the area. It has proven difficult to secure any workers located outside of the area as they have been unable to find accommodation for themselves and their families within Kerikeri. Therefore, the purpose of this subdivision is to offer opportunities for workers to live within the subdivision to ensure they have somewhere to live before committing to the job.



1.4 Currently there is an existing Right of Way easement which wraps the northern and north-western boundary which provides access to Lots 1 and 2 DP 202022, this easement will be cancelled as part of Stage 2, and Lots 1 and 2 DP 202022 will utilize the new Right of Way being established instead. As a result, a 243(e) certificate is also required to revoke this right of way (Document D513440.4) as part of Stage 2.

1.5 Written approval has been provided from;

Property	Legal description	Owners	Key
25 Koropewa Road	Lot 2 DP 168917	Bruce and Janine Hartley	Orange
23 Koropewa Road	Lot 1 DP 168917	Bettina and Colin Syme	Red
35B Koropewa Road	Lot 2 DP 202022	Kirsten Ong and Matthew Tyler	Green
29A Koropewa Road	Lot 1 DP 202022	Heather Christie Celia Honiss Anne Waddle	Purple



Land Use

- 1.6 The proposal results in multiple land use breaches across Stages 1 & 2, which will be discussed further in this report. Below is a list of the permitted land use rules breached in each of the stages –

Stage 1

- 8.6.5.1.3 Stormwater Management
- 8.6.5.1.4 Setback from Boundaries
- 8.6.5.1.10 Building Coverage
- 8.6.5.1.11 Scale of Activities

Stage 2

- 8.6.5.1.3 Stormwater Management
- 8.6.5.1.4 Setback from Boundaries
- 8.6.5.1.10 Building Coverage
- 8.6.5.1.11 Scale of Activities
- 15.1.6C.1.1 Private Accessways in All Zones

Variation to Previous Resource Consents

- 1.7 Described below in Section 2, there have been a number of recent resource consents approved on the site, which include a dwelling and the establishment of the boat building business.
- 1.8 The proposed subdivision will see the western entrance to the site (second crossing place) closed as part of the proposal, as all allotments will utilise the one designated crossing place. This proposal will result in the need to change a couple of conditions within the approved decision documents to reflect the above and to ensure consistency across all of the decision documents.
- 1.9 This variation will need to be assessed and read in conjunction with the subdivision and land use component of this resource consent.
- 1.10 As such, the degree of non-compliance does not increase and the proposal is therefore considered within the scope of a change to consent conditions pursuant to Section 127 of the Resource Management Act 1991.

National Environmental Standard for Managing and Assess Contaminated Soils in Human Health (NESCS)

- 1.11 The proposed subdivision and change of use are occurring on a piece of land that was historically used for horticultural purposes. A Detailed Site Investigation Report (DSI) has been provided as part of this application.



- 1.12 A preliminary site investigation does not exist for this property. Therefore, the proposal is unable to comply with the permitted threshold within the NES CS, however a DSI accompanies this report which states that the soil is highly unlikely to adversely affect human health and is suitable for the change of use. As a Detailed Site Investigation Report has been provided, the proposal is assessed as a Controlled Activity under the NESCS.

2.0 Site Description

- 2.1. The subject site is located 29 Koropewa Road, Kerikeri and is located in the Rural Production zone. The site is legally described as Lot 3 DP 202022 and has a legal area of 6.2232ha.
- 2.2. The site has an existing shed which is currently being used as temporary accommodation and is accessed via a vehicle crossing at the western side of the allotment. There is also a 1560m² shed currently under construction (may be finished at the time we lodge this application) which will operate a boat building business as well as a 450m² shed, which is associated with the boat building business for the purpose of storing materials. In addition to this, there is a dwelling currently under construction, which has recently been approved under RC2240001.
- 2.3. The applicants, surrounding properties as well as submitters outside of the area have lodged submissions to the Proposed District Plan to change the zoning of the site and surrounding environment from Horticulture to Rural Residential. This is due to the fact that the soils on the site and the surrounding environment have been proven to not be highly versatile and the surrounding area already consists of allotments which are rural-residential in nature.
- 2.4. Generally, the surrounding environment is a mix between rural residential sections and rural lifestyle sections ranging from approx. 4000m² to 12 ha with Waipapa located less than 1km away. As shown in Figure 3 below, the allotments to the north of the site have characteristics that reflect rural-residential allotments, being smaller allotments with residential dwellings and associated open space. Allotments to the west are similar, with lifestyle living.

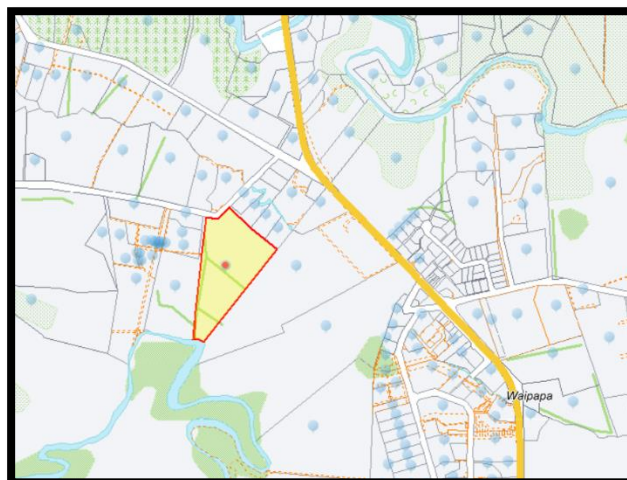


Figure 3: Subject site and surrounding allotments. Source: Prover

- 2.5. The site adjoins Advance Build to the East, which is a commercial house building business, that construct houses on-site and relocates them to the purchaser’s site. The house building factory is located on the eastern side of the site, adjoining State Highway 10.

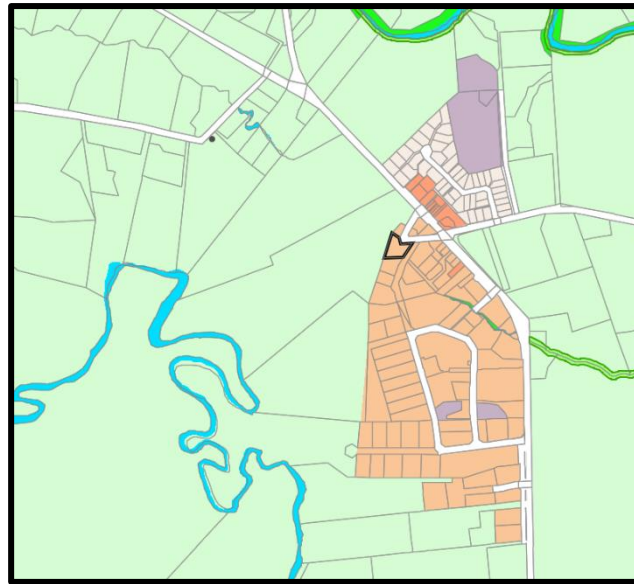


Figure 4: Operative District Plan Zoning.

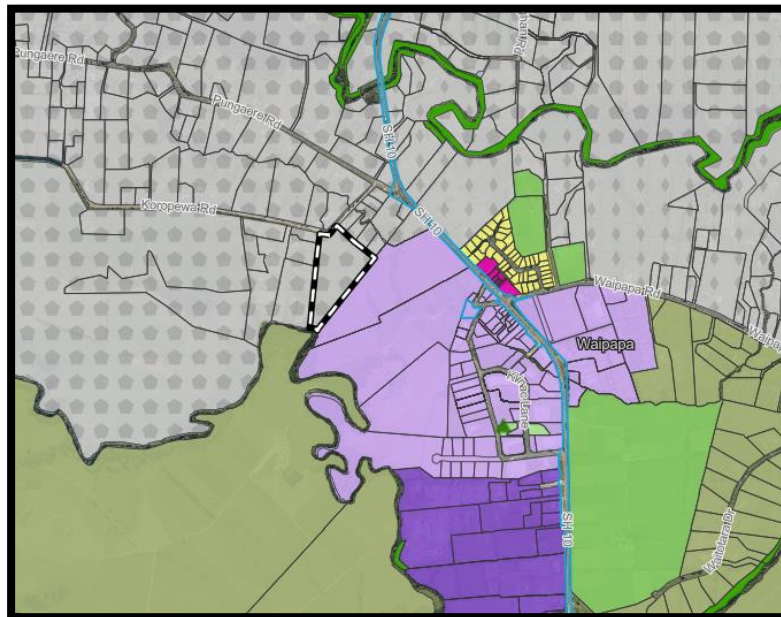


Figure 5: Proposed District Plan Zoning.

- 2.6. Currently the site and surrounding environment is zoned Rural Production, which directly adjoins the commercial and residential zones within Waipapa. The Residential zone in Waipapa is small and does not effectively reflect the residential growth within Waipapa Township.



- 2.7. Currently the site is utilized for commercial/industrial and residential purposes which are most commonly located on the peripheral of residential and commercial zones. Currently the allotments around the site tend to be smaller rural residential and lifestyle allotments (with the exception of the commercial allotment which contains Advance Build). The existing allotments better reflect rural residential development and provide a buffer between Waipapa Township and the larger horticulture/productive allotments. This provides more harmony and flow with the transition between commercial, residential, productive/horticulture.

Title

- 2.8. The subject site is legally held within record of title NA129B/873 dated 9 June 2000. The site is legally described as Lot 3 Deposited Plan 202022 and is 6.2232 hectares in area.
- 2.9. The title has the following registered interests:

Interests

Appurtenant hereto is a water right specified in Easement Certificate C082835.3
 Subject to a water right over parts marked B, E, G and H on DP 202022 specified in Easement Certificate C082835.3
 Appurtenant hereto is a right to drain water specified in Easement Certificate D513440.4 - 9.6.2000 at 3:44 pm
 Subject to a right of way, and to electricity, telecommunications and water supply rights over parts marked A B and C on DP 202022 specified in Easement Certificate D513440.4 - 9.6.2000 at 3:44 pm
 The easements specified in Easement Certificate D513440.4 are subject to Section 243 (a) Resource Management Act 1991
 Subject to a right (in gross) to transmit electricity over parts marked D, E, F on DP 202022 in favour of Top Energy Limited created by Transfer D513440.5 - 9.6.2000 at 3:44 pm
 The easements created by Transfer D513440.5 are subject to Section 243 (a) Resource Management Act 1991

Figure 6 - Title Interests

Site Photos

- 2.10. A site visit to the property was undertaken in February 2022, please find site pictures below, with commentary.



Figure 7: Existing dwelling on the site



Figure 8: Existing internal drive to the boat building factory





Figure 10: Location of new proposed vacant rural-residential allotments. Powerlines are to remain and will be located along new proposed private access ways.



Figure 9: Shed associated with boat building factory



Figure 11: Slab for boat building factory (is further along in build at present)



Figure 12: Internal drive to boat building factory. Existing dwelling can be seen in the right of the photo and shed located to the left.

Previous Resource Consents

RC 2300369-RMALUC

2.11. This resource consent was a land use activity which sought to construct a shed for the purpose of a boat building business, the consent included approval for 20 staff and 5 visitors per day which breached Scale of Activity. Furthermore, as a result of the gross business area the proposal was also unable to comply with Traffic Intensity (154 Tif's) in the Rural Production zone. Therefore, consent was sought for Scale of Activities and Traffic Intensity in the Rural Production Zone.



- 2.12. The resource consent was approved on a non-notified basis on 29th July 2021 by an independent hearing's commissioner.

RC 2300369-RMAVAR

- 2.13. This resource consent was for a variation which sought to amend condition 1 of RC 2300369-RMALUC being a consent to construct a building and establish a boat building business breaching Traffic Intensity and Scale of Activities in the Rural Production Zone. The amendment is to increase the size of the boat building shed by 148m² (10%) to accommodate a lunch room, patio and a covered store entrance.
- 2.14. The increase in area increased the traffic intensity factor as a technicality. However, as the effects remain materially similar to what was approved under the original resource consent; a s127 was considered appropriate in this case. The variation did not increase the number of people on site, nor was it considered to result in an increase in non-compliance.
- 2.15. The decision was approved on a non-notified basis on the 1st November 2022, to increase the size of the shed consented under RC 2300369-RMAVAR by 148m².

RC 2230218-RMALUC

- 2.16. Land Use consent to construct a second shed for the purpose of storing materials associated with the Boat Building Activity Breaching Traffic Intensity as a Discretionary Activity.
- 2.17. The applicant proposed to construct a second shed for the purpose of storing materials. This was initially included as part of RC 2300369-RMAVAR, however it was determined that a separate land-use consent would be required to establish a new building. As the additional shed was only required for storing materials, this did not increase the number of people on site at any given time. However, as the Gross Business Area was increasing, this impacted the traffic intensity factors which increased the non-compliance of the rule. Therefore, consent was sought as a Discretionary Activity for 246.4 Traffic movements.
- 2.18. The resource consent was approved on a non-notified basis on 20th December 2022.

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- 2.19. Land Use Activity to construct a dwelling within the area that will be Proposed Lot 3 as part of this application. The application was in breach of Stormwater Management and NESCS in the Rural Production Zone. Although the development will essentially be located on Proposed Lot 3, this resource consent applies to the parent lot, with the mitigation method's applying to the parent lot.
- 2.20. This resource consent was approved on a non-notified basis on 3rd August 2023.



Site Features

- 2.21. The site is located within the Rural Production zone and is not subject to any outstanding landscapes or features.
- 2.22. The site is zoned as Horticulture under the Proposed District Plan. As mentioned, submissions have been lodged to change the proposed zoning from Horticulture to Rural-Residential.
- 2.23. The site is HAIL. A report was provided which confirmed that the change of use was not likely to cause a risk to human health. As mentioned within Section 1 a PSI does not exist for this property, therefore the proposal will be assessed as a Controlled Activity under NES CS with a DSI which supports the proposal.
- 2.24. There is a small portion of flooding near Kerikeri river, this affects the southern portion of the site which is away from any existing or future development.
- 2.25. NZAA has not mapped any archaeological sites in the area.
- 2.26. The site does not contain any areas of PNA. The site is located within an area which is kiwi present.
- 2.27. The site is not located within a Statutory Acknowledgement area and is not located within an area of interest to local Hapu or Councils Treaty Settlement Maps.
- 2.28. With regard to the Regional Policy Statement for Northland, the site is not located within the coastal environment and is not identified as containing any areas of high natural character.
- 2.29. The site is not shown to be impacted by surface water protection zones.
- 2.30. The Land Use category for this site is LUC 2s 1 and 3s2. However, a report has been carried out which confirms the soils are at best 4s2 concluding that the site does not contain highly productive land. Please refer to the soil report for more detail.

3.0 Activity Status of the proposal

Weighting of Plans

- 3.1 The proposal is subject to the Proposed District Plan process that was notified 27 July 2022.
- 3.2 The site is zoned as Horticulture under the Proposed District Plan. When the Proposed Plan was first notified there were a number of rules which were identified as having immediate legal effect. The Summary of submissions have now been released, and no additional rules have been identified by Council's Policy department as having immediate legal effect under s86F. An assessment of the relevant rules and related objectives and policies of the Proposed District Plan now forms part of this application.



- 3.3 We have contacted Councils Policy Team enquiring about whether any additional rules have immediate legal effect. At this point in time no further rules have been publicly identified. As such, we have taken the approach that no further rules have immediate legal effect. If this is incorrect, we ask that Council contact us at their earliest convenience to provide us with an updated assessment list.

Operative District Plan

- 3.4 The subject site is located within the Rural Production Zone. An assessment of the relevant subdivision, zone and district wide rules of the District Plan is set out in the tables below.

Subdivision

- 3.5 The proposal will result in 10 rural-residential allotments and one larger balance allotment, over two stages. The proposal will also result in an allotment for the purpose of esplanade reserve as part of Stage 2. The allotment details are provided below:

Stage 1

Lot #	Area	Site details
1	3510m ²	Contains the existing residence on site
2	2430m ²	Vacant rural residential allotment
3	2150m ²	Rural residential allotment which will contain a residential dwelling approved under RC2240001.
4	5.41ha	To contain the existing boat building business

Stage 2

Lot #	Area	Site details
4	2150m ²	Vacant rural residential allotment
5	2920m ²	Vacant rural residential allotment
6	2810m ²	Vacant rural residential allotment
7	2452m ²	Vacant rural residential allotment
8	2415m ²	Vacant rural residential allotment
9	2238m ²	Vacant rural residential allotment
10	2150m ²	Vacant rural residential allotment
11	3.61ha	To contain the existing boat building business
12	864m ²	Esplanade Reserve

ASSESSMENT OF THE APPLICABLE SUBDIVISION RULES FOR THE RURAL PRODUCTION ZONE:

PERFORMANCE STANDARDS

Plan Reference	Rule	Performance of Proposal
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13.7.2.1	MINIMUM LOT SIZES	<p>Stages 1 & 2 - Non-Complying Activity</p> <p><u>Stage 1</u> Although the proposal meets the lot sizes for the Restricted Discretionary Activity criteria, the title date is post 28 April 2000 (title is dated June 2000), and therefore the provisions for the Restricted Discretionary Activity status cannot be met.</p> <p><u>Stage 2</u> Stage 2 will result in seven rural-residential allotments between 2150m² and 2920m² and one esplanade reserve. The balance lot will be 3.6 ha in area.</p> <p>The subdivision will not be via management plan, therefore will both stages will be assessed as a non-complying activity.</p>
13.7.2.2	ALLOTMENT DIMENSIONS	<p>Stages 1 & 2 Discretionary Activity</p> <p>The minimum dimension is 30m x 30m and taking into account the 10m setback from all boundaries.</p> <p><u>Stage 1</u> Lot 1 contains existing development. Lot 2 will be unable to provide the concept building envelope due to the proposed dimensions. Lot 3 is to contain the approved dwelling under RC2240001, which has already begun construction and can meet the required 10m setback from boundaries of Proposed Lot 3. Lot 4 has ample area to provide the concept building envelope dimensions.</p> <p>Therefore, dispensation is required for Lot 2 of Stage 1.</p> <p><u>Stage 2</u> Lots 4-10 do not have the required lot dimensions to be able to support the concept building envelope whilst meeting the required setback provisions.</p> <p>Lot 12 is an esplanade reserve and therefore is exempt from this rule.</p> <p>Lot 11 is over 3.5 hectares in area and as such can adequately comply.</p> <p>Therefore, dispensation is required for Lots 4-10 of Stage 2.</p>
13.7.2.3 – 5	Not Applicable for this application.	
13.7.2.6	Access, Utilities, Roads, Reserves.	Permitted Activity.



		This proposal includes an Esplanade Reserve (Lot 12) being 864m ² . The rule states that there shall be no minimum allotment areas in any zone for allotments created for access, utilities, roads and reserves.
13.7.2.7-9	Not Applicable for this application.	

3.6 Chapter 13.11 Non-complying activities states that;

Subdivision is a non-complying activity where:

(a) If a subdivision activity does not comply with the standards for a discretionary (subdivision) activity; or

(b) the subdivision is in a Coastal Hazard 1 Area, as shown on the Coastal Hazard Maps;

(c) the subdivision is in the Recreational Activities and Conservation Zones. Any application for a subdivision in the Recreational Activities and Conservation Zones will be publicly notified; or

(d) a new boundary line passes through the Outstanding Natural Feature (Appendix 1A) or Outstanding Landscape Feature (Appendix 1B) or a lot is created which results in the only building site and/or access to it being located in the feature unless it is for creation of a reserve under the Reserves Act 1977. This clause does not apply within the Puerua Heritage Precinct.

(e) if a subdivision activity does not comply with the standards of Rule 13.8.1 (National Grid Corridor

3.7 In this case the proposal is unable to comply with the allotment sizes for a Discretionary activity, therefore this subdivision will be assessed as a non-complying activity. Therefore, we will use the assessment criteria listed within 13.10 as a guide to assess this subdivision in conjunction with the matters set out in Sections 104, 104B, 104D and 106.

Rural Production Zone

3.8 The site is zoned Rural Production. The proposal involves existing as well as proposed development which will need to be assessed against the permitted rules for the zone.

ASSESSMENT OF THE PERMITTED RURAL PRODUCTION ZONE RULES:		
<u>PERFORMANCE STANDARDS</u>		
Plan Reference	Rule	Performance of Proposal
8.6.5.1.1	RESIDENTIAL INTENSITY	Stages 1 & 2 - Permitted Lots 1 & 3 of Stage 1 will be the only allotments to contain existing residences.



		There will be no allotments which contain more than one residential dwelling.
8.6.5.1.2	SUNLIGHT	<p>Stages 1 & 2 - Permitted</p> <p>Lots 1 & 3 of Stage 1 will contain the existing development. The existing development is located a sufficient distance from the new proposed boundaries such that the permitted sunlight provision will be met.</p> <p>Lot 4 of Stage 1 and Lot 12 of Stage 2 will contain the existing boat building business. This existing development is located a sufficient distance from the proposed boundaries such that the permitted sunlight provision will be met.</p>
8.6.5.1.3	STORMWATER MANAGEMENT	<p>Stages 1 & 2 – Discretionary</p> <p>Wilton Joubert have provided two tables within their report that detail the existing and proposed impermeable surfaces for the staged subdivision.</p> <p>Concept design areas for potential development within the vacant rural-residential allotments have also been provided to indicate an approximate value of the impermeable surface coverage within each of these lots, when developed.</p> <p>It is requested as part of this application, that consent is obtained for the area of impermeable surfaces indicated within Tables 4 & 5 of the Wilton Joubert Site Suitability Report to allow for future development within the proposed vacant rural-residential allotments. Stormwater design within the subdivision has been provided for to account for the attenuation required for the provided impermeable surface coverage.</p> <p>Below is a breakdown of the existing and concept design impermeable surface coverage within each of the lots and how much would be consented for as part of this application, for any future development.</p> <p><u>Stage 1</u></p> <p>Lot 1 – all existing development equating to 22.5% of the total site area (790m²). Discretionary</p> <p>Lot 2 – Proposed ROW area and anticipated impermeable surface coverage of 32.1% (780m²). Discretionary</p> <p>Lot 3 – Existing ROW and built development approved under RC2240001 of 27.7% (595m²). Discretionary</p> <p>Lot 4 – Existing built development, driveway and new ROW of 16.6% or 8958m². Controlled</p> <p><u>Stage 2</u></p>



		<p>Lot 4 – Anticipated impermeable surface coverage for new development of 21.9% (470m²). Discretionary.</p> <p>Lot 5 – New ROW and anticipated future development of 25.7% (751m²). Discretionary.</p> <p>Lot 6 – Anticipated future development of 16.7% (470m²). Controlled.</p> <p>Lot 7 – Anticipated future development of 19.2% (470m²). Controlled.</p> <p>Lot 8 – New ROW and anticipated future development of 29.8% (720m²). Discretionary.</p> <p>Lot 9 – New ROW and anticipated future development of 30.6% (684m²). Discretionary.</p> <p>Lot 10 – Anticipated future development of 21.9% (470m²). Controlled.</p> <p>Lot 11 – Existing factory and driveway areas plus an allowance of 1500m² for future expansion of the factory of 27.5% (9911m²). Discretionary.</p> <p>Lot 12 – esplanade reserve – nil impermeable surfaces as part of this consent.</p> <p>As such, consent is sought for the proposed and existing impermeable surfaces on each of the sites to allow for future development within each of the allotments as part of this subdivision as well as any residential development within the allotments. As mentioned, Wilton Joubert have addressed the impermeable surface coverage associated with the subdivision which will be discussed further in this report.</p> <p>Consent is sought as a Discretionary Activity for both stages.</p>
8.6.5.1.4	SETBACK FROM BOUNDARIES	<p>Stages 1 & 2 - Restricted Discretionary Activity.</p> <p>Lot 1 – Stage 1 All existing buildings are in excess of 10m from the proposed new boundary.</p> <p>Lot 2 – Stage 1 Dispensation is requested to allow a 3m setback along the south-eastern boundary (depicted on the scheme plan by the dashed line).</p> <p>Lot 3 – Stage 1 Dispensation is not required as RC2240001 has approved a dwelling which could be adequately contained within the 10 metre setback requirements.</p> <p>Lot 4– Stage 1 All existing buildings are in excess of 10m from the proposed new boundary.</p>



		<p>Lot 5 – Stage 2 Dispensation is requested to allow a 3m setback along the south-eastern and north-western boundary (depicted on the scheme plan by the dashed line).</p> <p>Lot 6 – Stage 2 Dispensation is requested to allow a 3m setback along the south-eastern and north-western boundary (depicted on the scheme plan by the dashed line).</p> <p>Lot 7 – Stage 2 Dispensation is requested to allow a 3m setback along the south-eastern and north-western boundary (depicted on the scheme plan by the dashed line).</p> <p>Lot 8 – Stage 2 Dispensation is requested to allow a 3m setback along the south-eastern and north-western boundary (depicted on the scheme plan by the dashed line).</p> <p>Lot 9 – Stage 2 Dispensation is requested to allow a 3m setback along the south-eastern and north-western boundary (depicted on the scheme plan by the dashed line).</p> <p>Lot 10 – Stage 2 Dispensation is requested to allow a 3m setback along the south-eastern and western boundary (depicted on the scheme plan by the dashed line).</p> <p>Lot 11 – Stage 2 All existing buildings are in excess of 10m from the proposed new boundary.</p> <p>Lot 12 – Stage 2 No buildings will be constructed on this lot as its intended as an esplanade reserve. As such, consent is required to allow for a 3 metre setback from the stated boundaries within Lot 2 of Stage 1 and Lots 4-10 of Stage 2.</p>
8.6.5.1.5	TRANSPORTATION	A full assessment has been undertaken in the table below.
8.6.5.1.6	KEEPING OF ANIMALS	Not applicable.
8.6.5.1.7	NOISE	<p>Permitted.</p> <p>The original application for the boat building factory (RC2300369) queried whether the application would comply with the permitted noise</p>



		<p>standards. The following is an extract from the Council s95 report which confirmed compliance with this standard:</p> <p>The application as lodged stated:</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Noise will not be breached as current workshop noise level at 12metres from boundary is 65 decibels, with no shelter belts. With the building being placed more than 20 metres from the boundary and shelterbelts in place, noise levels will be mitigated.</p> </div> <p>Further information was requested on 12.02.21 regarding how the decibel reading had been obtained. The applicant provided the following clarifications via email on 12.02.21 and 14.02.21:</p> <p><i>“The noise would not be breached as we’re moving to a larger building so that work areas are not cramped and even expanding the business. With the poly panel on the outside and the size of the building the noise should be less or the same.</i></p> <p><i>A majority of our work is not noisy such as fitting out the boats, welding, fitting electronics, carpeting. We have a CNC router that cuts all of the boat parts and a CNC Brake Press that bends all the parts. Yes, there is noise, the odd bang or a grinder being used but not constant.</i></p> <p><i>The roof is to be constructed of Thermospan EPS 250mm thick and walls Thermo panel 200mm thick. Both products will lower the noise emissions as internal wall structure of the panels are polystyrene.”</i></p> <p>No expert evidence confirming compliance with rule 8.6.5.1.7 - Noise has been provided. This is addressed later in this report in the assessment criteria for Scale of Activity.</p>
8.6.5.1.8	BUILDING HEIGHT	No new buildings sought.
8.6.5.1.9	HELICOPTER LANDING AREA	Not applicable.
8.6.5.1.10	BUILDING COVERAGE	<p>Stage 1 – Controlled</p> <p>Stage 2 – Controlled</p> <p>As part of Stage 1, the building coverage within Lot 1 will be 4.8% and Lot 4 will have a building coverage of 3.8%. Consent is sought for Lot 3, which will have a building coverage of 13%, just marginally above the permitted 12.5%. This building coverage includes the dwelling consented for as part of RC2240001.</p> <p>As part of Stage 2, Lot 12 will be the only allotment with built development (the boat factory) which equates to 5.9% of the total site area. However, due to the purpose of the smaller allotments being for rural-residential use with the lots anticipated to contain some form of residential development in the future, it is requested that an allowance is provided for 15% of the total site area for Lots 4-10 as part of Stage 2 and Lot 2 as part of Stage 1, is provided for. This will provide adequate</p>



		area within each of the allotments for future residential development of the sites.
8.6.5.1.11	SCALE OF ACTIVITIES	<p>Stages 1 & 2 – Discretionary</p> <p>Lots 1 to 10 will be utilised for rural-residential use. Lot 13 will be an esplanade reserve. Therefore, scale of activities is not applicable to these lots.</p> <p>As part of Stage 1, the boat building factory will be contained within Lot 4 which has an area of 5.41ha and as part of Stage 2, this will be contained within Lot 11 which has an area of 3.6ha.</p> <p>Consent for the boat building factory was granted under RC2300369 for 20 staff and 5 visitors per day. These numbers will not change as a result of the proposed subdivision. However, as the proposed subdivision will decrease the land area which the boat building factory is contained within, it is considered that the proposal creates a technical breach in both Stages 1 & 2. The GBA of the boat building operation will not change nor will the layout of the activity. As such, the degree of non-compliance does not increase from what has been previously approved.</p> <p>Therefore, as this rule is based on the net site area, a technical breach will be applied for under this rule for the boat building factory for both Stages 1 & 2.</p>
8.6.5.1.12	TEMPORARY EVENTS	Not applicable.

District Wide Matters

3.9 Assessment of District Wide Matters.

ASSESSMENT OF THE APPLICABLE PERMITTED DISTRICT WIDE RULES:		
<u>PERFORMANCE STANDARDS</u>		
Plan Reference	Rule	Performance of Proposal
12.1	LANDSCAPE & NATURAL FEATURES	<p>Not applicable</p> <p>The site does not contain any outstanding landscapes or indigenous vegetation.</p>
12.2	INDIGENOUS FLORA AND FAUNA	<p>Not applicable</p> <p>The site does not contain any indigenous flora or fauna.</p>
12.3.6.1.1	EXCAVATION AND/OF FILLING, EXCLUDING MINING AND	<p>Permitted</p> <p>The permitted excavation volumes for the Rural Production zone is 5,000m³ per 12 month period.</p>



	QUARRYING, IN THE RURAL PRODUCTION ZONE OR KAURI CLIFFS ZONE	<p>Wilton Joubert have provided some approximate excavation volumes associated with the subdivision works. For Stage 1, this will include construction of the required right of ways. As part of Stage 2, excavations will involve construction of further right of ways, attenuation ponds and drainage channels.</p> <p>Wilton Joubert have estimated that the total volume of earthworks for Stage 1 will be 451m³ and for Stage 2 will be 705m³ of cut and 718m³ of fill.</p> <p>For both stages combined, a cut volume of 1156m³ and a fill volume of 718m³.</p> <p>It is anticipated that Stage 1 and Stage 2 will not be completed in the same 12 month period and therefore can adequately comply with the permitted thresholds.</p>
12.4	NATURAL HAZARDS	<p>Not applicable</p> <p>There are no natural hazards under this section that apply to the proposal.</p>
12.5 – 12.9	Not applicable to the proposal.	
14.6.1	ESPLANADE AREAS	<p>Stage 1 & 2 - Permitted</p> <p>The subject site adjoins Kerikeri River along the southernmost boundary. As part of Stage 1, Lot 4 will adjoin Kerikeri River which will be 5.4 hectares in area. As such, there is no requirement for an esplanade reserve.</p> <p>As part of Stage 2, Lot 11 will be 3.5 ha in area and as such, there is a requirement to provide an esplanade reserve. As a result, Lot 12 has been created as an esplanade reserve which has an area of 864m².</p>
15.1.6A	TRAFFIC	<p>Stages 1 & 2 - Permitted Activity</p> <p>Each allotment will anticipate 10 TIF which equate to 1 household equivalent on Lots 1-10.</p> <p>The boat building activity will not be increasing the number of traffic movements to and from the site as a result of the subdivision nor will the GBA of the boat building activity change from what has previously been approved. Therefore, it is considered that existing use rights apply in this instance.</p>
15.1.6B	PARKING	<p>Stages 1 & 2 - Permitted Activity</p> <p>The existing parking provisions within Lot 1 and 4 of Stage 1 and Lot 12 as part of Stage 2, will remain unchanged. The vacant rural-residential allotments are of adequate size to provide parking on</p>



		site when/if developed with a residential dwelling. This requirement will form part of the BC for any future development.
15.1.6C.1.1	PRIVATE ACCESSWAY IN ALL ZONES	<p>Stage 1 – Permitted Activity</p> <p>Stage 2 - Discretionary Activity</p> <p>(a) The proposed accessway widths are provided for within Section 11 of the Site Suitability Report from WJ. The proposed private accessway carriageway and legal widths have been designed in accordance with proposed FNDC District Plan Tran-Table 9 and Table 3-16 of the FNDC Draft Engineering Standards 2023. These tables require a wider legal and carriageway width in regard to private accessways, within the Operative Far North District Plan. Therefore, the proposed widths exceed the widths stated in Appendix 3B-1 in Part 4 of the Operative Plan.</p> <p>(b) The Accessways will comply with the access widths and centreline gradients.</p> <p>(c) Easement A, as part of Stage 2 will service 10 household equivalents due to the Lots 1 & 2 DP202022 also utilising the new private accessways. Easements C, D, E & F will service 13 allotments, as this portion of accessway will service the Stage 1 lots as well as the proposed lots in Stage 2 and Lots 1 & 2 DP202022. It was proposed that this portion be vested as road, however NTA were not supportive of this portion being vested as road and recommended it be a private accessway. The correspondence with NTA is attached to this application. As such, as per the recommendations of NTA, the roadway has remained as private accessway. All other easements will serve 8 household equivalents or less. As such, consent is required as part of Stage 2 due to Easement A and Easement C, D, E & F servicing more than eight household equivalents.</p> <p>(d) Easement A as part of Stage 2 will provide access to 10 allotments which has resulted from the old ROW being decommissioned and replaced. Easements C, D, E & F will service 13 lots as NTA advised they did not want this portion as road to vest. Consent required as Easement A and Easements C, D, E & F will not be vested as public road.</p> <p>(e) Complies with items listed (i) to (vi).</p>



15.1.6C.1.2	PRIVATE ACCESSWAYS IN URBAN ZONES	Not applicable The site is not within an urban zone.
15.1.6C.1.3	PASSING BAYS ON PRIVATE ACCESSWAYS IN ALL ZONES	Permitted. As part of Stage 1, a passing bay and vehicle queuing space will be required at the vehicle crossing from the proposed ROW to Koropewa Road. Easements C, D, E & F will provide a widened accessway section, effectively providing a passing bay and vehicle queuing space. The total distance from Koropewa Road to the eastern end of the ROW is less than 100m and therefore passing bays are not required. As part of Stage 2, Easements A & G-J will allow for two way vehicle movement and therefore will not require a passing bay. The 4.5m wide ROW within Easements K, Q & W will be less than 100m long and therefore no passing bays are required.
15.1.6C.1.4	ACCESS OVER FOOTPATHS	Not applicable.
15.1.6C.1.5	VEHICLE CROSSING STANDARDS IN RURAL AND COASTAL ZONES	Permitted Activity As per the report from WJ, the vehicle crossings must be designed to comply with the FNDC Engineering Standards. WJ has recommended Type 1A from Sheet 21 for the proposed lots. Culverts are to be installed as per the report from WJ.
15.1.6C.1.6	VEHICLE CROSSING STANDARDS IN URBAN ZONES	Not applicable.
15.1.6C.1.7	GENERAL ACCESS STANDARDS	Permitted Activity As per the report from WJ, the proposal complies with this rule.
15.1.6C.1.8	FRONTAGE TO EXISTING ROADS	Permitted Activity (a) Koropewa Road is able to meet the legal road width standards. (b) Koropewa Road where it adjoins this site is a sealed rural road of good standard. (c) There is only 1 site frontage. (a) The legal road carriageway does not encroach upon the subject property.
15.1.6C.1.9	New Roads	Not applicable It was proposed that Easements C, D, E & F as part of Stage 2 be vested as road, however NTA were not supportive of this and recommended that it be a private access. Hence no new roads are



		proposed as part of this subdivision and a breach of the above mentioned rules is required.
15.1.6C.1.10 – all	Not applicable to this development.	

Overall status of the proposal under the District Plan

3.10 The proposal contains several sections which include, subdivision, land-use, variation to existing consent conditions as well as application under the NESCS. Below is a breakdown of what is being applied for across the 2 staged subdivision.

Subdivision

- 3.11 Stage 1 will create three rural-residential allotments and one balance lot. The proposal is unable to meet the Controlled, RDA or Discretionary activity criteria.
- 3.12 Stage 2 will result in seven rural-residential allotments between 2150m² and 2920m², and one esplanade reserve. The balance lot will be 3.5 ha in area. The proposed lot sizes are unable to comply with the Discretionary provisions for the zone.
- 3.13 In addition, dispensation will be required for Lot 2 of Stage 1 and Lots 4-10 of Stage 2 as these allotments do not have the required lot dimensions to be able to support the concept building envelope whilst meeting the required setback provisions under District Plan Rule 13.7.2.2.
- 3.14 The subdivision will not be via management plan, therefore both stages will be assessed as a **Non-Complying activity** in accordance with Rule 13.11 *Non-Complying Activities*.

Land Use

- 3.15 Stages 1 & 2 result in multiple breaches of the permitted land use rules for the zone, which are discussed below –

8.6.5.1.3 Stormwater Management

- 3.16 As discussed, it is requested as part of this application, that consent is obtained for the area of impermeable surfaces indicated within Tables 4 & 5 of the Wilton Joubert Site Suitability Report to allow for future development within the proposed vacant rural-residential allotments. Stormwater design within the subdivision has been provided for to account for the attenuation required for the provided impermeable surface coverage.
- 3.17 As part of Stage 1, the existing development within Lot 1 and 4 will result in a breach of the permitted allowance for impermeable surfaces in the zone. Proposed Lot 3 will contain the built development approved under RC2240001 which will also result in a breach of the permitted impermeable surfaces. The proposed ROW area and anticipated impermeable surface coverage within Lot 2 will also breach the permitted impermeable surface coverage for the zone.



- 3.18 As part of Stage 2, Lot 11 will contain the existing boat building factory as well as driveway areas, which will create a breach of impermeable surfaces due to the decrease in land area. Lots 4-10 will be vacant rural-residential allotments, with Lots 5, 8 & 9 containing a portion of the new proposed private accessways. Lot 12 which is an esplanade reserve and does not contain any impermeable surfaces.
- 3.19 As such, consent is required for existing, proposed and future impermeable surfaces for both Stages 1 & 2.

8.6.5.1.4 Setback from Boundaries

- 3.20 The proposal to subdivide triggers consent under the Operative District Plan, for dispensation for Lots 2-10 for a 3m setback rather than the permitted 10m setback from boundaries in the Rural Production Zone. This setback will not be applied to all the boundaries of Lots 2-10, only the boundaries which show the 3m setback with the dashed lines on the scheme plan.
- 3.21 As such, consent is required for both Stages 1 & 2 to allow for a reduction in the permitted setback distances from boundaries for future development.

8.6.5.1.10 Building Coverage

- 3.22 As part of Stage 1, the building coverage within Lot 1 will be 4.8% and Lot 4 will have a building coverage of 3.8%. Consent is sought for Lot 3, which will have a building coverage of 13%, just marginally above the permitted 12.5%. This building coverage includes the dwelling consented for as part of RC2240001.
- 3.23 As part of Stage 2, Lot 11 will be the only allotment with built development (the boat factory) which equates to 5.9% of the total site area. However, due to the purpose of the smaller allotments being for rural-residential use with the lots anticipated to contain some form of residential development in the future, **it is requested that an allowance is provided for 15% of the total site area for Lots 4-10 as part of Stage 2 and Lot 2 as part of Stage 1, is provided for.** This will provide adequate area within each of the allotments for future residential development of the sites.
- 3.24 As such, consent is required for both Stages 1 & 2.

8.6.5.1.11 Scale of Activities

- 3.25 As part of Stage 1, the boat building factory will be contained within Lot 4 which has an area of 5.41ha and as part of Stage 2, this will be contained within Lot 11 which has an area of 3.61ha.
- 3.26 Consent for the boat building factory was granted under RC2300369 for 20 staff and 5 visitors per day. These numbers will not change as a result of the proposed subdivision. However, as the proposed subdivision will decrease the land area which the boat building factory is contained within, it is considered that the proposal creates a technical breach in both Stages



1 & 2. The GBA of the boat building operation will not change nor will the layout of the activity. As such, the degree of non-compliance does not increase from what has been previously approved.

3.27 Therefore, as this rule is based on the net site area, a technical breach will be applied for under this rule for the boat building factory for both Stages 1 & 2.

15.1.6C.1.1 Private Accessways in All Zones

3.28 As part of Stage 2, Easement C, D, E & F will service 13 household equivalents and Easement A will service 10 household equivalents and therefore results in a breach of FNDC rule 15.1.6C.1.1 *Private Accessways in all zones (c) and (d)*, as Easement C, D, E & F and A are proposed to remain a private accessway rather than being vested as public road. As mentioned, it was originally proposed that Easement C, D, E & F were vested as road, however NTA were not supportive of this and recommended that it remain as a private access.

3.29 As such, consent is required as part of Stage 2, for this breach.

Overall Status of the Land use Application

3.30 In accordance with 8.6.5.4 *Discretionary Activities*, the land-use application will be assessed as a **Discretionary Activity** and the proposal will have regard to the relevant assessment criteria set out under Chapter 11.

Proposed District Plan

3.31 The proposal is also subject to the Proposed District Plan process. Within the Proposed District Plan, the site is zoned Horticulture. Assessment of the matters relating to the Proposed District Plan that have immediate legal effect, has been undertaken below:

Chapter	Rule Reference	Compliance of Proposal
Hazardous Substances	The following rules have immediate legal effect: Rule HS-R2 has immediate legal effect but only for a new significant hazardous facility located within a scheduled site and area of significance to Māori, significant natural area or a scheduled heritage resource Rules HS-R5, HS-R6, HS-R9	Not applicable. The site does not contain any hazardous substances to which these rules would apply.
Heritage Area Overlays	All rules have immediate legal effect (HA-R1 to HA-R14) All standards have immediate legal effect (HA-S1 to HA-S3)	Not applicable. The site is not located within a Heritage Area Overlay.
Historic Heritage	All rules have immediate legal effect (HH-R1 to HH-R10)	Not applicable.



	Schedule 2 has immediate legal effect	The site is not known to contain any historic heritage.
Notable Trees	All rules have immediate legal effect (NT-R1 to NT-R9) All standards have legal effect (NT-S1 to NT-S2) Schedule 1 has immediate legal effect	Not applicable. The site does not contain any notable trees.
Sites and Areas of Significance to Maori	All rules have immediate legal effect (SASM-R1 to SASM-R7) Schedule 3 has immediate legal effect	Not applicable. The site does not contain any sites or areas of significance to Maori.
Ecosystems and Indigenous Biodiversity	All rules have immediate legal effect (IB-R1 to IB-R5)	Not applicable. The site does not contain any known ecosystems or indigenous biodiversity to which these rules would apply.
Subdivision	The following rules have immediate legal effect: SUB-R6, SUB-R13, SUB-R14, SUB-R15, SUB-R17	Permitted. SUB-R6 relates to environmental benefit subdivisions which the proposal is not applying for. SUB-R13 relates to subdivision of a site within a heritage area overlay, which is not applicable. SUB-R14 relates to subdivision of a site that contains a scheduled heritage resource, which the site does not contain. SUB-R15 relates to a subdivision of a site containing a scheduled site and area of significance to Maori, which the site does not contain. SUB-R17 relates to a site containing a scheduled SNA, which the site does not include.
Activities on the Surface of Water	All rules have immediate legal effect (ASW-R1 to ASW-R4)	Not applicable. The proposal does not involve activities on the surface of water.
Earthworks	The following rules have immediate legal effect: EW-R12, EW-R13	Permitted. All earthworks will proceed under the guidance of an ADP and will be in accordance with the Erosion and



	The following standards have immediate legal effect: EW-S3, EW-S5	Sediment Control Guidelines for Land Disturbing Activities in the Auckland Region 2016, in accordance with Rules EW-12, EW-R13, EW-S3 and EW-S5.
Signs	The following rules have immediate legal effect: SIGN-R9, SIGN-R10 All standards have immediate legal effect but only for signs on or attached to a scheduled heritage resource or heritage area	Not applicable. No signs are proposed as part of this application.
Orongo Bay Zone	Rule OBZ-R14 has partial immediate legal effect because RD-1(5) relates to water	Not applicable. The site is not located in the Orongo Bay Zone.

3.32 The proposal is considered Permitted in terms of the Proposed District Plan.

Variation of Consent Conditions

3.33 As explained earlier in this report, consent is required to vary some of the consent conditions within existing resource consents 2300369, 2230218 & 2240001. The proposed subdivision will see the western entrance to the site (second crossing place) closed as part of the proposal, as all allotments will utilise the one designated crossing place. The proposal will result in the need to change a couple of conditions within the approved decision documents to reflect the above and to ensure consistency across all of the decision documents.

3.34 The change to the conditions will result in effects materially similar to those existing. The variation will not increase the scale of intensity, or traffic intensity relating to the initial resource consent. It is simply to ensure the plans and reports referenced in the decision reflect the updated plans and reports, which will be approved as part of the land use and subdivision to ensure consistency between resource consents. As such, the degree of non-compliance does not increase, and the proposal is therefore within the scope of a change to consent conditions pursuant to Section 127 of the Resource Management Act 1991.

National Environmental Standards

National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health (NES:CS)

3.35 The applicant has had a Detailed Site Investigation (DSI) completed by NZ Environmental in order to ascertain if the proposal is highly unlikely to pose a risk to human health if the proposed sub-division is undertaken with subsequent change in land-use to rural-residential on area of proposed Lots 1 to 10.



- 3.36 The property has historically been used for citrus and kiwifruit orcharding; therefore the whole site has been considered a 'piece of land'.
- 3.37 In order to determine if the land was suitable for development a Detailed Site Investigation was commissioned given testing of the soil was required. As a DSI has been undertaken by NZ Environmental and therefore consent is required.
- 3.38 The test results confirmed that from the suite of contaminants tested that all results were within the applicable soil contaminant standards. As such it was concluded that the activity was **Controlled** insofar as the regulation. A full assessment is included in the table below.

ASSESSMENT OF THE APPLICABLE STANDARDS WITHIN THE NESCS:	
Section 8 Permitted Activities	
Rule	Performance of Proposal
Removing or replacing a fuel storage system as a permitted activity	<p>Not applicable.</p> <p>No removal or replacing of a fuel storage system is proposed.</p>
Disturbing soil as a permitted activity	<p>Permitted.</p> <p>Regulation 8(3) allows for relatively small-scale soil disturbance that may occur on the land that is not associated with either soil sampling or removing or replacing fuel systems.</p> <p>Some soil disturbance is required for excavations associated with the construction of the private accessways as well as the road within Lot 11, which will be designated as road to vest. Wilton Joubert have provided concept excavation volumes for the work which were adopted within the DSI. It is noted that excavations associated with any future builds are unknown.</p> <p>The NES requires that set limits for permitted soil disturbance be as follows:</p> <ul style="list-style-type: none"> (a) Volume of disturbance (no more than 25m³ per 500m² of land) (b) Volume of soil removed (up to a total limit of 5m³ per 500m² of land per year, not including soil removed as samples for laboratory analysis) – provided that the soil is disposed of at a facility authorised to receive such material. (c) Duration of soil disturbance is no longer than 2 months. <p>For Stage 1 a cut volume of 451m³ has been calculated with an allowable volume of 3068m³. For Stage 2 a cut volume of 704.8m³ has been calculated with an allowable volume of 2664m³. Therefore, as per the DSI, excavation volumes are below regulation 8(3) for both Stage 1 and 2</p>



earthworks. This is true if the earthworks are undertaken separately between stages or concurrently.

Future soil disturbance is expected on site for the creation of a buildable platform, foundations for future buildings and associated services (wastewater, access, water tanks), and formation of driveway and parking areas.

Based on the size of the piece of land for the proposed lot sizes, the below table illustrates the total volume of earthworks permitted per year.

Proposed Lot	Size of Proposed Lots (m ²)	Approximate Area of Piece of Land (m ²)	Earthworks disturbance volumes not requiring consent (annual) m ³	Earthworks removal volumes not requiring consent (annual) m ³
Stage One				
1	3510	3510	176	35
2	2430	2430	122	24
3	2150	2150	108	22
4	54100	53236	2662	532
Lot 3 DP 202022	62232	61368	3068	614
Stage Two				
4	2150	2150	108	22
5	2920	2920	146	29
6	2810	2810	141	28
7	2452	2452	123	25
8	2415	2415	121	24
9	2238	2238	112	22
10	2150	2150	108	22
11	952	952	48	10
12	35180	35180	1759	352
13	864	NA	NA	NA
Area excluding Stage 1	54142	53278	2664	533

I 5 Allowable Annual Earthworks Volumes under Regulation 8(3)

Hence, any future earthworks within the ‘piece of land’ will more likely than not be permitted under the NES:CS if it complies with the above thresholds. If the above earthworks thresholds are exceeded, consent under the NES:CS will be required.

Future triggering activities defined in the NES:CS will continue to be applicable for assessment within the ‘piece of land’, however these do not form part of the subdivision proposal. It is considered this will be noted as a Consent Notice Condition. An example of such a consent notice condition is as follows:

For assessment of future soil disturbance activities such as Building Consent Application within the site, the permitted activity volumes for NES:CS assessment are stated within the Detailed Site Investigation Report completed by NZ Environmental Management Dated 4 September 2023 Rev 2, Table 15. If these threshold values are exceeded, a resource consent will be required. [Lots 1-10 & 12]

Subdividing land or changing land use as a permitted activity

Controlled

A DSI report has been completed by the NZ Environmental.
The ‘piece of land’ was determined to be the entire site.



	<p>Proposed Lot 1 and 12 already contain built development within the site. Construction of the development consented by RC2240001, has also begun within Proposed Lot 3. The remainder of the allotments will be vacant.</p> <p>The testing undertaken on site has concluded that the soil contaminant standards are in line with the proposed activity of Rural Residential 25% produce.</p>
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National Environmental Standards for Freshwater 2020

3.39 The subject site does not contain any water bodies within close proximity to the proposed subdivision. There is a small portion of a Kerikeri river adjoining the rear of the subject site. However this is an adequate separation distance between the river and proposed development. Furthermore, an esplanade reserve is proposed as part of Stage 2.

Other National Environmental Standards

3.40 No other National Environmental Standards are considered applicable to this development.

4.0 Statutory Assessment

Section 104A of the Act

4.1 Section 104A governs the determination of applications for Controlled Activities. With respect to Controlled Activities, a consent authority must grant the application and is restricted to the types of conditions that can be imposed. This activity status applies to the consent under the NES for Assessing and Managing Contaminates in Soils to protect Human Health.

Section 104B of the Act

4.2 Section 104B governs the determination of applications for Discretionary and Non-Complying Activities. With respect to both Discretionary and Non-Complying Activities, a consent authority may grant or refuse an application, and impose conditions under section 108. This section is applicable to the subdivision and land use activity.

Section 104D of the Act

4.3 Section 104D applies to Non-Complying Activities only and is the gateway test. Non-Complying activities must pass at least one of the gateway tests in order to consent authorities to consider approval. The gateway tests are determined in assessing the applicable documents under Section 104(1). This section is applicable to the subdivision activity.

Section 104(1) of the Act

4.4 Section 104(1) of the Act states that when considering an application for resource consent –

“the consent authority must, subject to Part II, have regard to –

(a) any actual and potential effects on the environment of allowing the activity; and



- (ab) *any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment that will or may result from allowing the activity; and*
- (b) *any relevant provisions of –*
 - i. a national environmental standard:*
 - ii. other regulations:*
 - iii. a national policy statement:*
 - iv. a New Zealand Coastal Policy Statement:*
 - v. a regional policy statement or proposed regional policy statement:*
 - vi. a plan or proposed plan; and*
- (c) *any other matter the consent authority considers relevant and reasonably necessary to determine the application.”*

- 4.5 Actual and potential effects arising from a development as described in 104(1)(a) can be both positive and adverse (As described in section 3 of the act). Positive effects arising from this subdivision is that additional allotments within this area will provide land for future housing which is currently under pressure. The development is being sought in an area which already has a number of lifestyle allotments. The subject site is located very close to Waipapa, and 5min from Kerikeri which provides all necessary services. Both the local Primary and Secondary Schools are located within the settlement of Kerikeri. It has been determined that the site does not contain highly versatile soils as well as the proposal being highly unlikely to pose a risk to human health in regard to soil disturbance. Adverse effects arising from this proposal relate to the allotment sizes.
- 4.6 Section 104(1)(ab) requires that the consent authority consider ‘any measure proposed or agreed to by the applicant for the purposes of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity’. A Site Suitability Report has been completed by Wilton Joubert which found that the proposed allotments are appropriate for built development and associated services. There is an existing shelterbelt which will remain in place to maintain the amenity of Koropewa Road.
- 4.7 Section 104(1)(b) requires the consent authority to consider the relevant provisions of the above listed documents. An assessment of the relevant statutory documents that corresponds with the scale and significance of the effects that the activity may have on the environment has been provided in section 6.0 below.
- 4.8 Section 104(1)(c) states that consideration must be given to ‘any other matters that the consent authority considers relevant and reasonable, necessary to determine the application’. Given the activity status of the proposal is Non-Complying an assessment of precedence is necessary. This has been included below.



5.0 Environmental Effects Assessment

- 5.1 Having reviewed the relevant plan provisions and taking into account the matters that must be addressed by an assessment of environmental effects as outlined in Clause 7 of Schedule 4 of the Act, the following environmental effects warrant consideration as part of this application.
- 5.2 It is noted that while the application is staged; that the assessment below considered the effects in terms of the overall development.

Subdivision

- 5.3 The proposal is a Non-Complying activity as per rule 13.7.2.1. The criteria within 13.10 of the District Plan is therefore to be used for assessment of the subdivision, in conjunction with the matters set out under Sections 104, 104B, 104D, and 106 of the Resource Management Act 1991. An assessment that corresponds with the scale and significance of the effects on the environment is provided below:
- 5.4 An assessment has been undertaken in accordance with Section 13.10 Assessment Criteria of the District Plan below.

ALLOTMENT SIZES AND DIMENSIONS

- 5.4.1 The proposal is to subdivide the site to create 10 rural residential allotments which range in size from 2150m² to 3150m². These will be created across two stages. With Stage 1 creating three rural residential allotments and one balance lot which will contain the boat building factory. Stage 2 will see a further seven rural-residential allotments created, a slightly smaller balance lot containing the boat building factory (being 3.5ha in area) and esplanade reserve.
- 5.4.2 As part of Stage 1, the existing residential development on the site will be contained within Lot 1, with Proposed Lot 3 containing the residential dwelling consented under RC2240001. Lot 2 will be vacant. As part of Stage 2, all rural-residential allotments will be vacant land, with the owner undecided if he will build homes on these for employees of the boat building factory or if he will on sell these lots to employees.
- 5.4.3 A Site Suitability Report has been completed by Wilton Joubert which has determined that all rural-residential allotments are suitable for future development as well as associated services (see report for full assessment, which will also be discussed below).
- 5.4.4 As has been mentioned within this report, the proposed vacant rural-residential allotments cannot accommodate the concept 30m by 30m building envelope without creating setback breaches, due to the purpose of these allotments being rural-residential and therefore the size of the allotments are smaller than larger rural productive sites. As shown within the report from WJ, each rural-residential allotment is capable of containing a dwelling and associated onsite services within each lot boundary. It is worth noting that the concept 30m by 30m

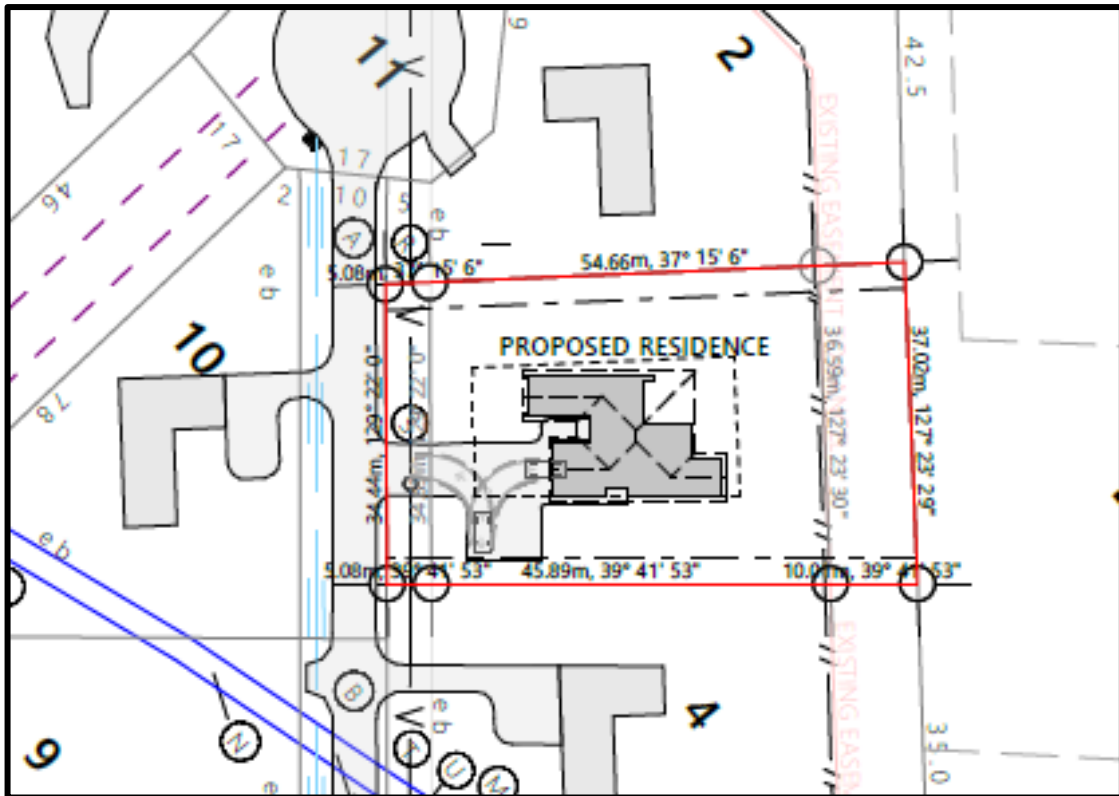


building envelope is usually provided to accommodate built development as well as associated services.

- 5.4.5 As part of this consent application, dispensation is being sought to decrease the setback distance from the **internal boundaries** of the subdivision, to allow a three metre setback distance. The 10 metre setback distance is proposed to remain on all external boundaries where the proposed lots share a boundary with an existing allotment (for example the easternmost boundaries of Lots 6 & 7, northernmost boundaries of Lots 10, 3, 4, 5 & 6 and southernmost boundaries of Lots 2, 7, 8 & 9). This will ensure that the permitted setback distance of 10 metres is maintained along boundaries which adjoin existing sites.
- 5.4.6 Due to the intended purpose of these sites being rural-residential, it is considered that the lots are of sufficient area and dimensions to provide for the intended land use of the site. The operation of the boat building factory will remain unaffected, with the new lot size not impeding the continued operation. It is considered that the concept building envelope is used for indicative purposes and is excessive in this instance.
- 5.4.7 RC2240001 included a single level dwelling and associated water tanks for potable use and stormwater attenuation as well as area for onsite wastewater disposal. It is noted that this application was applied for under the parent lot, however indicative boundary lines were shown for the newly created Proposed Lot 3 which indicated that the proposed dwelling could adequately fit within the boundaries without creating any setback breaches. Proposed Lot 3 is one of the smaller proposed rural-residential allotments and therefore, this reiterates that the proposed lot sizes are of adequate dimensions and area to provide for rural-residential living, which is the intended purpose for the lots. The proposed allotments are also sufficient for operational and maintenance requirements.

Figure 13: Snippet of approved plan under RC2240001, which demonstrates that a dwelling and associated services can be adequately provided for within the proposed lot boundaries.





5.4.8 Subdivision patterns within the immediate area are generally quite dated, with limited new subdivision development occurring within the immediate area recently. This prior development has seen a number of smaller allotments be created directly adjoining the subject site, along Koropewa Road, Pungaere Road and the State Highway. The allotments directly adjoining this site to the north range from 3,578m² through to 4205m², with smaller lots less than 3000m² further north along Koropewa Road, nearest the State Highway. Further afield there are sites which are less than 2000m², but generally the sites range from 3000m² to 2ha. Within 400m of the site is Mawson Ave in Waipapa which is zoned residential. Smaller scale rural-residential and lifestyle development are existing within this immediate environment and given the connections to the local townships development of this nature continues to be anticipated. The proposal will see rural-residential lots of a slightly smaller size than what is directly adjoining the site, however the land use will be the same, with the lots providing the same rural-residential living as those sites that adjoin it.

5.4.9 The site immediately adjoins a 12ha allotment (Lot 1 DP359361) to the east which contains the Advance Build Depot where construction of their houses are undertaken. The proposal will see Lot 1 DP359361 adjoin two smaller rural-residential allotments (Lots 6 & 7), however, the 10 metre setback provision will remain along the dividing boundary such that any residential development within the lots will be set back the same distance that a dwelling could be established at present. The majority of the boundary with Lot 1 DP359361 will adjoin the balance lot of the subdivision which will contain the consented boat building factory, such that there is considered to be very little change as to what is currently in existence. There is an existing mature shelterbelt along this boundary, which the applicant is happy to protect via consent notice condition to ensure that visual mitigation is maintained.



- 5.4.10 To the West (Lot 1 DP380499 – 4346m²), (Lot 1 DP581495 – 1.12ha) and (Lot 2 DP581495 – 4ha) are slightly larger sites, which seem to be utilised for rural-lifestyle use and are one of the more recent subdivisions in the area. These lots will adjoin Proposed Lot 1 and the balance lot in both stages. Effectively activities along this boundary will remain unchanged, with Lot 1 containing the existing built development and the balance lot containing the boat building factory. The allotments adjoining the western side of the site will be over 90-100 metres from the proposed rural-residential sites and will be buffered by the existing development on the subject site.
- 5.4.11 Given the location of the neighbouring development, the position of the proposed new allotments and the sites future intended use we have concluded that the proposal is compatible and consistent with neighbouring development trends.
- 5.4.12 The proposed allotments will utilise the existing access point directly off Koropewa Road. The second crossing to the existing residential development on the site will be permanently closed such that the site will only have one access point. This will maintain vehicle safety and not put an increased demand on infrastructure. The existing ROW easement to the adjoining allotments (Lots 1 & 2 DP202022) will be cancelled as part of Stage 2, with the access to these lots being from the new proposed private accessway. This will ensure traffic safety. NTA have been contacted as part of this application and although it was originally proposed to have the small portion of accessway directly from Koropewa Road vested as road, NTA were not supportive of this and recommended that the entirety of the new access remain privately owned. As such, a breach of FNDC rule *15.1.6C.1.1 Private Accessways in all zones (c) and (d)* forms part of this application due to the number of users utilising the first two portions of the private accessway exceeding 10.
- 5.4.13 The cumulative and long-term implications of this subdivision is that 10 additional rural-residential allotments will be created. The site has a relatively small road frontage, with the only rural-residential allotments adjoining Koropewa Road being Lot 1 as part of Stage 1 and Lot 10 of Stage 2. Lot 1 as part of Stage 1 will contain the existing built development and as such, will not change what is currently in existence. Lot 10 will be a vacant rural-residential site. The 10 metre setback will remain along the adjoining boundary with Koropewa Road, with anticipated built development being within the south-eastern corner of the site, furthest from Koropewa Road, as shown in the site plan from WJ. There is dense, mature bamboo hedging along this road boundary, however this will most likely be removed due to issues it creates with residential development (leaves falling in gutters etc) and replanted with trees which reach a height of 3-4 metres. Due to the bulk of development occurring a significant distance from Koropewa Road and the fact that a residential dwelling has already been approved under RC2240001, which will be located within Lot 3, the next adjoining lot to Lot 10, there are no adverse effects or long term implications anticipated on Koropewa Road in regards to visual effects or reverse sensitivity. Written approval has been sought from the adjoining lots to the north (Lots 1 & 2 DP168917 and Lots 1 & 2 DP202022) and as such, no effects are anticipated on these allotments.



- 5.4.14 Existing mature trees, such as pines, are also present along the Eastern boundary which adjoins Lot 1 DP359361. Lot 1 DP359361 contains mix use where the Advance Build factory is located to the north of the site, furthest from the proposed development and the remainder of the site is utilised for productive use, which is nearest to the subject site. Lot 1 DP359361 also adjoins existing rural-residential development further along this boundary, which are all located nearer to the factory than the subject site, indicating that the factory has very little or minimal effect on the residential development in the area. The existing vegetation provides a significant screening between the two sites, which as mentioned, has been offered to be protected via consent notice condition. Furthermore, only Lots 6 & 7 as part of Stage 2 will adjoin Lot 1 DP359361, with the permitted 10 metre setback remaining along this boundary, further mitigating effects.
- 5.4.15 As such, in terms of visual effects on the surrounding environment and neighbouring allotments it is considered that this is generally already mitigated by existing vegetation and can be further mitigated by additional planting. This proposal seeks to create additional rural-residential allotments, in an area which is already developed with a number of smaller allotments. The site subject to development is of a size where it is too small to be productive and too large for general lifestyle use. This is evident with large areas of the site being overgrown and unkept. In addition, an assessment of the soils has been completed by AgFirst which found that the soils contained within the site are **not** highly versatile and the site is not suited to any form of horticulture use. This proposal will essentially be an infill development of an existing lifestyle area. Given the characteristics of the site rendering it not suitable for horticulture and productive use, the existing rural-residential development in the area, its location within close proximity to townships and amenities, landscaping and the assessments below we have concluded that the development is sustainable in preserving the rural lifestyle character of the area.
- 5.4.16 Overall, the proposal is not considered out of character within the surrounding environment. Adjoining sites are of similar size to those proposed and the proposal will enable the best utilization of the land. Rural character will be maintained and preserved via existing hedging and future planting of trees which sets the scene for this area. The surrounding environment has already been compromised, with many developments of rural-residential/lifestyle allotments occurring within the immediate area. Furthermore, the site has been found to have soils which are not highly versatile, with productive use of the site very limited due to the non-versatile soils as well as topography and other factors, which will be discussed further in this report. The existing development emphasizes that rural-residential/lifestyle allotments of this size are able to make efficient use of the land, which is unable to be feasibly utilised as productive land.

NATURAL AND OTHER HAZARDS

- 5.4.17 The NRC Hazard Maps indicate that the southern corner of the property is mapped within the 10yr, 50yr and 100yr river flood extent (where the site adjoins Kerikeri River). Wilton Joubert have determined that the proposal is setback approximately 190 metres from the river flood extent and therefore no significant impact of potential flooding is anticipated within the proposed rural-residential lots as part of this development.



5.4.18 The site has been assessed as more likely than not to be HAIL. The accompanying DSI report has determined that the proposal is a **Controlled Activity** given the results of the soil tests were within the guideline levels. This will be evaluated in more detail in the NES section below.

5.4.19 It is therefore considered that there are no natural hazards within the site which could adversely affect the subdivision of the site and no matters applicable under s106 of the Act.

WATER SUPPLY

5.4.20 As part of Stage 1, Lot 1 will contain built development which has existing water supply via harvesting of rainwater to water tanks. Proposed Lot 3 will contain the new dwelling consented under RC2240001 which will be serviced via rainwater tanks as per the approved Stormwater Report attached with the consent. Proposed Lot 4 will contain the boat building factory which already has consented provisions for water supply as per the approved consents. Proposed Lot 2 will be vacant, with water supply for the site being provided at the time of built development on the site.

5.4.21 As part of Stage 2, Lots 4-10 will be vacant lots, with water supply being provided for at the time of built development on the lots. Proposed Lot 11 will contain the existing consented boat building factory which has approved methods for water supply.

5.4.22 Firefighting water supply will be provided on the lots at the time of built development. As Lots 1, 3 & 4 (Lot 11 as part of Stage 2) will have existing built development, it is considered the standard consent notice regarding firefighting will be registered on Lots 2, and 4-10.

5.4.23 Lot 12 as part of Stage 2 will be an esplanade reserve and therefore has not been considered.

STORMWATER DISPOSAL

5.4.24 Wilton Joubert have provided two tables within their report that detail the existing and proposed impermeable surfaces for the staged subdivision. Concept design areas for potential development within the vacant rural-residential allotments have also been provided to indicate an approximate value of the impermeable surface coverage within each of these lots, when developed.

5.4.25 It is requested as part of this application, that consent is obtained for the area of impermeable surfaces indicated within Tables 4 & 5 of the Wilton Joubert Site Suitability Report to allow for future development within the proposed vacant rural-residential allotments. Stormwater design within the subdivision has been provided for to account for the attenuation required for the provided impermeable surface coverage.

Stage 1

5.4.26 As part of Stage 1, the existing impermeable surfaces within the lots will breach the permitted threshold for the zone. Proposed Lot 1 will have a total impermeable surface coverage of 22.5%. WJ have determined that the total impermeable surface coverage area on Lot 1 exceeding the permitted activity threshold is 264m². It has been recommended that a



detention tank shall be provided which is to have a volume of 15,000L. The downpipes from the existing residence on Lot 1 are to be redirected to this new tank. WJ have also noted that if the existing outfall servicing the residence on Lot 1 is operational and adequate, then the tank outlet can direct flows to this system. Alternatively, the tank outlet is to direct flows to a 6m long dispersal bar. This is anticipated to be a condition of consent for Stage 1.

- 5.4.27 Lot 4 as part of Stage 1, will have an impermeable surface coverage of 16.6%, with 844m² exceeding the permitted activity threshold. This includes the existing impermeable surface areas on the lot as well as the new proposed ROW area. It is noted that the original consent which approved the boat building factory (RC2300369) included a condition relating to stormwater management and mitigation. WJ have provided mitigation for the amount exceeding the permitted threshold which will include installing 2x 25,000L tanks, which will capture rainwater from the roof area of the factory. The tank outlet is to direct flows to a 20m long dispersal device downslope of the factory.
- 5.4.28 Lot 3 is to contain the development consented under RC2240001. It is noted that WJ completed a Stormwater Report as part of RC2240001 (WJ Ref 12668-B dated 29.06.23) which accounted for the proposed impermeable surfaces forming part of Stage 1 subdivision which was the Lot 2 ROW area as well as the residential development on Lot 3. Therefore, these impermeable surface areas have been accounted for and will be implemented as part of the construction of the development on Lot 3 as well as the ROW access formed on Lot 1.
- 5.4.29 Lot 2 will be a vacant rural-residential allotment however, will contain a new portion of ROW. As mentioned above, attenuation for the new portion of ROW was accounted for within the Stormwater Report completed by WJ as part of RC2240001. WJ have provided a concept development design of a roof area of 280m² and driveway area of 190m² within the site, which creates a total impermeable surface coverage of 32.1% of the site area.
- 5.4.30 As concluded within the report from WJ, if the recommendations of this report are adhered to, the post development impermeable areas exceeding the permitted activity coverage threshold will be attenuated to pre-development conditions for the 10% AEP and 1% AEP storm events accounting for climate change factors. It is therefore considered appropriate for the impermeable surface coverage provided for within each of the allotments as part of Stage 1, to be granted as per the table below from WJ (noted that Lot 2 also is to provide an allowance of a concept 280m² roof area and 190m² driveway area, bringing the total anticipated impermeable coverage to 780m² or 32.1% of the total site area).

Table 4: Stage 1 Impermeable Coverage

Lot	Proposed Lot Area (m ²)	Existing Roof Area (m ²)	Driveway Area (m ²)	New ROW Area (m ²)	Existing Right of Way Area (m ²)*	Total Anticipated Impermeable Coverage (m ²)	% Site Area Coverage	Anticipated Status
1	3,510	170	620	-	-	790	22.5	Discretionary
2	2,430	-	-	320	-	320	13.2	Permitted
3	2,150	280	190	-	125	595	27.7	Discretionary
4	54,100	2,102	5,829	480	547	8,958	16.6	Controlled

* Refers to Existing ROW area serving Lots 1 & 2 DP 202022.



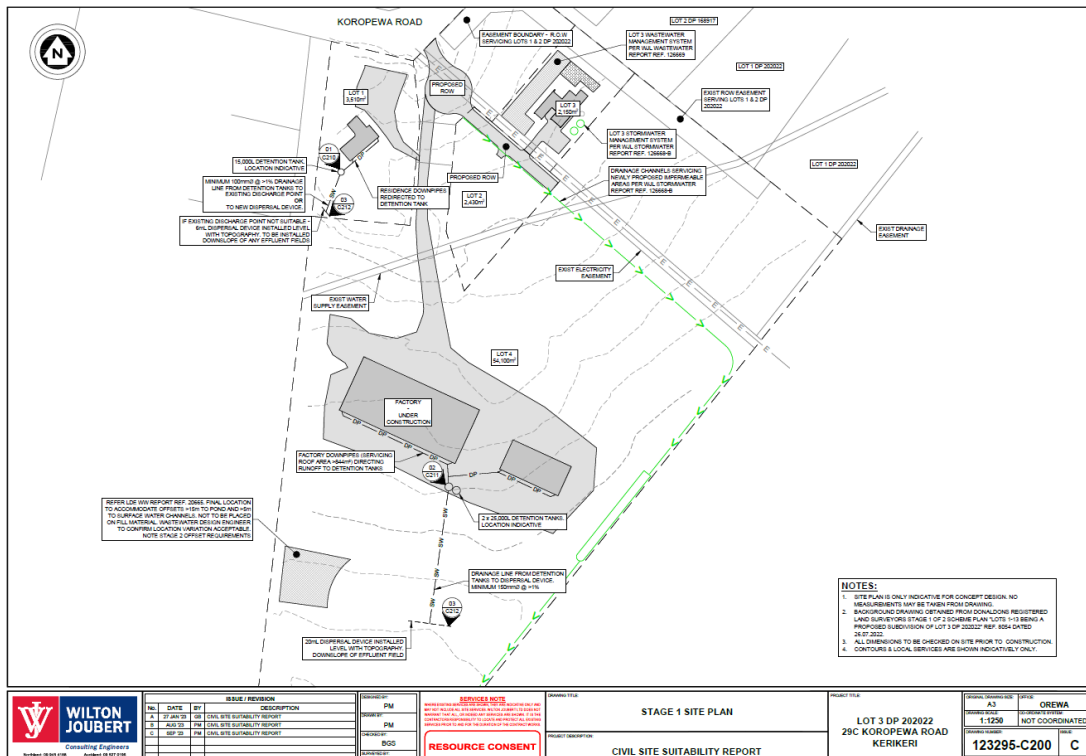


Figure 14: WJ Site Plan Stage 1

Stage 2

5.4.31 As part of Stage 2, Lots 4-10 will be rural-residential lots with Lots 5, 8 & 9 containing portions of the proposed private accessways. Lot 11 will contain the existing boat building factory and any associated access as constructed in Stage 1 as well as an allowance of 1500m² being made for future expansion of the factory within WJ’s calculations. Lot 12 will be esplanade reserve and contain no impermeable surface coverage and is therefore excluded from this assessment.

5.4.32 The concept development impermeable surfaces as well as the proposed impermeable surfaces as part of Stage 2, will render the majority of the lots not compliant with the permitted activity threshold for stormwater management. To address the breaches, a subdivisional attenuation pond is to be constructed within Proposed Lot 11 which will provide hydrologic neutrality for at least 6780m² impermeable area which will effectively mitigate flows back to the permitted activity levels across the subdivision. Any future development on the lots exceeding the coverage shown within Table 5 of WJ’s report (shown below in Figure 15 for clarity) will require further stormwater management design at the BC Stage.



Table 5: Stage 2 Impermeable Coverage

Lot	Proposed Lot Area (m ²)	Roof Area (m ²)*	Driveway Area (m ²)	New ROW Area (m ²)	Total Anticipated Impermeable Coverage (m ²)	% Site Area Coverage	Area Exceeding Permitted Threshold (m ²)	Anticipated Status
1	3,510	170	620	-	790	22.5	263.5	Discretionary
2	2,430	280	190	310	780	32.1	415.5	Discretionary
3	2,150	280	190	-	470	21.9	147.5	Discretionary
4	2,150	280	190	-	470	21.9	147.5	Discretionary
5	2,920	280	190	281	751	25.7	313	Discretionary
6	2,810	280	190	-	470	16.7	48.5	Controlled
7	2,452	280	190	-	470	19.2	102.2	Controlled
8	2,415	280	190	250	720	29.8	357.75	Discretionary
9	2,238	280	190	214	684	30.6	348.3	Discretionary
10	2,150	280	190	-	470	21.9	147.5	Discretionary
11	36,100	2,102	5,829 + 1,500**	480	9,911	27.5	4496	Discretionary
12	864	-	-	-	0	0	0	Permitted

* Lots 2-10 assumed roof and driveway areas are a conservative indication of potential development only for the purposes of stormwater management concept design.

** Additional allowance of 1,500m² for future expansion of Lot 11 Factory.

Figure 15: WJ Table 5

- 5.4.33 For future roof areas within Lots 4-10, water must be captured by gutter systems and conveyed to water tanks. Overflows from the tanks are to be directed to outlets in the subdivisional drainage system. These drainage channels are to convey flows in a controlled manner to the subdivision pond. New hardstand areas within these lots are also to shed runoff to the drainage channel system.
- 5.4.34 For Lot 11, drainage channels are to be installed on the border of the factory hardstand area, directing runoff to the subdivision pond. The tank outlets servicing the detention tanks as part of Stage 1 and any other downpipes servicing the factory that are not directed to the tanks are to be redirected to the subdivision pond or the subdivision drainage channel system. Hence, all runoff generated by impermeable surfaces on Proposed Lot 11, Stage 2, is directed to the pond for attenuation of runoff flows.
- 5.4.35 The pond outlet channels are to direct to a level spreader releasing runoff to the lower lying grassed area at the southern end of Lot 11. A 45m long level spreader is to be installed with a level spillover edge.
- 5.4.36 WJ have completed indicative design elements for a dry detention pond which was calculated to have a volume of 415m³. For more detailed design details and attenuation methods, please refer to Section 8.3 of WJ's report. An image of the proposed subdivision layout in regard to stormwater design at Stage 2 is shown below:



each of these lots which determined that each lot is suitable for providing onsite wastewater disposal. It is anticipated that any future system within Lots 2 & 4-10 will require a new site-specific TP58 document. It is anticipated that the standard consent notice condition will be applied to Lots 2 & 4-10 for any future wastewater system.

5.4.41 Lot 4 as part of Stage 1 (Lot 11 as part of Stage 2) will contain the boat building factory which included a wastewater treatment system previously designed by LDE. This will not be impacted by the proposed subdivision.

5.4.42 Indicative wastewater systems for the allotments is shown below.

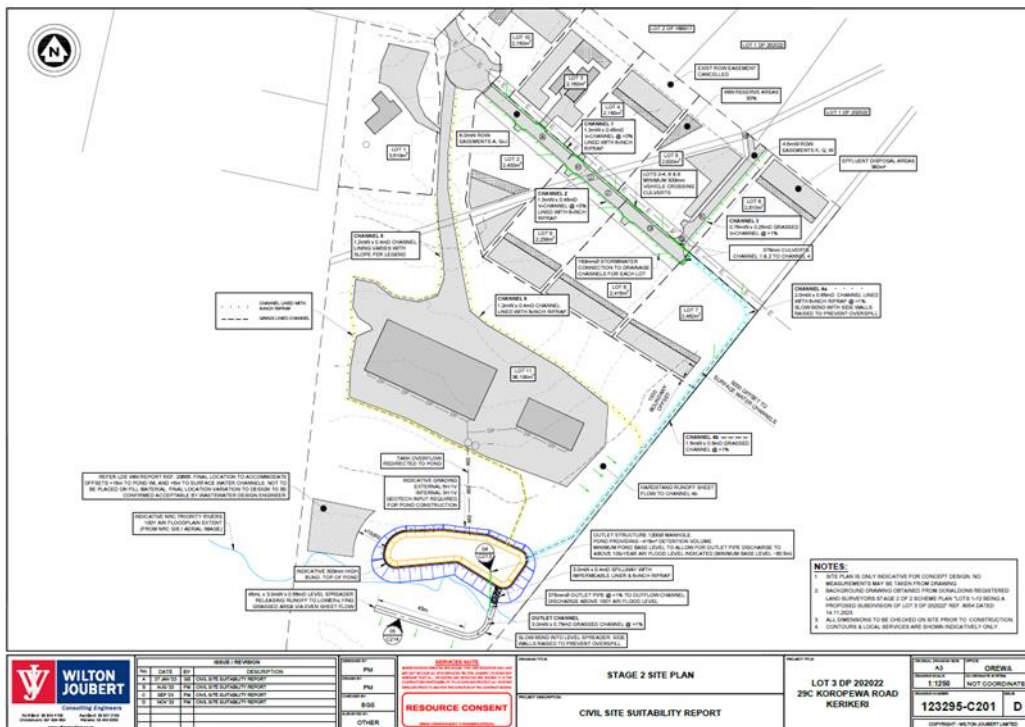


Figure 17: WJ Site Plan

ENERGY SUPPLY, TOP ENERGY TRANSMISSION LINES, & TELECOMMUNICATIONS

5.4.43 A transformer has been installed to supply power to all of the proposed allotments as part of this subdivision. Please see attached the correspondence from Top Energy included within this application.

5.4.44 There is an existing electricity easement which runs north-west to south-east which is parallel with the proposed private accessway. This easement will remain unaffected by the proposal. Provision for power supply and telecommunications has been provided within the private accessway carriageways.

5.4.45 We offer Councils standard consent notice condition that power supply and telecommunication services are not a requirement of the subdivision, however power supply



is available via connection to the transformer to ensure future owners of the site are aware of the situation.

EASEMENTS FOR ANY PURPOSE

- 5.4.46 The site contains existing easements which includes an existing water supply easement, electricity easement and a ROW. The water supply easement and the electricity easement will remain unchanged across both Stages 1 & 2. The existing ROW easement which provides access to adjoining Lots 1 & 2 DP202022 will remain unchanged as part of Stage 1, however, as part of Stage 2, this ROW easement will be cancelled. Access to Lots 1 & 2 DP202022 will be via the new road to vest and then via the proposed private accessways. Approval from the affected neighbours has been obtained. This is considered the most appropriate design for access as it ensures traffic safety as well as enabling the rural-residential sites to maximise the development potential, as Lots 10, 3, 4 & 5 can utilise the northern portion of their sites for other uses rather than as an additional access point. It also avoids these sites having access to two different private accessways.
- 5.4.47 The proposed easements as part of this proposal relate to ROW access via the proposed private accessways which will also allow for the right to convey water, electricity and telecommunications. A right to drain water has also been included within Stage 2 which provides the right to drain stormwater from the proposed lots over Lot 7 & 11 to the attenuation pond within the subdivision.
- 5.4.48 A stormwater easement via the proposed esplanade reserve is not deemed to be required as all stormwater runoff from the subdivision and any accounted future impermeable surfaces will be spread within Lot 11 and will then take its natural course. No piping of stormwater will be undertaken within the esplanade reserve.

PROVISION OF ACCESS

Stage 1

- 5.4.49 As part of Stage 1, the existing access from Koropewa Road to Proposed Lot 1, located in the western corner of the site will be closed and fenced off. Access to all lots as will be via a private accessway from Koropewa Road, with Lot 14 being the servient tenement.
- 5.4.50 Easements (B, C, D, E & F) are to be created on Lot 4 for access to the factory and the existing dwelling on Lot 1. Lot 1 will be accessed off the section of the existing metal driveway extending from Koropewa Road to the factory located within Easement B.
- 5.4.51 The created Right of Way easements C, D, E & F will allow for access from Koropewa Road to Lots 2 & 3. A new accessway will be formed within the new Easement A extending to the south-eastern boundary of Lot 2.
- 5.4.52 It has been proposed that the private accessway carriageway and legal widths are designed in accordance with the Proposed FNDC District Plan Tran-Table 9 and Table 3-16 of the FNDC Draft Engineering Standards 2023. These tables require wider legal and carriageway widths in regard to private accessways than the Operative District Plan. As Easement A will go on to



service additional lots as part of Stage 2, it will be formed to a surfacing width of 6m and have a legal width of 10 metres. This is to avoid additional costs at a later date. Easement B will only service two lots as part of Stage 1 & 2 and therefore will be constructed to a 3m carriageway width with at least a 4m legal width provided.

- 5.4.53 The ROW surfaces of C, D, E & F will be formed in accordance with the Stage 2 requirements detailed within this report and the WJ Report, which will 'future proof' the subdivision access.
- 5.4.54 Easements G, H, I, J & K will cover the existing right of way access along the western and northern boundaries which provide access to Lots 1 & 2 DP202022. This will remain unchanged as part of Stage 1 with no additional users utilizing this existing easement.
- 5.4.55 One vehicle crossing will service all lots from Koropewa Road. In regard to sight distances, Wilton Joubert have completed a Site Suitability Report which found that Koropewa Road has a general operating speed of 100km/hr. As such, the required minimum sight distance of 210m is required. The existing vehicle access allows for >210m of sight distance to the northeast and the west. The existing vehicle access therefore complies with the FNDC Engineering Standards' requirements for sight distance.
- 5.4.56 As such, the access provisions within Stage 1 comply with the permitted thresholds and no breaches of the District Plan are created in regard to access as part of Stage 1.

Stage 2

- 5.4.57 As part of Stage 2, Easements C, D, E & F will service 13 household equivalents and Easement A will service 10 household equivalents and therefore results in a breach of FNDC rule *15.1.6C.1.1 Private Accessways in all zones (c) and (d)*, as these easements are proposed to remain a private accessway rather than being vested as public road, as recommended by NTA. The existing ROW easements along the northern boundary of the site which are used by adjoining Lots 1 & 2 DP202022 are to be surrendered and access to these sites will be via the new proposed accessways.
- 5.4.58 It has been proposed that the private accessway carriageway and legal widths are designed in accordance with the Proposed FNDC District Plan Tran-Table 9 and Table 3-16 of the FNDC Draft Engineering Standards 2023. These tables require wider legal and carriageway widths in regard to private accessways than the Operative District Plan.
- 5.4.59 To provide some context, the following is proposed for the private accessways as part of Stage 2 –
- Easement A will service 10 HE – legal width of 10m and carriageway width of 6m.
 - Easements H-J will service 8 HE – legal width 10m and carriageway width of 6m
 - Easement G will service 6 HE – legal width of 10m and carriageway width of 6m
 - Easements K & Q will service 3 HE – legal width of 10m and carriageway width of 4.5m.
 - Easement W will service 1 HE – legal width of 10m and carriageway width of 4.5m.



- 5.4.60 It is noted that Easements K, Q & W do not require a legal width of 10 metres, however, a 10 metre legal width has been proposed to ensure consistency with the existing ROW easement to Lots 1 & 2 DP202022 as well as to allow for any future expansion that may occur and provide for rural amenity of larger access ways.
- 5.4.61 It is considered that passing bays will not be required as Easements A-G will allow for two-way vehicle movement and therefore there is no need for passing bays.
- 5.4.62 As mentioned above, the sight distances from the existing vehicle crossing meet the requirements under the FNDC Engineering Standards.
- 5.4.63 As has been mentioned within this report, it was proposed that Easements C, D, E & F were to be vested as public road, however during the pre-consultation process with NTA, NTA advised that they were not supportive of the road to vest and would rather it remain as private access. As such, the scheme plan was amended as per NTA's recommendations. The correspondence with NTA is included within this report.

EFFECT OF EARTHWORKS AND UTILITIES

- 5.4.64 WJ have provided preliminary estimations of earthworks quantities for the proposed ROW, drainage channels and attenuation pond across both stages. Future earthworks associated with development of the lots have not been accounted for as these are unknown. WJ have provided a list of assumptions on Page 11 of their report – please refer to these for further details.
- 5.4.65 The following earthworks quantities have been estimated for the proposed subdivision –



Table 1: Estimated Stage 1 Earthworks Quantities

	Earthworks Area (m ²)	Cut Volume (m ³)
Lot 11 ROW	480	357
Lot 2 ROW	320	94
Total	800	451

Table 2: Estimated Drainage Channel Earthworks Quantities

Channel (per Drawing C201)	Length (m)	Cross-Sectional Area (m ²)	Estimated EW Area (m ²)	Estimated Cut Volume (m ³)
1	128	0.29	166.4	37.4
2	128	0.29	166.4	37.4
3	66.5	0.094	49.9	6.2
4a	55	0.91	110	50.1
4b	147.5	0.43	221.3	63.1
5	291.1	0.24	349.3	69.8
6	219.3	0.24	263.2	52.6
Outlet	25	1.44	75	34.6
Level Spreader	45	1.44	135	64.8
		Total	1,370.1	416

Table 3: Estimated Stage 2 Earthworks Quantities

	Earthworks Area (m ²)	Cut Volume (m ³)	Fill Volume (m ³)
ROW Lots 8&9	464	135.6	-
ROW Lot 5	281	80.2	-
Attenuation Pond	2,080	73	718
Drainage Channels	1,370.1	416	-
Total	4,195.1	704.8	718

5.4.66 For both stages combined, a cut volume of 1156m³ and a fill volume of 718m³ over an area of 4195m² has been estimated based on the tables above. Therefore, even if all earthworks for both stages were completed concurrently in one 12 month period, the excavations would still be within the permitted volumes for the zone.

5.4.67 As has been previously discussed within this report, the excavation volumes are also within the allowable thresholds under the NESCS and therefore do not create a breach. This is discussed within the DSI attached with this report.

5.4.68 Provision for services such as power supply and access, will be addressed at the time of subdivision, with easements being provided for within the private accessways.

5.4.69 Overall, due to the amount of earthworks volumes being within the permitted threshold for the zone, no adverse effects on the environment are anticipated.

BUILDING LOCATIONS

5.4.70 Proposed Lot 1 as part of Stage 1 will contain existing built development. Proposed Lot 3 will contain the dwelling approved under RC2240001, which consent is sought under this application for a breach of stormwater management and building coverage. Stormwater management of the site has been addressed by WJ. Lot 4 as part of Stage 1 and Lot 12 as part of Stage 2 will contain the boat building factory. There is ample area on this lot for any future



residential dwelling, however, this is not the intention as it is to remain with just a boat building factory on it.

5.4.71 Lots 2 and 4-10 will be vacant rural-residential lots. Dispensation is sought as part of this application as the concept 30m by 30m building envelope is unable to be contained within the allotments due to the rural-residential nature of the lots. Due to the size of the lots reflecting rural-residential lots, dispensation for building coverage, stormwater management and setback has been requested as part of this application for the lots, to enable residential development of the lots without requiring further consent (unless the allowance sought are further breached). WJ have assessed that the lots are of a size capable of containing wastewater systems as well as area for residential development. Allowances have been made within the subdivision design to account for the increased impermeable surface coverage requested as part of this application. With the allowances provided for, the allotments are capable of providing suitable building sites.

5.4.72 The sites are not subject to inundation.

5.4.73 The lots are of a size and shape that enables any future house to take advantage of passive solar gain.

PRESERVATION AND ENHANCEMENT OF HERITAGE RESOURCES, VEGETATION, FAUNA AND LANDSCAPE, AND LAND SET ASIDE FOR CONSERVATION PURPOSES

5.4.74 The subject site is not known to contain any habitats of indigenous fauna, heritage resources or landscape features that are of sufficient values in terms of the objectives and policies in Chapter 12 of the Plan.

5.4.75 The site is not shown to be within or near any kiwi concentration areas and as such a restriction on cats and dogs is not considered necessary in this instance. The site is however within an area of kiwi present, and as such an advice note on the keeping of cats, dogs and mustelids should form part of the decision document.

5.4.76 The subject site is not known to contain any sites of archaeological or cultural significance. An advice note regarding the Accidental Discovery Protocol (ADP), is considered appropriate for this proposal.

5.4.77 As part of Stage 2, Lot 11 will be less than 4 hectares (will be 3.5 hectares) and as such, an esplanade reserve is proposed which will adjoin Kerikeri River in the southern portion of the site. As part of Stage 1, Lot 4 will be larger than 4 hectares and therefore an esplanade reserve is not required. This reserve is to be 20 metres wide and is over 150 metres from the proposed rural-residential lots.

SOIL & LANDUSE INCOMPATIBILITY

5.4.78 Under the NZLRI Land Use Capability Maps, the site is shown to contain soils classified as 2s1. A property report was completed by AgFirst who are Independent Agriculture & Horticulture



Consultants which concluded that the soils on the property have been wrongly assessed and the soils are at best Class 4s2, with some areas on site being Class 6. The main type of soil within the site has been determined as Pungaere soils which are not classified as highly versatile. AgFirst determined that the soils are neither highly productive nor potentially highly productive.

- 5.4.79 The site itself sits at just under 6 hectares in area and contains existing residential development, to be contained within Lot 1 and Lot 3 and consent for a boat building factory (under construction) which will be contained within Lot 4 of Stage 1 and Lot 11 of Stage 2.
- 5.4.80 As stated within the report from AgFirst, part of the site has previously been utilised for kiwifruit production, but the crop became infested with fungal and bacterial diseases due to wet soil conditions and the vines had to be removed. Due to the soil structure within the site, this makes the site prone to flooding and therefore unsuitable for most market gardening and livestock use. AgFirst determined within their report that *'the parcel of land has insufficient horticultural potential and has insufficient usable land to attract commercial investment in horticulture, even if the soil limitations could be mitigated.'*
- 5.4.81 Given the findings above, it is considered that while mapped as being highly versatile the study of the soils on the site show that they do not contain characteristics which would make them meet the highly versatile classification. We therefore consider that the effect on the soils is considered no more than minor as a result of this development.
- 5.4.82 The site is surrounded by rural-residential lots and development on the western and northern boundaries, with industrial development within 150 metres of part of the eastern boundary and the Waipapa commercial and industrial area within 450 metres of the rest of the eastern boundary. The southern boundary then adjoins the Kerikeri River. Effectively, the property is surrounded by residential dwellings, specifically the northern portion of the site, where the proposed rural-residential lots will be created. As mentioned within the report from AgFirst, even if the soils on the site were suitable for horticulture use, the proximity to the existing dwellings on adjoining properties would make management of an orchard extremely difficult due to reverse sensitivity effects. Crops such as kiwifruit would require to be sprayed with pesticides, which would require notification to a large number of residential dwellings. The use of sprays would also affect the quality of water supply as the dwellings in the area have rainwater supply via collection of rainwater from the roof of the structures to water tanks on site. During any time of spraying as well as a period of time afterwards, it would be required that water collection from roof is not undertaken. This would require houses in near proximity to install shut off valves to tanks or else filtration systems, which are costly. Organic practices could create smell nuisances to the surrounding community due to the stench of organic sprays and fertilisers. Noise and dust from agricultural machinery could create a nuisance for neighbours.
- 5.4.83 In terms of the surrounding environment, the concentration of smaller rural-residential allotments directly adjoining the subject site and within close proximity inhibit the use for productive activities which would likely cause reverse sensitivity effects. With this particular



site, it is considered that the 'horse has already bolted' and the underlying lot size and surrounding environment have already removed this site from being a productive use. The impact of this activity is not considered to change the existing situation.

- 5.4.84 The neighbouring allotments to the North (Lot 1 DP168917 – 3905m²), (Lot 2 DP168917 – 4205m²), (Lot 1 DP202022 – 3936m²) and (Lot 2 DP202022 – 3578m²) are of similar size to the proposal and also adjoin other similar sized allotments. As such, these sites are also unable to be developed with productive use. It is noted that the four properties directly adjoining the northern boundary of the site have provided their written approval to the subdivision.
- 5.4.85 To the West (Lot 1 DP380499 – 4346m²), (Lot 1 DP581495 – 1.12ha) and (Lot 2 DP581495 – 4ha) are slightly larger sites, which seem to be utilised for rural-lifestyle use. These lots will adjoin Proposed Lot 1 and the balance lot in both stages, Lot 4 & 11. Effectively activities along this boundary will remain unchanged, with Lot 1 containing the existing built development and the balance lot containing the boat building factory. The allotments adjoining the western side of the site will be over 90-100 metres from the proposed rural-residential sites and will be buffered by the existing development on the subject site, such that no reverse sensitivity effects are anticipated as what is currently in existence will remain unchanged from what is perceived from these allotments.
- 5.4.86 To the East of the site is Lot 1 DP359361 which is 12 hectares in area and contains the Advance Build depot which specialise and construct 'tiny homes' within their factory on the site. This factory is located towards the State Highway, over 150 metres from the proposed rural-residential allotments and is in closer proximity to the already established rural-residential allotments to the north of the subject site. The subject site adjoins the portion of Lot 1 DP359361 which is vacant land. There is an existing mature shelterbelt along the dividing boundary which buffers any activity within the subject site, which has been offered to be protected by way of consent notice condition. Lot 1 DP359361 will share a boundary with Proposed Lots 6 & 7 which are rural-residential lots and Proposed Lot 4/11. Proposed Lot 6 & 7 are of similar size to Lot 2 DP202022 which also adjoins Lot 1 DP359361. There are many similar sized lots within the vicinity of Lot 1 DP359361 which are of the same nature as the lots proposed. Due to the large separation distance between the proposed rural-residential allotments and the main activity within Lot 1 DP359361 (the Advance Build depot) as well as the fact that there are many established rural-residential allotments within the area as well as there being an existing mature shelterbelt between the two properties, it is considered that no reverse sensitivity effects will be created on Lot 1 DP359361 from this proposal. The proposal will see Lot 1 DP359361 adjoin two smaller rural-residential allotments, however, the 10 metre setback provision will remain along the dividing boundary such that any residential development within the lots will be set back the same distance that a dwelling could be established at present. The majority of the boundary with Lot 1 DP359361 will adjoin the balance lot of the subdivision which will contain the consented boat building factory, such that there is considered to be very little change as to what is currently in existence. Given the above, it is considered that no reverse sensitivity effects will be established with the creation of this proposal.



ACCESS TO RESERVES AND WATERWAYS

5.4.87 The site is not located near the CMA. The southern portion of the site does adjoin Kerikeri River. As the allotment which adjoins Kerikeri River (Lot 11 as part of Stage 2) will be less than 4 hectares in area, a 20metre esplanade reserve is proposed which will separate Lot 11 and Kerikeri River. This is depicted as Lot 12 on the Stage 2 scheme plan.

PROXIMITY TO AIRPORTS

5.4.88 Not applicable as the subject site is not located in close proximity to an airport.

NATURAL CHARACTER OF THE COASTAL ENVIRONMENT

5.4.89 The site is not within the coastal environment.

ENERGY EFFICIENCY AND RENEWABLE ENERGY DEVELOPMENT/USE

5.4.90 No energy efficient or renewable energy development are sought as part of this proposal.

NATIONAL GRID CORRIDOR

5.4.91 The site is not within a national grid corridor.

Summary

5.5 The subdivision will result in ten additional rural residential/lifestyle allotments being created over two stages, in an area with a number of rural residential activities which are already present. Each allotment will be of a size that can accommodate a future dwelling and associated infrastructure. The site has been classified as containing soils which are not highly versatile and as a result, as well as other factors, the site has been considered to not be suitable for horticulture or productive use. Due to similar sized allotments in the surrounding environment, it is considered there are no reverse sensitivity or incompatible land use activities created by the proposal. The proposal will enhance the rural amenity of the site and the area and provide better utilization of the land.

Land Use

5.6 The land use component of the proposal has been assessed as a Discretionary activity as per Rules 8.6.5.4 and 15.1.6C.2. The relevant criteria within Chapter 11 and 15.1.6C.4 of the District Plan will therefore to be used for assessment of the subdivision, in conjunction with the matters set out under Sections 104, 104B and 106 of the Resource Management Act 1991.

5.7 An assessment that corresponds with the scale and significance of the effects on the environment is provided below:

11.3 STORMWATER MANAGEMENT

5.7.1 As mentioned earlier in this report, Wilton Joubert have provided two tables within their report that detail the existing and proposed impermeable surfaces for the staged subdivision. Concept design areas for potential development within the vacant rural-residential allotments



have also been provided to indicate an approximate value of the impermeable surface coverage within each of these lots, when developed.

- 5.7.2 It is requested as part of this application, that consent is obtained for the area of impermeable surfaces indicated within Tables 4 & 5 of the Wilton Joubert Site Suitability Report to allow for future development within the proposed vacant rural-residential allotments. Stormwater design within the subdivision has been provided for to account for the attenuation required for the provided impermeable surface coverage.
- 5.7.3 Overall, WJ have included assessment and provided attenuation design for the existing impermeable surfaces on site, the proposed impermeable surfaces as part of the subdivision as well as future residential development on Lots 2-10 and future expansion of the boat building factory on Lot 11. It is considered that the stormwater detention pond designed by WJ will have adequate volume to account for all impermeable surfaces within Tables 4 & 5 of WJ's report and therefore, consent should be given for the impermeable surface coverages provided within these tables for each of the lots. If future development exceeds the allowances provided for, further attenuation design will be required at BC Stage, which can be noted as a consent notice condition on the new titles.
- 5.7.4 It is considered that with the recommendations from WJ's report being adhered to and implemented, anticipated stormwater runoff within the proposed subdivision will be adequately managed, with no adverse effects created.
- 5.7.5 WJ have completed a thorough assessment of Stormwater Management within their report as well as this being detailed earlier in the Subdivision section of this report. As such, to avoid reiteration throughout this report, further assessment is not considered to be required as all detail has been either covered within this report of WJ's Site Suitability Report.

11.6 SETBACK FROM BOUNDARIES

- 5.8 The proposal to subdivide triggers consent under the Operative District Plan, for dispensation for Lots 2 and 4-10 for a 3m setback rather than the permitted 10m setback from boundaries threshold in the Rural Production Zone. This setback will not be applied to all the boundaries of Lots 2-10, only the boundaries which show the 3m setback with the dashed lines on the scheme plan, which are the internal boundaries of the lots. **It is noted that setback dispensation is not being sought from any boundaries which adjoining existing allotments,** only the internal boundaries of the proposed rural-residential lots. Figure 18 below highlights the boundaries where a setback dispensation is being sought which are as follows –
- Lot 2 (Stage 1) – 3m setback from adjoining boundary with Lot 9
 - Lot 4 (Stage 2) – 3m setback from adjoining boundaries within Lots 3 & 4
 - Lot 5 (Stage 2) – 3m setback from adjoining boundary with Lot 4
 - Lot 6 (Stage 2) – 3m setback from adjoining boundary with Lot 5
 - Lot 7 (Stage 2) – 3m setback from adjoining boundary with Lot 8
 - Lot 8 (Stage 2) – 3m setback from adjoining boundaries with Lots 7 & 8
 - Lot 9 (Stage 2) – 3 metre setback from adjoining boundaries with Lots 8 & 2



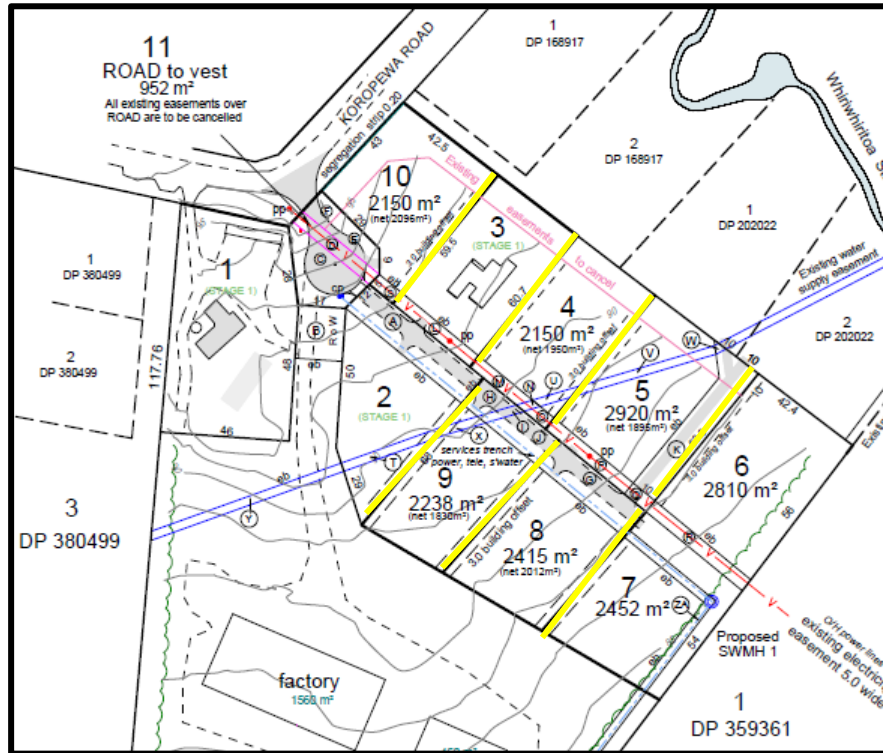


Figure 18: Image showing yellow boundaries where a 3m setback will be applied.

5.9 As such, consent is required for both Stages 1 & 2 to allow for a reduction in the permitted setback distances from the relevant boundaries for future development. Assessment of Chapter 11.6 has been undertaken below.

(a) Where there is a setback, the extent to which the proposal is in keeping with the existing character and form of the street or road, in particular with the external scale, proportions and buildings on the site and on adjacent sites.

(b) The extent to which the building(s) intrudes into the street scene or reduces outlook and privacy of adjacent properties.

(c) The extent to which the buildings restrict visibility for vehicle manoeuvring.

(d) The ability to mitigate any adverse effects on the surrounding environment, for example by way of street planting.

(e) The extent to which provision has been made to enable and facilitate all building maintenance and construction activities to be contained within the boundaries of the site.

5.9.1 The purpose of the proposed allotments are for rural-residential purposes. These allotments are less than 3000m² and are around 40-50 metres wide and therefore, a 10 metre setback is considered excessive in this instance. The Site Suitability Report from WJ has determined that the sites are of adequate size to cater for future residential built development as well as onsite services, which is the intention of the lots. Each lot will also be able to sustain a small outdoor area for private use. As has been discussed within this report, the character of the area is a mix of rural-residential lots through to rural lifestyle and larger rural production lots. The lots



directly adjoining the proposed rural-residential lots are of slightly larger than what is proposed however are utilised for rural-residential use. The setback dispensation is required from internal boundaries of the proposed allotments and will not affect adjoining existing allotments nor the form of the street or road, as the permitted 10 metre setback distance will be maintained from those boundaries. It is noted that under the Proposed District Plan, the permitted setback distance is to be 3 metres, with a 10 metre setback distance required from the boundary of a Rural Production zoned allotment. This is consistent with what is being proposed, as the internal boundaries will have a 3 metre setback, where they adjoin other rural-residential allotments and the 10 metre setback will be maintained from the larger lot to the east. As such, it is considered the proposal is in keeping with the character and form of the area as well as other buildings on adjacent sites.

- 5.9.2 As mentioned, the proposal is not anticipated to intrude into the street scene or reduce the outlook or privacy of adjacent sites, as the permitted 10 metre setback will be maintained along these boundaries.
- 5.9.3 There are no buildings sought as part of this consent and therefore vehicle manoeuvrability will be designed at the time of built development within the lots which will be designed around the proposed setback distances.
- 5.9.4 Planting is not considered required in this instance as no visual effects are anticipated. The proposed lots will be vacant and purchasers will be aware of the approved setbacks for the site and adjoining allotments prior to buying the land (if the client decides to on sell any lots). A 3 metre setback is consistent with rural-residential living such that further mitigation measures are not considered necessary at the subdivision stage.
- 5.9.5 As mentioned, the sites will be vacant and therefore maintenance and construction activities will be incorporated into the design once the lots are to be built on. The proposed lots are of ample size to cater for this.
- 5.10 Overall, it is considered that the proposed setback dispensation for the internal boundaries of the proposed rural-residential allotments will not create any adverse effects on the surrounding environment. This setback dispensation is consistent with rural-residential development and will allow ample separation distance between any future built development on the lots, whilst enabling the space to be maximised for a dwelling and associated services. The permitted 10 metre setback is considered excessive in this instance due to the intended purpose of the lots, however will be maintained along adjoining boundaries with existing allotments as well as road boundaries, to ensure the amenity of rural living is maintained.

11.24 BUILDING COVERAGE

- 5.11 As part of Stage 1, consent is sought for Lot 3, which will have a building coverage of 13%, just marginally above the permitted 12.5%. This building coverage includes the development consented for as part of RC2240001.



5.12 As part of Stage 2, Lot 11 will be the only allotment with built development (the boat factory) which equates to 5.9% of the total site area. However, due to the purpose of the smaller allotments being for rural-residential use with the lots anticipated to contain some form of residential development in the future, **it is requested that an allowance is provided for 15% of the total site area for Lots 4-10 as part of Stage 2 and Lot 2 as part of Stage 1, is provided for.** This will provide adequate area within each of the allotments for future residential development of the sites.

5.13 An assessment of Chapter 11.24 has been undertaken below.

(a) the ability to provide adequate landscaping for all activities associated with the site.

(b) the extent to which building(s) are consistent with the character and scale of the existing buildings in the surrounding environment.

(c) the scale and bulk of the building in relation to the site.

(d) the extent to which private open space can be provided for future uses.

(e) the extent to which the cumulative visual effects of all the buildings impact on landscapes, adjacent sites and the surrounding environment.

(f) the extent to which the siting, setback and design of building(s) avoid visual dominance on landscapes, adjacent sites and the surrounding environment.

(g) the extent to which landscaping and other visual mitigation measures may reduce adverse effects.

(h) the extent to which non-compliance affects the privacy, outlook and enjoyment of private open spaces on adjacent sites.

5.13.1 The proposed allotments are rural-residential in nature and are anticipated to be developed as such. As shown within RC224001, there is ample room outside of a standard sized dwelling for any future landscaping requirements, which can be designed at the time of built development within the lots.

5.13.2 The proposed rural-residential allotments are considered consistent with the existing character of the surrounding environment as has been discussed in depth throughout this report. Increasing the building coverage allowance of Lots 2 and 4 -10 to 15% will enable a decent sized family home to be built on the allotments as well as additional area for a garden shed or similar. This type of development is considered consistent with the built development in the area.

5.13.3 The scale and bulk of the buildings are unknown on Lots 2 and 4-10, however with the building coverage being minimally increased to 15% of the total site area, this will enable a decent sized family home on the lots that is not out of character with the surrounding area. The built development approved under RC2240001 which is to be contained within Lot 3, will slightly



breach the permitted amount for building coverage, however the house is considered of modest design and similar to those in the surrounding environment.

- 5.13.4 The lots are of adequate size to provide open space. 15% building coverage will see a building footprint of 323m² to 438m² on the proposed rural-residential allotments, leaving ample area for open space.
- 5.13.5 The cumulative effects on the surrounding environment are considered to be managed within the site boundaries. As has been discussed throughout this report, the proposal will create rural-residential allotments which are consistent with the surrounding development in the area. The slight increase in building coverage will enable a good-sized family home on the lots which will ensure the lots are utilized for their intended use. It is considered that due to the marginal increase of the building coverage allowance, cumulative effects will be less than minor.
- 5.13.6 The design of such buildings is not part of this application; however the 10 metre minimum setback distances will be maintained on boundaries which adjoin existing allotments and the road boundary to ensure there is no visual dominance on these allotments. The slight increase in building coverage is considered to be consistent with rural-residential living. Landscaping can be provided for at the time of built development on the lots as this will be dependent on the designs for each allotment.
- 5.13.7 As mentioned, the intended purpose of the lots is for rural-residential use. The slight increase of building coverage to 15% of the total site area is not considered to impact the privacy, outlook and enjoyment of private open spaces on adjacent sites within the development. The minimum 10 metre setback will be maintained on all other boundaries adjoining existing sites.
- 5.14 Overall, it is considered that the slight increase of the allowable buildable coverage from 12.5% to 15% will have less than minor adverse effects on the surrounding environment. This will see an increase of 53m² to 73m² of buildable area on the subject allotments, which is considered minor. Proposed Lot 3 will contain already consented development which has been shown to be adequately maintained within the proposed boundaries, whilst maintaining the 10 metre setback. It is considered that the allowance of 15% building coverage is consistent with rural-residential living and will enable a decent sized family home on the allotment, without creating the need for additional consents.

11.1 Scale of Activities

- 5.15 As part of Stage 1, the boat building factory will be contained within Lot 4 which has an area of 5.41ha and as part of Stage 2, this will be contained within Lot 11 which has an area of 3.518ha.
- 5.16 Consent for the boat building factory was granted under RC2300369 for 20 staff and 5 visitors per day. These numbers will not change as a result of the proposed subdivision. However, as the proposed subdivision will decrease the land area which the boat building factory is



contained within, it is considered that the proposal creates a technical breach in both Stages 1 & 2. The GBA of the boat building operation will not change nor will the layout of the activity. As such, the degree of non-compliance does not increase from what has been previously approved.

- 5.17 Therefore, as this rule is based on the net site area, a technical breach will be applied for under this rule for the boat building factory for both Stages 1 & 2. An assessment of Chapter 11.1 has been undertaken below.

(a) The character and appearance of building(s) and the extent to which the effects they generate can be avoided, remedied or mitigated, consistent with the principal activity on the site and with other buildings in the surrounding area.

(b) The siting of the building(s), decks and outdoor areas relative to adjacent properties and the road frontage, in order to avoid visual domination and loss of privacy and sunlight.

(c) The size, location and design of open space and the extent to which trees and garden plantings are utilised for mitigating adverse effects.

(d) The ability of the immediate environment to cope with the effects of increased vehicular and pedestrian traffic.

(e) The location and design of vehicular and pedestrian access, on site vehicle manoeuvring and parking areas and the ability of those to mitigate the adverse effects of additional traffic.

(f) Location in respect of the roading hierarchy – the activity should be assessed with regard to an appropriate balance between providing access and the function of the road.

(g) The extent to which hours of operation are appropriate in terms of the surrounding environment.

(h) Noise generation and the extent to which reduction measures are used.

(i) Any servicing requirements and/or constraints of the site – whether the site has adequate water supply and provision for disposal of waste products and stormwater.

(j) Whether the development is designed in a way that avoids, remedies or mitigates any adverse effects of stormwater discharge from the site into reticulated stormwater systems and/or natural water bodies.

(k) The ability to provide adequate opportunity for landscaping and buildings and for all outdoor activities associated with the residential unit(s) permitted on the site.

(l) The degree to which mitigation measures are proposed for loss of open space and vegetation.

(m) Any adverse effects on the life supporting capacity of soils.

(n) The extent of visual and aural privacy between residential units on the site and their associated outdoor spaces.

(o) Visual effects of site layout on the natural character of the coastal environment.



(p) The effect on indigenous vegetation and habitats of indigenous fauna.

(q) The extent to which the activity may cause or exacerbate natural hazards or may be adversely affected by natural hazards, and therefore increase the risk to life, property and the environment.

(r) Proximity to rural production activities and potential for incompatible and reverse sensitivity effects.

(s) When establishing a minor residential unit

(i) the extent of the separation between it and the principal dwelling;

(ii) the degree to which the design is compatible with the principal dwelling;

(iii) the extent that services can be shared;

(iv) the extent that the floor plan is fit for purpose;

(v) the extent to which landscaping is utilised to mitigate adverse effects;

(vi) the design of the building in regard to how easily it may be removed from a site should circumstances change.

(t) With respect to access to a State Highway (SH) that is a Limited Access Road, the effects on the safety and/or efficiency on any SH and its connections to the local roading network and the provision of written approval from the NZ Transport Agency.

5.17.1 While consent is required for a breach of Scale of Activities this is technical only, and no further buildings will be added nor will any additional employees/persons be introduced to the site in comparison to the previous land-use and variation proposals.

5.17.2 The site has large areas of open space available, with the lot being over 5.4 hectares as part of Stage 1 and over 3.5 hectares as part of Stage 2.

5.17.3 As no further people will be introduced to the site, there will be no increase in traffic.

5.17.4 No further people will be introduced to the site and as such no further traffic effects on the adjacent road are anticipated.

5.17.5 Hours of operation and noise generation are already governed by the underlying land-use consent. No changes to these are proposed.

5.17.6 The site has adequate servicing. Stormwater management will be slightly altered as discussed earlier in this report, however there is ample room for what is proposed. All stormwater runoff will be managed within the site boundaries as determined within the Site Suitability Report from WJ.



- 5.17.7 No mitigation measures for loss of open space are proposed as the area where the proposed rural-residential lots will be provided for was an unused area for the boat building factory. There is sufficient open space on site.
- 5.17.8 The site has already been approved for boatbuilding activities. The site was found to have soils which are not highly versatile and the land is unsuitable for most horticulture and productive activities. Therefore, there are no adverse effects on the life supporting capacity of soils anticipated.
- 5.17.9 No residential units are proposed. The site is not within the coastal environment. No indigenous flora or fauna will be impacted. No natural hazards will be impacted. The boat building factory is already consented and there will be no change to this. No minor units are sought.
- 5.17.10 The site is not accessed off a State Highway.

15.1.6C.4.1 PROPERTY ACCESS

- 5.18 As part of Stage 2, Easements C, D, E & F will service 13 household equivalents and Easement A will service 10 household equivalents and therefore results in a breach of FNDC rule *15.1.6C.1.1 Private Accessways in all zones (c) and (d)*, as these easements are proposed to remain a private accessway rather than being vested as public road. It is worth noting that this breach occurs within Easement A as the existing ROW located along the northern boundary of the site, which services adjoining Lots 1 & 2 DP202022 is to be cancelled, and access to these sites will be via the proposed ROW, creating 10 users.
- 5.19 It was originally proposed that Easements C, D, E & F be vested as public road, however NTA were not supportive of this and recommended that this portion of access remain private.
- 5.20 As such, a breach occurs and therefore assessment of 15.1.6C.4.1 has been undertaken below.
- (a) Adequacy of sight distances available at the access location.*
- 5.20.1 WJ completed an assessment of sight distances within Section 11.5 of their report and found that the sight distances from the existing vehicle access meets the requirements under the FNDC Engineering Standards.
- (b) Any current traffic safety or congestion problems in the area.*
- There are no current safety or congestion problems known in the area.
- (c) Any foreseeable future changes in traffic patterns in the area.*
- 5.20.2 The surrounding environment is already developed with rural-residential allotments and therefore, the surrounding environment already caters for such activities. There are no



foreseeable future changes in traffic patterns in the area and it is considered that the increased vehicular movements will be easily absorbed in to the existing roading network.

(d) Possible measures or restrictions on vehicle movements in and out of the access.

5.20.3 The private accessway will be double width for the entire length of Easement A as well as Easements H, I J and G, which do not carry as many vehicles. This will ensure that vehicles can safely move in and out of the access.

(e) The adequacy of the engineering standards proposed and the ease of access to and from, and within, the site.

5.20.4 The proposed accessway widths are provided for within Section 11 of the Site Suitability Report from WJ. The proposed private accessway carriageway and legal widths have been designed in accordance with proposed FNDC District Plan Tran-Table 9 and Table 3-16 of the FNDC Draft Engineering Standards 2023. These tables require a wider legal and carriageway width in regard to private accessways, then the Operative Far North District Plan. Therefore, the proposed widths exceed the widths stated in Appendix 3B-1 in Part 4 of the Operative Plan.

(f) The provision of access for all persons and vehicles likely to need access to the site, including pedestrian, cycle, disabled and vehicular.

5.20.5 As mentioned, the private accessway will be double width and have a legal width of 10 metres, allowing adequate room for all persons and vehicles. The access will also be designed to accommodate heavy rigid vehicles.

(g) The provision made to mitigate the effects of stormwater runoff, and any impact of roading and access on waterways, ecosystems, drainage patterns or the amenities of adjoining properties.

5.20.6 All stormwater will be managed within the site boundaries and has been accommodated for within the Site Suitability Report from WJ.

(h) For sites with a road frontage with Kerikeri Road between its intersection with SH10 and Cannon Drive:

- (i) the visual impact of hard surfaces and vehicles on the natural character;*
- (ii) the cumulative effects of additional vehicle access onto Kerikeri Road and the potential vehicle conflicts that could occur;*
- (iii) possible use of right of way access and private roads to minimise the number of additional access points onto Kerikeri Road;*
- (iv) the vehicle speed limit on Kerikeri Road at the additional access point and the potential vehicle conflicts that could occur.*



- (v) (i) *The provisions of the roading hierarchy, and any development plans of the roading network.*

5.20.7 The site does not have access to Kerikeri Road.

(j) The need to provide alternative access for car parking and vehicle loading in business zones by way of vested service lanes at the rear of properties, having regard to alternative means of access and performance standards for activities within such zones.

5.20.8 The proposal does not involve business zones.

(k) Any need to require provision to be made in a subdivision for the vesting of reserves for the purpose of facilitating connections to future roading extensions to serve surrounding land; future connection of pedestrian accessways from street to street; future provision of service lanes; or planned road links that may need to pass through the subdivision; and the practicality of creating such easements at the time of subdivision application in order to facilitate later development.

5.20.9 It is considered that the proposed accessway will only be utilised for the allotments as part of this subdivision. No connections to other roads can be made within the site and as such this is not applicable to the subdivision.

(l) Enter into agreements that will enable the Council to require the future owners to form and vest roads when other land becomes available (consent notices shall be registered on such Certificates of Title pursuant to Rule 13.6.7).

5.20.10 Not applicable to the proposal.

(m) With respect to access to a State Highway that is a Limited Access Road, the effects on the safety and/or efficiency on any SH and its connection to the local road network and the provision of written approval from the New Zealand Transport Agency.

5.20.11 Access is not from a State Highway.

5.20.12 Overall, the proposal will see Easement A of Stage 2 service 10 users, due to the cancellation of the existing ROW along the northern portion of the site. Easements C, D, E & F will service 13 users, and although this portion was proposed to be vested as road, NTA were not supportive of this and recommended that it remain as private access. The proposed access is considered the most suitable design for the site and eliminates a redundant existing easement and upgrades to a double width accessway which will provide a more practical and safer approach. Due to the sizes of the sites which will utilise the private accessway, further subdivision is not considered an option and therefore additional users from what is proposed is not considered likely in the future. As such, the private accessway will remain private in a sense and maintenance and use of this accessway will be the responsibility of the users of the road, rather than the FNDC.

Resolution under s243(e) – Revoking of Easement

5.21 There is an existing ROW easement along the northern boundary of the site which contains the existing driveway to Lots 1 & 2 DP202022. This ROW easement is contained within



Document D513440.4, which is registered on the subject title and allows access to Lots 1 & 2 DP202022.

- 5.22 As a result of Stage 2 of this proposal, Lots 1 & 2 DP202022 will gain access via the new private accessways created as part of this subdivision. Therefore, there is no need for the existing ROW easements which are contained within D513440.4 and therefore, it is requested that this is revoked as part of this proposal.
- 5.23 Section 243(e) states the following
Where a subdivision consent is granted or any record of title is issued subject to a condition that any specified easements be granted or reserved, the following provisions apply:

(e) the territorial authority may at any time, whether before or after the survey plan has been deposited in the Land Registry Office or the Deeds Register Office, revoke the condition in whole or part.
- 5.24 It is therefore requested that a Section 243(e) certificate is also issued to revoke right of way Document D513440.4.

Variation to Consent Conditions

- 5.25 As mentioned, there are existing approved consents for activities within the site. These include the boat building business, which will be contained within the balance lot and the approval for a second dwelling, which will be contained within Proposed Lot 3 as part of Stage 1.
- 5.26 For the purpose of consistency for the existing resource consents and to ensure the decisions are up to date, we will need to amend the conditions of consent to reflect the updated stormwater mitigation methods, to avoid any confusion in future. These variations will need to be assessed and read in conjunction with the subdivision and land use component of this resource consent.
- 5.27 The change to the conditions will result in effects materially similar to those that are existing. The variation will not increase the scale of intensity, or traffic intensity relating to the initial resource consent. It is simply to ensure the plans and reports referenced in the decision reflect the updated plans and reports, which will be approved as part of the land use and subdivision to ensure consistency between resource consents. As such, the degree of non-compliance does not increase, and the proposal is therefore within the scope of a change to consent conditions pursuant to Section 127 of the Resource Management Act 1991.

RC 2300369-RMAVAR/A

- 5.28 RMAVAR/A – 2300369 sought to *amend condition 1 of RC 2300369-RMALUC being a consent to construct a building and establish a boat building business breaching Traffic Intensity and Scale of Activities in the Rural Production Zone. The amendment is to increase the size of the boat building shed by 148m² (10%) to accommodate a smoko room patio and a covered store entrance.*



5.29 Consent is sought to change the following conditions of RC 2300369-RMALUC.

Condition 2

The consent holder shall, prior to the construction of the building or site development works commencing, clearly identify the extent of flooding (e.g. onsite visible markers) on the property, to ensure that the earthworks, proposed building and stormwater management associated with RC2300369 RMAVAR/A & B and mitigation system are located outside of this area.

Some earthworks are required within the flood hazard extent as part of Stage 2. These works involve the construction of the level spreader (approx. 64.8m³ of cut), as part of Stage 2 of the proposed subdivision. As such, it is requested that it is clear that this condition only relates to the works associated with this subject consent (RC2300369), as works required within the flood extent will be dealt with as part of the subject subdivision consent being applied for. This will ensure that the works associated with RC2300369 RMAVAR/A & B are not held up because of the subdivision works.

Condition 5

*The consent holder shall within 3 months of the issue of this consent upgrade the existing western entrance (adjacent to 33 Koropewa Rd vehicle crossing) to comply with the Council's Engineering Standard FNDC/S/2, and section 3.3.17 of the Engineering Standard and NZS4404:2004. Seal or concrete the entrance plus splays for a minimum distance of 5m from the existing seal edge. Removal of vegetation is required on bend to improve sight line distances, and improvement of grade to meet vehicle breakover requirements. This entrance shall remain single width, and is not to be used by commercial vehicles. Note: A corridor access request and traffic management plan approval will be required from Northern Transport Alliance (NTA) prior to commencing work in the legal road. **Upgrading of this crossing will not be required if the crossing is closed permanently as part of the subdivision application under RC XXXXXXX. Closing of this crossing place shall also include any reinstatement of any fenceline.***

As part of Stage 1 of the proposed subdivision, this crossing place will be permanently closed and fencing reinstated. It is unnecessary for the crossing place to be upgraded if it is to be closed in the near future. As such, it is requested to include in the condition that if the crossing is permanently closed, with fencing reinstated then upgrading of the crossing is not required.

Condition 6

The consent holder shall prior to the occupation of proposed building or activity commencing provide to Council's Development Engineer or designate for approval a specific design prepared by a suitably qualified engineer for upgrading the existing vehicle crossing (current entrance to R.O.W on bend to 29 Koropewa Rd to a concreted double width commercial vehicle crossing (see associated Advice Notes below).



Consultation has been had with NTA to confirm if this standard would still be required or if a double width commercial crossing would not be required. We are yet to receive a response. Therefore, it is unconfirmed if a variation to this condition is required.

RC 2230218-RMALUC

5.30 RC2230218 included the following activity *To construct a second shed for the purposes of storing materials associated with the Boat Building Activity in the Rural Production Zone breaching Traffic Intensity as a Discretionary Activity.*

5.31 Consent is sought to change the following conditions of RC 2230218-RMALUC.

Condition 4

The commercial vehicle crossing shall be constructed in accordance with conditions 6 and 7 of RC 2300369-RMAVAR/A prior to the Code of Compliance being issued for the shed.

Consultation has been had with NTA to confirm if this standard would still be required or if a double width commercial crossing would not be required. We are yet to receive a response. Therefore, it is unconfirmed if a variation to this condition is required.

RC2240001 – RMALUC

5.32 RC2240001 included the following activities –

Activity A:

To construct a dwelling breaching Stormwater Management in the Rural Production Zone.

Activity B:

To construct a dwelling changing the use of a piece of land under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations 2011

Condition 3

3. Within 2 months of the Code of Compliance being issued for the proposed dwelling, the consent holder shall either:

a. Remove the facilities within the existing shed which result in the building being defined as a 'residential unit'; or

b. Obtain resource consent to allow for the second residential unit on the site; or

c. Provide confirmation to Council's resource consents monitoring officer that the building can comply with the permitted standards in the District Plan for 'Residential Intensity'.

d. Provide evidence that the building approved under RC2240001 is contained within an independent Title as part of RCXXXXXXX and is the only dwelling on the allotment.

5.33 As part of the Stage 1 of the proposed subdivision, the dwelling approved under RC2240001 will be contained within the boundaries of Proposed Lot 3. This is intended to be the only dwelling on the site. Additional breaches that are created by containing the dwelling within



Proposed Lot 3 are being addressed as part of this application (Stormwater Management and Building Coverage). As the building under RC2240001 will be the only dwelling within Proposed Lot 3, it is considered that if the applicant can produce the title for the newly created allotment, showing that it contains the dwelling, then this condition will be adhered to. If the dwelling under RC2240001 is completed prior to the issuing of title for Lot 3, then either a, b or c will have to be complied with. The intention of this condition is to ensure that the parent site does not contain two residential dwellings at the same time. The inclusion of Option d ensures this.

Summary

- 5.34 The change to the conditions will result in effects materially similar to those existing. The variation will not increase the scale of intensity, or traffic intensity relating to the initial resource consents. It is simply to ensure the approved decisions reflect any works that are to be undertaken as part of this subject application. This will ensure consistency between resource consents. As such, the degree of non-compliance does not increase, and the proposal is therefore within the scope of a change to consent conditions pursuant to Section 127 of the Resource Management Act 1991.

NES:CS

- 5.35 The proposal is a Controlled activity as per regulation 9(3) of the NES. The criteria within 9(4) is therefore to be used for assessment of the non-compliance, in conjunction with the matters set out under Sections 104 & 104A of the Resource Management Act 1991. An assessment that corresponds with the scale and significance of the effects on the environment is provided below:

9(4)The matter over which control is reserved is the adequacy of the detailed site investigation, including—

- *(a) site sampling:*
- *(b) laboratory analysis:*
- *(c) risk assessment.*

- 5.35.1 The sampling has been undertaken in accordance with the regulation guideline documents. The testing has been sent through to an accredited lab. The risk of the proposal is negligible given that the test results show that the contaminants on site will not cause a risk to human health.

Summary

- 5.36 The subdivision will result in 10 rural-residential allotments. The soil contaminant standards have been assessed as acceptable for the activity which includes the proposed earthworks associated with the subdivision works over both Stages 1 & 2; therefore, the effects of this proposal are considered to be no more than minor on human health.



Other Matters

Precedence

- 5.37 The site is located within 400m of the Residential zone, 450m of the Commercial zone and 430m of the Industrial zone. Generally, areas adjacent to urban zones are set aside as a transition area such as a lifestyle zone. This is to reduce the potential of adverse effects of farming to residential zones and vice versa. A transitional zone ensures that both rural and residential activities can co-exist with a larger boundary separation for habitable structures and less housing density in comparison to an urban zone. Transitional zones are generally applied to areas where existing subdivision patterns have led to a semi urban character but where more intensive subdivision would result in adverse effects on the rural and natural environment. On the ground commercial/industrial activities are located between these urban zones and the subject site i.e., Advance Build – House building factory, Containers – Storage, hire and sales, and Akatere Plant Centre. Some of these commercial activities immediately adjoin the subject property as well as the property being approved to contain a boat building factory. Adjacent to these commercial/industrial activities are small rural-residential and lifestyle properties which are consistent with this proposal. While physically the area operates as a transitional area between town and country the underlying zoning does not reflect this.
- 5.38 Furthermore, the site is well screened by an existing shelterbelt along Koropewa Road such that in terms of a visual appearance to people passing by, there won't be much of a change. Written approval has also been obtained from the adjoining four rural-residential allotments to the north of the site.
- 5.39 The soil on site has undergone testing recently which has confirmed that its properties place its versatility as not highly versatile, despite what has been mapped. Due to the soil structure within the site, the site is prone to flooding and therefore unsuitable for most market gardening and livestock use. AgFirst determined within their report that *'the parcel of land has insufficient horticultural potential and has insufficient usable land to attract commercial investment in horticulture, even if the soil limitations could be mitigated.'* Therefore, rendering the site to have limited, if any, productive potential.
- 5.40 Moreover, to the above, with the soil not being suitable for productive activities and the site being located adjacent to smaller allotments, which are also utilized for rural residential use, establishing a productive use on the site would not only be difficult, but may result in adverse impacts on those neighbouring allotments. This is an area which is already well developed on the fringe of the Waipapa Township. A boat building factory has also been approved to be constructed on the site, with construction currently underway. This building takes up a large portion of the site, inhibiting any productive use. The site is unable to be utilised for production given the items discussed above.
- 5.41 NTA have provided their approval to the proposal and advised it would be preferable for the entire accessway to remain as private rather than public road. Sight distances from the existing crossing place have been deemed to meet the required standards. All accessways will be



constructed in accordance with the relevant standards, with design being provided for by a suitably qualified person.

- 5.42 Overall, it is considered that the proposal does not set a precedence due to the combination of factors described above which restrict and inhibit the rural productive use of the site.

6.0 Policy Documents

- 6.1 In accordance with section 104(1)(b) of the Act the following documents are considered relevant to this application.

National Environmental Standards

- 6.2 As discussed in the sections above the proposal is controlled in terms of the National Environmental Standard for Assessing and Managing Contaminants in Soil to protect Human Health (NESCS) and permitted in terms of all other relevant documents. The NESCS has no objectives and policies, however its aim is to ensure contaminated land is identified and remediated such that appropriate development is undertaken. In this case the land in question has contaminant levels which will not impact on human health. As such meeting the aim of the legislation.

National Policy Statements

- 6.3 There are currently 7 National Policy Statements in place. These are as follows:
- National Policy Statement on Urban Development.
 - National Policy Statement for Freshwater Management.
 - National Policy Statement for Renewable Electricity Generation.
 - National Policy Statement on Electricity Transmission.
 - New Zealand Coastal Policy Statement.
 - National Policy Statement for Highly Productive Land
 - National Policy for Indigenous Biodiversity
- 6.4 It is considered that only the National Policy Statement for Highly Productive Land is relevant to this proposal. The other National Policy Statements are not considered applicable to this application including the Coastal Policy Statement as the development is not located within or in close proximity to the coastal environment.

National Policy Statement for Highly Productive Land

- 6.5 The NPS for HPL has one objective and 9 policies. These all relate to sites which are classified as having highly productive land. Highly Productive Land is defined as –
- highly productive land means land that has been mapped in accordance with clause 3.4 and is included in an operative regional policy statement as required by clause 3.5 (but see clause 3.5(7) for what is treated as highly productive land before the maps are included in an operative regional policy statement and clause 3.5(6) for when land is rezoned and therefore ceases to be highly productive land)***



- 6.6 As this is a new NPS the Regional Policy Statement is yet to map highly productive land and as such in assessing this, we refer to clause 3.5(7).

3.5(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.*

- 6.7 The site is zoned rural production, and the site has a land use classification within Far North Maps which considers the site to meet the definition of being 'Highly Productive Land'. FNDC maps has identified the site as highly productive, however unfortunately the maps are not 100% accurate.

- 6.8 A report has been provided for this application which concludes that the site has a land use classification of LUC 4s2 at best. This is not considered highly productive land under the NPS-HPL and therefore the development is consistent with the objectives and policies of the NPS HPL.

Regional Policy Statement

- 6.9 The role of The Regional Policy Statement is to promote sustainable management of Northland's natural and physical resources by providing an overview of the regions resource management issues and setting out policies and methods to achieve integrated management of Northland's natural and physical resources.

- 6.10 An assessment of this subdivision in terms of relevant objectives and policy documents has been undertaken below:

Water Quality

Objective 3.2 Region-wide water quality

Improve the overall quality of Northland's fresh and coastal water with a particular focus on:

- (a) Reducing the overall Trophic Level Index status of the region's lakes;*
- (b) Increasing the overall Macroinvertebrate Community Index status of the region's rivers and streams;*
- (c) Reducing sedimentation rates in the region's estuaries and harbours;*
- (d) Improving microbiological water quality at popular contact recreation sites, recreational and cultural shellfish gathering sites, and commercial shellfish growing areas to minimise risk to human health; and*



(e) Protecting the quality of registered drinking water supplies and the potable quality of other drinking water sources.

Policy 4.2.1 Improving overall water quality

Improve the overall quality of Northland's water resources by:

(a) Establishing freshwater objectives and setting region-wide water quality limits in regional plans that give effect to Objective 3.2 of this regional policy statement.

(b) Reducing loads of sediment, nutrients, and faecal matter to water from the use and development of land and from poorly treated and untreated discharges of wastewater; and

(c) Promoting and supporting the active management, enhancement and creation of vegetated riparian margins and wetlands.

6.10.1 The proposal is not considered to adversely affect any fresh and coastal waters. Kerikeri River does adjoin the southernmost portion of the site, however the proposed rural-residential allotments will be located within the northernmost portion of the site, furthest from Kerikeri River. All stormwater from the proposed subdivision development as well as anticipated residential development within the rural-residential allotments will be managed on site, with allowances provided for within WJ's report. Erosion and sediment runoff resulting from the subdivision activities will be managed. Future development is unlikely to trigger any adverse effects of water quality, given its location. Overall, the effects of this development are likely to be positive.

Economic Wellbeing

3.5 Enabling Economic Wellbeing

Northland's natural and physical resources are sustainably managed in a way that is attractive for business and investment that will improve the economic wellbeing of Northland and its communities.

6.10.2 The natural and physical resources on the site will be sustainably managed through enabling the use of this land. The economic wellbeing will be enhanced through the development and future habitation of the allotments. As has been mentioned, the applicant has an established boat building business, with the new factory being built on the subject site. The applicant has had difficulties finding employees due to the specialist set of skills required meaning most suitable employees are located outside of the immediate area. The potential candidates then have difficulty finding a home to relocate themselves and their families to, due to the shortage of land and houses available in the area and therefore are unable to take the employment opportunity. The applicant intends to on sell some of the proposed allotments to future employees or else build dwellings himself on the allotments and rent these to future employees. This will greatly improve the economic wellbeing of the community and provide attractive incentives for business and investment.

Reverse Sensitivity and Productive Soils

3.6 Economic activities – reverse sensitivity and sterilisation

The viability of land and activities important for Northland's economy is protected from the negative impacts of new subdivision, use and development, with particular emphasis on either:

(a) Reverse sensitivity for existing:



- (i) Primary production activities;*
- (ii) Industrial and commercial activities;*
- (iii) Mining*; *Includes aggregates and other minerals. or*
- (iv) Existing and planned regionally significant infrastructure; or*
- (b) Sterilisation of:*
 - (i) Land with regionally significant mineral resources; or*
 - (ii) Land which is likely to be used for regionally significant*

5.1.1 Planned and coordinated development

Subdivision, use and development should be located, designed and built in a planned and co-ordinated manner which:

- (a) Is guided by the 'Regional Form and Development Guidelines' in Appendix 2;*
- (b) Is guided by the 'Regional Urban Design Guidelines' in Appendix 2 when it is urban in nature;*
- (c) Recognises and addresses potential cumulative effects of subdivision, use, and development, and is based on sufficient information to allow assessment of the potential long-term effects;*
- (d) Is integrated with the development, funding, implementation, and operation of transport, energy, water, waste, and other infrastructure;*
- (e) Should not result in incompatible land uses in close proximity and avoids the potential for reverse sensitivity;*
- (f) Ensures that plan changes and subdivision to / in a primary production zone, do not materially reduce the potential for soil-based primary production on land with highly versatile soils¹⁰, or if they do, the net public benefit exceeds the reduced potential for soil-based primary production activities; and*
- (g) Maintains or enhances the sense of place and character of the surrounding environment except where changes are anticipated by approved regional or district council growth strategies and / or district or regional plan provisions.*
- (h) Is or will be serviced by necessary infrastructure.*

5.1.3 Avoiding the adverse effects of new use(s) and development

Avoid the adverse effects, including reverse sensitivity effects of new subdivision, use and development, particularly residential development on the following:

- (a) Primary production activities in primary production zones (including within the coastal marine area);*
- (b) Commercial and industrial activities in commercial and industrial zones;*
- (c) The operation, maintenance or upgrading of existing or planned¹³ regionally significant infrastructure¹⁴; and*
- (d) The use and development of regionally significant mineral resources¹⁵.*

6.10.3 Throughout this application we have covered off the issues listed within Part A Regional form and development guidelines. Part B urban design guidelines and Part C Māori Urban design principles are not applicable to this subdivision.

6.10.4 The site does not contain significant mineral resources or regionally significant infrastructure nor is it set aside of this purpose in the future. The report completed by Agfirst has confirmed the site does not contain versatile soils therefore, it is considered that due to the physical



constraints of the site, the site is unable to boast any feasible rural productive activities. The proposal is considered to be the best use of the site.

6.10.5 In regard to existing primary production activities, the site adjoins rural-residential/lifestyle allotments on the northern and western boundaries. The allotments adjoining the northern boundary are utilised for residential use and have provided their approval to the subdivision. The allotments to the west are located over 100 metres from the proposed rural-residential allotments and are separated by the existing boat building factory and the existing development within Proposed Lot 1, such that what is currently perceived from these sites will remain unchanged. Furthermore, there is an existing shelterbelt along the westernmost boundary which will visually mitigate any effects. The allotment to the East contains the Advance Build depot as well as some additional land utilised for small scale productive use. It is noted that there is existing residential development in closer proximity to the Advance Build depot than the proposed rural-residential allotments, such that effects are considered to be consistent with what is already in the surrounding environment. The Advance build depot was constructed only recently, with the existing residential developments on adjoining allotments (the allotments to the north of the subject site) being in existence prior to the depot being built. As has been discussed, the proposal is considered consistent with development in the area and therefore no additional reverse sensitivity effects are anticipated as residential development is existing in the area in closer proximity to the Advance Build site. In this case, the horse has already bolted, with the proposal not introducing any new activity to the area. Furthermore, there is an existing mature shelterbelt along the eastern boundary of the site which is to remain.

6.10.6 The cumulative effects of this subdivision are considered acceptable in this case, as the development is located within a rural residential/lifestyle area. The proposal will see an additional 10 rural-residential allotments created in the area. Cumulative effects could relate to stormwater management, which as addressed within the report from WJ, and will be adequately managed on site. Stormwater management has been addressed as part of the subdivision development as well as anticipated future residential development within the allotments. Accounting for future development of the lots at the initial design stage ensures that cumulative effects are addressed, and any implications are dealt with. Traffic could be noted as creating cumulative effects, however NTA have been contacted as part of this proposal and were in support of the proposal. The additional crossing place to Lot 1 will be closed to ensure all traffic is entering and exiting the site at the same location. Sight distances can adequately be met. All accessways will be constructed to the required standards, which includes a double width accessway where the accessway serves 6 or more HEs. A conservative legal width of 10 metres has been provided for to ensure the rural amenity of the site is maintained. Cumulative effects in regard to building coverage have been considered and are not considered to create long term implications. As mentioned, the site is in an area which has been heavily developed with similar sized allotments and due to the close proximity to the Waipapa township which includes residential, commercial and industrial activities, the area is more of a transition zone, which is what the existing development in the area reflects. The proposed rural-residential allotments will be set back a sufficient distance from Koropewa Road, with only Lots 1 & 10 having road frontage. Lot 1 contains the existing development and



hence what is currently in existence will remain unchanged. The existing shelterbelts on site will also provide visual mitigation. As such, it is considered that additional built development on the site will not be out of character with the immediate area.

- 6.10.7 The soil on site has undergone testing recently which has confirmed that its properties place its versatility as not highly versatile, despite what has been mapped. Due to the soil structure within the site, the site is prone to flooding and therefore unsuitable for most market gardening and livestock use. AgFirst determined within their report that *'the parcel of land has insufficient horticultural potential and has insufficient usable land to attract commercial investment in horticulture, even if the soil limitations could be mitigated.'* Therefore, rendering the site to have limited, if any, productive potential. The proposal is therefore considered the best use of the land.
- 6.10.8 The proposal will maintain and enhance the sense of place by utilising a non-productive lot to provide for future housing in an area which has seen development of similar sized allotments. Only one access point will service the entire subdivision, which ensures that there are not a number of different crossing places from Koropewa Road. Therefore, what is currently perceived from Koropewa Road will effectively remain the same. Shelterbelts along the external boundaries of the site are to be maintained as well the permitted 10 metre setback distances along boundaries which adjoin existing allotments.
- 6.10.9 Infrastructure will be provided as part of the subdivision for access and stormwater. Wastewater will be designed at the time of built development of the lots, however WJ have determined each site is suitable for onsite wastewater systems. Water supply will also be provided for at the time of built development, with this being via rainwater harvesting to tanks. Energy supply will also be provided for as part of the subdivision process.

Natural Hazard Risk

The risks and impacts of natural hazard events (including the influence of climate change) on people, communities, property, natural systems, infrastructure and our regional economy are minimised by:

- (a) Increasing our understanding of natural hazards, including the potential influence of climate change on natural hazard events;*
- (b) Becoming better prepared for the consequences of natural hazard events;*
- (c) Avoiding inappropriate new development in 10 and 100 year flood hazard areas and coastal hazard areas;*
- (d) Not compromising the effectiveness of existing defences (natural and man-made);*
- (e) Enabling appropriate hazard mitigation measures to be created to protect existing vulnerable development; and*
- (f) Promoting long-term strategies that reduce the risk of natural hazards impacting on people and communities.*
- (g) Recognising that in justified circumstances, critical infrastructure may have to be located in natural hazard-prone areas.*

7.1.1 Policy – General risk management approach



Subdivision, use and development of land will be managed to minimise the risks from natural hazards by:

- (a) Seeking to use the best available information, including formal risk management techniques in areas potentially affected by natural hazards;*
- (b) Minimising any increase in vulnerability due to residual risk;*
- (c) Aligning with emergency management approaches (especially risk reduction);*
- (d) Ensuring that natural hazard risk to vehicular access routes and building platforms for proposed new lots is considered when assessing subdivision proposals; and*
- (e) Exercising a degree of caution that reflects the level of uncertainty as to the likelihood or consequences of a natural hazard event.*

7.1.2 Policy – New subdivision and land use within 10-year and 100- year flood hazard areas
New subdivision, built development (including wastewater treatment and disposal systems), and land use change may be appropriate within 10-year and 100-year¹⁹ flood hazard areas provided all of the following are met:

- (a) Hazardous substances will not be inundated during a 100-year flood event.*
- (b) Earthworks (other than earthworks associated with flood control works) do not divert flood flow onto neighbouring properties, and within 10-year flood hazard areas do not deplete flood plain storage capacity;*
- (c) A minimum freeboard above a 100-year flood event of at least 500mm is provided for residential buildings.*
- (d) Commercial and industrial buildings are constructed so as to not be subject to material damage in a 100 year flood event.*
- (e) New subdivision plans are able to identify that building platforms will not be subject to inundation and / or material damage (including erosion) in a 100-year flood event;*
- (f) Within 10-year flood hazard areas, land use or built development is of a type that will not be subject to material damage in a 100-year flood event; and*
- (g) Flood hazard risk to vehicular access routes for proposed new lots is assessed.*

7.1.6 Policy – Climate change and development

When managing subdivision, use and development in Northland, climate change effects will be included in all estimates of natural hazard risk, taking into account the scale and type of the proposed development and using the latest national Regional Policy Statement for Northland Page 122 of 178 guidance and best available information on the likely effects of climate change on the region or district.

- 6.11 The southern portion of the site contains an area subject to 1 in 100 yr flood hazard events. All development will be located outside of this area, including all access. The proposed rural-residential lots are located furthest from this area. No diversion of flood flow is anticipated on neighbouring properties, as the area subject to flood hazard will remain unchanged and all stormwater runoff will be adequately managed within the site boundaries. All building sites are located outside of the flood hazard area as the rural-residential lots are not subject to any flood hazard. WJ have accounted for climate change within their report.
- 6.12 It can be concluded from the above that the proposal is generally compatible with the intent of the Regional Policy Statement. The proposal will effectively utilise the site, which cannot be economically utilised as productive land, as well as maintain the amenity values of the area.



The proposal is not considered to create any reverse sensitivity effects and can provide suitable building platforms within the new allotments.

Far North District Plan

Relevant objectives and policies

- 6.13 The relevant objectives and policies of the Plan are those related to the Rural Environment, the Rural Production Zone, the subdivision and Transportation chapter. The proposal is considered to create no more than minor adverse effects on the rural environment. The activity it is considered generally consistent with the objectives and policies of the Plan, as per below.

Assessment of the objectives and policies within the Rural Environment

- 6.14 The following assessment is based upon the objectives and policies contained within section 8.3 and 8.4 of the District Plan.

Objectives

8.3.1 To promote the sustainable management of natural and physical resources of the rural environment.

8.3.2 To ensure that the life supporting capacity of soils is not compromised by inappropriate subdivision, use or development.

8.3.3 To avoid, remedy or mitigate the adverse and cumulative effects of activities on the rural environment.

8.3.4 To protect areas of significant indigenous vegetation and significant habitats of indigenous fauna.

8.3.5 To protect outstanding natural features and landscapes.

8.3.6 To avoid actual and potential conflicts between land use activities in the rural environment.

8.3.7 To promote the maintenance and enhancement of amenity values of the rural environment to a level that is consistent with the productive intent of the zone.

8.3.8 To facilitate the sustainable management of natural and physical resources in an integrated way to achieve superior outcomes to more traditional forms of subdivision, use and development through management plans and integrated development.

8.3.9 To enable rural production activities to be undertaken in the rural environment.

8.3.10 To enable the activities compatible with the amenity values of rural areas and rural production activities to establish in the rural environment.

- 6.14.1 The sustainable management of natural and physical resources takes the needs of the present and future generations while at the same time ensuring our natural resources are not depleted. In this case, the natural resource are the soils, which have been determined to not be highly versatile and unsuitable for productive use. The proposed development is considered to provide for present and future generations.



- 6.14.2 Given the above, the development is not considered to compromise the life supporting capacity of soils.
- 6.14.3 Cumulative impacts of this development have been assessed as no more than minor given that the site is already surrounded by rural residential and lifestyle allotments, the subject property has already been removed from production and the site size is such that productive activities could not be undertaken. Stormwater management and wastewater for future development of the lots can be adequately managed within the site. Approval from NTA has been obtained and hence traffic impacts are considered to be less than minor.
- 6.14.4 The site is not known to contain any areas of significant vegetation or habitats of indigenous fauna, nor any outstanding features and landscapes.
- 6.14.5 As discussed throughout this report, the subject site adjoins rural residential and lifestyle allotments. The larger allotment to the east contains the Advance Build depot as well as vacant land which is utilised for small scale productive use. The majority of this boundary will adjoin the balance lot, with only two rural-residential lots being created along this boundary in Stage 2. A 10 metre setback will be maintained from the dividing boundary. There is also mature vegetation along this boundary, which has been offered to be protected by way of consent notice condition, which will visually obscure the two new rural-residential allotments adjoining this subject boundary. This adjoining allotment also adjoins existing rural-residential lots which are in closer proximity to the Advance Build depot than the proposed allotments and therefore it can be considered that effects will not change from what is currently in existence and the addition of additional rural-residential allotments located a further distance from the Advance Build depot will not create any conflicts of land use, since these activities already exist in the immediate environment.
- 6.14.6 Visual amenity and character of the area will generally remain consistent due to the surrounding environment already containing many rural-residential and lifestyle allotments. The existing mature shelterbelt along the western boundary is to be maintained as per Condition 9 of existing approved RC2300369.
- 6.14.7 A management plan subdivision or integrated development proposal is not considered applicable to this application.
- 6.14.8 This development will not change the existing situation where residential and commercial use of the site will remain unchanged. The boat building factory will remain in the balance lot and the rural-residential allotments will be congregated in the northern portion of the site which is an underutilised area of the site, as well as adjoining existing rural-residential lots. As has been previously determined, the site does not contain highly versatile soils and is not suitable for productive use. The surrounding environment consists of a range of activities from rural-residential lots to some larger productive lots. The proposal will not alter the use of these sites.



6.14.9 Development of this nature is considered compatible with the amenity values of this rural residential and lifestyle area.

Policies

8.4.1 Those activities which will contribute to the sustainable management of the natural and physical resources of the rural environment are enabled to locate in that environment.

8.4.2 Those activities be allowed to establish within the rural environment to the extent that any adverse effects of these activities are able to be avoided, remedied or mitigated and as a result the life supporting capacity of soils and ecosystems is safeguarded and rural productive activities are able to continue.

8.4.3 That any new infrastructure for development in rural areas be designed and operated in a way that safeguards the life supporting capacity of air, water, soil and ecosystems while protecting areas of significant indigenous vegetation

8.4.4 That development which will maintain or enhance the amenity value of the rural environment and outstanding natural features and outstanding landscapes be enabled to locate in the rural environment.

8.4.5 That plan provisions encourage the avoidance of adverse effects from incompatible land uses, particularly new developments adversely affecting existing land-uses (including by constraining the existing land-uses on account of sensitivity by the new use to adverse effects from the existing use – i.e., reverse sensitivity).

8.4.6 Those areas of significant indigenous vegetation and significant habitats of indigenous fauna habitat be protected as an integral part of managing the use, development and protection of the natural and physical resources of the rural environment.

8.4.7 That Plan provisions encourage the efficient use and development of natural and physical resources, including consideration of demands upon infrastructure.

8.4.8 That, when considering subdivision, use and development in the rural environment, the Council will have particular regard to ensuring that its intensity, scale and type is controlled to ensure that adverse effects on habitats (including freshwater habitats), outstanding natural features and landscapes on the amenity value of the rural environment, and where appropriate on natural character of the coastal environment, are avoided, remedied or mitigated. Consideration will further be given to the functional need for the activity to be within rural environment and the potential cumulative effects of non-farming activities.

6.14.10 The proposal is considered to contribute to the sustainable management of the natural and physical resources as explained above.

6.14.11 The life supporting capacity of soils is considered to remain as per the existing situation. As detailed, the site is not of a size in which productive activities could be undertaken, nor would productive activities be practical within a lifestyle area.

6.14.12 New infrastructure established on the lots will not adversely impact on the features listed.



- 6.14.13 The site is not known to contain any outstanding natural features or landscapes. Amenity value is considered to be maintained and protected by the proposal.
- 6.14.14 The site is located in an area with surrounding allotments being similar in size to the proposal. No incompatible land use or reverse sensitivity effects are anticipated as the proposal is not out of character within the surrounding environment and will not create any activities which are not currently within the immediate environment. The proposal will not alter the ability of rural production activities to occur on neighbouring sites.
- 6.14.15 The subject site does not contain the appropriate features nor is it a size that would render the site suitable for rural productive activities and hence it is considered that this allotment was always going to be a rural-residential/lifestyle lot. The proposal does not constrain the existing land use activities on the site or adjoining allotments and these activities will be buffered by proposed and existing landscaping and planting.
- 6.14.16 There are no known significant indigenous vegetation or habitats of indigenous fauna within the site.
- 6.14.17 A Site Suitability report has been completed by WJ which determined that the sites are capable of containing independent infrastructure within the site boundaries. The intensity, scale and type of the proposal is considered to be compatible with lots in the surrounding environment. No adverse effects on habitats, outstanding natural features and landscapes or on the amenity value of the rural environment are anticipated. The site is not located within the coastal environment. Amenity values of the site will be maintained and protected. The additional allotments have a functional need to be within the rural environment, as there is a shortage of allotments of this size and character available throughout Northland within close proximity to a township, which is reflected in the difficulty the client is having with obtaining employees. The cumulative effects of the additional allotments are considered to be mitigated due to the existing character of the surrounding environment.

Assessment of the objectives and policies within the Rural Production Zone

- 6.15 The following assessment is based upon the objectives and policies contained within section 8.6.3 and 8.6.4 of the District Plan.

Objectives

8.6.3.1 To promote the sustainable management of natural and physical resources in the Rural Production Zone.

8.6.3.2 To enable the efficient use and development of the Rural Production Zone in a way that enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety.

8.6.3.3 To promote the maintenance and enhancement of the amenity values of the Rural Production Zone to a level that is consistent with the productive intent of the zone.

8.6.3.4 To promote the protection of significant natural values of the Rural Production Zone.



8.6.3.5 To protect and enhance the special amenity values of the frontage to Kerikeri Road between its intersection with SH10 and the urban edge of Kerikeri.

8.6.3.6 To avoid, remedy or mitigate the actual and potential conflicts between new land use activities and existing lawfully established activities (reverse sensitivity) within the Rural Production Zone and on land use activities in neighbouring zones.

8.6.3.7 To avoid remedy or mitigate the adverse effects of incompatible use or development on natural and physical resources.

8.6.3.8 To enable the efficient establishment and operation of activities and services that have a functional need to be located in rural environments.

8.6.3.9 To enable rural production activities to be undertaken in the zone.

- 6.15.1 As noted in the sections above, this subdivision will contribute to the sustainable management of natural and physical resources by providing additional sites for current and future generations to develop in an area which is already compromised for production. Protection of existing vegetation via existing and proposed consent notice conditions will aid in enhancing and protecting the visual amenity of the surrounding environment. Due to the physical constraints of the site and its surrounds, including the fact that the site does not contain highly versatile soils, the site is not considered suitable for rural productive use and therefore the natural and physical resources in this regard, are not considered to be degraded due to the site already being compromised. The proposal is considered to be the best utilization of the site as will enable enhancement of the site.
- 6.15.2 Efficient use and development is provided by creating a rural residential allotments within an area which already boasts these characteristics. Social, economic and cultural well-being will be provided for by enhancing the existing character of the site and surrounding environment while providing additional allotments.
- 6.15.3 This level of development is not out of character within this rural residential/lifestyle area. Amenity values will be maintained by congregating the allotments in the northern portion of the site, which directly adjoins existing rural-residential allotments on the northern boundary, whilst maintaining the larger balance allotment which will contain the boat building factory. Vegetation along the westernmost boundary will be maintained as required by RC2300369, also contributing to maintaining amenity values in the area.
- 6.15.4 There are no areas of significant vegetation on the site.
- 6.15.5 The site is not located along Kerikeri Road.
- 6.15.6 Reverse Sensitivity effects to neighbouring properties are not considered likely given the rural residential and lifestyle allotments adjoining the site. Rural residential and lifestyle development as proposed is considered compatible within this specific area. The proposed allotments while adjoining some slightly larger allotments on the Western and Eastern boundaries, are separated by vegetation and existing development. This provides a buffer



between the proposed new allotments and adjoining sites which are of a size where some small-scale productive activity may be undertaken. The buffer ensures that reverse sensitivity effects are unlikely to arise. Furthermore, the allotment to the east which contains the Advance Build depot already adjoins existing rural-residential allotments, which are in closer proximity to the depot than the subject site. As such, the proposal will not introduce any new activities which are not already existing in the current environment.

- 6.15.7 Rural residential activities have a functional need to be established outside of urban areas. The proposal is considered appropriate in the locality due to the close connectivity to the Waipapa industrial and business districts as well as the Kerikeri township. The proposal provides rural-residential allotments in close proximity to other rural-residential and lifestyle developments in the area as well as connectivity and access to employment, services and community infrastructure such as schools, day-cares, halls, dairies which reiterates the functional need of these types of allotments in the area.
- 6.15.8 The proposal will not alter the ability of rural production activities to be undertaken in the zone as the site is currently of a size where rural production activities are not feasible. The site does not contain highly versatile soils and contains provision for a second dwelling and a boat building factory, such that production activities would not be feasible for the site.

Policies

8.6.4.1 That the Rural Production Zone enables farming and rural production activities, as well as a wide range of activities, subject to the need to ensure that any adverse effects on the environment, including any reverse sensitivity effects, resulting from these activities are avoided, remedied or mitigated and are not to the detriment of rural productivity.

8.6.4.2 That standards be imposed to ensure that the off site effects of activities in the Rural Production Zone are avoided, remedied or mitigated.

8.6.4.3 That land management practices that avoid, remedy or mitigate adverse effects on natural and physical resources be encouraged.

8.6.4.4 That the type, scale and intensity of development allowed shall have regard to the maintenance and enhancement of the amenity values of the Rural Production Zone to a level that is consistent with the productive intent of the zone.

8.6.4.5 That the efficient use and development of physical and natural resources be taken into account in the implementation of the Plan.

8.6.4.6 That the built form of development allowed on sites with frontage to Kerikeri Road between its intersection with SH10 and Cannon Drive be maintained as small in scale, set back from the road, relatively inconspicuous and in harmony with landscape plantings and shelter belts.

8.6.4.7 That although a wide range of activities that promote rural productivity are appropriate in the Rural Production Zone, an underlying goal is to avoid the actual and potential adverse effects of conflicting land use activities.

8.6.4.8 That activities whose adverse effects, including reverse sensitivity effects, cannot be avoided remedied or mitigated are given separation from other activities



8.6.4.9 That activities be discouraged from locating where they are sensitive to the effects of or may compromise the continued operation of lawfully established existing activities in the Rural Production zone and in neighbouring zones.

- 6.15.9 This subdivision will create rural-residential allotments which are in high demand for the area. The site has been determined to not be suitable for rural production use due to a number of factors which have been discussed throughout this report. Given the location of these sites adjoining other rural residential and lifestyle development it is not anticipated that there will be any reverse sensitivity effects generated on neighbouring properties. Land Management practices associated with rural lifestyle development are generally considered low scale with no more than minor effects on the wider environment. On-site effects relating from future rural residential and lifestyle activities will be consistent with neighbouring sites in the area. Amenity values will not be compromised. The site is not accessed, nor does it have a frontage to Kerikeri Road. No conflicting land uses are anticipated. Separation is not considered necessary from other activities as this is built into the existing zone rules. Future rural residential and lifestyle use of the sites is not considered to be sensitive to or likely to compromise any neighbouring lawfully established activities.

Assessment of the objectives and policies for Subdivision Activities

- 6.16 The following assessment is based upon the objectives and policies contained within Section 13.3 and 13.4 of the District Plan.

Objectives

13.3.1 To provide for the subdivision of land in such a way as will be consistent with the purpose of the various zones in the Plan, and will promote the sustainable management of the natural and physical resources of the District, including airports and roads and the social, economic and cultural well being of people and communities.

13.3.2 To ensure that subdivision of land is appropriate and is carried out in a manner that does not compromise the life-supporting capacity of air, water, soil or ecosystems, and that any actual or potential adverse effects on the environment which result directly from subdivision, including reverse sensitivity effects and the creation or acceleration of natural hazards, are avoided, remedied or mitigated.

13.3.3 To ensure that the subdivision of land does not jeopardise the protection of outstanding landscapes or natural features in the coastal environment.

13.3.4 To ensure that subdivision does not adversely affect scheduled heritage resources through alienation of the resource from its immediate setting/context.

13.3.5 To ensure that all new subdivisions provide a reticulated water supply and/or on-site water storage and include storm water management sufficient to meet the needs of the activities that will establish all year round.

13.3.6 To encourage innovative development and integrated management of effects between subdivision and land use which results in superior outcomes to more traditional forms of subdivision, use and development, for example the protection, enhancement and restoration



of areas and features which have particular value or may have been compromised by past land management practices.

13.3.7 To ensure the relationship between Māori and their ancestral lands, water, sites, wahi tapu and other taonga is recognised and provided for.

13.3.8 To ensure that all new subdivision provides an electricity supply sufficient to meet the needs of the activities that will establish on the new lots created.

13.3.9 To ensure, to the greatest extent possible, that all new subdivision supports energy efficient design through appropriate site layout and orientation in order to maximise the ability to provide light, heating, ventilation and cooling through passive design strategies for any buildings developed on the site(s).

13.3.10 To ensure that the design of all new subdivision promotes efficient provision of infrastructure, including access to alternative transport options, communications and local services.

13.3.11 To ensure that the operation, maintenance, development and upgrading of the existing National Grid is not compromised by incompatible subdivision and land use activities.

- 6.17 The subdivision will be consistent with the purpose of the rural production zone which is to *enable the continuation of the wide range of existing and future activities compatible with normal farming and forestry activities, and with rural lifestyle and residential uses while ensuring that the natural and physical resources of the rural area are managed sustainably.* This subdivision will create rural residential/lifestyle allotments in an area which has already been heavily developed with similar sized allotments to those proposed. The existing site is not considered to be a rural productive site. Although it contains mapped highly versatile soils, given the site size, the existing consented development for the site, neighbouring rural-residential and lifestyle developments and a Soil Versatility report which concludes the soils do not meet the high versatility criteria it is concluded that the site cannot be utilised for a productive purpose. Natural and physical resources will be maintained and protected by ensuring the future protection of the western vegetation. The development is appropriate, and as detailed above does not compromise any of the items listed in objective 13.3.2. The site does not contain any outstanding landscapes or features, nor any heritage resources. Water storage is a requirement at time of building consent for a dwelling. The development is not of a size or being undertaken on land where a management plan or integrated development proposal would be necessary. The development will not have any adverse impacts on Māori. Energy supply can be provided to the lots, whether it be from reticulated supply or off grid. The sites are of a size that when designing a future house, energy efficient design methods can be utilised. The site is located within a rural area with limited public transport options and reticulated services. Upgrades to the National Grid will not be impacted by this development.

Policies

13.4.1 That the sizes, dimensions and distribution of allotments created through the subdivision process be determined with regard to the potential effects including cumulative effects, of the use of those allotments on:



- (a) natural character, particularly of the coastal environment;*
- (b) ecological values;*
- (c) landscape values;*
- (d) amenity values;*
- (e) cultural values;*
- (f) heritage values; and*
- (g) existing land uses.*

13.4.2 That standards be imposed upon the subdivision of land to require safe and effective vehicular and pedestrian access to new properties.

13.4.3 That natural and other hazards be taken into account in the design and location of any subdivision.

13.4.4 That in any subdivision where provision is made for connection to utility services, the potential adverse visual impacts of these services are avoided.

13.4.5 That access to, and servicing of, the new allotments be provided for in such a way as will avoid, remedy or mitigate any adverse effects on neighbouring property, public roads (including State Highways), and the natural and physical resources of the site caused by silt runoff, traffic, excavation and filling and removal of vegetation.

13.4.6 That any subdivision proposal provides for the protection, restoration and enhancement of heritage resources, areas of significant indigenous vegetation and significant habitats of indigenous fauna, threatened species, the natural character of the coastal environment and riparian margins, and outstanding landscapes and natural features where appropriate.

13.4.7 That the need for a financial contribution be considered only where the subdivision would:

- (a) result in increased demands on car parking associated with non-residential activities; or*
- (b) result in increased demand for esplanade areas; or*
- (c) involve adverse effects on riparian areas; or*
- (d) depend on the assimilative capacity of the environment external to the site.*

13.4.8 That the provision of water storage be taken into account in the design of any subdivision.

13.4.9 That bonus development donor and recipient areas be provided for so as to minimise the adverse effects of subdivision on Outstanding Landscapes and areas of significant indigenous flora and significant habitats of fauna.

13.4.10 The Council will recognise that subdivision within the Conservation Zone that results in a net conservation gain is generally appropriate.

13.4.11 That subdivision recognises and provides for the relationship of Māori and their culture and traditions, with their ancestral lands, water, sites, waahi tapu and other taonga and shall take into account the principles of the Treaty of Waitangi.

13.4.12 That more intensive, innovative development and subdivision which recognises specific site characteristics is provided for through the management plan rule where this will result in superior environmental outcomes.



13.4.13 Subdivision, use and development shall preserve and where possible enhance, restore and rehabilitate the character of the applicable zone in regards to s6 matters. In addition subdivision, use and development shall avoid adverse effects as far as practicable by using techniques including:

- (a) clustering or grouping development within areas where there is the least impact on natural character and its elements such as indigenous vegetation, landforms, rivers, streams and wetlands, and coherent natural patterns;*
- (b) minimising the visual impact of buildings, development, and associated vegetation clearance and earthworks, particularly as seen from public land and the coastal marine area;*
- (c) providing for, through siting of buildings and development and design of subdivisions, legal public right of access to and use of the foreshore and any esplanade areas;*
- (d) through siting of buildings and development, design of subdivisions, and provision of access that recognise and provide for the relationship of Māori with their culture, traditions and taonga including concepts of mauri, tapu, mana, wehi and karakia and the important contribution Māori culture makes to the character of the District (refer Chapter 2 and in particular Section 2.5 and Council's "Tangata Whenua Values and Perspectives" (2004);*
- (e) providing planting of indigenous vegetation in a way that links existing habitats of indigenous fauna and provides the opportunity for the extension, enhancement or creation of habitats for indigenous fauna, including mechanisms to exclude pests;*
- (f) protecting historic heritage through the siting of buildings and development and design of subdivisions.*
- (g) achieving hydraulic neutrality and ensuring that natural hazards will not be exacerbated or induced through the siting and design of buildings and development.*

13.4.14 That the objectives and policies of the applicable environment and zone and relevant parts of Part 3 of the Plan will be taken into account when considering the intensity, design and layout of any subdivision.

13.4.15 That conditions be imposed upon the design of subdivision of land to require that the layout and orientation of all new lots and building platforms created include, as appropriate, provisions for achieving the following:

- (a) development of energy efficient buildings and structures;*
- (b) reduced travel distances and private car usage;*
- (c) encouragement of pedestrian and cycle use;*
- (d) access to alternative transport facilities;*
- (e) domestic or community renewable electricity generation and renewable energy use.*

13.4.16 When considering proposals for subdivision and development within an existing National Grid Corridor the following will be taken into account:

- (a) the extent to which the proposal may restrict or inhibit the operation, access, maintenance, upgrading of transmission lines or support structures;*
- (b) any potential cumulative effects that may restrict the operation, access, maintenance, upgrade of transmission lines or support structures; and*
- (c) whether the proposal involves the establishment or intensification of a sensitive activity in the vicinity of an existing National Grid line.*

- 6.18 There will be no adverse impacts on any of the items listed within Policy 13.4.1. Vehicular access will be provided via the existing crossing place, with private accessways being proposed, as recommended by NTA. NTA have been contacted and their approval has been



obtained for the proposal. The southern portion of the site is shown to be susceptible to river flood hazards, however this area of the site will remain undeveloped and is located a sufficient distance and downslope of the proposed rural-residential sites. The remainder of the site is not impacted by natural hazards. No connections for reticulated services are available within this area. Power and Telecom connections are not a requirement for rural subdivisions; however, the applicant will provide provision for power to the allotments as detailed within this report. The subdivision does not cause any adverse effects on riparian margins. An esplanade reserve is proposed as part of Stage 2, where the site adjoins Kerikeri River. Water storage will be provided at time of built development. No bonus development donor or recipient areas are applicable to this development. The site is not zoned conservation. The subdivision is not anticipated to have any adverse impacts on local tangata whenua. A management plan development is not appropriate in this case. The visual impact of any existing and future buildings will be minimised by future landscaping and planting of the sites, as well as retaining some of the existing vegetation along the boundaries of the site. The site does not contain any areas of interest to local Māori. Retention of the existing shelterbelt along the western boundary as provided by RC2300369 will be maintained as well as protection of the vegetation along the eastern most boundary has been proposed to ensure visual amenity is maintained post subdivision. No areas of historic heritage will be impacted by this development.

Assessment of the objectives and policies for Transportation

- 6.19 The following assessment is based upon the objectives and policies contained within Section 15.1.3 and 15.1.4 of the District Plan.

Objectives

- 15.1.3.1 To minimise the adverse effects of traffic on the natural and physical environment.*
- 15.1.3.2 To provide sufficient parking spaces to meet seasonal demand in tourist destinations.*
- 15.1.3.3 To ensure that appropriate provision is made for on-site car parking for all activities, while considering safe cycling and pedestrian access and use of the site.*
- 15.1.3.4 To ensure that appropriate and efficient provision is made for loading and access for activities.*
- 15.1.3.5 To promote safe and efficient movement and circulation of vehicular, cycle and pedestrian traffic, including for those with disabilities.*

- 6.20 Adverse effects have been minimised by ensuring that all traffic enters and exits the site at one point only. The second crossing to the site will be permanently closed as part of the subdivision. A road to vest was proposed for the first portion of the private accessway, however NTA were not supportive of this and recommended that the entire access remain private. As part of Stage 2, access to adjoining Lots 1 & 2 DP202022 will be reconfigured such that these allotments will also utilise the new private access. This will ensure that all vehicle access is via one access, rather than multiple crossing places. Approval from NTA has been obtained as part of the proposal. Parking spaces for seasonal demand is not considered applicable to this proposal. On site car parking will be provided for within each allotment as part of any future build. The consented parking for the boat building factory will remain unchanged. Cycling and pedestrian access is not considered applicable due to the type of



activities on the site as well as the area in general not providing provision for this. Loading and access for the boat building factory will remain unchanged. The proposal has included safe and efficient movement and circulation of access.

Policies

15.1.4.1 That the traffic effects of activities be evaluated in making decisions on resource consent applications.

15.1.4.2 That the need to protect features of the natural and built environment be recognised in the provision of parking spaces.

15.1.4.3 That parking spaces be provided at a location and scale which enables the efficient use of parking spaces and handling of traffic generation by the adjacent roading network.

15.1.4.4 That existing parking spaces are retained or replaced with equal or better capacity where appropriate, so as to ensure the orderly movement and control of traffic.

15.1.4.5 That appropriate loading spaces be provided for commercial and industrial activities to assist with the pick-up and delivery of goods.

15.1.4.6 That the number, size, gradient and placement of vehicle access points be regulated to assist traffic safety and control, taking into consideration the requirements of both the New Zealand Transport Agency and the Far North District Council.

15.1.4.7 That the needs and effects of cycle and pedestrian traffic be taken into account in assessing development proposals.

15.1.4.8 That alternative options be considered to meeting parking requirements where this is deemed appropriate by the Far North District Council.

- 6.21 NTA have provided approval to the proposal and as such, traffic effects are considered to have been evaluated. Parking spaces for the boat building factory will remain unchanged from what has been consented and parking will be provided for within the new rural residential allotments as they are developed. Loading spaces for the boat building factory will also remain unchanged from what has been previously consented. The proposal will utilise only one existing access point with the second access point to the site proposed to be permanently closed. Cycle and pedestrian access are not considered applicable to this proposal due to the nature of activities that will occur on the site and the fact that provision for cycling and pedestrian access is not provided for along Koropewa Road. The proposal does not involve any alternative options for parking.

Proposed District Plan

- 6.22 Under the Proposed District Plan, the site is zoned Horticulture. Although the site is considered to be more appropriately zoned Rural-Residential under the new plan, and many submissions have been made for this case, as the Proposed District Plan has the site currently zoned as Horticulture, an assessment of the objectives and policies within this chapter have been included below. The proposal is considered to create no more than minor adverse effects on the environment. The proposal is considered to be consistent with the objectives and policies of the Proposed District Plan.



Assessment of objectives and policies in the Horticulture zone

Objectives

HZ-O1 - The Horticulture zone is managed to ensure its availability for Horticultural activities and its long-term protection for current and future generations.

HZ-O2 The Horticulture zone enables horticultural and ancillary activities, while managing adverse environmental effects on site.

HZ-O3 - Land use and subdivision in the Horticulture zone:

- a. avoids land sterilisation that reduces the potential for highly productive land to be used for a horticulture activity;*
- b. avoids land fragmentation that comprises the use of land for horticultural activities;*
- c. avoids any reverse sensitivity effects that may constrain the effective and efficient operation of primary production activities;*
- d. does not exacerbate any natural hazards;*
- e. maintains the rural character and amenity of the zone;*
- f. is able to be serviced by on-site infrastructure.*

6.23 The proposal will not affect the availability of land for primary production activities, as the site is rural lifestyle in nature and already has a legally established boat building activity. The site has been determined to be unsuitable for Horticulture activities due to the soils not being highly versatile as well as proximity to existing rural-residential allotments.

6.24 Land sterilisation is avoided as the site does not contain highly versatile soils. Land fragmentation that compromises the use of land for horticultural activities is not considered applicable as the site is not suitable for such activities. Reverse sensitivity effects are not anticipated as has been discussed in detail within this report. Natural hazards will not be exacerbated as determined within the report from WJ. Rural character and amenity will be maintained as the proposal is consistent with the surrounding environment. As determined in the Site Suitability Report from WJ, the subdivision will provide allotments which can be serviced by on-site infrastructure.

Policies

HZ-P1 - Identify a Horticulture Zone in the Kerikeri / Waipapa area using the following criteria:

- a) presence of highly productive land suitable for horticultural use;*
- b) access to a water source, such as an irrigation scheme or dam able to support horticultural use; and*
- c) infrastructure available to support horticultural use.*

HZ-P2 - Avoid land use that:

- a) is incompatible with the purpose, function and character of the Horticulture Zone;*
- b) will result in the loss of productive capacity of highly productive land;*



- c) *compromises the use of highly productive land for horticultural activities in the Horticulture Zone; and*
- d) *does not have a functional need to be located in the Horticultural Zone and is more appropriately located in another zone.*

HZ-P3 - Enable horticulture and associated ancillary activities that support the function of the Horticulture zone, where:

- a) *adverse effects are contained on site to the extent practicable; and*
- b) *they are able to be serviced by onsite infrastructure.*

HZ-P4 - Ensure residential activities are designed and located to avoid, or otherwise mitigate, reverse sensitivity effects on horticulture activities, including adverse effects associated with dust, noise, spray drift and potable water collection.

HZ-P5 - Manage the subdivision of land in the Horticulture zone to:

- a) *avoid fragmentation that results in loss of highly productive land for use by horticulture and other farming activities;*
- b) *ensure the long-term viability of the highly productive land resource to undertake a range of horticulture uses;*
- c) *enable a suitable building platform for a future residential unit; and*
- d) *ensure there is provision of appropriate onsite infrastructure.*

HZ-P6 - Encourage the amalgamation or boundary adjustments of Horticulture zoned land where this will help to make horticultural activities more viable on the land

HZ – O7 - Manage land use and subdivision to address the effects of the activity requiring resource consent, including (but not limited to) consideration of the following matters where relevant to the application:

- a) *whether the proposal will increase production potential in the zone;*
- b) *whether the activity relies on the productive nature of the soil;*
- c) *consistency with the scale and character of the rural environment;*
- d) *location, scale and design of buildings or structures;*
- e) *for subdivision or non-primary production activities:*
 - i. *scale and compatibility with rural activities;*
 - ii. *potential reverse sensitivity effects on primary production activities and existing infrastructure;*
 - iii. *the potential for loss of highly productive land, land sterilisation or fragmentation*
- f) *at zone interfaces:*
 - i. *any setbacks, fencing, screening or landscaping required to address potential conflicts;*
 - ii. *the extent to which adverse effects on adjoining or surrounding sites are mitigated and internalised within the site as far as practicable;*
- g) *the capacity of the site to cater for on-site infrastructure associated with the proposed activity, including whether the site has access to a water source such as an irrigation network supply, dam or aquifer;*



- h) *the adequacy of roading infrastructure to service the proposed activity;*
 - i. *Any adverse effects on historic heritage and cultural values, natural features and landscapes or indigenous biodiversity;*
- i) *Any historical, spiritual, or cultural association held by tangata whenua, with regard to the matters set out in Policy TW-P6*

- 6.25 The site does not contain highly productive land as explained within the soils report. The site does not contain a water source such as an irrigation scheme or dam which would support horticulture use. As detailed in the Soils report, the site is not suitable for Horticulture use.
- 6.26 The site and surrounding environment are already compromised due to the existing rural-residential development in the area. Loss of productive capacity of highly productive land is not anticipated as the site does not contain highly versatile soils. The site and surrounding environment are considered to be more appropriately zoned Rural-Residential due to the nature of existing activities in the area as well as the absence of highly versatile soils. The proposal is considered to have a functional need to be located in this area due to the proximity to Kerikeri and Waipapa townships as well as the high demand for land and housing of this size in the area.
- 6.27 Horticulture and ancillary activities are not considered suitable for the site, as discussed previously.
- 6.28 Reverse sensitivity effects are not anticipated as has been discussed in detail throughout this report.
- 6.29 Fragmentation of highly productive land is not anticipated as the site is not classified as such. WJ have completed a detailed Site Suitability Report showing that each proposed rural-residential allotment contains area suitable for built development as well as onsite infrastructure.
- 6.30 The proposal is not for an amalgamation or boundary adjustment.
- 6.31 The site does not boast production potential as determined within the Soils Report. The proposal is consistent with the scale and character of the surrounding environment. Reverse sensitivity effects are not anticipated as explained within this report. The site is not located at a zone interface, however a 10 metre setback will be maintained on all boundaries which adjoin separately owned allotments. The vegetation along the western boundary is protected as part of RC2300369, with existing mature vegetation located along all other external boundaries of the site. All adverse effects are considered to be mitigated to a less than minor degree. As detailed within the Site Suitability Report from WJ, the proposal will be able to cater for onsite infrastructure. NTA have been contacted as part of the proposal and their approval has been obtained. No adverse effects on historic heritage and cultural values are anticipated.

Summary

- 6.32 The above assessment of the relevant policy documents demonstrates that the proposal will be consistent with the relevant objectives and policies of those statutory documents.
- 6.33 Although the proposal is considered to be a non-complying activity, allotments of this size are not unusual in the immediate and wider environment. Due to the close proximity of the site



to the Waipapa and Kerikeri townships, there is a functional need for allotments of this size to be located in the area, providing connectivity between the urban and rural areas. The proposal provides for the social, economic and cultural well-being of the community by providing rural residential allotments in close proximity to employment, services and community infrastructure.

- 6.34 The site is not considered to be suitable for rural productive use, due to the physical constraints of the site. The proposal will allow better utilization of the site and provide a protection on the level of visual amenity by congregating the allotments to the north of the site, which adjoins similar sized allotments.
- 6.35 No reverse sensitivity effects are anticipated due to the nature of the surrounding environment.

7.0 Notification Assessment – Sections 95A to 95G of the Act

Public Notification Assessment

- 7.1 Section 95A requires a council to follow specific steps to determine whether to publicly notify an application. The following is an assessment of the application against these steps:

Step 1 Mandatory public notification in certain circumstances

(2) Determine whether the application meets any of the criteria set out in subsection (3) and, —

(a) if the answer is yes, publicly notify the application; and

(b) if the answer is no, go to step 2.

(3) The criteria for step 1 are as follows:

(a) the applicant has requested that the application be publicly notified:

(b) public notification is required under section 95C:

(c) the application is made jointly with an application to exchange recreation reserve land under section 15AA of the Reserves Act 1977.

- 7.1.1 It is not requested the application be publicly notified and the application is not made jointly with an application to exchange reserve land. Therefore step 1 does not apply and Step 2 must be considered.

Step 2: Public Notification precluded in certain circumstances

(4) Determine whether the application meets either of the criteria set out in subsection (5) and, —

(a) if the answer is yes, go to step 4 (step 3 does not apply); and

(b) if the answer is no, go to step 3.

(5) The criteria for step 2 are as follows:

(a) the application is for a resource consent for 1 or more activities, and each activity is subject to a rule or national environmental standard that precludes public notification:

(b) the application is for a resource consent for 1 or more of the following, but no other, activities:

(i) a controlled activity:

(ii) [Repealed]

(iii) a restricted discretionary, discretionary, or non-complying activity, but only if the activity is a boundary activity.

(iv) [Repealed]



(6)[Repealed]

7.1.2 The application is a non-Complying activity. No preclusions apply in this instance.

Step 3: If not precluded by Step 2, public notification required in certain circumstances

(7) Determine whether the application meets either of the criteria set out in subsection (8) and,—

(a) if the answer is yes, publicly notify the application; and

(b) if the answer is no, go to step 4.

(8) The criteria for step 3 are as follows:

(a) the application is for a resource consent for 1 or more activities, and any of those activities is subject to a rule or national environmental standard that requires public notification;

(b) the consent authority decides, in accordance with section 95D, that the activity will have or is likely to have adverse effects on the environment that are more than minor.

7.1.3 No applicable rules require public notification of the application. The activity will not have a more than minor effect on the environment.

Step 4: Public notification in special circumstances

(9) Determine whether special circumstances exist in relation to the application that warrant the application being publicly notified and,—

(a) if the answer is yes, publicly notify the application; and

(b) if the answer is no, do not publicly notify the application, but determine whether to give limited notification of the application under section 95B.

7.1.4 The proposal will result in ten additional rural residential allotments which are suitable for future development. The proposal will involve upgrading of an existing crossing, permanently closing the second crossing to the site as well as new private accessways. While the site is mapped as having highly versatile soils, a soil versatility report has determined that the soils on site are not highly versatile. This combined with the size of the allotment, the surrounding development as well as the existing consented activities on the site make rural productive activities not feasible. The site has existing mature vegetation along all boundaries, which will maintain the rural amenity of the site.

7.1.5 All associated infrastructure can be maintained within the lot boundaries such that no downstream effects are considered to be created.

7.1.6 Written approvals have been obtained from the adjoining allotments. An assessment of adjoining parties will be made in the limited notification assessment below.

7.1.7 The site and surrounding environment have already been compromised, with many rural residential and lifestyle allotments occurring along the beginning of Pungaere and Koropewa roads. The proximity of this site to Waipapa ensures that there is existing connections to both social, economic and cultural activities.

7.1.8 As determined with Section 5 the effects on the environment are considered to be less than minor and the proposal is generally consistent with the objectives and policies of the relevant policy documents as determined within Section 6 of this report.



7.1.9 It is therefore considered that there are no special circumstances that exist to justify public notification of the application because the proposal is not considered to be controversial or of significant public interest. There are no circumstances which are considered to be unusual or exceptional in this instance.

Public Notification Summary

7.1.10 From the assessment above it is considered that the application does not need to be publicly notified, but assessment of limited notification is required.

Limited Notification Assessment

7.2 If the application is not publicly notified, a consent authority must follow the steps of section 95B to determine whether to give limited notification of an application.

Step 1: Certain affected groups and affected persons must be notified

(2) Determine whether there are any—

(a) affected protected customary rights groups; or

(b) affected customary marine title groups (in the case of an application for a resource consent for an accommodated activity).

(3) Determine—

(a) whether the proposed activity is on or adjacent to, or may affect, land that is the subject of a statutory acknowledgement made in accordance with an Act specified in Schedule 11; and

(b) whether the person to whom the statutory acknowledgement is made is an affected person under section 95E.

(4) Notify the application to each affected group identified under subsection (2) and each affected person identified under subsection (3).

7.2.1 There are no protected customary rights groups or customary marine title groups or statutory acknowledgement areas that are relevant to this application. Therefore Step 1 does not apply and Step 2 must be considered.

Step 2: Limited notification precluded in certain circumstances

(5) Determine whether the application meets either of the criteria set out in subsection (6) and,—

(a) if the answer is yes, go to step 4 (step 3 does not apply); and

(b) if the answer is no, go to step 3.

(6) The criteria for step 2 are as follows:

(a) the application is for a resource consent for 1 or more activities, and each activity is subject to a rule or national environmental standard that precludes limited notification:

(b) the application is for a controlled activity (but no other activities) that requires a resource consent under a district plan (other than a subdivision of land).

7.2.2 There is no rule in the plan or national environmental standard that precludes notification. The application is not for a controlled activity. Therefore Step 3 must be considered.

Step 3: Certain other affected persons must be notified.

(7) In the case of a boundary activity, determine in accordance with section 95E whether an owner of an allotment with an infringed boundary is an affected person.



(8) In the case of any other activity, determine whether a person is an affected person in accordance with section 95E.

(9) Notify each affected person identified under subsections (7) and (8) of the application.
The proposal is not for a boundary activity nor is it a prescribed activity.

7.2.3 The development does involve any boundary activities, which include a breach of setback from the internal boundaries of the new proposed rural-residential lots. As the setback dispensation is requested for the internal boundaries only, no other adjoining allotments will be affected.

7.2.4 In deciding who is an affected person under section 95E, a council under section 95E(2):

(2) The consent authority, in assessing an activity’s adverse effects on a person for the purpose of this section, —

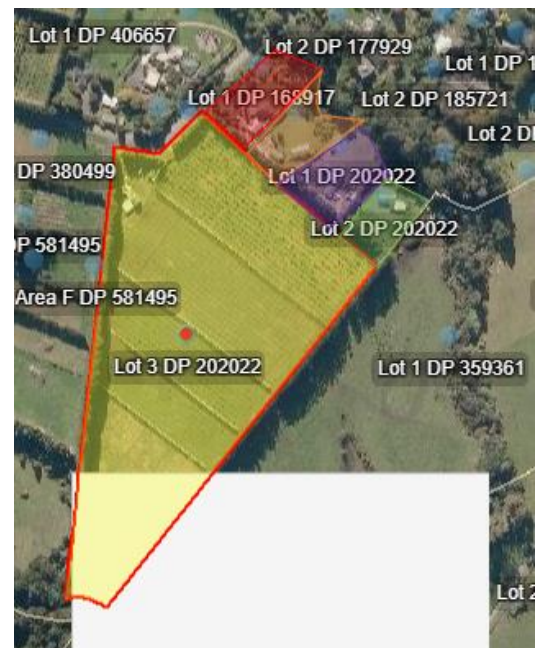
(a) may disregard an adverse effect of the activity on the person if a rule or a national environmental standard permits an activity with that effect; and

(b) must, if the activity is a controlled activity or a restricted discretionary activity, disregard an adverse effect of the activity on the person if the effect does not relate to a matter for which a rule or a national environmental standard reserves control or restricts discretion; and

(c) must have regard to every relevant statutory acknowledgement made in accordance with an Act specified in Schedule 11.

7.2.5 A council must not consider that a person is affected if they have given their written approval, or it is unreasonable in the circumstances to seek that person’s approval. In this case, the following written approvals have been obtained –

Property	Legal description	Owners	Key
25 Koropewa Road	Lot 2 DP 168917	Bruce and Janine Hartley	Orange
23 Koropewa Road	Lot 1 DP 168917	Bettina and Colin Syme	Red
35B Koropewa Road	Lot 2 DP 202022	Kelly and Todd Chapman	Green
29A Koropewa Road	Lot 1 DP 202022	Heather Christie Celia Honiss Anne Waddle	Purple



7.2.6 The subdivision is a non-Complying activity. The adjoining properties where written approval has not been sought have been assessed and comments on each site are as follows:

1. *Lot 1 DP380499 (35 Koropewa Road, Waipapa) & Lot 1 DP581495 (43 Koropewa Road, Waipapa)*

7.2.7 These two allotments are located to the west of Proposed Lot 1 (Stage 1) and do not directly adjoin the subject site as the access leg to Lot 2 DP581495 separates the subject site and these two allotments (see below image for visual). Lot 1 DP380499 contains a residential dwelling and accessory buildings with an area of less than 4400m² and Lot 1 DP581495 contains a residential dwelling and some accessory buildings, with an area of around 1ha.



Figure 19: Aerial view of the site and adjoining Lots to the west

7.2.8 In terms of effects of the proposal on these allotments, it is considered these are less than minor. The nearest proposed allotments will be Proposed Lot 1 as part of Stage 1 and then the balance lot in both stages which will contain the boat building factory. Proposed Lot 1 will contain the existing built development on the site. As such, in terms of visual effects, these will not change to what is currently in existence. Furthermore, as per RC2300369, the vegetation along the western boundary is to be maintained to provide a visual screening between these allotments and the boat building activity.

7.2.9 Given the existing mature shelterbelt along this boundary as well as the proposed vacant rural-residential lots being located over approximately 150 metres away, we do not consider these properties to be affected by the proposal.

2. *Lot 2 DP581495 (33 Koropewa Road, Waipapa)*

7.2.10 This allotment is located to the west of the subject site of approximately 4 hectares in area. Built development within this site consists of a residential dwelling and accessory buildings, which is located in the south-western corner of the site, furthest from the dividing boundary



with the subject site. As mentioned above, RC2300369 requires that the vegetation along the western boundary is maintained, providing a visual screening between the subject site and Lot 2 DP581495. Similar to the aforementioned allotments, this lot will be over 150 metres from the proposed vacant rural-residential allotments and will only share a boundary with Proposed Lot 1 of Stage 1 and the balance lot in both stages which will contain the boat building factory. Built development in Proposed Lot 1 and the balance lot are existing and therefore, what is currently perceived from Lot 2 DP581495 will remain unchanged.

7.2.11 The vegetation along the western boundary will provide adequate visual screening between this site and the new vacant rural-residential lots.

7.2.12 For the reasons above, we do not consider this property to be affected.

3. *Lot 1 DP359361 (2077 SH10, Waipapa)*

7.2.13 This allotment is just over 12ha and contains the Advance Build depot, where they construct prefabricated and transportable homes inside the factory. The factory is located within the northern portion of the site, closest to the State Highway, where access is provided to the site. The remainder of the site consists of paddocks.



Figure 20: Aerial image of the subject site, Lot 1 DP359361 and surrounding rural-residential development.

7.2.14 The factory is located approximately 200 metres from the northeastern corner of the site. As part of Stage 1, this allotment will adjoin the larger balance lot and as part of Stage 2, it will adjoin two vacant rural-residential lots (Lots 6 & 7) and the larger balance lot.

7.2.15 As can be seen in the aerial image to the right, Lot 1 DP359361 already adjoins existing rural-residential sites which contain existing built development. This existing development is in closer proximity to the Advance Home factory than the subject site. Along the eastern boundary of the subject site consists of a mature shelterbelt, which provides a visual screening between the site and this allotment. It is offered that this vegetation is protected by way of consent notice condition to maintain a screening buffer between the sites. A 10 metre setback for any future development within the proposed adjoining allotments will be maintained to enhance the rural amenity of the site and mitigate reverse sensitivity effects.

7.2.16 In terms of visual effects, it is considered that the proposed allotments are a significant distance from the Advance Build factory that visual effects will be less than minor. The existing shelterbelt will also provide visual screening.



- 7.2.17 In terms of reverse sensitivity effects, Lot 1 DP359361 already adjoins existing, developed rural-residential allotments, which were in existence prior to the Advance Build factory being established. These existing rural-residential allotments are in closer proximity to the Advance Build factory than the subject site. As such, it is considered that as the site already adjoins allotments of similar nature, and the fact that rural-residential development in the area is already present, the proposal will not be introducing a new activity in the area nor an activity that does not already adjoin Lot 1 DP359361. In regard to the productive activities that occur on the remainder of Lot 1 DP359361, the same as above can be said, where the proposal will not be introducing any activities that do not already exist in close proximity to Lot 1 DP359361. The mature shelterbelt will also provide visual mitigation and decrease effects from farm machinery, dust and odour. The 10 metre setback from the dividing boundary for any future built development in the proposed allotments will also provide an adequate buffer from Lot 1 DP359361.
- 7.2.18 Due to the fact that Lot 1 DP359361 already adjoins existing rural-residential activities which are in closer proximity to the existing operation than the subject site, it is considered that the proposal will not be introducing any new activities which do not already exist along the boundaries of Lot 1 DP359361. Visual effects will be mitigated by the existing vegetation along the boundary as well as the provision for a 10 metre setback for any future development along the dividing boundary. Reverse sensitivity effects are not anticipated as the surrounding environment consists of mixed use which has not had an impact on the operation of Lot 1 DP359361. The proposal will only introduce two new vacant rural-residential allotments along this boundary, with the majority of the boundary being shared with the balance lot which will contain the consented boat building factory. As such, it is considered that this neighbour is not affected by the proposal.
- 7.2.19 Due to the size of allotments in the area, the development is considered consistent with other developments in the area and as such no other sites are considered to be adversely affected.
- 7.2.20 As a result of the above and with respect to section 95B(8) and section 95E, the proposal is considered to have a no more than minor effect on all owners and occupiers of adjacent properties. Therefore Step 3 does not apply and Step 4 must be considered.

Step 4: Further notification in special circumstances

(10) whether special circumstances exist in relation to the application that warrant notification of the application to any other persons not already determined to be eligible for limited notification under this section (excluding persons assessed under section 95E as not being affected persons),

- 7.2.21 The proposal is to undertake a rural residential subdivision within an area that has similar lifestyle development. The development is sought on land which does not contain highly versatile soils and is not suitable for productive use. Protection of existing shelterbelts and additional screening will provide visual mitigation of the development. It is considered that no special circumstances exist in relation to the application.



- 7.2.22 Upgrading to the existing crossing is required, as determined within the Site Suitability Report. NTA have been contacted as part of the proposal and have provided their approval.
- 7.2.23 It is therefore considered that there are no special circumstances that exist to warrant notification of the application to any other persons.

Limited Notification Assessment Summary

- 7.3 Overall, from the assessment undertaken Steps 1 to 4 do not apply and there are no affected persons.

Notification Assessment Conclusion

- 7.4 Pursuant to sections 95A to 95G it is recommended that the Council determine the application be non-notified for the above-mentioned reasons.

8.0 Part 2 Assessment

- 8.1 The application must be considered in relation to the purpose and principles of the Resource Management Act 1991 which are contained in Section 5 to 8 of the Act inclusive.
- 8.2 The proposal will meet Section 5 of the RMA as the development can achieve sustainable management of natural and physical resources by maintaining and enhancing vegetation within the site as well as involving land which does not contain highly versatile soils. The proposal is considered consistent in terms of its allotment sizes and character as the sites being created are generally comparable with the rural residential and lifestyle subdivision patterns of the immediate surrounding environment.
- 8.3 Section 6 of the Act sets out a number of matters of national importance. It is considered that the proposal will not adversely affect any of these matters, as has been explained throughout this report.
- 8.4 Section 7 identifies a number of “other matters” to be given particular regard by a Council in the consideration of any assessment for resource consent, including efficient use and development of natural and physical resources, the maintenance and enhancement of amenity values. This development will result in an efficient use of the site and its resources as the site can be effectively used for rural residential and lifestyle purposes. Natural and physical resources will be enhanced by future landscaping and planting. Amenity values will be maintained as the character of the area is already rural residential and lifestyle in nature.
- 8.5 Section 8 requires Council to take into account the principals of the Treaty of Waitangi. It is considered that the proposal raises no Treaty issues. The subject site is not known to be located within an area of significance to Māori nor does the site indicate any historic archaeology is present. As such it is considered that the proposal has taken into account the principals of the Treaty of Waitangi; and is not considered to be contrary to these principals.



- 8.6 Overall, the application is considered to be consistent with the relevant provisions of Part 2 of the Act, as expressed through the objectives, policies and rules reviewed in earlier sections of this application. Given that consistency, we conclude that the proposal achieves the purposes of sustainable management set out by section 5 of the Act.

9.0 104D Assessment

- 9.1 As detailed in section 4.3 of this application, Section 104D of the Act requires that a non-Complying subdivision must meet at least one of the gateway tests above in order for the decision-making authority to consider approving the application.
- 9.2 As detailed within section 5 above it is concluded that the effects of the proposal on the surrounding environment will be no more than minor. Passing the first test.
- 9.3 In section 6.32 above it was also concluded that the proposal would be generally consistent with the available policy documents. Passing the second test.
- 9.4 Case Law has determined that the precedent of granting resource consent is a relevant factor for a consent authority when considering whether to grant a non-Complying resource consent. A precedent effect is likely to arise in a situation where consent is granted to a non-Complying activity that lacks the evident unique, unusual or distinguished qualities that serve to take the application out of the generality of cases or similar sites in the vicinity. If the activity boasts sufficient qualities that are unusual or unique, that other proposals may not contain, precedent effects may be avoided. As discussed in Sections 5.37 to 5.42 of this report, in this case, the proposal is considered unique due to the site's physical location (being within a transitional area), having soils which while mapped as highly versatile are in fact not highly versatile and being surrounded by sites which are of a similar size. The site is in an area that is already compromised, with limitations of the site ever being productive given the soil, site size and surrounding development. Reverse sensitivity effects are avoided given the surrounding use is rural-residential and lifestyle, and with the retention of shelterbelts. Given all of the above, the proposal is not considered to set a precedence.
- 9.5 As both gateway tests have been satisfied it is concluded that the proposal can be approved under delegated authority by Council.

10.0 Conclusion

- 10.1 The proposal is to undertake a subdivision to create ten rural-residential allotments and one balance lot, across two stages within the Rural Production zone. The proposal is considered to be consistent with neighbouring development patterns which have created rural residential and lifestyle allotments.
- 10.2 In terms of section 104(1)(a) of the Act, the actual and potential effects of the proposal will be no more than minor.



- 10.3 It is also considered that the proposal will have no more than minor adverse effects on the wider environment; no persons will be adversely affected by the proposal and there are no special circumstances.
- 10.4 The proposal is a non-Complying activity, an assessment of the gateway tests under section 104D have been undertaken. The proposal is considered to pass both gateway tests.
- 10.5 The relevant provisions within Part 2 of the Act have been addressed as part of this application. The overall conclusion from the assessment of the statutory considerations is that the proposal is considered to be consistent with the sustainable management purpose of the Resource Management Act 1991.
- 10.6 It is considered that the proposal results in no more than minor effects on the environment and the proposal is generally consistent with the relevant objectives and policies set out under the District Plan and Regional Policy Statement. The development is considered appropriate for consent to be granted on a non-notified basis.

11.0 LIMITATIONS

- 11.1 This report has been commissioned solely for the benefit of our client, in relation to the project as described above, and to the limits of our engagement, with the exception that the Far North District Council or Northland Regional Council may rely on it to the extent of its appropriateness, conditions and limitations, when issuing their subject consent.
- 11.2 Copyright of Intellectual Property remains with Northland Planning and Development 2020 Limited, and this report may NOT be used by any other entity, or for any other proposals, without our written consent. Therefore, no liability is accepted by this firm or any of its directors, servants or agents, in respect of any information contained within this report.
- 11.3 Where other parties may wish to rely on it, whether for the same or different proposals, this permission may be extended, subject to our satisfactory review of their interpretation of the report.
- 11.4 Although this report may be submitted to a local authority in connection with an application for a consent, permission, approval, or pursuant to any other requirement of law, this disclaimer shall still apply and require all other parties to use due diligence where necessary.






**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 **NA129B/873**
Land Registration District **North Auckland**
Date Issued 09 June 2000

Prior References

NA102A/553

Estate Fee Simple
Area 6.2232 hectares more or less
Legal Description Lot 3 Deposited Plan 202022

Registered Owners

Maria Ann Vlug and Smith & Partners Trustee Co. Limited

Interests

Appurtenant hereto is a water right specified in Easement Certificate C082835.3

Subject to a water right over parts marked B, E, G and H on DP 202022 specified in Easement Certificate C082835.3

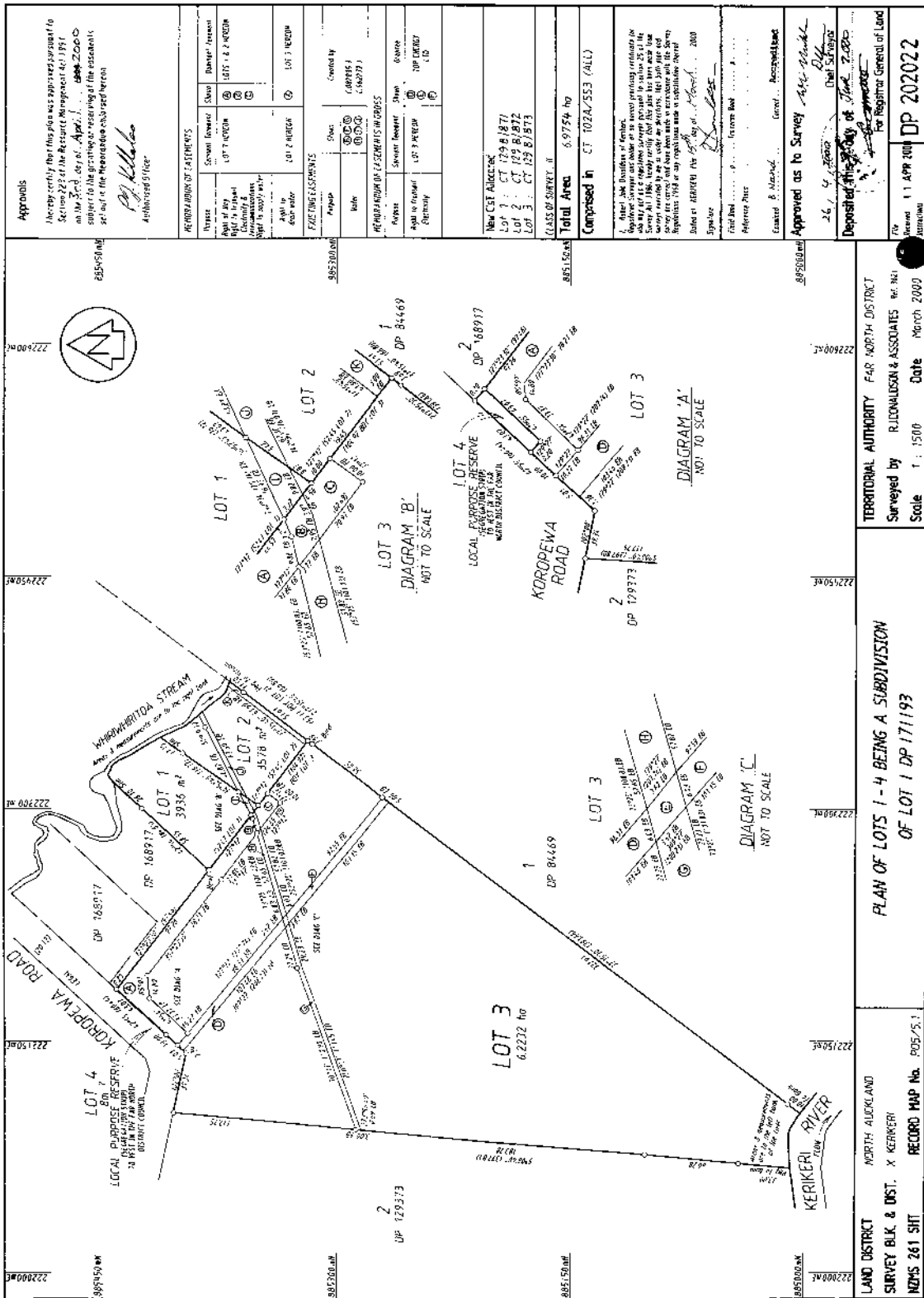
Appurtenant hereto is a right to drain water specified in Easement Certificate D513440.4 - 9.6.2000 at 3:44 pm

Subject to a right of way, and to electricity, telecommunications and water supply rights over parts marked A B and C on DP 202022 specified in Easement Certificate D513440.4 - 9.6.2000 at 3:44 pm

The easements specified in Easement Certificate D513440.4 are subject to Section 243 (a) Resource Management Act 1991

Subject to a right (in gross) to transmit electricity over parts marked D, E, F on DP 202022 in favour of Top Energy Limited created by Transfer D513440.5 - 9.6.2000 at 3:44 pm

The easements created by Transfer D513440.5 are subject to Section 243 (a) Resource Management Act 1991



Approvals
 I hereby certify that this plan was approved pursuant to Section 223 of the Resource Management Act 1991 on the 3rd day of April 2009.
 Subject to the grant of a resource consent for the easements set out in the Resource Consent application.
 P. J. Killeen
 Authorised Officer

REPRODUCTION OF EASEMENTS	
Shown Easement	Shown Easement
LOT 1 EASEMENT	LOT 1 EASEMENT
LOT 2 EASEMENT	LOT 2 EASEMENT
LOT 3 EASEMENT	LOT 3 EASEMENT
LOT 4 EASEMENT	LOT 4 EASEMENT

EASEMENT CLASSIFICATIONS	
Proposed	Shown
LOT 1 EASEMENT	LOT 1 EASEMENT
LOT 2 EASEMENT	LOT 2 EASEMENT
LOT 3 EASEMENT	LOT 3 EASEMENT
LOT 4 EASEMENT	LOT 4 EASEMENT

REPRODUCTION OF EASEMENTS IN CODES	
Shown Easement	Shown Easement
LOT 1 EASEMENT	LOT 1 EASEMENT
LOT 2 EASEMENT	LOT 2 EASEMENT
LOT 3 EASEMENT	LOT 3 EASEMENT
LOT 4 EASEMENT	LOT 4 EASEMENT

New C&G Allocation
 LOT 1 : CT 129 81871
 LOT 2 : CT 129 81922
 LOT 3 : CT 129 81973
 CLASS OF SURVEY : II

Total Area 6.9754 ha
Composed in CT 1022A/553 (ALL)

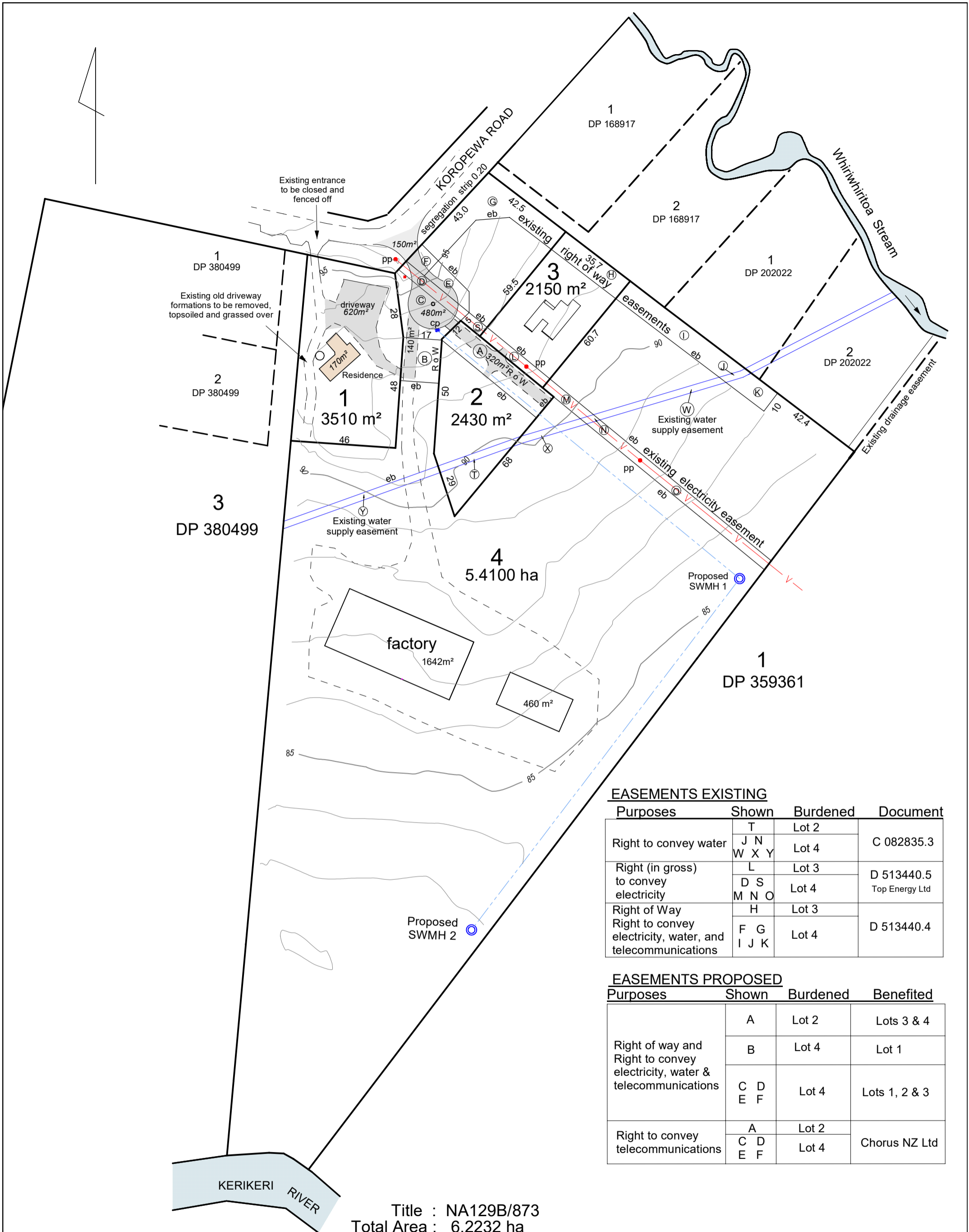
Approved as to Survey
 Approved as to Survey
 Deposited this 3rd day of April 2009
 For Registrar General of Land
 Received 11 APR 2009
 DP 202022

TERRITORIAL AUTHORITY FAR NORTH DISTRICT
 Surveyed by RICHARDSON & ASSOCIATES No. 162
 Scale 1 : 1500 Date March 2009

PLAN OF LOTS 1-4 BEING A SUBDIVISION OF LOT 1 DP 171193

LAND DISTRICT NORTH AUCKLAND
SURVEY BLK. & DIST. X KERIKERI
NZMS 261 SH1 RECORD MAP No. P05/5.1

15 JUN 2009



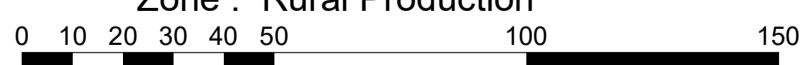
EASEMENTS EXISTING

Purposes	Shown	Burdened	Document
Right to convey water	T	Lot 2	C 082835.3
	J N	Lot 4	
	W X Y		
Right (in gross) to convey electricity	L	Lot 3	D 513440.5 Top Energy Ltd
	D S	Lot 4	
	M N O		
Right of Way Right to convey electricity, water, and telecommunications	H	Lot 3	D 513440.4
	F G I J K	Lot 4	

EASEMENTS PROPOSED

Purposes	Shown	Burdened	Benefited
Right of way and Right to convey electricity, water & telecommunications	A	Lot 2	Lots 3 & 4
	B	Lot 4	Lot 1
	C D E F	Lot 4	Lots 1, 2 & 3
Right to convey telecommunications	A	Lot 2	Chorus NZ Ltd
	C D	Lot 4	
	E F		

Title : NA129B/873
 Total Area : 6.2232 ha
 Zone : Rural Production



STAGE 1 OF 2 STAGES

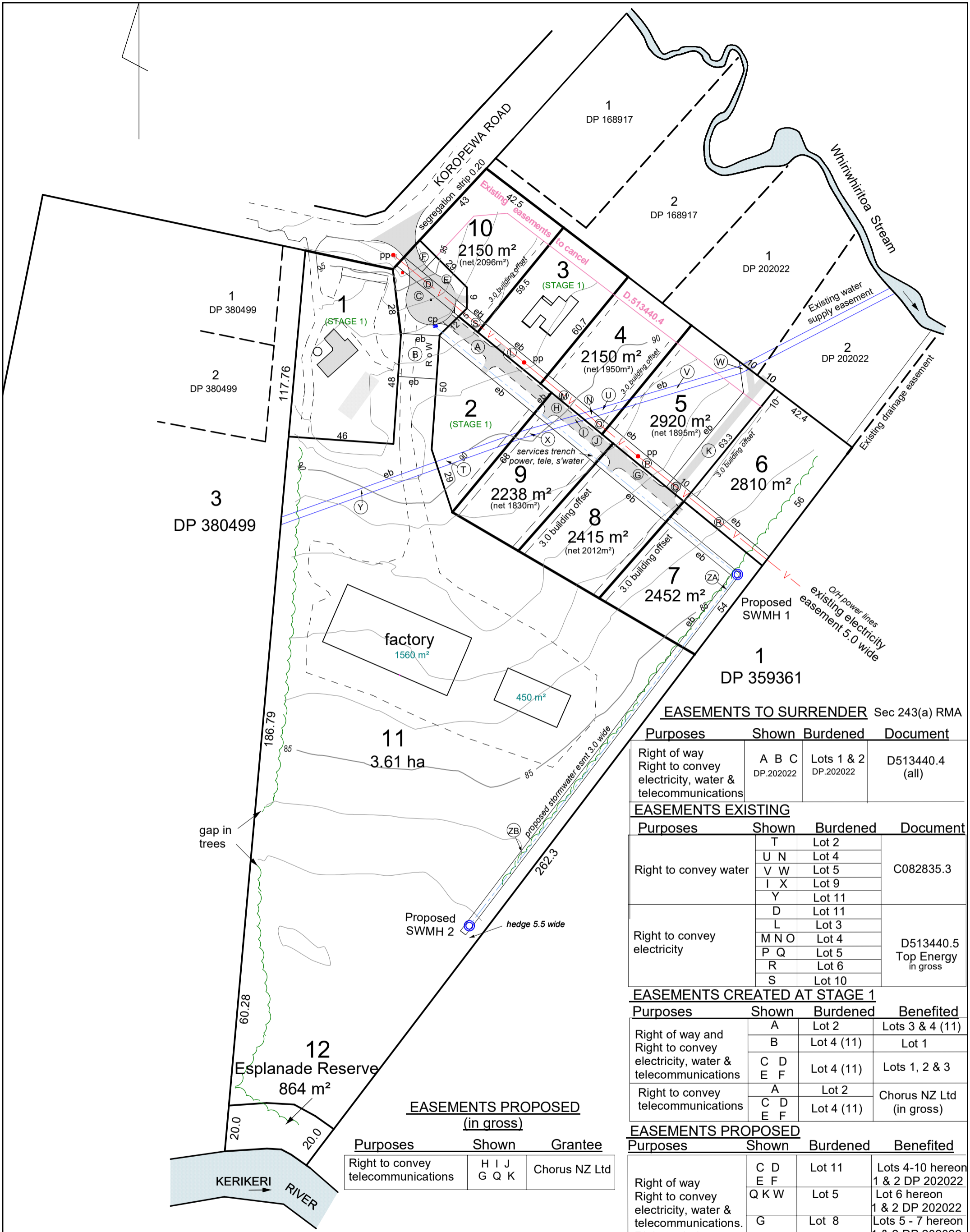
LOTS 1 - 4 BEING A PROPOSED SUBDIVISION OF LOT 3 DP 202022

Notes:
 Areas and measurements are subject to survey
 For resource consent purpose only.

file 8054 Scheme plan Stage 1.mjo



Contour interval : 1 m
 Scale @ A3 : 1:1500
 Date : 14 November 2023
 Ref : 8054



EASEMENTS TO SURRENDER Sec 243(a) RMA

Purposes	Shown	Burdened	Document
Right of way Right to convey electricity, water & telecommunications	A B C DP.202022	Lots 1 & 2 DP.202022	D513440.4 (all)

EASEMENTS EXISTING

Purposes	Shown	Burdened	Document
Right to convey water	T	Lot 2	C082835.3
	U N	Lot 4	
	V W	Lot 5	
	I X	Lot 9	
Right to convey electricity	Y	Lot 11	D513440.5 Top Energy in gross
	D	Lot 11	
	L	Lot 3	
	M N O	Lot 4	
	P Q	Lot 5	
	R	Lot 6	
	S	Lot 10	

EASEMENTS CREATED AT STAGE 1

Purposes	Shown	Burdened	Benefited
Right of way and Right to convey electricity, water & telecommunications	A	Lot 2	Lots 3 & 4 (11)
	B	Lot 4 (11)	Lot 1
Right to convey telecommunications	C D E F	Lot 4 (11)	Lots 1, 2 & 3
	A	Lot 2	Chorus NZ Ltd (in gross)
	C D E F	Lot 4 (11)	

EASEMENTS PROPOSED

Purposes	Shown	Grantee
Right to convey telecommunications	H I J G Q K	Chorus NZ Ltd

Purposes	Shown	Burdened	Benefited
Right of way Right to convey electricity, water & telecommunications. Right to drain water.	C D E F	Lot 11	Lots 4-10 hereon 1 & 2 DP 202022
	Q K W	Lot 5	Lot 6 hereon 1 & 2 DP 202022
	G	Lot 8	Lots 5 - 7 hereon 1 & 2 DP 202022
	H I J	Lot 9	Lots 4 - 8 hereon 1 & 2 DP 202022
Right to drain water	ZA	Lot 7	Lots 2 - 6, 8 - 10
	ZB	Lot 11	Lots 2 - 10



Scale @ A3 : 1:1500

file 8054 Scheme plan Stage 2.mjo

STAGE 2 OF 2 STAGES

LOTS 4 - 12 BEING A PROPOSED SUBDIVISION OF LOT 3 DP 202022



Contour interval : 1m
Date : 14 November 2023
Ref : 8054

Wilton Joubert Limited
09 527 0196
PO BOX 11-381
Ellerslie
Auckland 1524

SITE Lot 3 DP 202022, 29C Koropewa Road, Kerikeri

PROJECT Proposed Subdivision

CLIENT Breakwater Trust

REFERENCE NO. 123295

DOCUMENT Site Suitability Report

STATUS/REVISION No. D

DATE OF ISSUE 20th November 2023

Report Prepared For	Attention	Email
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Reviewed & Approved by	B. Steenkamp <i>(CPEng, CMEngNZ, BEng Civil, BSc (Geology))</i>	Senior Civil Engineer	BenS@wjl.co.nz	[REDACTED]

1. EXECUTIVE SUMMARY

The following table is intended to be a concise summary which must be read in conjunction with the relevant report sections as referenced herein.

Parent Lot Legal Description:	Lot 3 DP 202022
Parent Lot Site Area:	6.2232 ha
Development Proposals Supplied:	<ul style="list-style-type: none"> • Stage 1 of 2 Stages Scheme Plan prepared by Donaldsons Surveyors titled "Lots 1 – 4 being a proposed subdivision of Lot 3 DP 202022". Ref. 8054 dated 14 November 2023. • Stage 2 of 2 Stages Scheme Plan prepared by Donaldsons Surveyors titled "Lots 4 – 12 being a proposed subdivision of Lot 3 DP 202022". Ref. 8054 dated 14 November 2023. • Overall Scheme Plan prepared by Donaldsons Surveyors titled "Lots 1 – 12 being a proposed subdivision of Lot 3 DP 202022". Ref. 8054 dated 14 November 2023.
Associated Documents:	WJL Site Suitability Report – Geotechnical Componentry Ref. 122623.
Development Type:	<p>Stage 1 Proposed 4-lot subdivision</p> <ul style="list-style-type: none"> • 3 x Residential Lots • 1 x Commercial Lot <p>Stage 2 Proposed 12-lot Subdivision.</p> <ul style="list-style-type: none"> • 10 x Residential Lots • 1 x Commercial Lot • 1 x Esplanade Reserve (to be vested in council)
Geology Encountered:	Kerikeri Volcanic Deposits.
Lot Sizes:	<p>Stage 1 Proposed Lot 1 – 3,510m² Proposed Lot 2 – 2,430m² Proposed Lot 3 – 2,150m² Proposed Lot 4 – 54,100m²</p> <p>Stage 2 Proposed Lot 1 – 3,510m² Proposed Lot 2 – 2,430m² Proposed Lot 3 – 2,150m² Proposed Lot 4 – 2,150m² Proposed Lot 5 – 2,920m² Proposed Lot 6 – 2,810m² Proposed Lot 7 – 2,452m² Proposed Lot 8 – 2,415m² Proposed Lot 9 – 2,238m² Proposed Lot 10 – 2,150m² Proposed Lot 11 – 36,100m² Proposed Lot 12 – 864m² (Esplanade Reserve)</p>
District Plan Zone:	Rural Production
Wastewater Disposal:	Wastewater to be managed via on-site effluent disposal in accordance with the relevant standards. Recommendations for design have been provided for in Section 7. See WJL Wastewater Report 126669 for Lot 3 wastewater management design.
Stormwater Management – District Plan Rules:	Permitted Activity:

8.6.5.1.3 STORMWATER MANAGEMENT – The maximum proportion of gross site area covered by buildings and other impermeable surfaces shall be 15%.

Controlled Activity:

8.6.5.2.1 STORMWATER MANAGEMENT – The maximum proportion of the gross site area covered by buildings and other impermeable surfaces shall be 20%.

Subdivision Drainage:	<p>Stage 1</p> <ul style="list-style-type: none">Existing structures' drainage elements are to be located and verified as operational. Rerouting of existing drainage and installation of new dispersal devices may be implemented where appropriate.Primary flows from the newly proposed development on Lot 3 are to be directed to a channel, detention trench and outfall per the WJL Stormwater Report Ref. 126668-B. <p>Stage 2</p> <ul style="list-style-type: none">All primary flows are to be directed to a drainage channel system.Minimum 300mmØ culverts required under proposed lots 2-4, 8 & 9 vehicle crossings. A minimum 375mmØ culvert is to be installed under the Lot 7 vehicle crossing to convey runoff from Channel 2 to Channel 3.150mmØ uPVC (or similar) connections to swale system to be provided for lots 2-10.Runoff will be released via even sheet flow to the lower-lying grassed area at the southern end of the parent lot.
Attenuation:	<p>Stage 1</p> <ul style="list-style-type: none">An attenuation tank must be installed on Lot 1 to address the Permitted Coverage breach resulting from subdivision.Attenuation tanks must be installed on Lot 4 to address the Permitted Coverage breach resulting from subdivision.Primary flows from the newly proposed development on Lot 3 are to be attenuated via a detention trench per the WJL Stormwater Report Ref. 126668-B. <p>Stage 2</p> <p>Runoff resulting from impermeable areas exceeding the Permitted Coverage threshold for all lots, accounting for an allowance for future development on Lots 2-10, will require attenuation. For this, a detention pond at the southern end of the site is proposed.</p>
Potable Water Supply:	To be provided via on-site rainwater tanks.
Firefighting Water:	To be provided via on-site tanks. FENZ to be consulted for firefighting volume requirements. The standard requirements can be waived or adjusted if a different agreement is specifically made with the New Zealand Fire Service for the subject site or subdivision.
Access:	<p>Lots accessed off Koropewa Road via ROW.</p> <p>Commentary for access suitability provided in Section 11.</p>
Further Review of Development Proposals Required:	A review would be required for any design/proposal changes that may affect the concepts presented within this report.

2. SCOPE OF WORK & DEVELOPMENT PROPOSALS

Wilton Joubert Limited was engaged by Breakwater Trust (the Client) to undertake a site suitability investigation to support a proposed 2-stage 1-into-12 lot subdivision under section 106 of the Resource management Act, for Lot 3 DP 202022. The parent lot is to be subdivided in two stages as depicted in the subdivision scheme plans prepared by Donaldsons Surveyors; Ref: 8054, dated 14 November 2023, with subdivision into four lots in Stage 1 and a further eight lots being created in Stage 2 (parent lot subdivided into 12 lots total upon completion of Stage 2). See Figures 1 & 2 Below.

The following report provides preliminary site suitability assessments and recommendations in regard to Stormwater Management, Wastewater Management and Access for the subdivision. Preliminary earthworks quantities are also given under a range of assumptions for proposed drainage channels, an attenuation pond, and a proposed Right of Way. Our understanding of the general subdivision layout and proposed works at the time of report-writing is summarised below.

The parent 6.2232-hectare lot is currently occupied by a two-storey dwelling and a large greenhouse located in the north-western corner of the property. The greenhouse is to be removed during Stage 1 of the subdivision. A factory is currently under construction in the northern end of the south-western half of the property (refer to Figure 6 below). The existing dwelling and the factory are located within proposed lots 1 and 4 in the Stage 1 scheme plan (or 1 and 11 in the Stage 2 scheme plan) respectively. Lots 2-10 (Stage 2) are intended to contain residential dwellings. Lot 12, extending 20m from the parent lot's southern boundary bordering the Kerikeri River, is to be vested in FNDC as an esplanade reserve.

A geotechnical assessment has been completed by WJL in December 2022, titled: Geotechnical Site Suitability Report (Ref No: 122623, dated: 14.12.2022) for the subject site, which should be read in conjunction with this report.

Any revision of the supplied drawings and/or development proposals with stormwater management, wastewater management and access implications should be referred back to us for review. This report is not intended to support building consent applications for the future proposed lots, and any revision of the supplied drawings and/or development proposals including those for Building Consent, and which might rely on stormwater, wastewater and/or access assessments herein, should be referred to us for review.

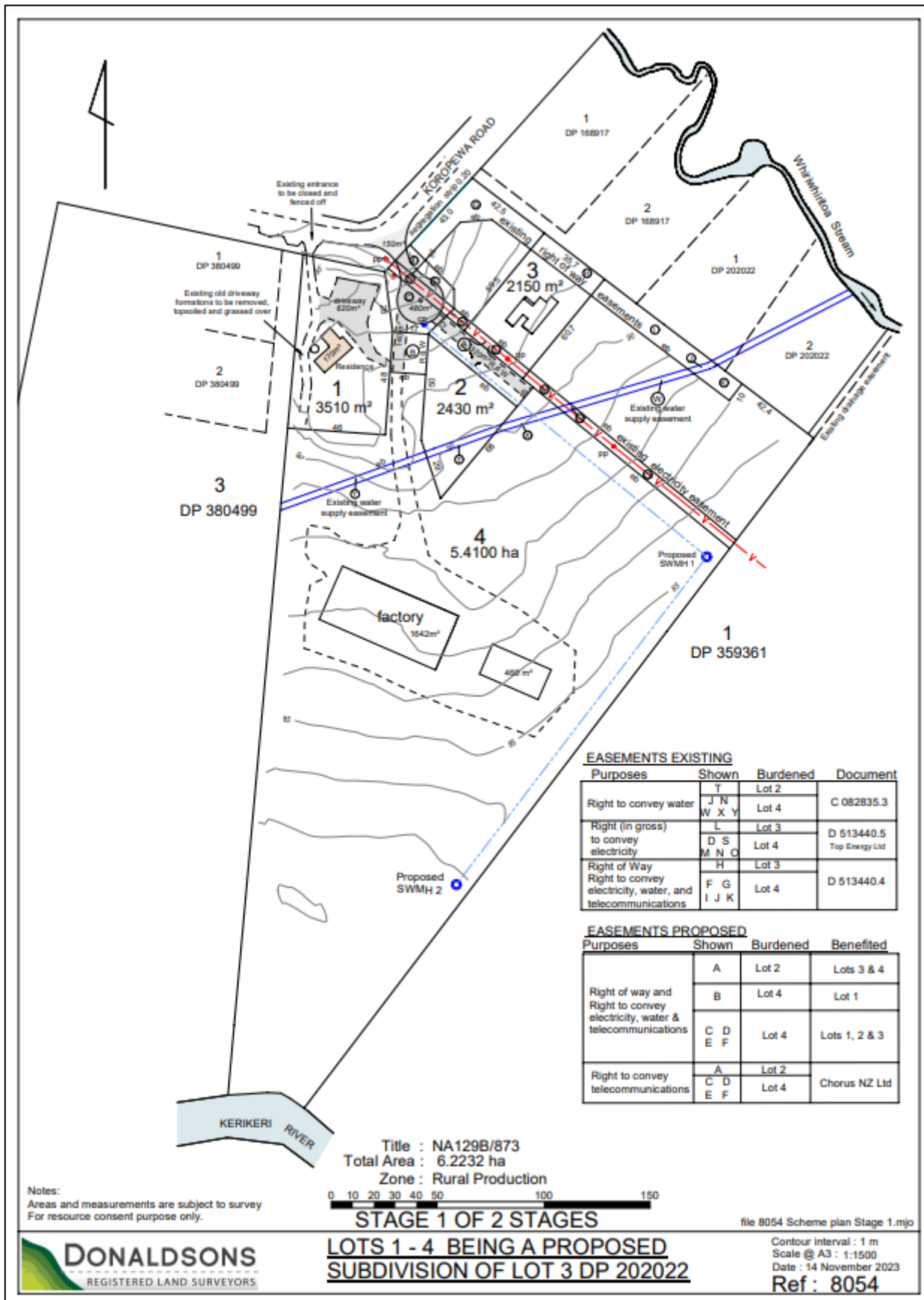


Figure 1: Excerpt of the Stage 1 Scheme Plan Prepared by Donaldsons Surveyors. Ref. 8054 dated 14.11.2023.

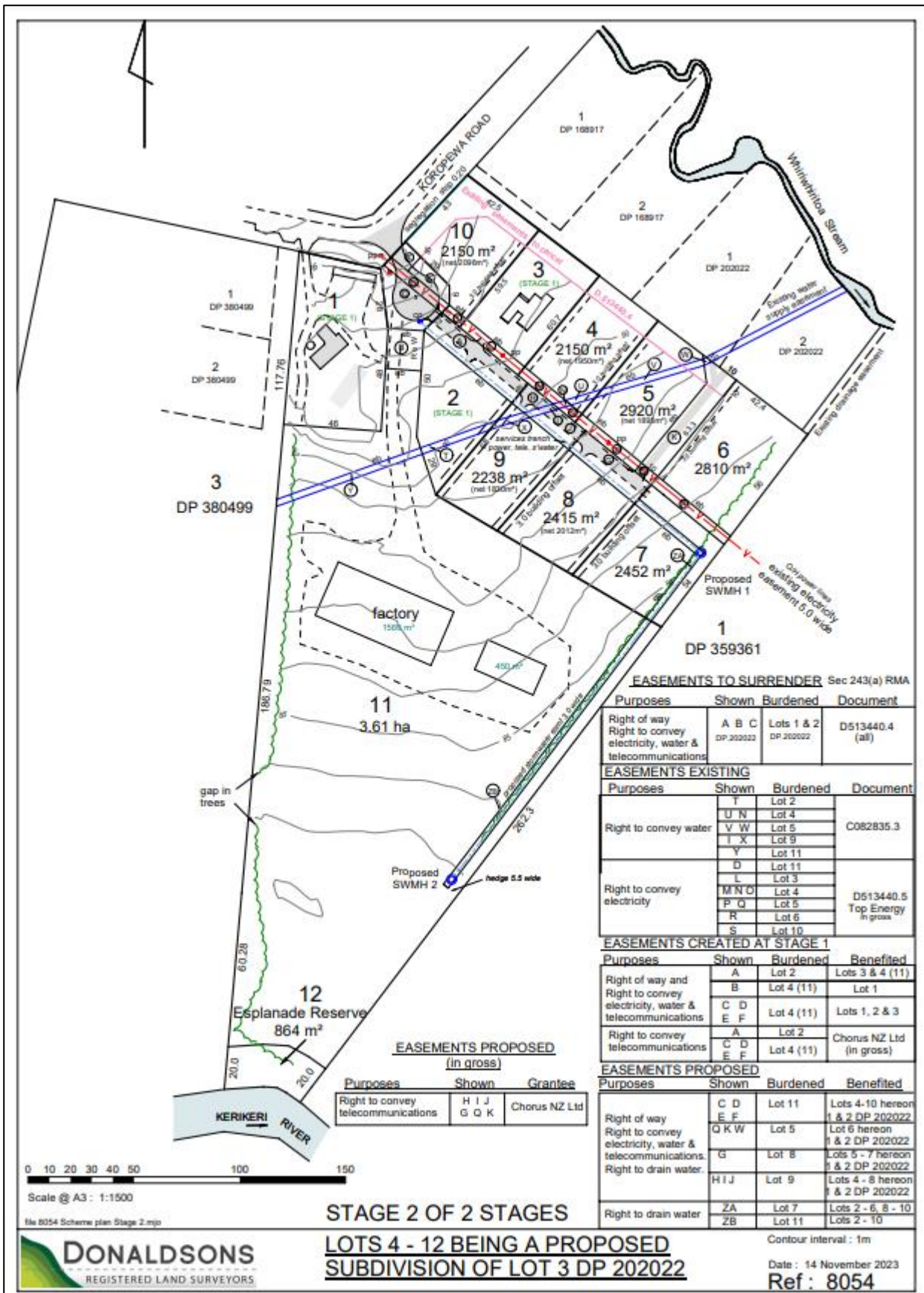


Figure 2: Excerpt of the Stage 2 Scheme Plan Prepared by Donaldsons Surveyors. Ref. 8054 dated 14.11.2023.

3. SITE DESCRIPTION

The subject property is legally described as 'Lot 3 DP 202022', situated at 29C Koropewa Road. Access to the parent lot is through the northwest corner, directly from Koropewa Road, with an existing gravel driveway situated along the north-eastern boundary, as well as to the east of the existing dwelling leading towards the factory.

The site measures 6.2232ha in area and is generally flat to gently sloping, with average gradients of around 3-4° falling from the northwest corner of the site towards the east and south. Vegetation on-site consists of overgrown grass across the whole site, with large trees along the north-eastern and south-eastern boundaries.

From review of the scheme plan, there appears to be an existing water supply easement (3 metres wide) situated horizontally (west to east) in the approximate centre of the site. Furthermore, an overhead power line (5 metres wide easement) is situated in the approximate centre of the site, intersecting the northern corner and south-eastern boundaries.

Surrounding properties are all similar rural-residential style.

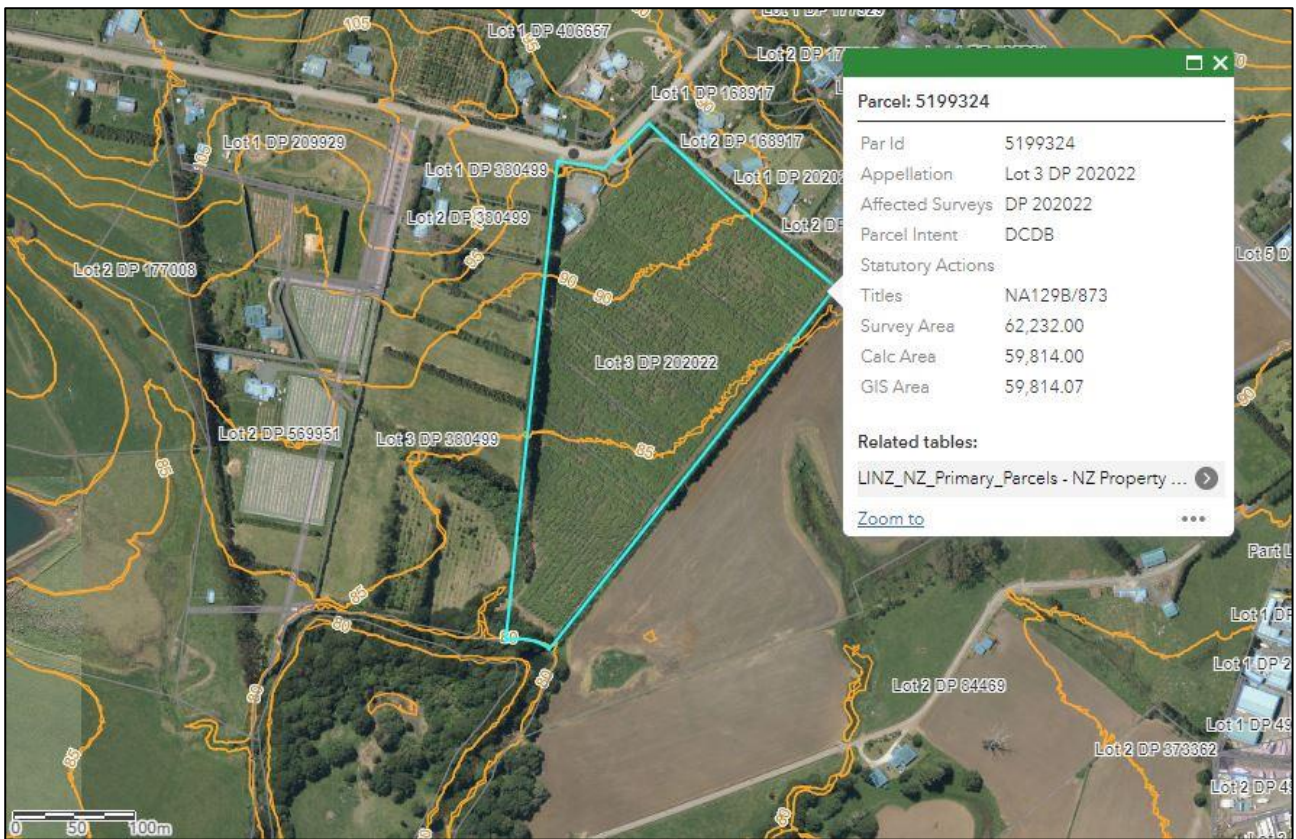


Figure 3: Aerial view with the subject property highlighted in blue with 5m contours in gold
(From Far North District Council's GIS Map)



Figure 4: Drone aerial photo of the subject site, taken from beyond south-eastern boundary facing north-west.



Figure 5: Drone aerial photo of the subject site, facing south-east.



Figure 6: Drone aerial photo of the existing dwelling and factory in construction.



Figure 7: Drone aerial photo of the southern end of the parent lot.

4. PUBLISHED GEOLOGY

Local geology at the property is noted on the GNS Science New Zealand Geology Web Map, Scale 1:250,000, as Kerikeri Volcanic Group Late Miocene basalt of Kaikohe – Bay of Islands Volcanic Field (red shaded area), described as; “Basalt lava, volcanic plugs and minor tuff,” refer; ‘GNS Science Website.’

Land immediately to the south of the site, within proximity of the channel of the nearby river/stream is noted as Holocene river deposits (beige shaded area), described as; “Unconsolidated to poorly consolidated mud, sand, gravel and peat deposits of alluvial, colluvial and lacustrine origins.”

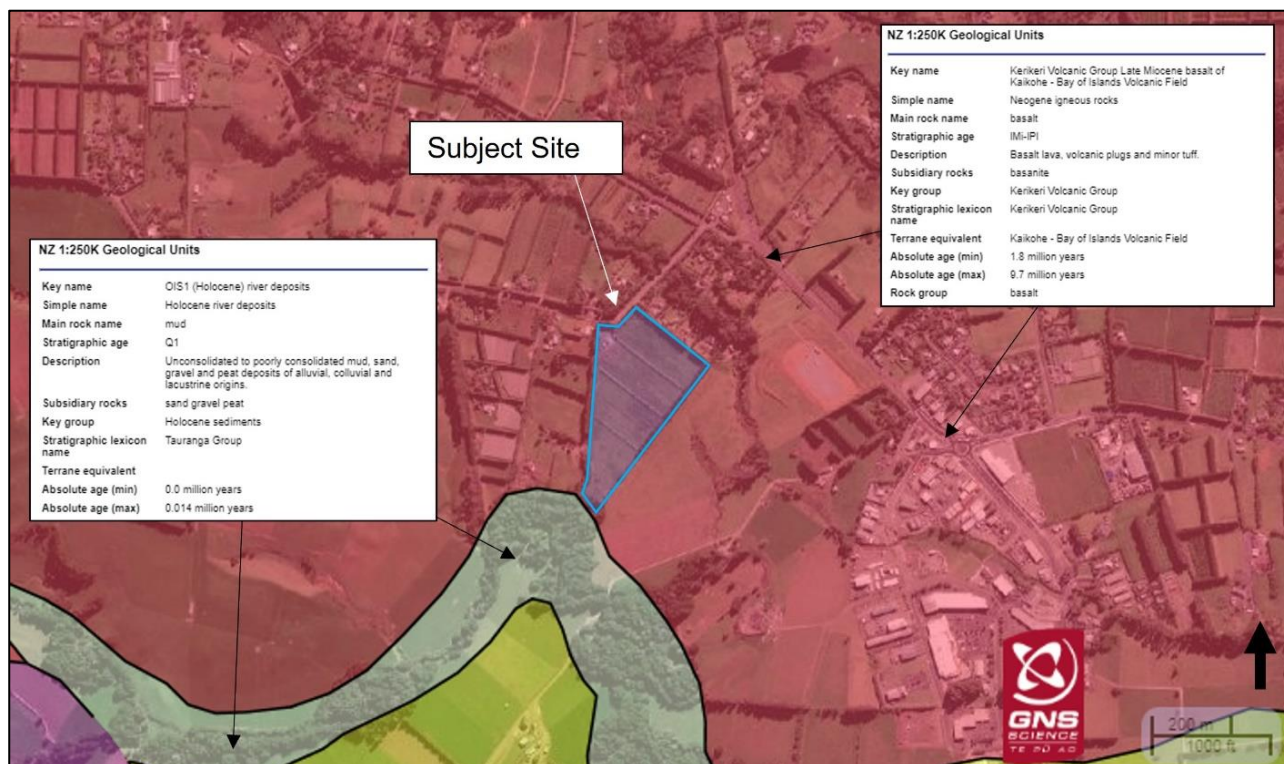


Figure 8: Screenshot of New Zealand geological map, GNS science website.

5. NATURAL HAZARDS

Northland Regional Council Maps indicates that the southern corner of the property is mapped within the 10-year, 50 year and 100 year modelled Priority Rivers flood extent (see Figure below).

The subject site is setback approximately 190 metres away from the modelled river flood extent. Therefore, we consider there to be no significant impact of potential flooding within the site for the proposed development.



Figure 9: Screenshot from Northland Regional Council (NRC) online GIS showing River Flood Extent within proximity of the subject site.

6. EARTHWORKS

All earthworks are to be completed in accordance with the relevant standards and the Geotechnical Report. Geometric design and pavement design for the Right of Way are not included in this report – these are to be undertaken at the detailed design stage by a suitably qualified professional.

Preliminary estimations of earthworks quantities for the proposed Right of Way, the drainage channels and attenuation pond as detailed in Section 8 of this report are provided below. No earthworks have been considered for future development on the subdivided lots. The quantities are based on the proposals as depicted in the supplied plans and the following assumptions:

- Assumed Lot 11 ROW entrance profile following gradual slope from lot boundary existing level to existing level at start of Lot 2 ROW. Assumed Lots 2, 5, 8 & 9 ROW profile following EGL (contours of EGL obtained from LINZ). Assumed 300mm cut below finished ROW level, with imported materials not considered – the resulting determined volumes are cut only. Indicative ROW section having 2% crossfall from centreline. Quantities determined via modelling in Civil 3D.
- Drainage channels formed via cut only. No grading from channel extents to finished ground level considered.
- Pond earthworks are based on the preliminary pond design detailed herein. Geotechnical input is required for pond lining, fill and bund construction. Quantities determined via modelling in Civil 3D.

See Tables 1-3 below for a breakdown of the calculated quantities.

Table 1: Estimated Stage 1 Earthworks Quantities

	Earthworks Area (m ²)	Cut Volume (m ³)
Lot 11 ROW	480	357
Lot 2 ROW	320	94
Total	800	451

Table 2: Estimated Drainage Channel Earthworks Quantities

Channel (per Drawing C201)	Length (m)	Cross-Sectional Area (m ²)	Estimated EW Area (m ²)	Estimated Cut Volume (m ³)
1	128	0.29	166.4	37.4
2	128	0.29	166.4	37.4
3	66.5	0.094	49.9	6.2
4a	55	0.91	110	50.1
4b	147.5	0.43	221.3	63.1
5	291.1	0.24	349.3	69.8
6	219.3	0.24	263.2	52.6
Outlet	25	1.44	75	34.6
Level Spreader	45	1.44	135	64.8
		Total	1,370.1	416

Table 3: Estimated Stage 2 Earthworks Quantities

	Earthworks Area (m ²)	Cut Volume (m ³)	Fill Volume (m ³)
ROW Lots 8&9	464	135.6	-
ROW Lot 5	281	80.2	-
Attenuation Pond	2,080	73	718
Drainage Channels	1,370.1	416	-
Total	4,195.1	704.8	718

Under the assumptions detailed above, the following quantities have been estimated:

- For Stage 1, a cut volume of 451m³ over an area of 800m²
- For Stage 2, a cut volume of 705m³ and a fill volume of 718m³ over an area of 4,195m²
- For both stages combined, a cut volume of 1,156m³ and a fill volume of 718m³ over an area of 4,195m².

7. WASTEWATER MANAGEMENT

Lot 1

It is our understanding that a wastewater treatment system is present in proposed Lot 1 to service the existing dwelling. We recommend that a registered drainlayer be engaged to provide commentary on the condition and confirm the location of the existing wastewater system, including any trenches or effluent fields. This should be conditioned as part of the Resource Consent process.

If the existing septic system is functioning, fit for the existing dwelling and located within Lot 1 it may continue to operate, given that Lot 1 is not re-developed. If any trenches or effluent fields are not within proposed Lot 1, the system can be either re-located to Lot 1, or it can be decommissioned and replaced with a new on-site wastewater treatment system in accordance with the recommendations herein.

A new site-specific design based on TP58 will be required by FNDC for any future development within Lot 1.

Lots 2-10

No existing wastewater management systems are present within Lots 2-10. As such, any future system must comply with the design details provided below. A new site-specific TP58 document will be required by FNDC for any future development within Lots 2-10. This should be conditioned as part of the Resource Consent process.

A wastewater management design has been provided in a separate report for Proposed Lot 3 – see WJL Wastewater Report Ref. 126669.

Lot 11

The wastewater treatment system to service Lot 1 has been previously designed by LDE. If the wastewater management system is to be installed in accordance with the LDE design, adjustments to the positioning of the disposal and reserve areas to ensure sufficient clearances to the proposed pond (>15m) and associated swale drain (>5m) are recommended. Indicative disposal field and reserve field locations are shown in the appended Site Plans. The wastewater design engineer is to confirm if the proposed variation to the effluent field location is acceptable.

7.1 DESIGN PARAMETERS

The following tables are intended to be a concise summary of design parameters, which must be read in conjunction with the relevant report sections as referenced herein.

As no development proposals are available at this stage for the eventual residential development within Lots 2-10, our recommendations have been based on a moderate size dwelling containing 4 bedrooms.

Given the subsoils encountered during WJL's fieldwork investigation, we recommend secondary treatment or higher for proposed Lots 1 – 10.

7.1.1 Summary of Preliminary Design Parameters for a PCDI Secondary Treatment System

Development Type:	Residential Dwellings
Effluent Treatment Level:	Secondary (<BOD5 20 mg/L, TSS 30 mg/L)
Fill Encountered in Disposal Areas:	Not encountered
Water Source:	Rainwater Collection Tanks
Site Soil Category (TP58):	Category 6 – Silty Clay – Slowly Draining
Estimate House Occupancy:	Lots 2-10 6 persons
Loading Rate:	PCDI System – 3mm/day
Estimated Total Daily Wastewater Production per Lot:	Lots 2-10: 1,080L

Typical Wastewater Design Flow Per Person	180l/pp/pd (Estimated – introduction of water conservation devices may enable lower design flows)
Application Method:	Surface or subsurface laid PCDI lines.
Loading Method	Dosed
Minimum Tank size	Lots 2-10: >1080L
Emergency Storage	24 hours
Estimated Min. Disposal Area Requirement	Lots 2-10: ~360m ²
Required Min. Reserve Area:	30%
Buffer Zone	Not anticipated to be required.
Cut-off Drain	Not anticipated to be required.

7.2 REQUIRED SET BACK DISTANCES

The disposal and reserve areas must be situated outside the relevant exclusion areas and setbacks described within Table 9 of the PRPN: Exclusion areas and setback distances for on-site domestic wastewater systems:

Feature	Primary treated domestic type wastewater	Secondary and tertiary treated domestic type wastewater	Greywater
<i>Exclusion areas</i>			
Floodplain	5 percent annual exceedance probability	5 percent annual exceedance probability	5 percent annual exceedance probability
<i>Horizontal setback distances</i>			
Identified stormwater flow path (including a formed road with kerb and channel, and water-table drain) that is down-slope of the disposal area	5 metres	5 metres	5 metres
River, lake, stream, pond, dam or natural wetland	20 metres	15 metres	15 metres
Coastal marine area	20 metres	15 metres	15 metres
Existing water supply bore	20 metres	20 metres	20 metres
Property boundary	1.5 metres	1.5 metres	1.5 metres
<i>Vertical setback distances</i>			
Winter groundwater table	1.2 metres	0.6 metres	0.6 metres

Figure 10: Table 9 of the PRPN (Proposed Regional Plan for Northland).

7.3 NORTHLAND REGIONAL PLAN ASSESSMENT

The future wastewater disposal system should meet the compliance points below, stipulated within Section C.6.1.3 of the Proposed Regional Plan for Northland:

C.6.1.3 Other on-site treated domestic wastewater discharge– permitted activity	
The discharge of domestic type wastewater into or onto land from an on-site system and the associated discharge of odour into air from the on-site system are permitted activities, provided:	
#	Rule
1	The on-site system is designed and constructed in accordance with the Australian/New Zealand Standard. On-site Domestic Wastewater Management (AS/NZS 1547:2012), and
2	The volume of wastewater discharged does not exceed two cubic metres per day, and
3	The discharge is not via a spray irrigation system or deep soakage system, and
4	The slope of the disposal area is not greater than 25 degrees, and
5	The wastewater has received secondary or tertiary treatment and is discharged via a trench or bed in soil categories 3 to 5 that is designed in accordance with Appendix L of Australian/New Zealand Standard. On-site Domestic Wastewater Management (AS/NZS 1547:2012); or is via an irrigation line system that is:
	a) dose loaded, and
	b) covered by a minimum of 50 millimetres of topsoil, mulch, or bark, and
6	For the discharge of wastewater onto the surface of slopes greater than 10 degrees:
	a) the wastewater, excluding greywater, has received at least secondary treatment, and
	b) the irrigation lines are firmly attached to the disposal area, and
	c) where there is an up-slope catchment that generates stormwater runoff, a diversion system is installed and maintained to divert surface water runoff from the up-slope catchment away from the disposal area, and
	d) a minimum 10 metre buffer area down-slope of the lowest irrigation line is included as part of the disposal area, and
	e) the disposal area is located within existing established vegetation that has at least 80 percent canopy cover, or
	f) the irrigation lines are covered by a minimum of 100 millimetres of topsoil, mulch, or bark, and
7	the disposal area and reserve disposal area are situated outside the relevant exclusion areas and setbacks in Table 9: Exclusion areas and setback distances for on-site domestic wastewater systems, and
8	for septic tank treatment systems, a filter that retains solids greater than 3.5 millimetres in size is fitted on the outlet, and
9	the following reserve disposal areas are available at all times:
	a) 100 percent of the existing effluent disposal area where the wastewater has received primary treatment or is only comprised of greywater, or
	b) 30 percent of the existing effluent disposal area where the wastewater has received secondary treatment or tertiary treatment, and
10	the on-site system is maintained so that it operates effectively at all times and maintenance is undertaken in accordance with the manufacturer's specifications, and
11	the discharge does not contaminate any groundwater water supply or surface water, and

12	there is no surface runoff or ponding of wastewater, and
13	there is no offensive or objectionable odour beyond the property boundary.

We envision that there will be no issue meeting the Permitted Activity Status requirements as outlined above.

8. STORMWATER MANAGEMENT

8.1 ASSESSMENT CRITERIA

The following stormwater assessment has been completed in accordance with the recommendations and requirements contained within the Far North District Engineering Standards and the Far North District Council District Plan.

Per Figure 11 below, the site resides in a Rural Production Zone:

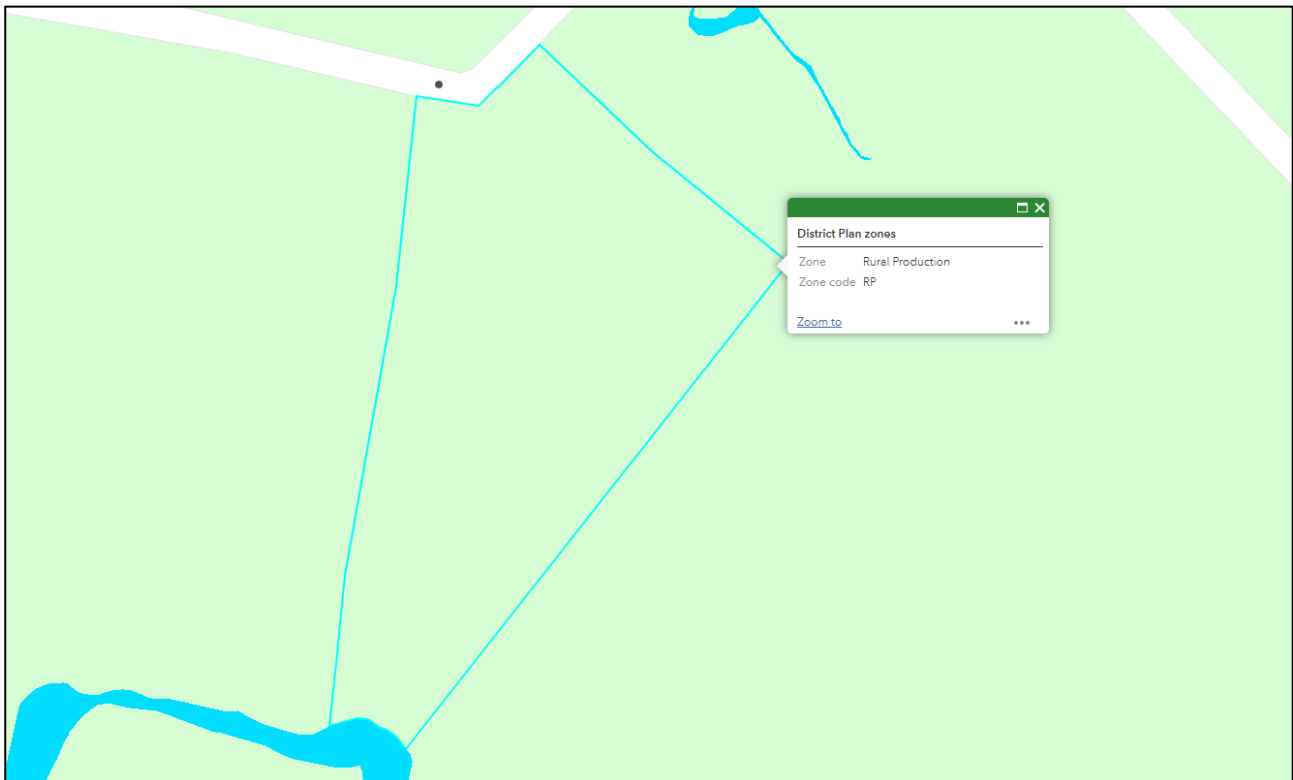


Figure 11: Screenshot of FNDC District Plan Maps showing parent lot zoning (Rural Production).

The following Stormwater Management Rules Apply:

Permitted Activity:

8.6.5.1.3 STORMWATER MANAGEMENT – The maximum proportion of gross site area covered by buildings and other impermeable surfaces shall be 15%.

Controlled Activity:

8.6.5.2.1 STORMWATER MANAGEMENT – The maximum proportion of the gross site area covered by buildings and other impermeable surfaces shall be 20%.

To comply with the parameters of the Permitted Activity Rule (8.6.5.1.3), the proposed lots must not exceed an impermeable area coverage of 15%. The anticipated post-development impermeable coverages and corresponding Activity Status for each lot in Stages 1 & 2 are summarised below.

The assumed roof and driveway areas are a conservative indication of potential development only for the purposes of stormwater management concept design.

Table 4: Stage 1 Impermeable Coverage

Lot	Proposed Lot Area (m ²)	Existing Roof Area (m ²)	Driveway Area (m ²)	New ROW Area (m ²)	Existing Right of Way Area (m ²)*	Total Anticipated Impermeable Coverage (m ²)	% Site Area Coverage	Anticipated Status
1	3,510	170	620	-	-	790	22.5	Discretionary
2	2,430	-	-	320	-	320	13.2	Permitted
3	2,150	280	190	-	125	595	27.7	Discretionary
4	54,100	2,102	5,829	480	547	8,958	16.6	Controlled

* Refers to Existing ROW area serving Lots 1 & 2 DP 202022.

Table 5: Stage 2 Impermeable Coverage

Lot	Proposed Lot Area (m ²)	Roof Area (m ²)*	Driveway Area (m ²)	New ROW Area (m ²)	Total Anticipated Impermeable Coverage (m ²)	% Site Area Coverage	Area Exceeding Permitted Threshold (m ²)	Anticipated Status
1	3,510	170	620	-	790	22.5	263.5	Discretionary
2	2,430	280	190	310	780	32.1	415.5	Discretionary
3	2,150	280	190	-	470	21.9	147.5	Discretionary
4	2,150	280	190	-	470	21.9	147.5	Discretionary
5	2,920	280	190	281	751	25.7	313	Discretionary
6	2,810	280	190	-	470	16.7	48.5	Controlled
7	2,452	280	190	-	470	19.2	102.2	Controlled
8	2,415	280	190	250	720	29.8	357.75	Discretionary
9	2,238	280	190	214	684	30.6	348.3	Discretionary
10	2,150	280	190	-	470	21.9	147.5	Discretionary
11	36,100	2,102	5,829 + 1,500**	480	9,911	27.5	4496	Discretionary
12	864	-	-	-	0	0	0	Permitted

* Lots 2-10 assumed roof and driveway areas are a conservative indication of potential development only for the purposes of stormwater management concept design.

** Additional allowance of 1,500m² for future expansion of Lot 11 Factory.

For Stage 1 of the subdivision, Lots 1, 3 & 4 will not be compliant with Permitted Activity Rule (8.6.5.1.3). For the breach on Stage 1 Proposed Lots 1 & 4, detention tanks will be provided to attenuate flows back to Permitted Activity levels for these lots. See Section 8.2 below.

A stormwater management report for development on Lot 3 has been provided by WJL, separate to this report. The report contains recommendations for stormwater management of a dwelling and driveway on Lot 3 as well as the section of the ROW providing access to Lots 2 and 3 during Stage 1. Provided that recommendations in the Stormwater Report Ref. 126668 are adhered to, post-development runoff resulting from Proposed Lot 3 exceeding the Permitted Activity threshold will be attenuated to less than pre-development flow rates for the 10% AEP and 1% AEP storm events accounting for climate change, and the Lot 3 coverage breach during Stage 1 will be addressed. Refer to the Stormwater Mitigation Report by WJL Ref. 126668-B, dated 29.06.2023.

For Stage 2 of the subdivision, all lots aside from Lot 12 will not be compliant with Permitted Activity Rule (8.6.5.1.3). The total amount of impermeable area constructed on-site after subdivision works and future developments on the residential lots is anticipated to be approximately **6,780m²**. To address the impermeable coverage breaches, a subdivisional attenuation pond is proposed to provide hydrologic neutrality for an impermeable area of at least 6,780m² to effectively mitigate flows back to Permitted Activity levels across the subdivision. Any future development on the lots exceeding the coverage shown in Table 5 above will require specific stormwater management design at the Building Consent stage, complying with E1 – Surface Water of the NZBC and the Far North District Council Engineering Standards.

The stormwater design concepts herein are intended to indicate that a system adhering to the relevant standards is able to be implemented on-site. Design elements specified below are to be reviewed and adjusted where appropriate at the detailed design stage.

Stormwater Modelling Methodology

The calculations herein have been computed using HydroCAD modelling software. The model has been configured utilising the Rational Method (NZ Building Code E1). The post-development flow scenarios for the storm events must be increased to account for climate change. For this, the NIWA RCP6.0 rainfall data scenario for 2081-2100 has been used. The rainfall intensity values for the 10% AEP storm event and 1% AEP storm events adjusted for climate change are as follows:

Rainfall Intensity Values (RCP6.0 2081-2100)								
Time	10m	20m	30m	1h	2h	6h	12h	24h
10% AEP	118	86.6	72.3	52.8	37.7	20.7	13.5	8.5
1% AEP	176	130	109	79.8	57.1	31.7	20.8	13

Catchment delineation was undertaken using the provided scheme plan and topographic data obtained from LINZ. The runoff coefficients for impermeable areas and permeable areas were taken as 0.96 and 0.59 respectively in accordance with Table 4-3 of the FNDC Engineering Standards.

8.2 STORMWATER MANAGEMENT – STAGE 1

8.2.1 Stormwater Management

Stormwater management recommendations for newly proposed impermeable areas forming part of Stage 1 of the subdivision (Lot 3 residential development and Lot 2 ROW area) have been provided in the Stormwater Report Ref. 126668-B dated 29.06.23. Refer to this report for the stormwater management system requirements and recommendations.

The discharge points servicing existing impermeable surfaces on each of the lots forming part of Stage 1 should be confirmed as operational. If the discharge points are in suitable condition these should be maintained and continue to service the existing structures.

Through implementation of the recommendations in the WJL Stormwater Report Ref. 126668 and those given in Sections 8.2.2 & 8.2.3 of this report, all runoff generated from the Stage 1 post-development impermeable areas exceeding the Permitted Activity coverage threshold will be attenuated to pre-development conditions for the 10% AEP and 1% AEP storm events accounting for climate change factors.

8.2.2 Lot 1 Detention Tank & Outfall

The total impermeable coverage area on Proposed Lot 1 exceeding the Permitted Activity threshold during Stage 1 will be **264m²**. Therefore, a detention tank shall be provided to attenuate flows for the 10% AEP and 1% AEP storm events, accounting for climate change, back to pre-development flow rates.

To provide this, the downpipes of the existing residence on Lot 1 are to be redirected to a new 15,000L detention tank on Lot 1. The design elements of the detention tank are as follows:

Proposed Tank	1 x 15,000 litre Promax Tank (or similar)
Tank dimensions	3000m Ø (or greater) x 2600mm high (or greater)
Outlet orifice (10% AEP control)	18mm diameter orifice ; located <u>150mm above the tank base</u> <ul style="list-style-type: none">- 1066mm water elevation- 7.5m³ Storage
Outlet orifice (1% AEP control)	20mm diameter orifice ; located <u>1070mm above the 10% AEP control orifice</u> <ul style="list-style-type: none">- 1581mm water elevation- 11.2m³ Storage
Overflow Outlet	100mm diameter ; located at the top of the tank

See the appended Stage 1 Lot 1 Tank Detail C210.

If the existing outfall servicing the Lot 1 residence is operational and in adequate condition, the tank outlet may direct flows to the existing discharge point via sealed pipes. Alternatively, the tank outlet is to direct flows via sealed pipes to a 6m long dispersal bar constructed level with the topography and in accordance with the attached Dispersal Device Detail C212. See the appended Stage 1 Site Plan C200 for clarification.

Note that if Stage 2 works proceed and the subdivisional attenuation pond is installed per the recommendations within this report, the detention tank on Lot 1 may be retrofitted for water re-use at the owner's discretion after the Stage 2 works are complete. The subdivisional pond accounts for the impermeable coverage on Lot 1 as described in this report, and will supersede the on-lot attenuation provided in the Lot 1 detention tank.

8.2.3 Lot 4 Detention Tanks & Outfall

The total impermeable coverage area on Proposed Lot 4 exceeding the Permitted Activity threshold during Stage 1 will be **844m²**. Therefore, a detention tank shall be provided to attenuate flows for the 10% AEP and 1% AEP storm events, accounting for climate change, back to pre-development flow rates.

To provide this, the downpipes of the factory roof areas on Lot 4 are to be directed to two new 25,000L detention tanks on Lot 4. The design elements of the detention tanks are as follows:

Proposed Tank	2 x 25,000 litre Promax Tank (or similar)
Tank dimensions	3600m Ø (or greater) x 2600mm high (or greater)
Outlet orifice (10% AEP control)	50mm diameter orifice ; located <u>150mm above the tank base</u>

- 1066mm water elevation
- 7.5m³ Storage

Outlet orifice (1% AEP control) **32mm diameter orifice**; located 1370mm above the 10% AEP control orifice

- 2164mm water elevation
- 44.0m³ Storage

Overflow Outlet **150mm diameter**; located at the top of the tank

See the appended Stage 1 Lot 4 Tank Detail C211.

The tank outlet is to direct flows via a minimum 150mm \emptyset drainage line to a 20m long dispersal device downslope of the factory (and downslope of any filled batters and/or effluent fields), constructed level with the topography and in accordance with the appended Dispersal Device Detail C212.

Note that if Stage 2 works proceed and the subdivisional attenuation pond is installed per the recommendations within this report, the detention tanks on Lot 4 may be retrofitted for water re-use at the owner's discretion after the Stage 2 works are completed. The subdivisional pond accounts for the impermeable coverage of the factory and future Stage 2 ROW as described in this report, and will supersede the on-lot detention volume provided in the Stage 1 Lot 4 detention tank.

8.3 STORMWATER MANAGEMENT – STAGE 2

8.3.1 On-lot Stormwater Management – Lots 2-10 Roof Areas

Stormwater runoff from future roof areas on Proposed Stage 2 Lots 2-10 must be captured by gutter systems and conveyed to potable water tanks. Litter filters may be installed in-line between the roof areas and the inlets of the tanks. The tank inlet level should be at least 600mm below the gutter inlet and any in-line litter filters. Any filters will require regular inspection and cleaning to ensure the effective operation of the system. The tanks must be installed as per the manufacturer's specifications. Due to inadequate water quality concerns, runoff from hardstand areas should not be allowed to drain to the potable water tanks.

The potable water tanks are to direct overflows via sealed pipes to minimum 150mm \emptyset outlets in the subdivisional drainage channel system. See Section 8.3.4 below.

Care should be taken when constructing the discharge point to avoid any siphon or backflow effect within the stormwater system. Subsequent to construction, a programme of regular inspection / maintenance of the system should be initiated by the owner to ensure the continuance of effective function, and if necessary, the instigation of any maintenance required.

8.3.2 On-lot Stormwater Management – Lots 2-10 Driveway Areas

It is recommended to shape new hardstand areas on Proposed Stage 2 Lots 2-10 to shed runoff to the proposed drainage channel system where practicable. New hardstand areas may be shaped to shed to catchpits conveying runoff to the drainage channel system where sheet flow is not practicable.

Runoff must not be directed over any proposed effluent fields. Sheet flow or concentrated flows should not be directed towards any proposed structures within or on neighbouring sites.

8.3.3 On-lot Stormwater Management – Lot 11 Factory

Drainage channels are to be installed on the border of the factory hardstand area, directing runoff to the subdivision pond. See Section 8.3.4.

The tank outlet drainage line servicing the detention tanks specified in Section 8.2.3 of this report and any other downpipes servicing the factory roof areas that are not directed to the tanks are to be redirected to the subdivision pond or to the subdivision drainage channel system so that all runoff generated by impermeable surfaces on Proposed Stage 2 Lot 11 is directed to the pond for attenuation of runoff flows.

8.3.4 Subdivision Stormwater Management - Drainage Channels

It is recommended to manage runoff generated across Stage 2 of the subdivision via drainage channels, which are to convey flows in a controlled manner to the subdivision pond and from the pond to the lower-lying grassed area at the southern end of the parent lot. Any open drains constructed during Stage 1 of the subdivision per the WJL Stormwater Report Ref. 126668 or otherwise may be upgraded to the specifications below where the channel layout is similar between stages.

Minimum channel sizings and lining specifications, as well as minimum and maximum grades utilised in capacity and velocity calculations, for the anticipated development proposals outlined above are summarised in Table 6 below. See the appended Stage 2 Site Plan C201 for an indicative channel layout. As per the attached calculations, the channels will have adequate capacity to convey runoff resulting from the anticipated subdivision catchment for the 1% AEP storm event for both primary and secondary flow catchments.

Table 6: Minimum Drainage Channel Requirements

Channel	Min Grade (%)	Max Grade (%)	Minimum Size	Lining
1	3	6	1.3mW x 0.45mD v-channel	6-Inch Riprap
2	3	6	1.3mW x 0.45mD v-channel	6-Inch Riprap
3	1	1	0.75mW x 0.25mD v-channel	Grassed
4a	1	6	2mW x 0.65mD trapezoidal channel	6-Inch Riprap
4b	1	1	1.4mW x 0.45mD trapezoidal channel	Grassed
5	1	10	1.2mW x 0.4mD v-channel	Dependent on Slope – see Site Plan
6	1	10	1.2mW x 0.4mD v-channel	6-Inch Riprap
Pond Outlet	1	1	3.0mW x 0.75mD trapezoidal channel	Grassed

The pond outlet channel is to direct runoff to the discharge point specified below.

8.3.5 Subdivision Stormwater Management - Discharge Point

The pond outlet channel is to direct runoff to a level spreader structure releasing runoff via even sheet flow across the lower-lying grassed area at the southern end of the parent lot. Any future plantings in the downslope grassed area will aid in the treatment of runoff via filtration and evapotranspiration.

A 45m long level spreader installed level with the topography will be required for the anticipated development proposals outlined in Section 8.1. A level spillover edge is to be formed on the downslope side of the channel via treated timber beams pinned with waratahs or a concrete beam (or similar).

The outfall is to be inspected and maintained regularly to ensure the efficacy of the system. See the appended Level Spreader Detail 123295-C214 for a conceptual level spreader detail.

The level spreader length should be sized to allow for sheet flow (less than 30mm flow depth) up to the 10% AEP storm event. As the pond outlet channel and spillway will be designed to convey the 1% AEP flows accounting for climate change, runoff will be released at higher flow depths in severe storm events but will still allow for the safe release of runoff to the lower-lying grassed area at the southern end of the parent lot, downslope of any existing structures and proposed future development area.

8.3.6 Subdivision Stormwater Management - Culverts

Culverts are required to be installed under the vehicle crossings from the proposed ROW on lots 2-4, 8 & 9 to allow for runoff to be conveyed through the previously specified drainage channels. The culverts are recommended to be at least 300mm \emptyset – refer to the appended calculations.

375mm \emptyset culverts are to be installed under the 4.5m wide ROW on Lot 5 and under Lot 7's vehicle crossing to convey runoff from Channels 1 & 2 to Channel 4 – refer to the appended calculations.

8.3.7 Subdivision Stormwater Management – Attenuation Pond

To mitigate the effects of runoff resulting from the Stage 2 post-development impermeable areas exceeding the Permitted Activity coverage threshold, it is recommended that post-development flows are attenuated to pre-development conditions for the 10% AEP and 1% AEP storm events, with adjustments included to account for climate change, via a subdivision attenuation pond at the southern end of the site.

A summary of indicative design elements for a dry detention pond is given below. See the appended HydroCAD calculations.

Pond Dimensions	1,150m ² wet area x 1.15mH (including 300mm high bund at top of pond) Total 415m ³ Detention Volume
Outlet Structure	1200mm \emptyset precast manhole riser - 100mm thick concrete wall cast across inside of riser (or similar internal wall structure)
Inlet Structure	375mm diameter (or greater) inlet with invert >50mm above pond base
10% AEP Detention Outlet	5 x 100mm diameter ; Outlets cast in concrete wall within manhole riser with <u>invert level >50mm above trench base.</u>
1% AEP Detention Outlet	2 x 100mm diameter ; Outlets cast in concrete wall within manhole riser with <u>invert level 270mm above the 10% AEP detention outlet</u> (320mm above pond base)
Manhole Overflow Inlet	Scruffy dome inlet <u>>100mm above concrete wall weir.</u>
Outlet Pipe	375mm diameter (or greater); with <u>invert level at 10% AEP detention outlet invert level</u> , draining to pond outlet channel @ >1%. Outlet pipe discharging above 100y ARI flood level
Secondary Flow Spillway	3.0mW x 0.4mD Channel (or greater); with invert level <u>>550mm below top of pond bund.</u> Lined with 6-inch riprap & underlying geotextile lining, minimum grade 8%.

The specified spillway and outlet channel are sized to allow sufficient capacity for the conveyance of primary and secondary flows for the 1% AEP storm event from the subdivision catchment under the assumption of complete blockage of the outlet pipe. The outlet structure manhole, inlet, and outlet pipe are sized to allow for flows from the attenuated areas (6,780m² total) to pass through the chamber for flow attenuation.

Based on an assessment of available GIS data from FNDC maps and the NRC Hazard Maps Priority Rivers flooding overlays, a minimum pond base level of ~83.5m NZVD2016 will be required to achieve an outlet pipe discharge level above the indicated 100-year ARI flood level.

All relevant safety standards are to be complied with in the trench / pond's construction, operation and maintenance. Geotechnical design input will be required during the detailed design stage of the pond to ensure sufficient storage capacity is achieved within the soil limitations.

Detailed design of the subdivision pond is to be provided at a later stage. The above preliminary design is intended to illustrate that attenuation of flows resulting from the impermeable areas exceeding the Permitted Activity coverage threshold back to pre-development flow rates is achievable, and to provide an indicative pond footprint based on the assumptions stated herein.

8.4 SECONDARY STORMWATER

Where required, overland flows and similar runoff from higher ground should be intercepted by means of shallow surface drains or small bunds near structures and directed to the proposed swale drain system to protect these from both saturation and erosion.

8.5 DISTRICT PLAN ASSESSMENT

This section has been prepared to demonstrate the likely effects of the activity on stormwater run-off and the means of mitigating run-off.

In assessing an application under this provision, the Council will exercise discretion to review the following matters below, (a) through (r). In respect of matters (a) through (r), we provide the following comments:

13.10.4 – Stormwater Disposal

<i>(a) Whether the application complies with any regional rules relating to any water or discharge permits required under the Act, and with any resource consent issued to the District Council in relation to any urban drainage area stormwater management plan or similar plan.</i>	No discharge permits are required. No resource consent issued documents stipulating specific requirements are known for the subject site or are anticipated to exist.
<i>(b) Whether the application complies with the provisions of the Council's "Engineering Standards and Guidelines" (2004) - Revised March 2009 (to be used in conjunction with NZS 4404:2004).</i>	The application is deemed compliant with the provisions of the Council's "Engineering Standards and Guidelines" (2004) - Revised March 2009.
<i>(c) Whether the application complies with the Far North District Council Strategic Plan - Drainage.</i>	The application is deemed compliant with the Far North District Council Strategic Plan – Drainage.
<i>(d) The degree to which Low Impact Design principles have been used to reduce site impermeability and to retain natural permeable areas.</i>	The stormwater drainage utilises overland flow over lawns, swale drains, open drains, and a detention pond. Attenuation of flows back to Permitted Activity levels will be provided.

<p><i>(e) The adequacy of the proposed means of disposing of collected stormwater from the roof of all potential or existing buildings and from all impervious surfaces.</i></p>	<p>As above. Runoff from any new roof area will be collected by rainwater tanks and discharged in a controlled manner to the proposed drainage channel. Attenuation of flows back to Permitted Activity levels will be provided.</p> <p>Runoff from hardstand areas is recommended to be conveyed through the proposed drainage channel system and attenuation pond to the outfall discharging to the lower-lying grassed area at the southern end of the parent lot via even sheet flow.</p>
<p><i>(f) The adequacy of any proposed means for screening out litter, the capture of chemical spillages, the containment of contamination from roads and paved areas, and of siltation.</i></p>	<p>Runoff from roof areas is free of litter, chemical spillages, or containments from roads.</p> <p>Where the conveyance of runoff via even sheet flow to the drainage channel system is not practicable, hardstand areas are recommended to be shaped to shed to catchpits with suitable sumps. Sumps will serve as a pre-treatment device prior to the discharging to the proposed stormwater management system. Sheet flow will aid in the treatment of runoff via filtration and evapotranspiration processes.</p>
<p><i>(g) The practicality of retaining open natural waterway systems for stormwater disposal in preference to piped or canal systems and adverse effects on existing waterways.</i></p>	<p>No alteration to waterways is proposed in this application. Runoff from the proposed subdivision is to be conveyed to the lower-lying grassed area at the southern end of the parent lot via even sheet flow from the specified outlet up to the 1% AEP storm event. Sheet flow will aid in the treatment of runoff via filtration and evapotranspiration processes.</p>
<p><i>(h) Whether there is sufficient capacity available in the Council's outfall stormwater system to cater for increased run-off from the proposed allotments.</i></p>	<p>Peak stormwater flows from the site will not exceed Permitted Activity levels per the District Plan provided the recommendations in this report are adhered to.</p>
<p><i>(i) Where an existing outfall is not capable of accepting increased run-off, the adequacy of proposals and solutions for disposing of run-off.</i></p>	<p>Not applicable.</p>
<p><i>(j) The necessity to provide on-site retention basins to contain surface run-off where the capacity of the outfall is incapable of accepting flows, and where the outfall has limited capacity, any need to restrict the rate of discharge from the subdivision to the same rate of discharge that existed on the land before the subdivision takes place.</i></p>	<p>A stormwater detention pond is proposed to maintain hydrological neutrality for the proposed impermeable areas exceeding the Permitted Activity threshold. The proposed outfall is designed to convey runoff to the lower-lying grassed area at the southern end of the parent lot via even sheet flow up to the 1% AEP storm event. Sheet flow will aid in the treatment of runoff via filtration and evapotranspiration processes. Runoff will be released at higher flow depths in more severe storm events but will still allow for the safe release of</p>

	runoff to the lower-lying grassed area at the southern end of the parent lot, downslope of any existing structures and proposed future development area. The proposed outfall is considered to have adequate capacity for the disposal of runoff.
<i>(k) Any adverse effects of the proposed subdivision on drainage to, or from, adjoining properties and mitigation measures proposed to control any adverse effects.</i>	As above.
<i>(l) In accordance with sustainable management practices, the importance of disposing of stormwater by way of gravity pipe lines. However, where topography dictates that this is not possible, the adequacy of proposed pumping stations put forward as a satisfactory alternative.</i>	Not applicable.
<i>(m) The extent to which it is proposed to fill contrary to the natural fall of the country to obtain gravity outfall; the practicality of obtaining easements through adjoining owners' land to other outfall systems; and whether filling or pumping may constitute a satisfactory alternative.</i>	The proposed stormwater management system will direct runoff to the lower-lying grassed area at the southern end of the parent lot with minimal adjustments to the natural drainage patterns on-site.
<i>(n) For stormwater pipes and open waterway systems, the provision of appropriate easements in favour of either the registered user or in the case of the Council, easements in gross, to be shown on the survey plan for the subdivision, including private connections passing over other land protected by easements in favour of the user.</i>	Drainage easements are to be proposed at a later stage to accommodate the drainage channel and detention pond layout outlined in this report once the subdivision scheme plan is finalised.
<i>(o) Where an easement is defined as a line, being the centre line of a pipe already laid, the effect of any alteration of its size and the need to create a new easement.</i>	Not applicable.
<i>(p) For any stormwater outfall pipeline through a reserve, the prior consent of the Council, and the need for an appropriate easement.</i>	Not applicable.
<i>(q) The need for and extent of any financial contributions to achieve the above matters.</i>	Not applicable.
<i>(r) The need for a local purpose reserve to be set aside and vested in the Council as a site for any public utility required to be provided.</i>	Not applicable.

9. POTABLE WATER SUPPLY

It has been assumed for the purposes of this report that Proposed lots 1 & 4 of Stage 1 (or Lots 1 & 11 of Stage 2) are serviced by an existing potable water supply source.

Stage 1

The new dwelling on Proposed Lot 3 is to be serviced via rainwater tanks. See the WJL Stormwater Report Ref. 126668-B and WJL Wastewater Report Ref. 126669.

For Proposed Lot 2, potable rainwater tanks are to be provided in accordance with the Countryside Living Toolbox requirements. It is recommended to provide at least 2 x 25,000L tanks for potable water usage. The type of tank and volume is for the client to confirm.

Stage 2

Potable rainwater tanks are to be provided in accordance with the Countryside Living Toolbox requirements on Proposed Lots 2-10. It is recommended to provide at least 2 x 25,000L tanks for potable water usage. The type of tank and volume is for the client to confirm. See Section 8.3.1 for additional information regarding rainwater harvesting for future developments on Proposed Lots 2-10.

10. FIREFIGHTING WATER

As the proposed dwelling is not within a 90m distance of an open utilisable water body and all future dwellings are anticipated to be serviced by non-reticulated water supply, The New Zealand Fire Service Firefighting Water Supplies Code of Practice (SNZPAS 4509:2008) states that buildings require a minimum on-site firefighting water supply of 45m³.

The firefighting source should be provided for by on-site water tanks, installed/positioned in compliance with Appendix B of SNZPAS4509. The firefighting supply tank(s) must be installed separately to any potable rainwater tanks and must remain full. These tanks must be accessible to fire trucks in the scenario of a fire emergency.

The above requirement can be waived or adjusted if a different agreement is specifically made with the New Zealand Fire Service for the subject site or subdivision.

11. ACCESS AND VEHICLE CROSSING

11.1 GENERAL

A basic access and vehicle crossing assessment has been completed with recommendations provided in this section. No geometric design or pavement design for the proposed Right of Way and vehicle crossings has been undertaken. Assumptions made in earthworks modelling (see Section 6) are not indicative of the final ROW or vehicle crossing designs.

Our understanding of the proposals at the time of report-writing pertaining to access for the proposed lots is as follows:

Stage 1

Refer to the attached "Stage 1 of 2 Stages" Scheme Plan for references to future easements pertaining to Stage 1 of the subdivision.

Easements (B, C, D, E, F) are to be created on Lot 4 for access to the factory and the existing dwelling on Lot 1. Lot 1 will be accessed off the section of the existing metal driveway extending from Koropewa Road to the factory located within Easement B.

The created Right of Way easements C, D, E & F will allow for access from Koropewa Road to Lots 2 & 3. A new accessway will be formed within the new Easement A extending to the south-eastern boundary of Lot 2.

Stage 2

Refer to the attached “Stage 2 of 2 Stages” Scheme Plan for references to future easements pertaining to Stage 2 of the subdivision.

Lot 10 will be accessed directly from the Lot 11 sealed roadway.

Existing easements along the northern boundary of the parent lot for access to Lots 1 & 2 DP 202022 will be cancelled. A new accessway will be constructed in new easements within lots 8 & 9 providing access to lots 4 & 6-9, and a new accessway will be constructed in new easements on lot 5 providing access to Proposed Lot 5 and existing Lots 1 & 2 DP 202022.

11.2 VEHICLE CROSSINGS

The design and construction standards for the ROW vehicle crossing from Koropewa Road are to be confirmed by the council.

It is recommended that the crossings from the ROW to the proposed lots are constructed per Type 1A specifications from Sheet 21 of the FNDC Engineering Standards.

The crossings shall not obstruct any drainage facilities within the berm. Culverts are required to be installed for lots 2-9 per the recommendations in Section 8.3 of this report.

11.3 VEHICLE ACCESS

The Far North District Plan Section 15.1.6C.1.5 notes that “*All bends and corners on the private accessway are to be constructed to allow for the passage of a Heavy Rigid Vehicle*” and “*Runoff from impermeable surfaces shall, wherever practicable, be directed to grass swales and/or shall be managed in such a way as will reduce the volume and rate of stormwater runoff and contaminant loads.*”.

Vehicle accessways must be designed to comply with the Far North District Council Engineering Standards – Sheets 9-10 (Jan 2021).

Stage 1

In Stage 1 of the subdivision, the ROW within Easement A will serve 2 Household Equivalents (H.E), the ROW within Easement B will serve 2 H.Es, and the ROW within Easements C-F will serve 4 H.Es.

Per the operative district plan requirements shown in Figure 12 below, the minimum ROW legal and carriageway widths are:

- 5m and 3m respectively for 2 H.E
- 7.5 and 3m (with passing bays) respectively for 3-4 HE.

Forming the ROW surfaces in accordance with the Stage 2 requirements detailed below will “future-proof” the subdivision access.

Stage 2

In Stage 2 of the subdivision, the ROW within Easement A will serve 10 Household Equivalents (H.E), the ROW within Easements H-J will serve 8 H.Es, the ROW within Easement G will serve 6 H.Es and the ROW within Easements K & Q will serve 3 H.Es.

Per the **operative** district plan requirements shown in Figures 12 below, the minimum ROW legal and carriageway widths are:

- 7.5m and 3m respectively for 3-4 H.E
- 7.5 and 5m respectively for 5-8 HE.

Per the **proposed** district plan and FNDC Draft Engineering standards 2023 (at the time of report-writing) shown in Figure 13 & 14 below, the minimum ROW legal and carriageway widths are:

- 6m and 4.5m respectively for 3-5 H.E
- 10m and 6m respectively for 6-8 HE.

The client has advised that the Right of Way is to be formed to the following specifications:

- The ROW within Easement A is proposed to be formed per the requirements of the proposed FNDC District Plan TRAN-Table 9 and Table 3-16 of the FNDC Draft Engineering Standards 2023 requirements under Discretionary Activity conditions (maximum 8 Household Equivalents exceeded), with a legal width of 10m and a surfacing width of 6m.
- The ROW within Easements G-J will be formed to the same specifications as Easement A, and will therefore be considered a Permitted Activity under the proposed District Plan and Draft Engineering Standards requirements.
- The ROW within Easements K, Q & W serving Proposed Lot 5 and Lots 1 & 2 DP 202022 will have a legal width of 10m and a surfacing width of 4.5m, and will therefore be considered a Permitted Activity under the proposed District Plan and Draft Engineering Standards requirements.

APPENDIX 3B-1: STANDARDS FOR PRIVATE ACCESS

(Reference: **Part 3 District Wide Provisions, Section 15.1 Traffic, Parking and Access and Zone Maps**)

Zone	No. of H.E.s	Legal Width	Carriageway Width	Maximum Gradient		Kerb	Foot-path	Storm-water Drain ¹
				Unsealed	Sealed			
Residential	1	-	3.0	1:6	1:4	-	-	Yes
Coastal Residential	2	5.0	3.0	-	1:4	-	-	Yes
Russell Township	3 - 4	7.5	3.0 with passing bays	-	1:4	-	-	Yes
Point Veronica	5 - 8	7.5	5.0	-	1:4	Yes	-	Yes
Commercial	1	-	3.0	1:8	1:5	-	-	Yes
Industrial	2 - 4	8.0	6.0	-	1:5	-	-	Yes
Orongo Bay Special Purpose	>5	8.0	6.0	-	1:5	-	-	Yes
Rural Production	1	-	3.0	1:5	1:4	-	-	Yes
Rural Living								
Waimate North Horticultural Processing	2	5	3.0	1:5	1:4	-	-	Yes
Carrington Estate								
General Coastal Coastal Living	3 - 4	7.5	3.0 with passing bays	1:5	1:4	-	-	Yes
South Kerikeri Inlet								
Recreational Activities	5 - 8	7.5	5.0	1:5	1:4	-	-	Yes

¹ All private access must have stormwater drainage measures such that adverse effects are not created on adjoining properties or the public road, in accordance with Council's "Engineering Standards and Guidelines" (June 2004 – Revised 2009)

Note 1: H.E. = Household Equivalent represented by 10 vehicle movements

Note 2: Refer to **Rules 15.1.6B.1.1(c) and (d)**.

Note 3: Access for more than 8 Household Equivalents shall be by public road and constructed to a standard identified in **Appendix 3B-2**.

Note 4: Access carriageways in urban zones that serve two or more users shall be sealed or concreted, refer **Rule 15.1.6B.1.2(c)**.

Figure 12: FNDC Operative DP Table 3B-1: Standards for Private Accessways

TRAN-Table 9 - Requirements for private accessways								
Number of residential units	Maximum length (m)	Minimum legal width (m)	Minimum Unsealed shoulder	carriageway	width (m)	Footpath width (m)	Maximum gradient	Crossfall
				Surfacing width	Total			
Urban								
2-4	50	4.0	-	1 x 3.0	3.0	-	12.5% from the first 5m from the road boundary and 22% for the remainder restricted to straight sections	3%
5-8	100	6.0		1 x 4.5	4.5	1 x 0.95		
Rural								
2	-	4.0	2 x 0.25	1 x 3.0	3.5	-	12.5% for the first 5m from the road boundary and 22.2% for the remainder	3% where sealed; 6% where unsealed
3 - 5		6.0	2 x 0.25	1 x 3.0	4.5			
6 - 8		10.0	2 x 0.25	1 x 3.0	6.0			

Figure 13: Snip of FNDC proposed District Plan TRAN-Table 9.

Category	Criteria (Household Units)	Minimum Legal Width (m)	Minimum Carriageway Width (m)			Footpath Width (m)	Minimum Surfacing Requirement
			Unsealed Shoulder	Surfacing Width ¹⁷	Total		
Urban							
A	2 - 4	4.0	-	1 x 3.0	3.0	-	Seal or Concrete
A(Alt) ¹	2 - 4	5.0	-	1 x 4.0	4.0	-	Seal or Concrete
B	5 - 8	6.0	-	1 x 4.5	4.5	1 x 0.95	Seal or Concrete
Rural							
C	2	4.0	2 x 0.25	1 x 3.0	3.5	-	Aggregate ¹⁸
C(Alt) ¹⁶	2	5.0	2 x 0.25	1 x 4.0	4.5	-	Aggregate ¹⁸
D	3 - 5	6.0	2 x 0.25	1 x 4.0	4.5	-	Aggregate ¹⁸
E	6 - 8	10.0	2 x 0.25	2 x 2.75	6.0	-	Seal

Figure 14: Snip of FNDC Draft Engineering Standards 2023 Table 3-16.

11.4 PASSING BAYS

The Far North District Plan Section 15.1.6C.1.3 notes that

“ (a) Where required, passing bays on private accessways are to be at least 15m long and provide a minimum usable access width of 5.5m.

(b) Passing bays are required:

(i) in rural and coastal zones at spacings not exceeding 100m

(ii) on all blind corners in all zones at locations where the horizontal and vertical alignment of the private accessway restricts the visibility.

(c) All accesses serving 2 or more sites shall provide passing bays and vehicle queuing space at the vehicle crossing to the legal road.”

Stage 1

Lots 1-4 will be serviced by the same access point. Therefore, a passing bay and vehicle queuing space is required at the vehicle crossing from the proposed Right of Way to Koropewa Road. The current Right of Way proposal on proposed Lot 11 includes a widened accessway section, effectively providing a passing bay and vehicle queuing space, and the total distance from the access from Koropewa Road to the eastern end of the ROW is less than 100m (passing bay requirements per FNDC Engineering Standards Sheet 10).

Stage 2

The Row through Easements A & G-J will allow for two-way vehicle movement and will not require passing bays. The 4.5m wide ROW within Easements K, Q & W will be less than 100mm long and will therefore not require passing bays.

The Right of Way design is to be finalised at a later stage. The final proposed layout is to comply with the passing bay requirements above.

11.5 SIGHT DISTANCES

Koropewa Road has a general operating speed of 100km/hr. As such, the required minimum sight distance of 210m is required.

The existing vehicle access allows for >210m of sight distance to the northeast and the west. As such, the existing vehicle access complies with the FNDC Engineering Standards' requirements for sight distance.



Figure 15: Proposed Vehicle Crossing Location on Koropewa Road Facing Northeast, >210m Sight Distance Available.

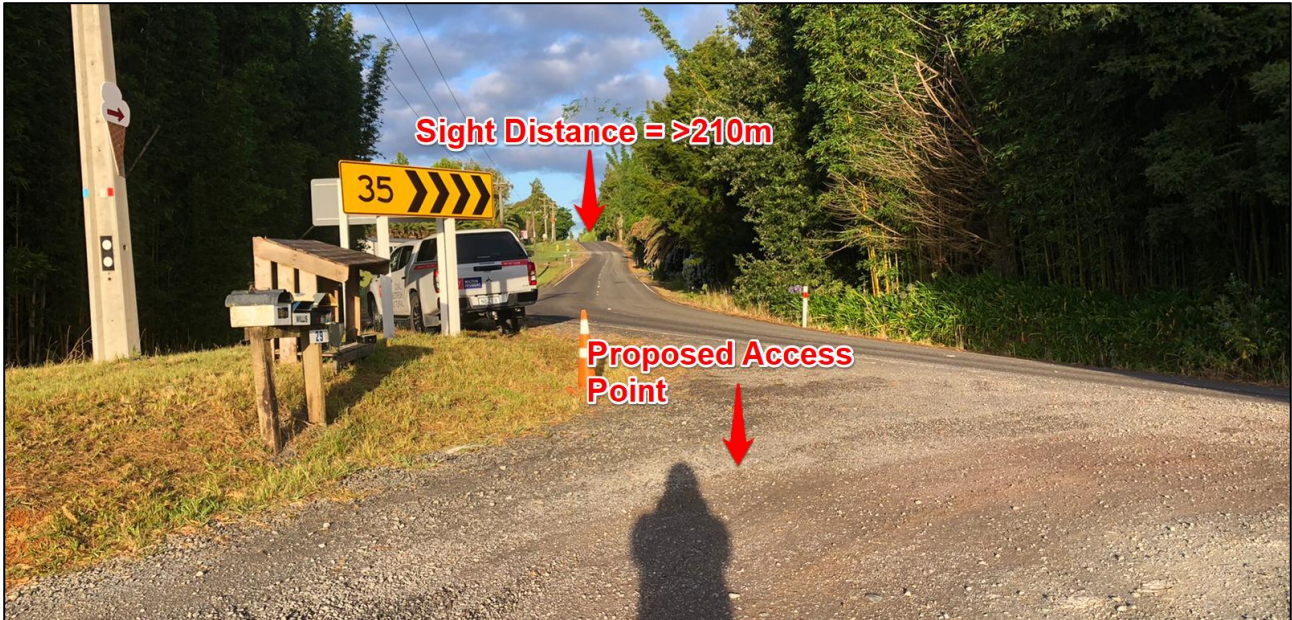


Figure 16: Proposed Vehicle Crossing Location on Koropewa Road Facing West, >210m Sight Distance Available.

12. LIMITATIONS

We anticipate that this report is to be submitted to Council in support of a Resource Consent application.

This report has been commissioned solely for the benefit of our client, **Breakwater Trust**, in relation to the project as described herein, and to the limits of our engagement, with the exception that the local Territorial Authority may rely on it to the extent of its appropriateness, conditions and limitations, when issuing the subject consent.

Any variations from the development proposals as described herein as forming the basis of our appraisal should be referred back to us for further evaluation. Copyright of Intellectual Property remains with Wilton Joubert Limited, and this report may NOT be used by any other entity, or for any other proposals, without our written consent. Therefore, no liability is accepted by this firm or any of its directors, servants or agents, in respect of any other geotechnical or civil services aspects of this site, nor for its use by any other person or entity, and any other person or entity who relies upon any information contained herein does so entirely at their own risk. Where other parties may wish to rely on it, whether for the same or different proposals, this permission may be extended, subject to our satisfactory review of their interpretation of the report.

Although this report may be submitted to a local authority in connection with an application for a consent, permission, approval, or pursuant to any other requirement of law, this disclaimer shall still apply and require all other parties to use due diligence where necessary and does not remove the necessity for the normal inspection of site conditions and the design of foundations as would be made under all normal circumstances.

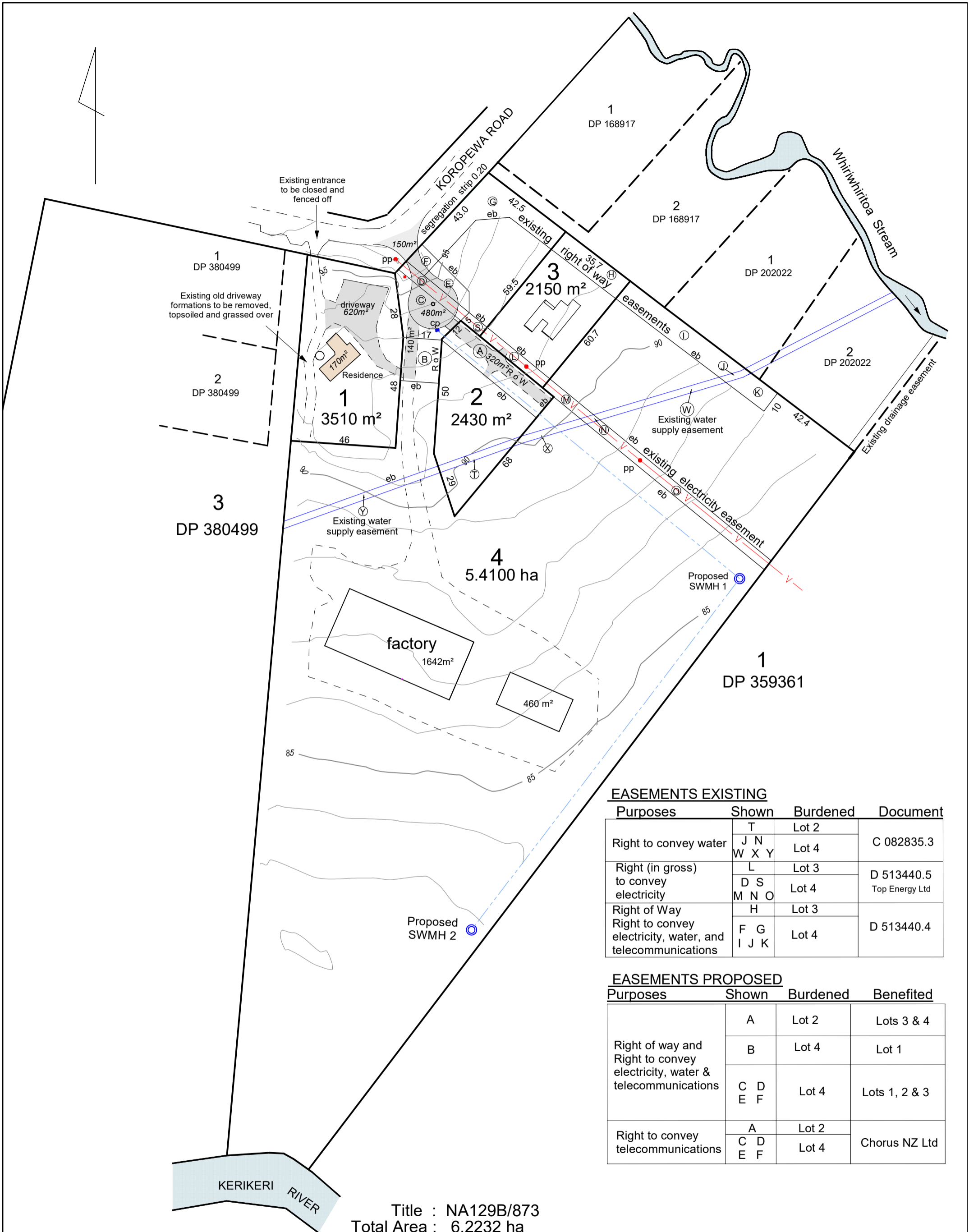
Thank you for the opportunity to provide our services on this project, and if we can be of further assistance, please do not hesitate to contact us.

Yours faithfully,

WILTON JOUBERT LIMITED

Enclosures:

- Donaldsons Surveyors Stage 1 of 2 Stages Scheme Plan – “Lots 1 – 12 being proposed subdivision of Lot 3 DP 202022” Ref: 8054, Dated 14 November 2023 (1 sheet)
- Donaldsons Surveyors Stage 2 of 2 Stages Scheme Plan – “Lots 1 – 12 being proposed subdivision of Lot 3 DP 202022” Ref: 8054, Dated 14 November 2023 (1 sheet)
- 123295-C200 – Stage 1 Site Plan (1 sheet)
- 123295-C201 – Stage 2 Site Plan (1 sheet)
- 123295-C210 – Stage 1 Lot 1 Detention Tank Detail (1 sheet)
- 123295-C211 – Stage 1 Lot 4 Detention Tank Detail (1 sheet)
- 123295-C212 – Dispersal Device Detail (1 sheet)
- 123295-C213 – Stage 2 Detention Pond Detail (1 sheet)
- 123295-C214 – Stage 2 Level Spreader Detail (1 sheet)
- 123295-C400 – Stage 1 Access Site Distances (1 sheet)
- Stormwater Attenuation Calculations - HydroCAD Output
- Hand Auger Borehole Records (10 sheets)



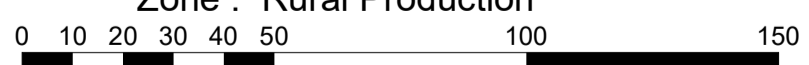
EASEMENTS EXISTING

Purposes	Shown	Burdened	Document
Right to convey water	T	Lot 2	C 082835.3
	J N	Lot 4	
	W X Y		
Right (in gross) to convey electricity	L	Lot 3	D 513440.5 Top Energy Ltd
	D S	Lot 4	
	M N O		
Right of Way	H	Lot 3	D 513440.4
Right to convey electricity, water, and telecommunications	F G I J K	Lot 4	

EASEMENTS PROPOSED

Purposes	Shown	Burdened	Benefited
Right of way and Right to convey electricity, water & telecommunications	A	Lot 2	Lots 3 & 4
	B	Lot 4	Lot 1
	C D E F	Lot 4	Lots 1, 2 & 3
Right to convey telecommunications	A	Lot 2	Chorus NZ Ltd
	C D	Lot 4	
	E F		

Title : NA129B/873
 Total Area : 6.2232 ha
 Zone : Rural Production



STAGE 1 OF 2 STAGES

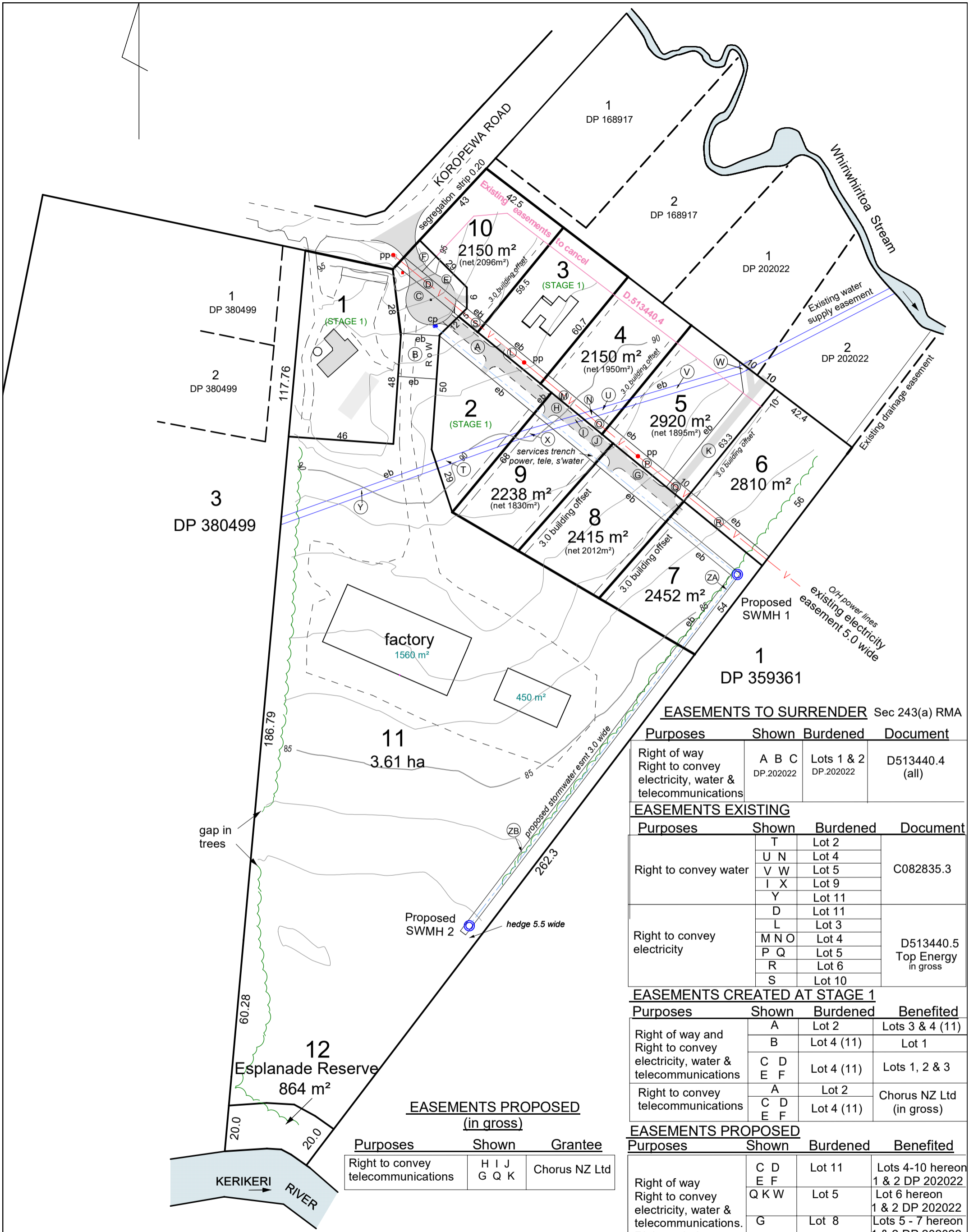
LOTS 1 - 4 BEING A PROPOSED SUBDIVISION OF LOT 3 DP 202022

Notes:
 Areas and measurements are subject to survey
 For resource consent purpose only.

file 8054 Scheme plan Stage 1.mjo



Contour interval : 1 m
 Scale @ A3 : 1:1500
 Date : 14 November 2023
 Ref : 8054



EASEMENTS TO SURRENDER Sec 243(a) RMA

Purposes	Shown	Burdened	Document
Right of way Right to convey electricity, water & telecommunications	A B C DP.202022	Lots 1 & 2 DP.202022	D513440.4 (all)

EASEMENTS EXISTING

Purposes	Shown	Burdened	Document
Right to convey water	T	Lot 2	C082835.3
	U N	Lot 4	
	V W	Lot 5	
	I X	Lot 9	
Right to convey electricity	Y	Lot 11	D513440.5 Top Energy in gross
	D	Lot 11	
	L	Lot 3	
	M N O	Lot 4	
	P Q	Lot 5	
	R	Lot 6	
	S	Lot 10	

EASEMENTS CREATED AT STAGE 1

Purposes	Shown	Burdened	Benefited
Right of way and Right to convey electricity, water & telecommunications	A	Lot 2	Lots 3 & 4 (11)
	B	Lot 4 (11)	Lot 1
Right to convey telecommunications	C D E F	Lot 4 (11)	Lots 1, 2 & 3
	A	Lot 2	Chorus NZ Ltd (in gross)
	C D E F	Lot 4 (11)	

EASEMENTS PROPOSED

Purposes	Shown	Burdened	Benefited
Right of way Right to convey electricity, water & telecommunications. Right to drain water.	C D E F	Lot 11	Lots 4-10 hereon 1 & 2 DP 202022
	Q K W	Lot 5	Lot 6 hereon 1 & 2 DP 202022
	G	Lot 8	Lots 5 - 7 hereon 1 & 2 DP 202022
	H I J	Lot 9	Lots 4 - 8 hereon 1 & 2 DP 202022
Right to drain water	ZA	Lot 7	Lots 2 - 6, 8 - 10
	ZB	Lot 11	Lots 2 - 10

EASEMENTS PROPOSED (in gross)

Purposes	Shown	Grantee
Right to convey telecommunications	H I J G Q K	Chorus NZ Ltd



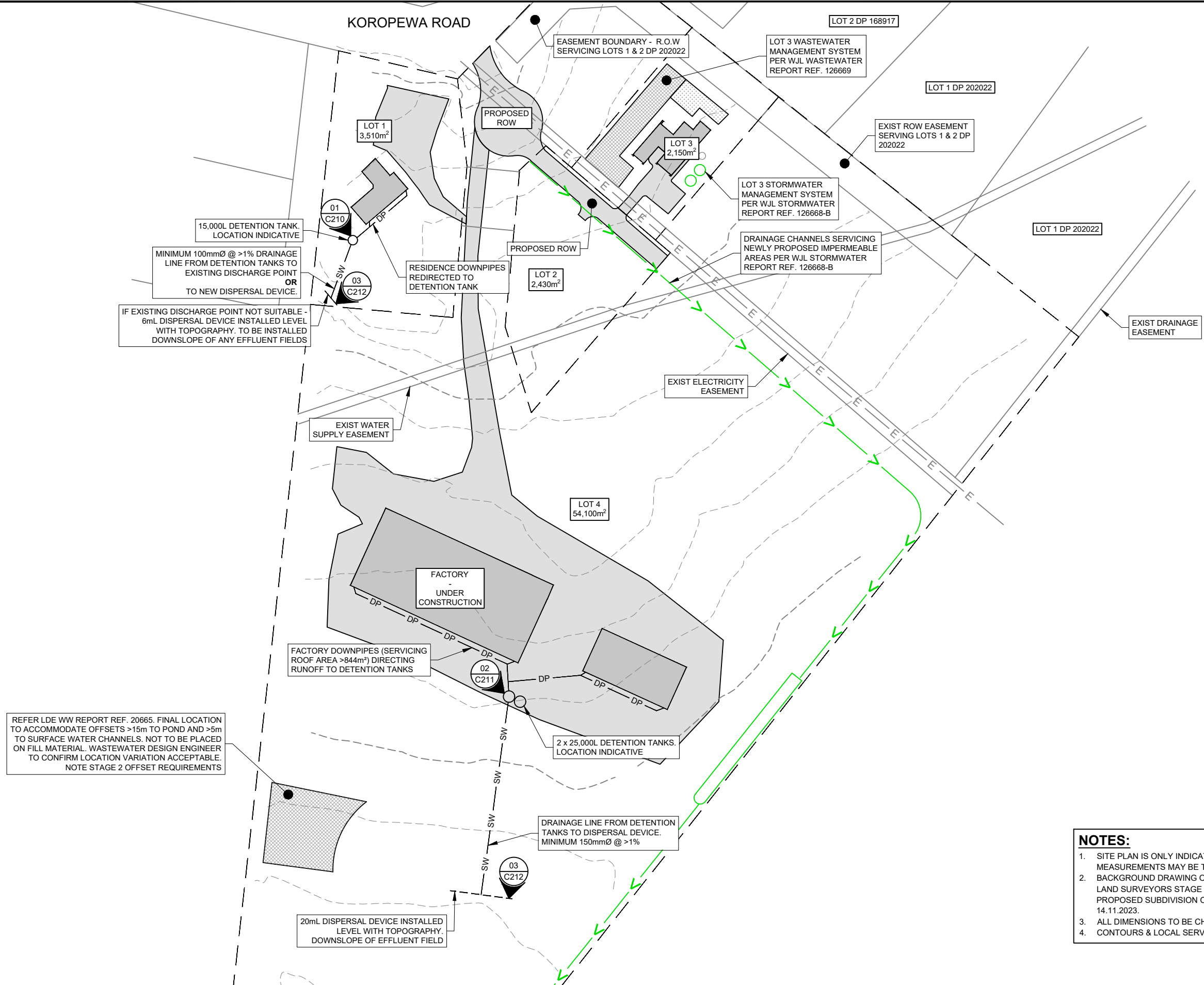
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STAGE 2 OF 2 STAGES
LOTS 4 - 12 BEING A PROPOSED
SUBDIVISION OF LOT 3 DP 202022

Contour interval : 1m
Date : 14 November 2023
Ref : 8054



REFER LDE WW REPORT REF. 20665. FINAL LOCATION TO ACCOMMODATE OFFSETS >15m TO POND AND >5m TO SURFACE WATER CHANNELS. NOT TO BE PLACED ON FILL MATERIAL. WASTEWATER DESIGN ENGINEER TO CONFIRM LOCATION VARIATION ACCEPTABLE. NOTE STAGE 2 OFFSET REQUIREMENTS

- NOTES:**
1. SITE PLAN IS ONLY INDICATIVE FOR CONCEPT DESIGN. NO MEASUREMENTS MAY BE TAKEN FROM DRAWING.
 2. BACKGROUND DRAWING OBTAINED FROM DONALDONS REGISTERED LAND SURVEYORS STAGE 1 OF 2 SCHEME PLAN "LOTS 1-4 BEING A PROPOSED SUBDIVISION OF LOT 3 DP 202022" REF. 8054 DATED 14.11.2023.
 3. ALL DIMENSIONS TO BE CHECKED ON SITE PRIOR TO CONSTRUCTION.
 4. CONTOURS & LOCAL SERVICES ARE SHOWN INDICATIVELY ONLY.

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ISSUE / REVISION			
No.	DATE	BY	DESCRIPTION
A	27 JAN '23	GB	CIVIL SITE SUITABILITY REPORT
B	AUG '23	PM	CIVIL SITE SUITABILITY REPORT
C	SEP '23	PM	CIVIL SITE SUITABILITY REPORT
D	NOV '23	PM	CIVIL SITE SUITABILITY REPORT

DESIGNED BY: PM
DRAWN BY: PM
CHECKED BY: BGS
SURVEYED BY: OTHER

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RESOURCE CONSENT

DESIGN / DRAWING SUBJECT TO ENGINEERS APPROVAL

DRAWING TITLE: **STAGE 1 SITE PLAN**

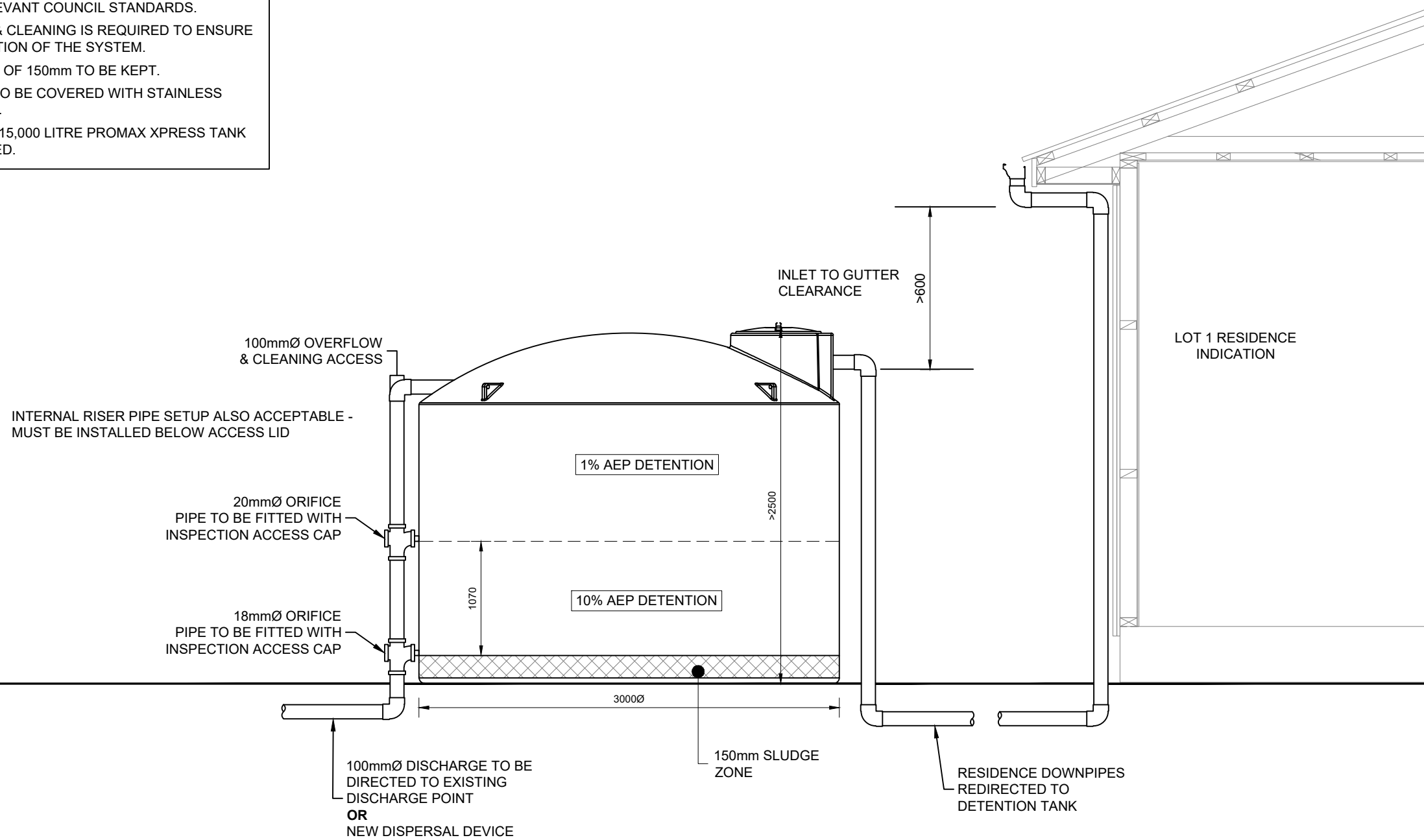
PROJECT DESCRIPTION: **CIVIL SITE SUITABILITY REPORT**

PROJECT TITLE: **LOT 3 DP 202022
29C KOROPEWA ROAD
KERIKERI**

ORIGINAL DRAWING SIZE: A3	OFFICE: OREWA
DRAWING SCALE: 1:1250	CO-ORDINATE SYSTEM: NOT COORDINATED
DRAWING NUMBER: 123295-C200	ISSUE: D
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3. TANK TO BE INSTALLED AS PER MANUFACTURERS SPECIFICATIONS & RELEVANT COUNCIL STANDARDS.
4. REGULAR INSPECTION & CLEANING IS REQUIRED TO ENSURE THE EFFECTIVE OPERATION OF THE SYSTEM.
5. MINIMUM SLUDGE ZONE OF 150mm TO BE KEPT.
6. ALL ORIFICE OUTLETS TO BE COVERED WITH STAINLESS STEEL OR NYLON MESH.
7. ASSUMED USE OF A 1 x 15,000 LITRE PROMAX XPRESS TANK OR SIMILARLY APPROVED.



01 LOT 1 DETENTION TANK DETAIL
C200 N.T.S

ISSUE / REVISION			
No.	DATE	BY	DESCRIPTION
A	27 JAN '23	GB	CIVIL SITE SUITABILITY REPORT
B	AUG '23	PM	CIVIL SITE SUITABILITY REPORT
C	SEP '23	PM	CIVIL SITE SUITABILITY REPORT

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RESOURCE CONSENT

DESIGN / DRAWING SUBJECT TO ENGINEERS APPROVAL

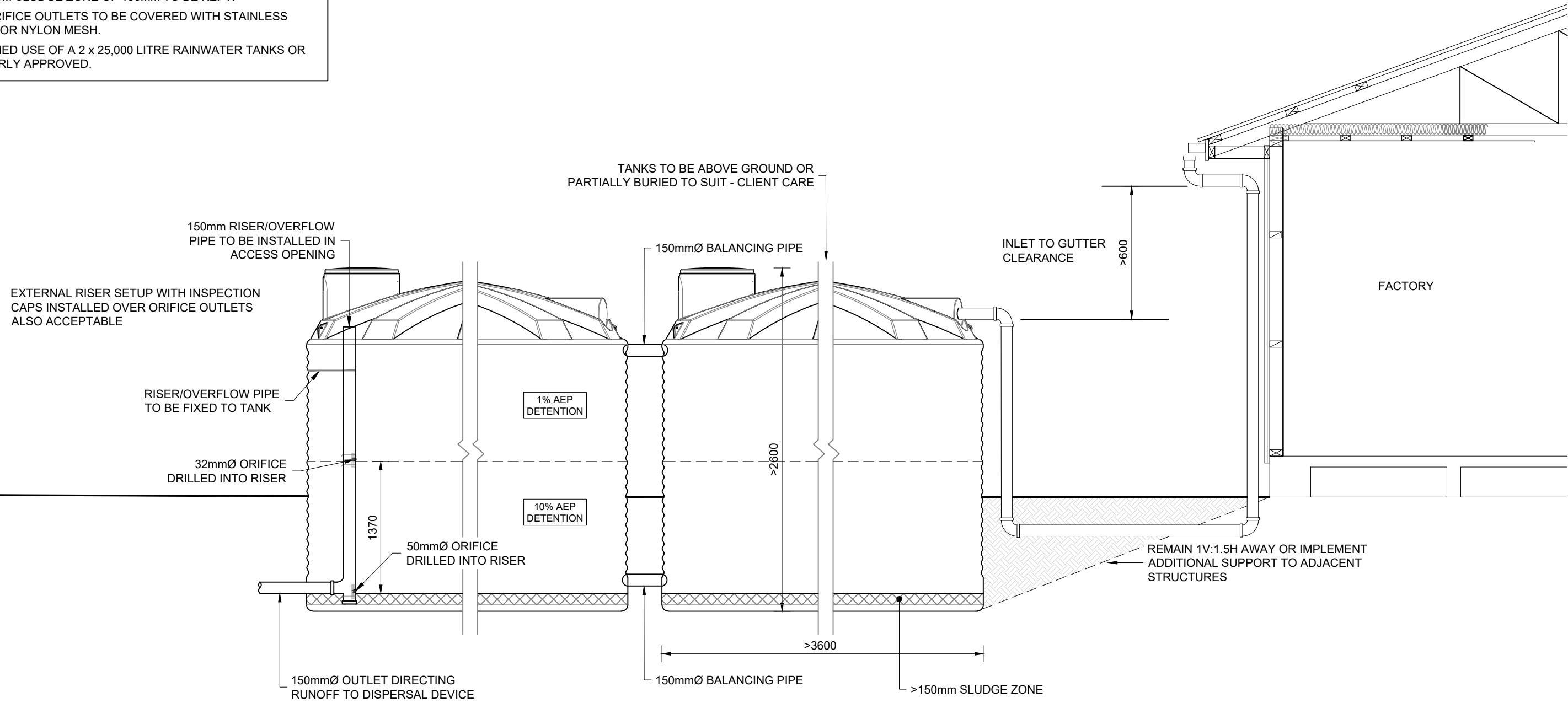
DRAWING TITLE:	STAGE 1 LOT 1 TANK DETAIL
PROJECT DESCRIPTION:	CIVIL SITE SUITABILITY REPORT

PROJECT TITLE:	LOT 3 DP 202022 29C KOROPEWA ROAD KERIKERI
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ORIGINAL DRAWING SIZE:	A3	OFFICE:	OREWA
DRAWING SCALE:	N.T.S	CO-ORDINATE SYSTEM:	NOT COORDINATED
DRAWING NUMBER:	123295-C210	ISSUE:	C
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4. REGULAR INSPECTION & CLEANING IS REQUIRED TO ENSURE THE EFFECTIVE OPERATION OF THE SYSTEM.
5. MINIMUM SLUDGE ZONE OF 150mm TO BE KEPT.
6. ALL ORIFICE OUTLETS TO BE COVERED WITH STAINLESS STEEL OR NYLON MESH.
7. ASSUMED USE OF A 2 x 25,000 LITRE RAINWATER TANKS OR SIMILARLY APPROVED.



02 LOT 4 DETENTION TANK DETAIL
C200 N.T.S

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A	27 JAN '23	GB	CIVIL SITE SUITABILITY REPORT
B	AUG '23	PM	CIVIL SITE SUITABILITY REPORT
C	SEP '23	PM	CIVIL SITE SUITABILITY REPORT

DESIGNED BY: PM
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SURVEYED BY: OTHER

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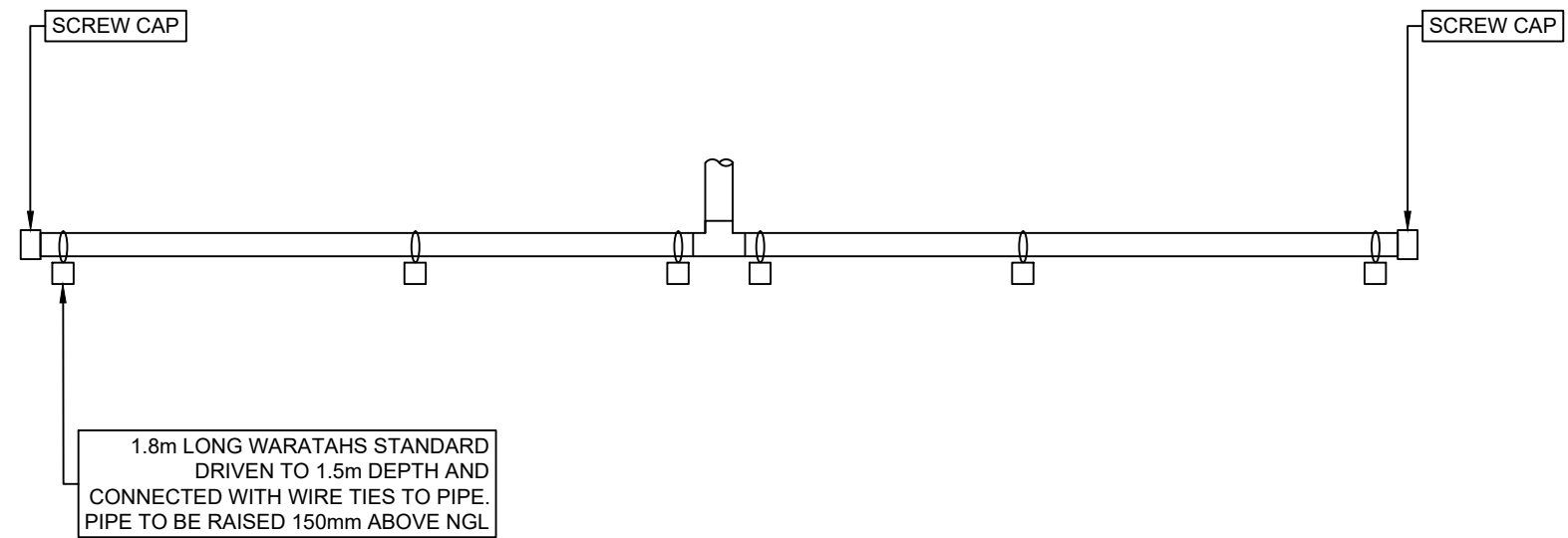
RESOURCE CONSENT
DESIGN / DRAWING SUBJECT TO ENGINEERS APPROVAL

DRAWING TITLE: **STAGE 1 LOT 4 TANK DETAIL**

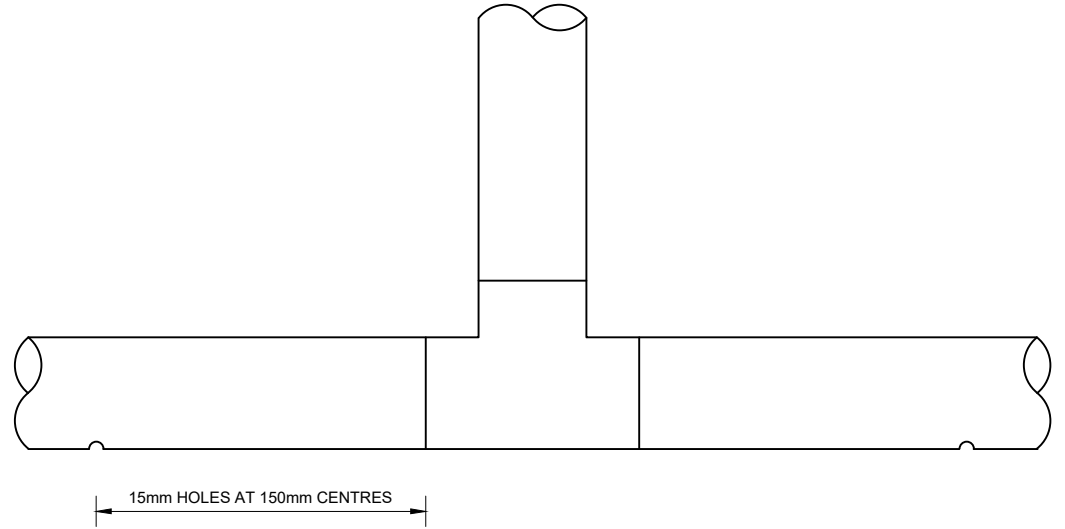
PROJECT DESCRIPTION: **CIVIL SITE SUITABILITY REPORT**

PROJECT TITLE: **LOT 3 DP 202022
29C KOROPEWA ROAD
KERIKERI**

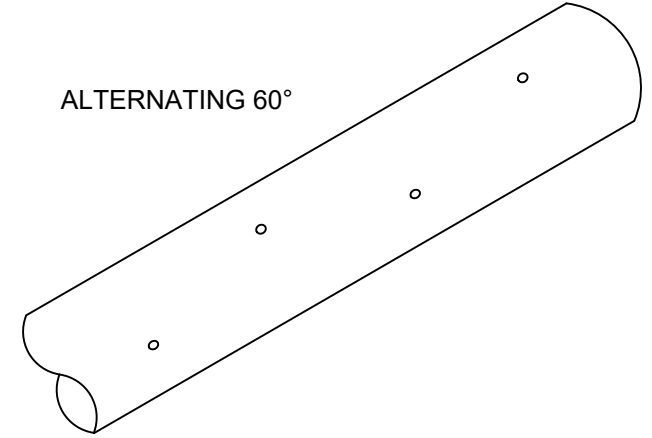
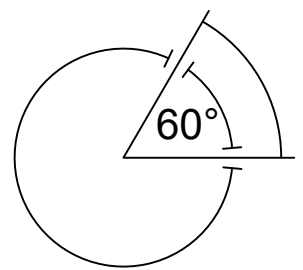
ORIGINAL DRAWING SIZE: A3	OFFICE: OREWA
DRAWING SCALE: N.T.S	CO-ORDINATE SYSTEM: NOT COORDINATED
DRAWING NUMBER: 123295-C211	ISSUE: C
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PLAN



PIPE CONNECTION DETAIL



PIPE OUTLET HOLE
ARRANGEMENT DETAIL

03 **DISPERSAL DEVICE DETAIL**
C200 N.T.S

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RESOURCE CONSENT
DESIGN / DRAWING SUBJECT TO ENGINEERS APPROVAL

DRAWING TITLE:
DISPERSAL DEVICE DETAIL

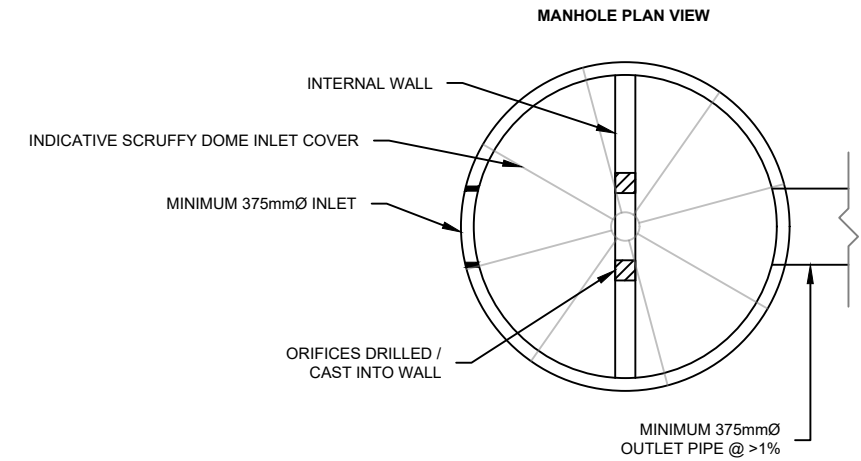
PROJECT DESCRIPTION:
CIVIL SITE SUITABILITY REPORT

PROJECT TITLE:
**LOT 3 DP 202022
29C KOROPEWA ROAD
KERIKERI**

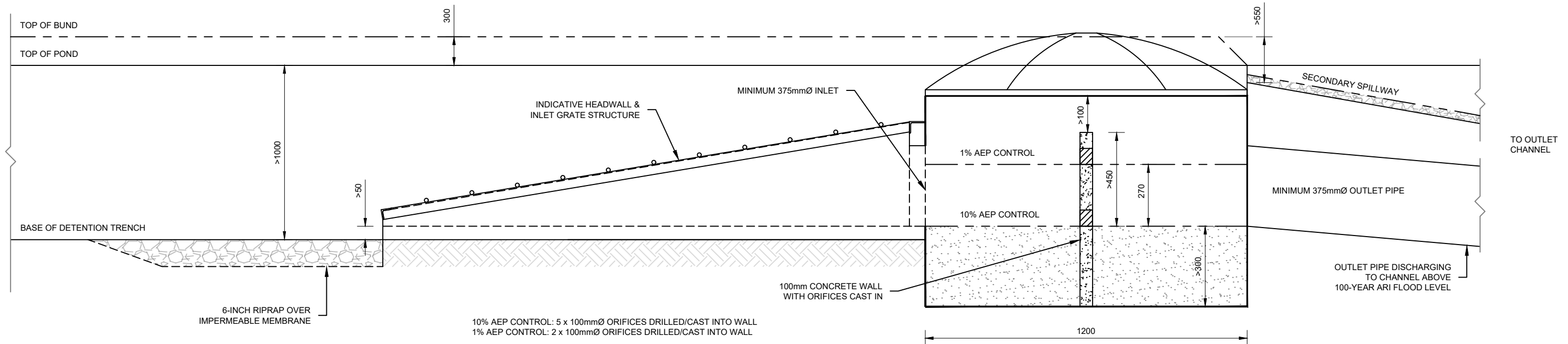
ORIGINAL DRAWING SIZE: A3	OFFICE: OREWA
DRAWING SCALE: N.T.S	CO-ORDINATE SYSTEM: NOT COORDINATED
DRAWING NUMBER: 123295-C212	ISSUE: C
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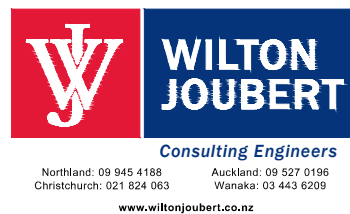
1. NOT TO SCALE. DRAWN INDICATIVELY ONLY. LABELLED DIMENSIONS IN MM.
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3. REGULAR INSPECTION & CLEANING IS REQUIRED TO ENSURE THE EFFECTIVE OPERATION OF THE SYSTEM.



PRELIMINARY VOLUMES
 POND DETENTION VOLUME: 415m³
 POND EARTHWORKS - CUT VOLUME*: 73m³
 POND EARTHWORKS - FILL VOLUME*: 718m³
 *includes indicative batters shown



04 DETENTION POND DETAIL
 C201 N.T.S



ISSUE / REVISION			
No.	DATE	BY	DESCRIPTION
A	27 JAN '23	GB	CIVIL SITE SUITABILITY REPORT
B	AUG '23	PM	CIVIL SITE SUITABILITY REPORT
C	SEP '23	PM	CIVIL SITE SUITABILITY REPORT

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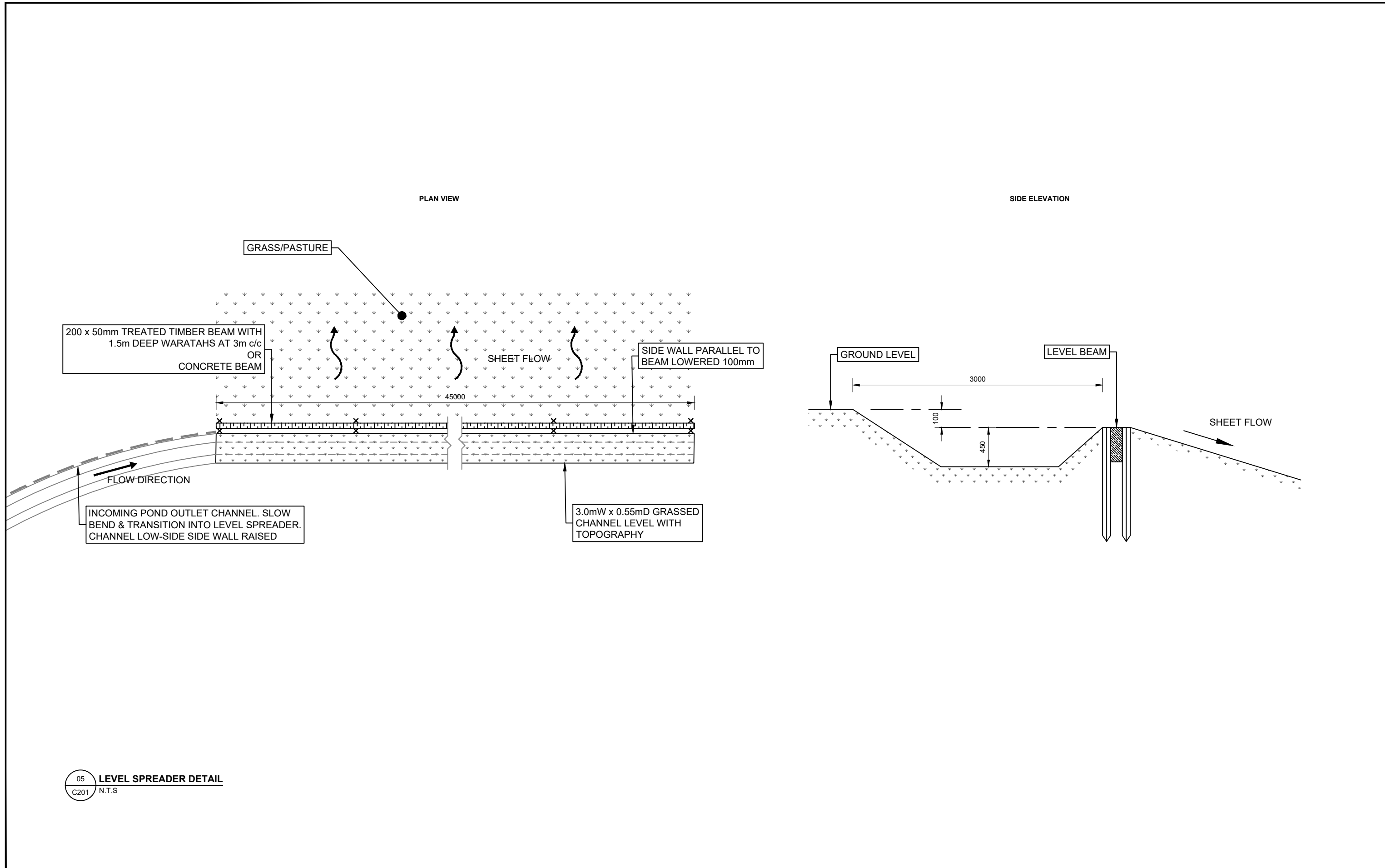
RESOURCE CONSENT
 DESIGN / DRAWING SUBJECT TO ENGINEERS APPROVAL

DRAWING TITLE:
DETENTION POND DETAIL

PROJECT DESCRIPTION:
CIVIL SITE SUITABILITY REPORT

PROJECT TITLE:
**LOT 3 DP 202022
 29C KOROPEWA ROAD
 KERIKERI**

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A3	OREWA
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05 LEVEL SPREADER DETAIL
C201 N.T.S

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C	SEP '23	PM	CIVIL SITE SUITABILITY REPORT

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RESOURCE CONSENT
DESIGN / DRAWING SUBJECT TO ENGINEERS APPROVAL

DRAWING TITLE:
LEVEL SPREADER DETAIL

PROJECT DESCRIPTION:
CIVIL SITE SUITABILITY REPORT

PROJECT TITLE:
**LOT 3 DP 202022
29C KOROPEWA ROAD
KERIKERI**

ORIGINAL DRAWING SIZE: A3	OFFICE: OREWA
DRAWING SCALE: N.T.S	CO-ORDINATE SYSTEM: NOT COORDINATED
DRAWING NUMBER: 123295-C214	ISSUE: C
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D	NOV '23	PM	CIVIL SITE SUITABILITY REPORT

DESIGNED BY:	GB
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RESOURCE CONSENT

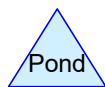
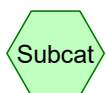
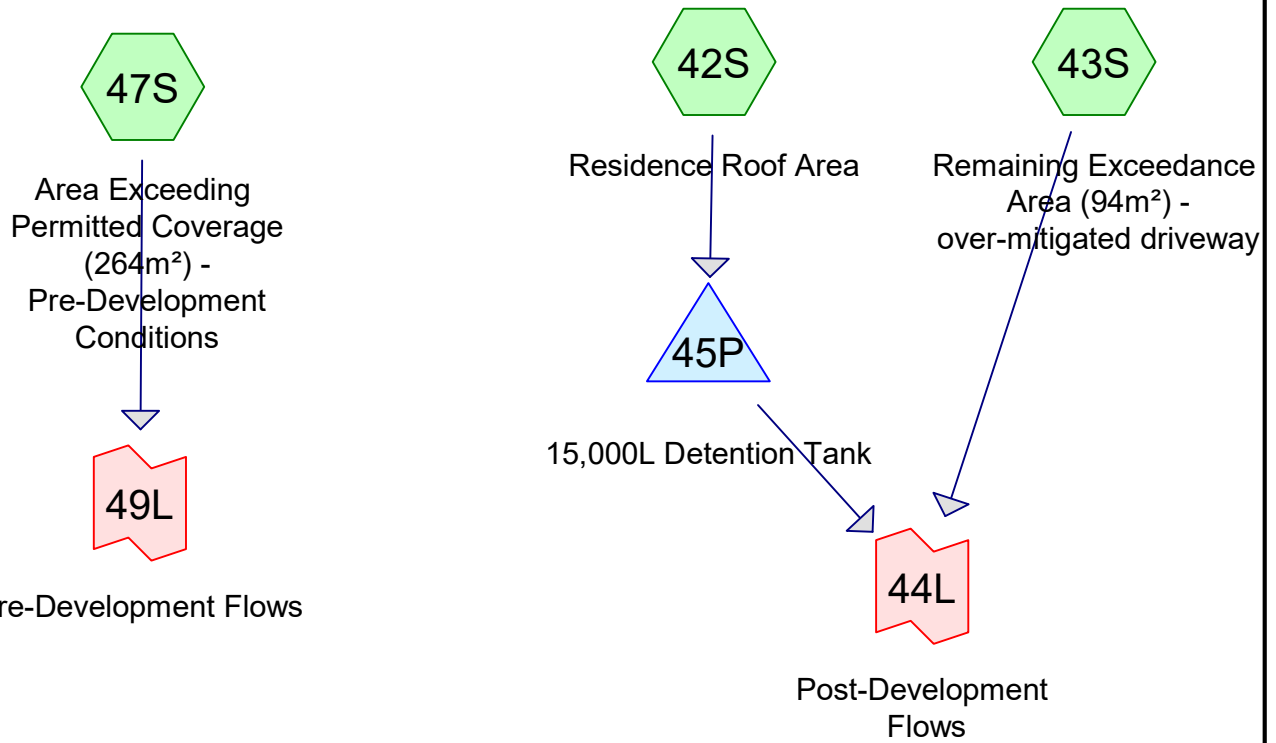
DESIGN / DRAWING SUBJECT TO ENGINEERS APPROVAL

DRAWING TITLE:	STAGE 1 ACCESS SIGHT DISTANCES
PROJECT DESCRIPTION:	CIVIL SITE SUITABILITY REPORT

PROJECT TITLE:	LOT 3 DP 202022 29C KOROPEWA ROAD KERIKERI
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ORIGINAL DRAWING SIZE:	A3	OFFICE:	OREWA
DRAWING SCALE:	1:1000	CO-ORDINATE SYSTEM:	NOT COORDINATED
DRAWING NUMBER:	123295-C400	ISSUE:	D
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Lot 1



Summary for Subcatchment 42S: Residence Roof Area

Runoff = 2.08 L/s @ 0.17 hrs, Volume= 10.0 m³, Depth= 59 mm

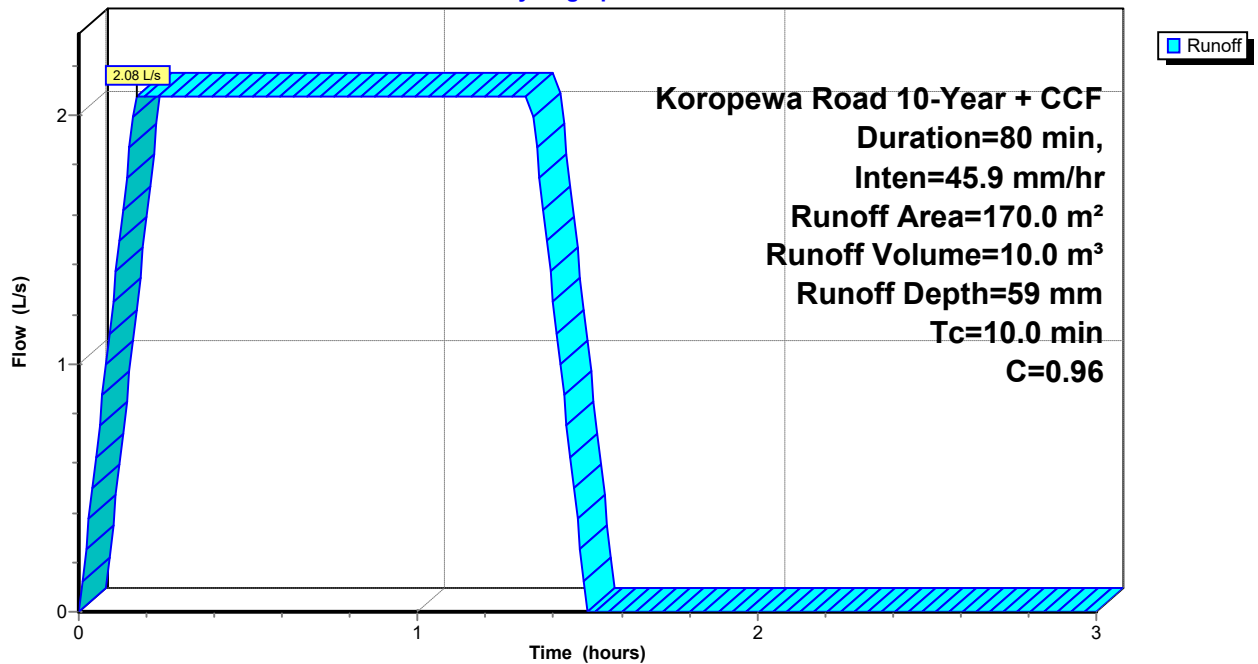
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 10-Year + CCF Duration=80 min, Inten=45.9 mm/hr

Area (m ²)	C	Description
170.0	0.96	
170.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 42S: Residence Roof Area

Hydrograph



Summary for Subcatchment 43S: Remaining Exceedance Area (94m²) - over-mitigated driveway

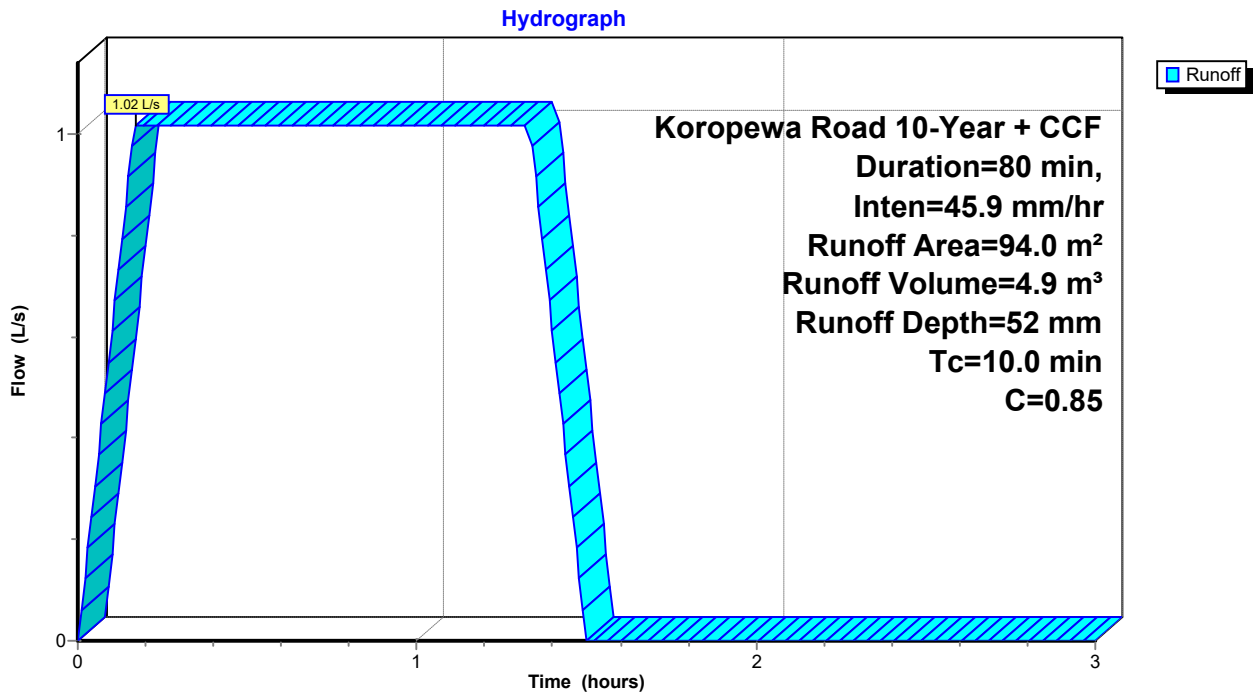
Runoff = 1.02 L/s @ 0.17 hrs, Volume= 4.9 m³, Depth= 52 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 10-Year + CCF Duration=80 min, Inten=45.9 mm/hr

Area (m ²)	C	Description
94.0	0.85	
94.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 43S: Remaining Exceedance Area (94m²) - over-mitigated driveway



Summary for Subcatchment 47S: Area Exceeding Permitted Coverage (264m²) - Pre-Development Conditions

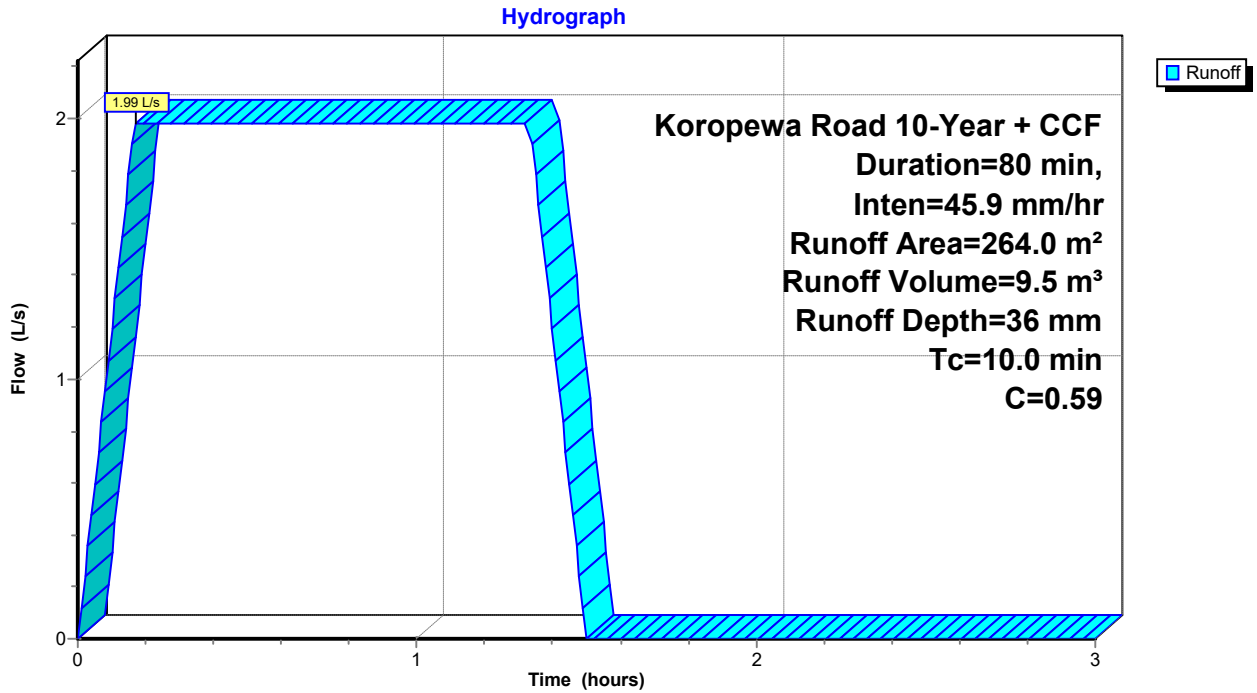
Runoff = 1.99 L/s @ 0.17 hrs, Volume= 9.5 m³, Depth= 36 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 10-Year + CCF Duration=80 min, Inten=45.9 mm/hr

Area (m ²)	C	Description
264.0	0.59	
264.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 47S: Area Exceeding Permitted Coverage (264m²) - Pre-Development Conditions



Summary for Pond 45P: 15,000L Detention Tank

Inflow Area = 170.0 m², 100.00% Impervious, Inflow Depth = 59 mm for 10-Year + CCF event
 Inflow = 2.08 L/s @ 0.17 hrs, Volume= 10.0 m³
 Outflow = 0.70 L/s @ 1.44 hrs, Volume= 5.8 m³, Atten= 67%, Lag= 76.5 min
 Primary = 0.70 L/s @ 1.44 hrs, Volume= 5.8 m³

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 1.066 m @ 1.44 hrs Surf.Area= 7.1 m² Storage= 7.5 m³

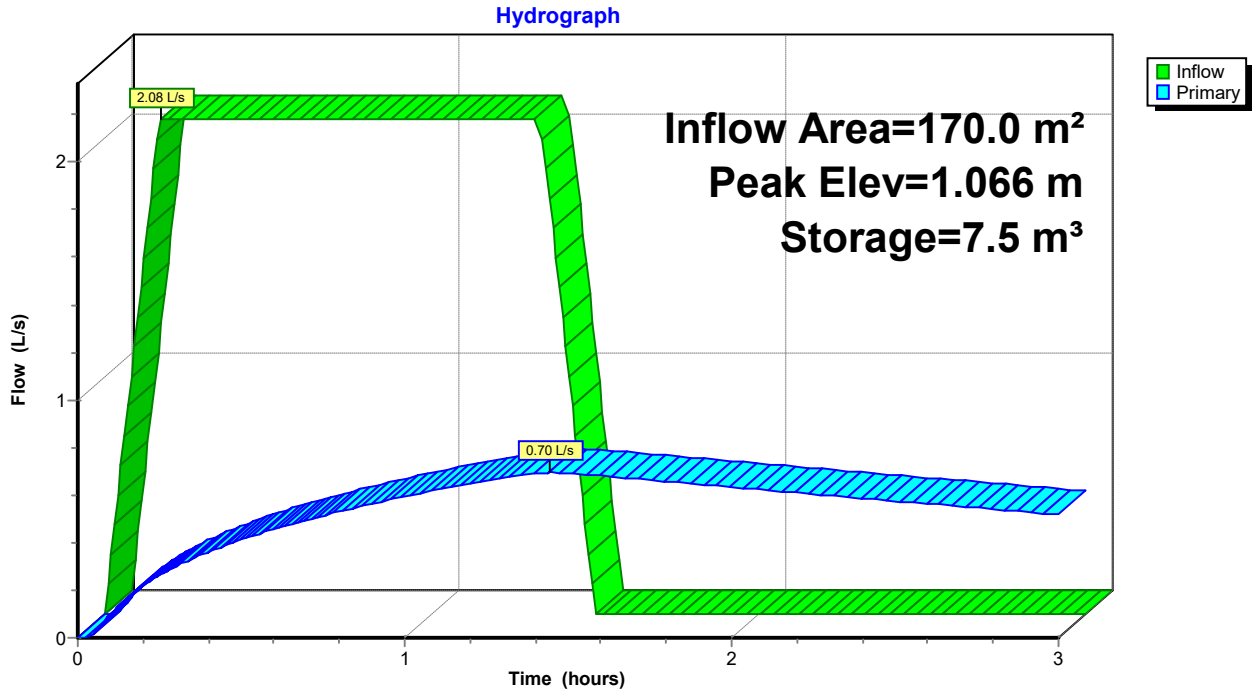
Plug-Flow detention time= 70.8 min calculated for 5.8 m³ (58% of inflow)
 Center-of-Mass det. time= 54.2 min (99.2 - 45.0)

Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	18.4 m ³	3.00 mD x 2.60 mH Vertical Cone/Cylinder

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	18 mm Vert. Orifice/Grate C= 0.600
#2	Primary	1.070 m	20 mm Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.70 L/s @ 1.44 hrs HW=1.066 m TW=0.000 m (Dynamic Tailwater)
 1=Orifice/Grate (Orifice Controls 0.70 L/s @ 2.73 m/s)
 2=Orifice/Grate (Controls 0.00 L/s)

Pond 45P: 15,000L Detention Tank

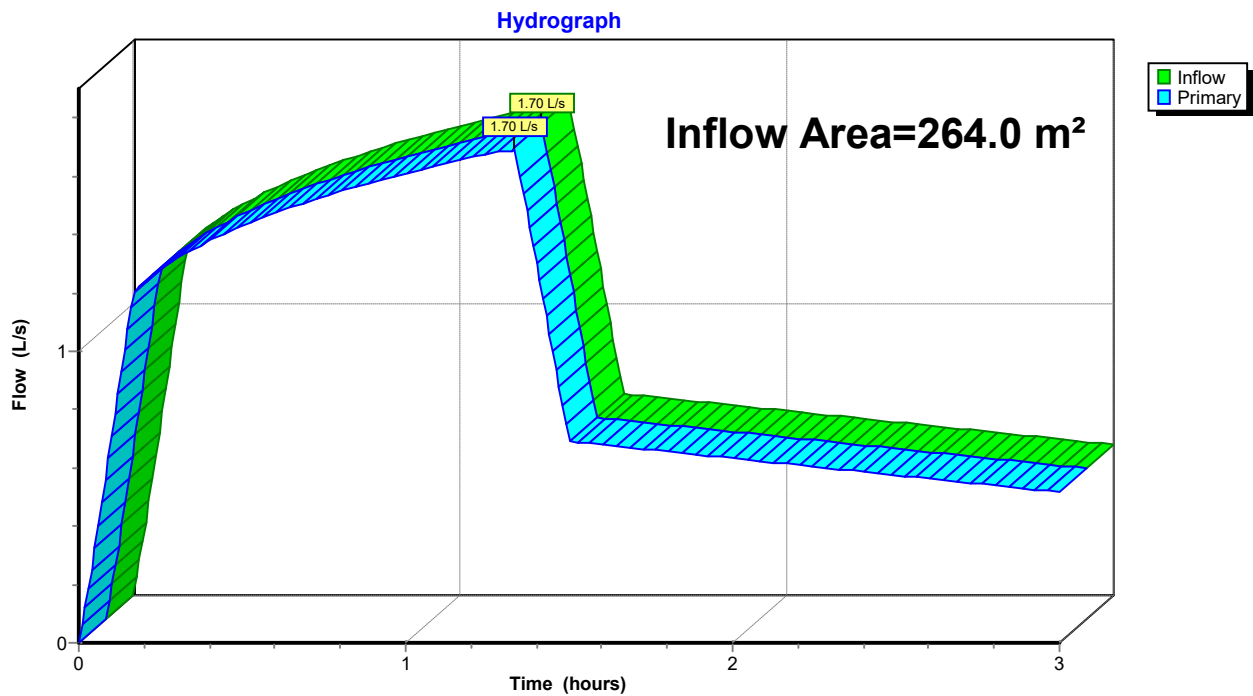


Summary for Link 44L: Post-Development Flows

Inflow Area = 264.0 m², 64.39% Impervious, Inflow Depth > 40 mm for 10-Year + CCF event
Inflow = 1.70 L/s @ 1.33 hrs, Volume= 10.7 m³
Primary = 1.70 L/s @ 1.33 hrs, Volume= 10.7 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Link 44L: Post-Development Flows

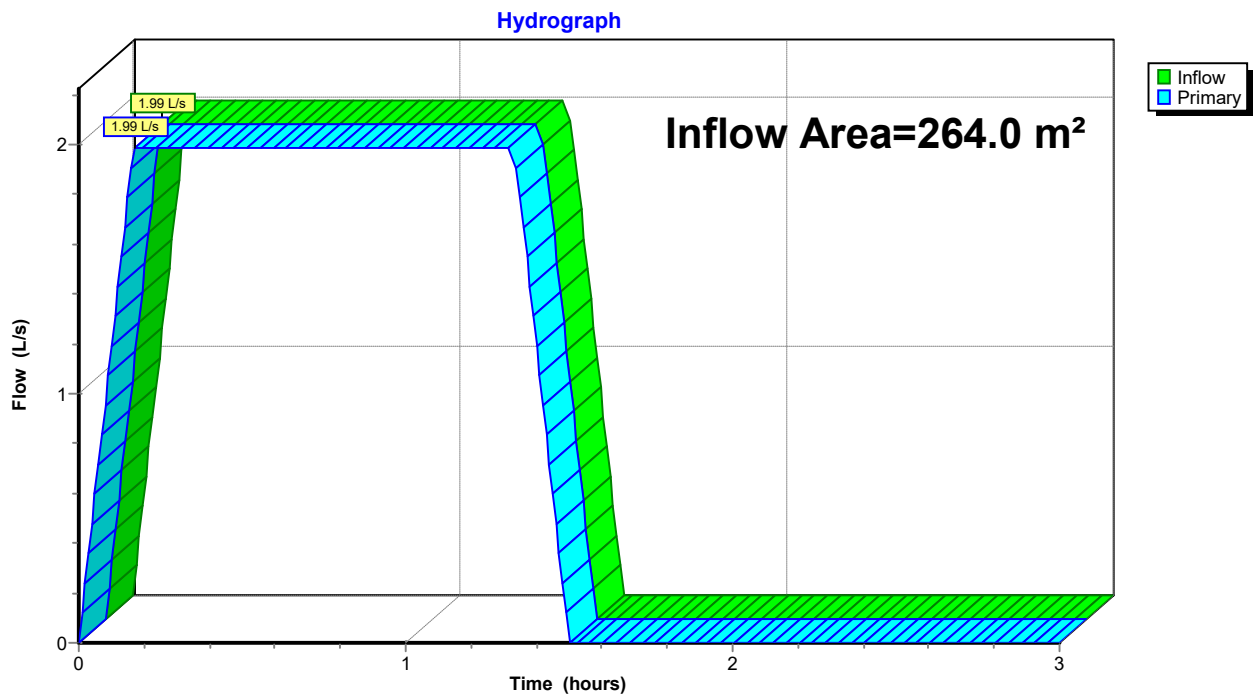


Summary for Link 49L: Pre-Development Flows

Inflow Area = 264.0 m², 0.00% Impervious, Inflow Depth = 36 mm for 10-Year + CCF event
Inflow = 1.99 L/s @ 0.17 hrs, Volume= 9.5 m³
Primary = 1.99 L/s @ 0.17 hrs, Volume= 9.5 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Link 49L: Pre-Development Flows



Summary for Subcatchment 42S: Residence Roof Area

Runoff = 3.15 L/s @ 0.17 hrs, Volume= 15.1 m³, Depth= 89 mm

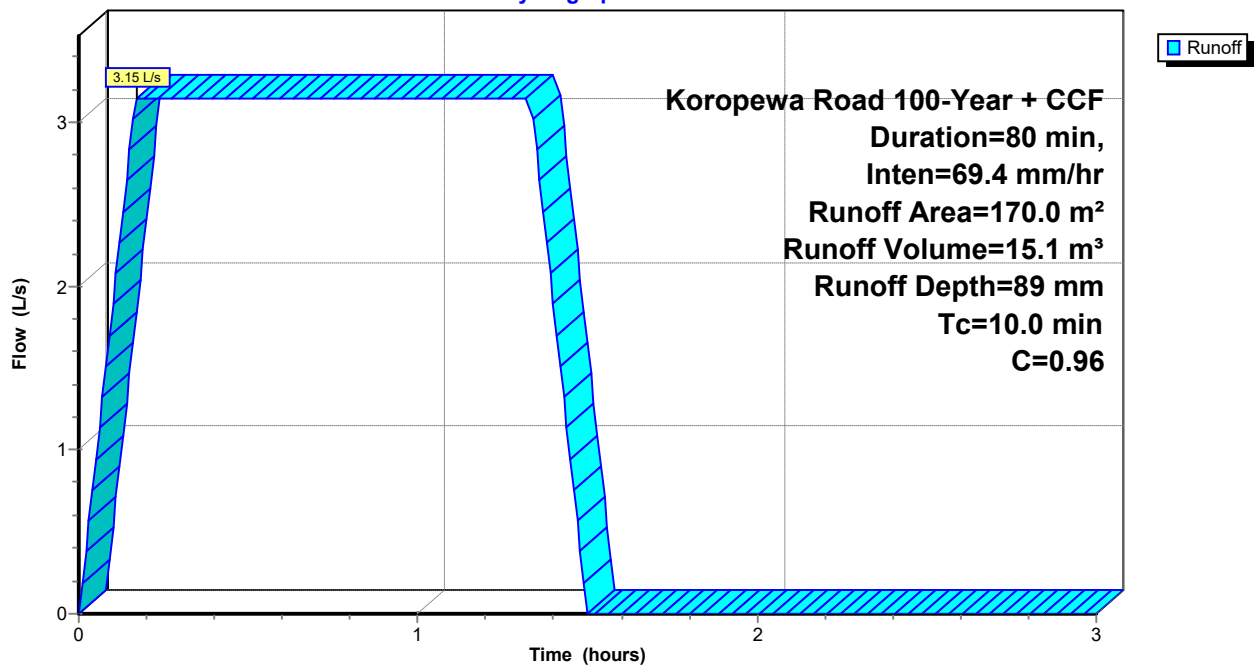
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 100-Year + CCF Duration=80 min, Inten=69.4 mm/hr

Area (m ²)	C	Description
170.0	0.96	
170.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 42S: Residence Roof Area

Hydrograph



Summary for Subcatchment 43S: Remaining Exceedance Area (94m²) - over-mitigated driveway

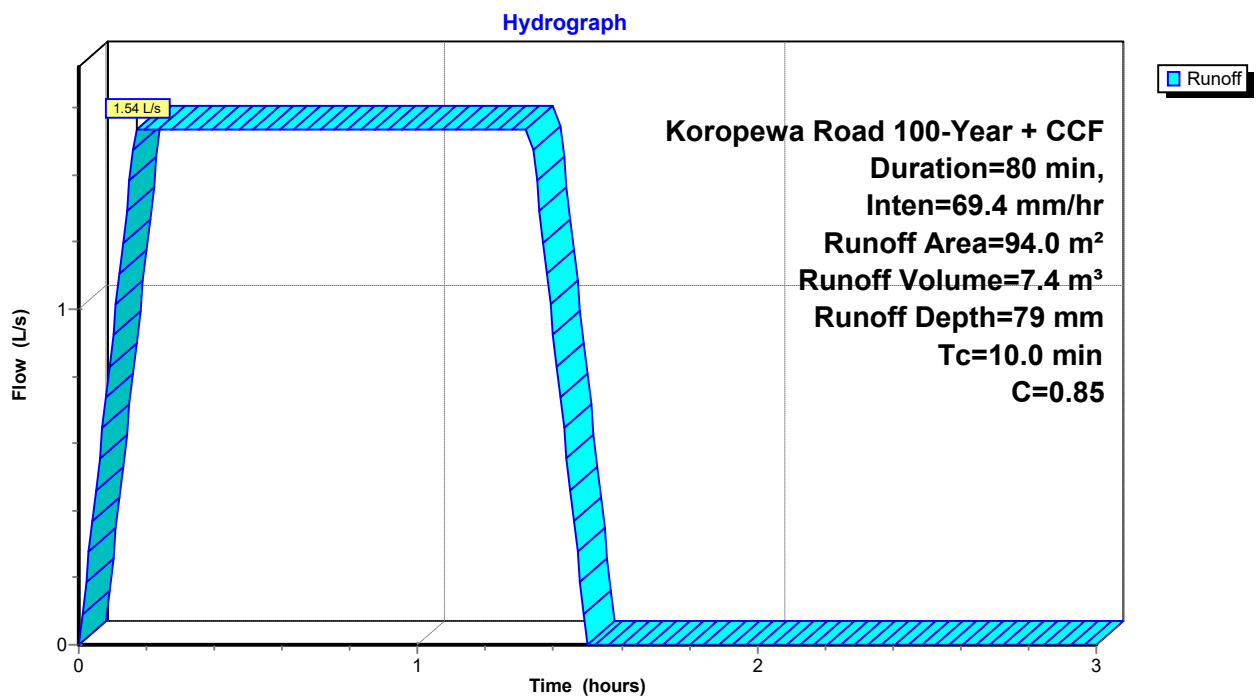
Runoff = 1.54 L/s @ 0.17 hrs, Volume= 7.4 m³, Depth= 79 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 100-Year + CCF Duration=80 min, Inten=69.4 mm/hr

Area (m ²)	C	Description
94.0	0.85	
94.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 43S: Remaining Exceedance Area (94m²) - over-mitigated driveway



Summary for Subcatchment 47S: Area Exceeding Permitted Coverage (264m²) - Pre-Development Conditions

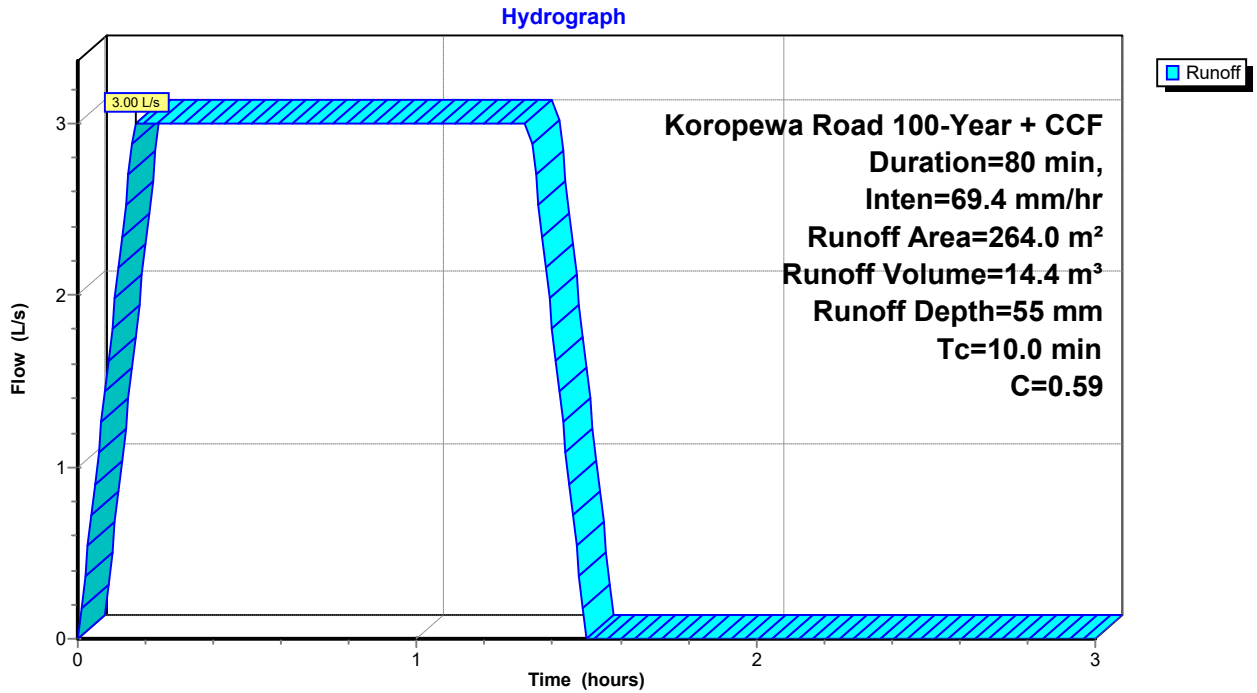
Runoff = 3.00 L/s @ 0.17 hrs, Volume= 14.4 m³, Depth= 55 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 100-Year + CCF Duration=80 min, Inten=69.4 mm/hr

Area (m ²)	C	Description
264.0	0.59	
264.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 47S: Area Exceeding Permitted Coverage (264m²) - Pre-Development Conditions



Summary for Pond 45P: 15,000L Detention Tank

Inflow Area = 170.0 m², 100.00% Impervious, Inflow Depth = 89 mm for 100-Year + CCF event
 Inflow = 3.15 L/s @ 0.17 hrs, Volume= 15.1 m³
 Outflow = 1.44 L/s @ 1.42 hrs, Volume= 9.1 m³, Atten= 54%, Lag= 75.2 min
 Primary = 1.44 L/s @ 1.42 hrs, Volume= 9.1 m³

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 1.581 m @ 1.42 hrs Surf.Area= 7.1 m² Storage= 11.2 m³

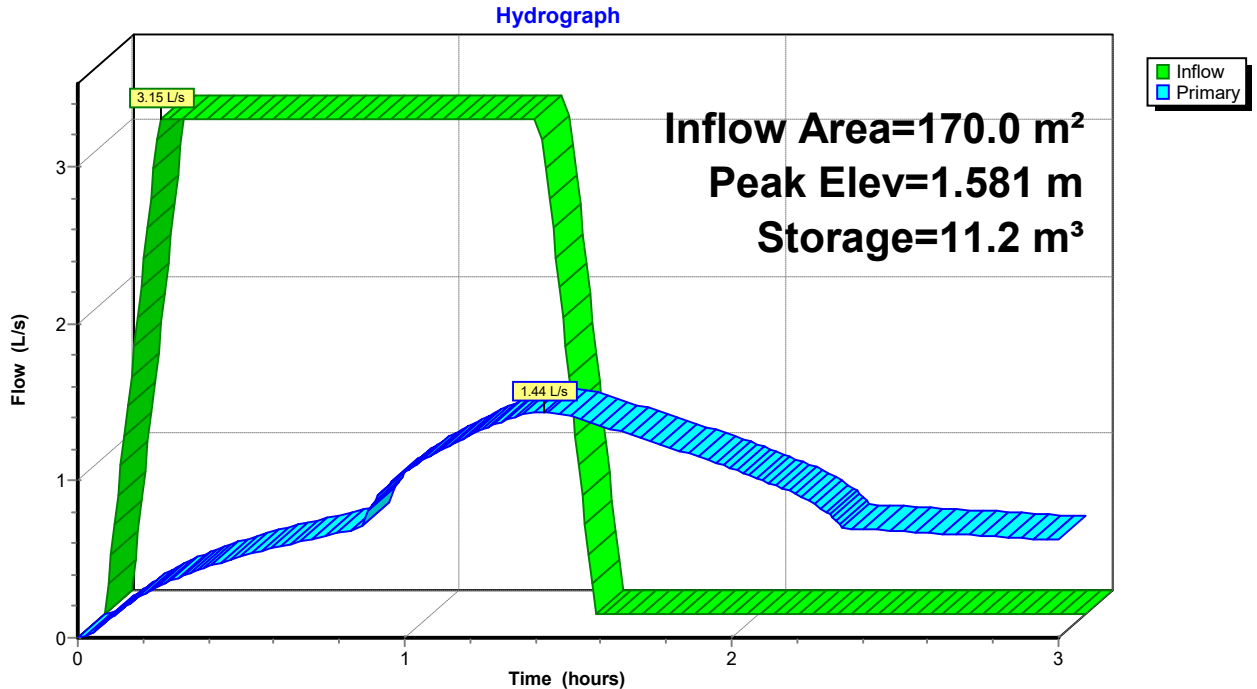
Plug-Flow detention time= 67.7 min calculated for 9.1 m³ (60% of inflow)
 Center-of-Mass det. time= 51.9 min (96.9 - 45.0)

Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	18.4 m ³	3.00 mD x 2.60 mH Vertical Cone/Cylinder

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	18 mm Vert. Orifice/Grate C= 0.600
#2	Primary	1.070 m	20 mm Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=1.44 L/s @ 1.42 hrs HW=1.581 m TW=0.000 m (Dynamic Tailwater)
 1=Orifice/Grate (Orifice Controls 0.85 L/s @ 3.33 m/s)
 2=Orifice/Grate (Orifice Controls 0.59 L/s @ 1.88 m/s)

Pond 45P: 15,000L Detention Tank

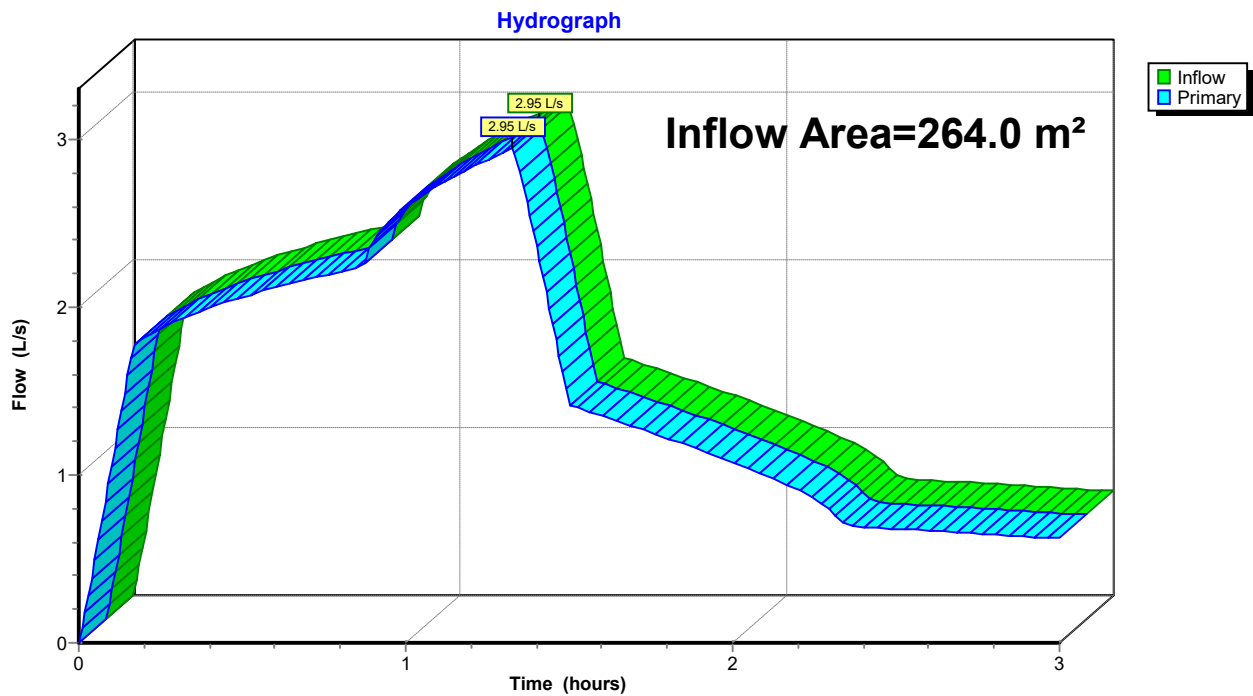


Summary for Link 44L: Post-Development Flows

Inflow Area = 264.0 m², 64.39% Impervious, Inflow Depth > 62 mm for 100-Year + CCF event
Inflow = 2.95 L/s @ 1.33 hrs, Volume= 16.5 m³
Primary = 2.95 L/s @ 1.33 hrs, Volume= 16.5 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Link 44L: Post-Development Flows

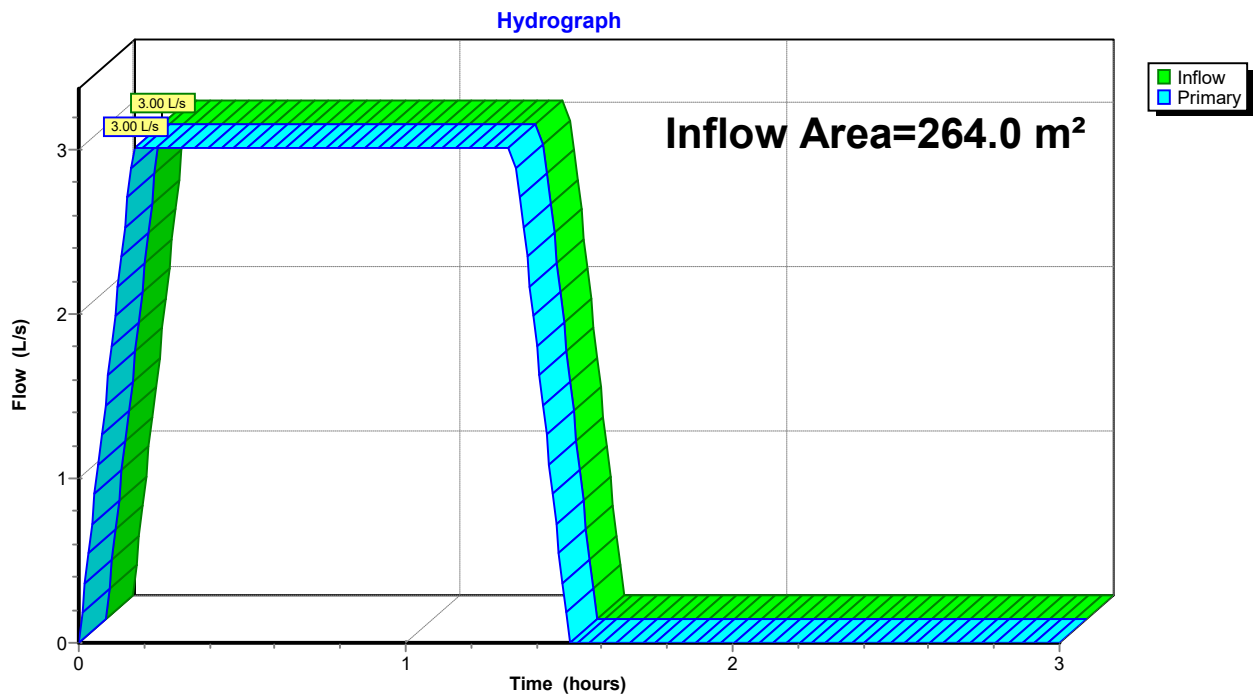


Summary for Link 49L: Pre-Development Flows

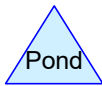
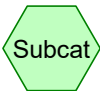
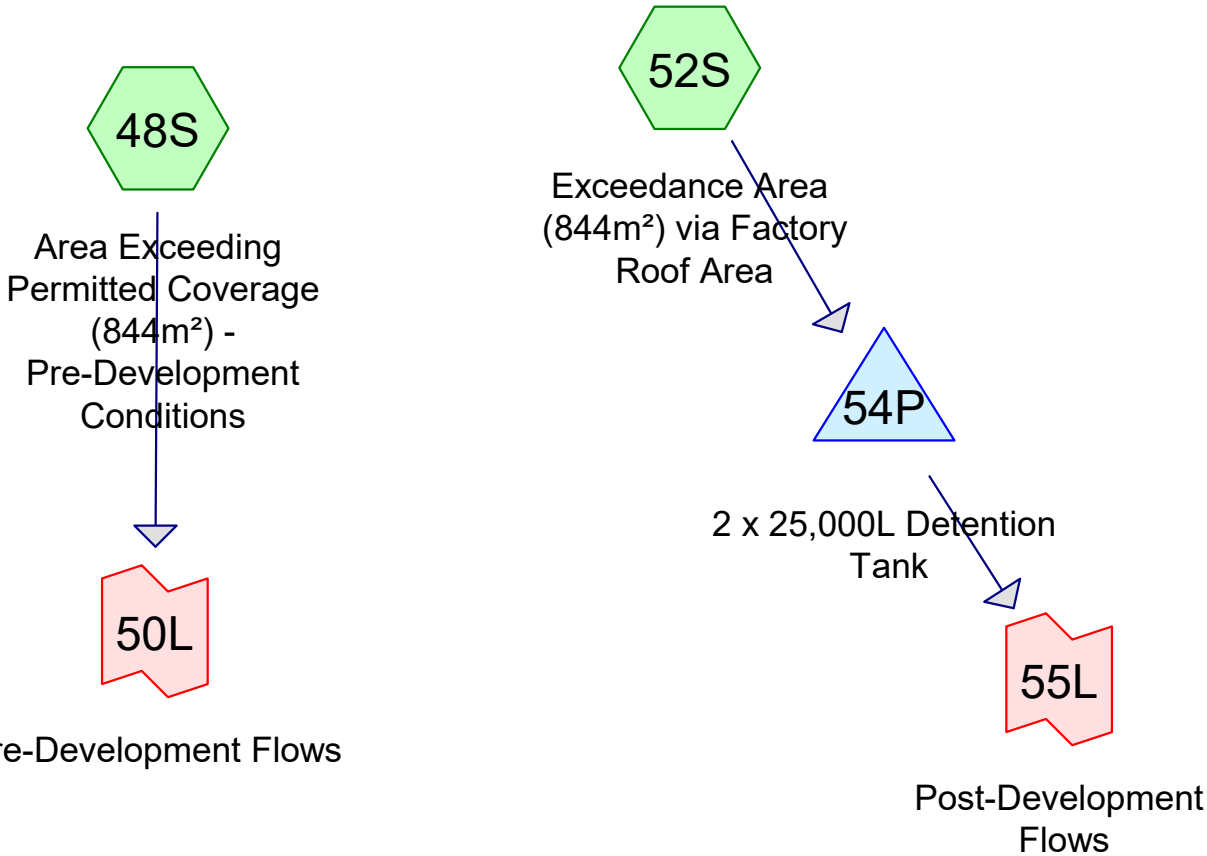
Inflow Area = 264.0 m², 0.00% Impervious, Inflow Depth = 55 mm for 100-Year + CCF event
Inflow = 3.00 L/s @ 0.17 hrs, Volume= 14.4 m³
Primary = 3.00 L/s @ 0.17 hrs, Volume= 14.4 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Link 49L: Pre-Development Flows



Lot 4



Summary for Subcatchment 48S: Area Exceeding Permitted Coverage (844m²) - Pre-Development Conditions

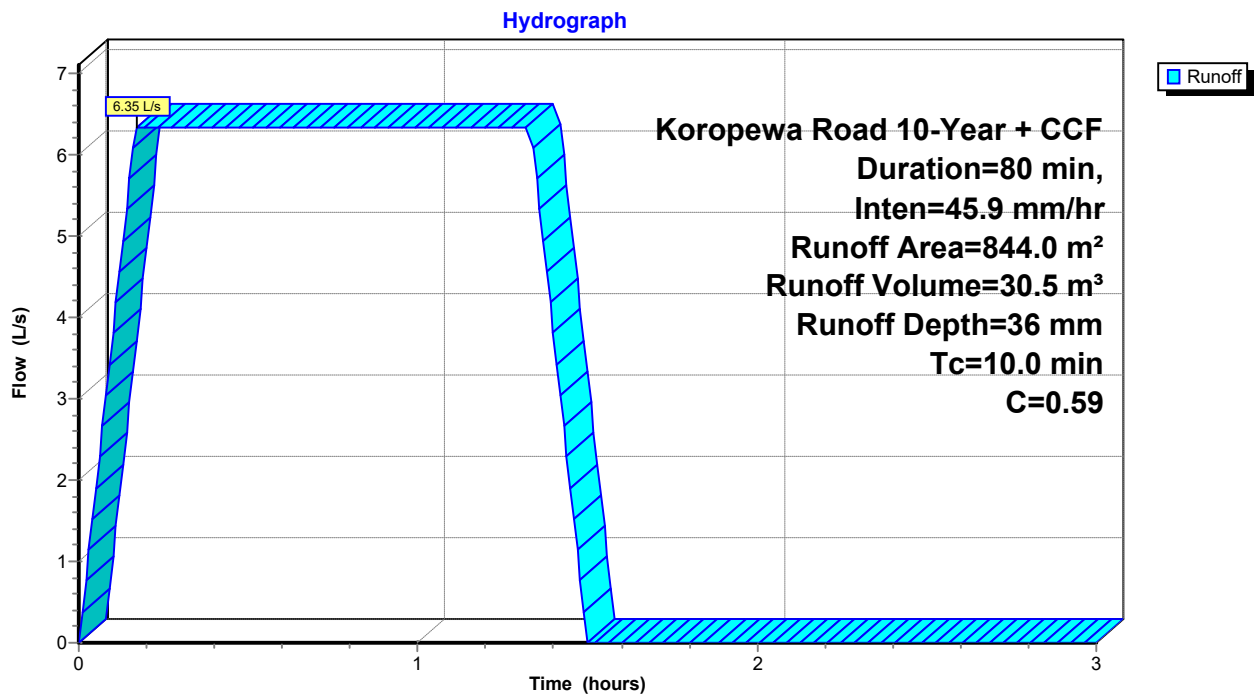
Runoff = 6.35 L/s @ 0.17 hrs, Volume= 30.5 m³, Depth= 36 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 10-Year + CCF Duration=80 min, Inten=45.9 mm/hr

Area (m ²)	C	Description
844.0	0.59	
844.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 48S: Area Exceeding Permitted Coverage (844m²) - Pre-Development Conditions



Summary for Subcatchment 52S: Exceedance Area (844m²) via Factory Roof Area

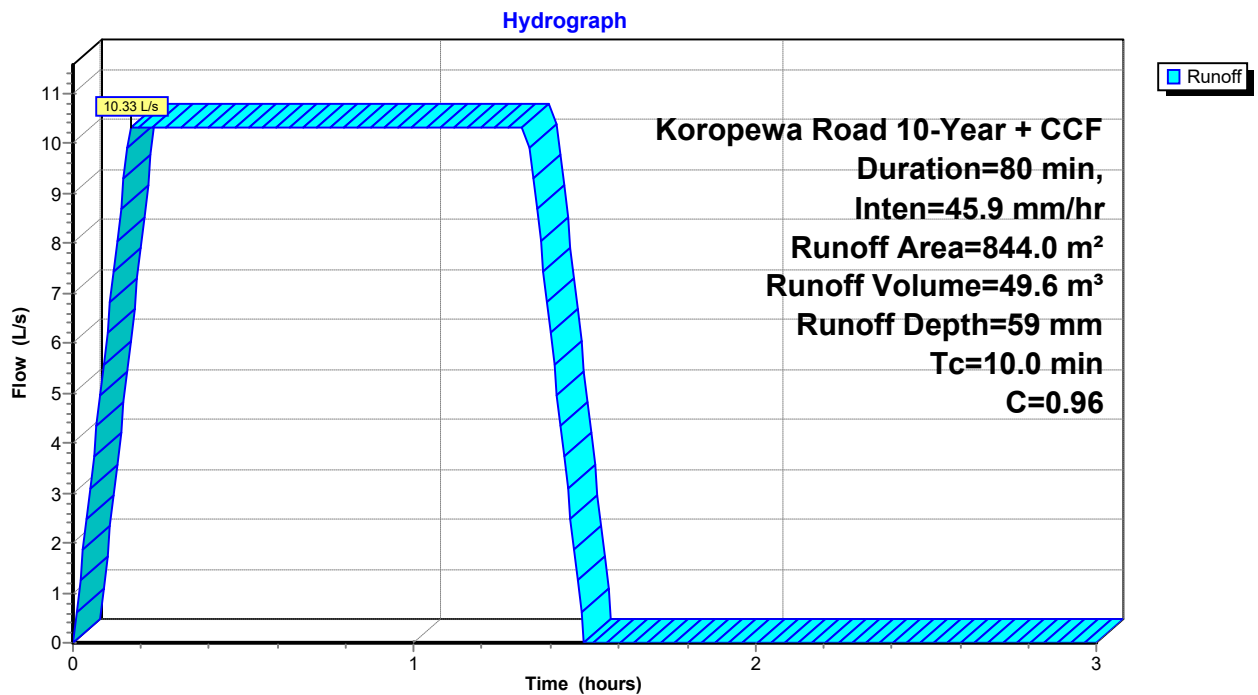
Runoff = 10.33 L/s @ 0.17 hrs, Volume= 49.6 m³, Depth= 59 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 10-Year + CCF Duration=80 min, Inten=45.9 mm/hr

Area (m ²)	C	Description
844.0	0.96	
844.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 52S: Exceedance Area (844m²) via Factory Roof Area



Summary for Pond 54P: 2 x 25,000L Detention Tank

Inflow Area = 844.0 m², 100.00% Impervious, Inflow Depth = 59 mm for 10-Year + CCF event
 Inflow = 10.33 L/s @ 0.17 hrs, Volume= 49.6 m³
 Outflow = 6.05 L/s @ 1.40 hrs, Volume= 45.1 m³, Atten= 41%, Lag= 73.9 min
 Primary = 6.05 L/s @ 1.40 hrs, Volume= 45.1 m³

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 1.370 m @ 1.40 hrs Surf.Area= 20.4 m² Storage= 27.9 m³

Plug-Flow detention time= 49.8 min calculated for 44.9 m³ (91% of inflow)
 Center-of-Mass det. time= 46.3 min (91.3 - 45.0)

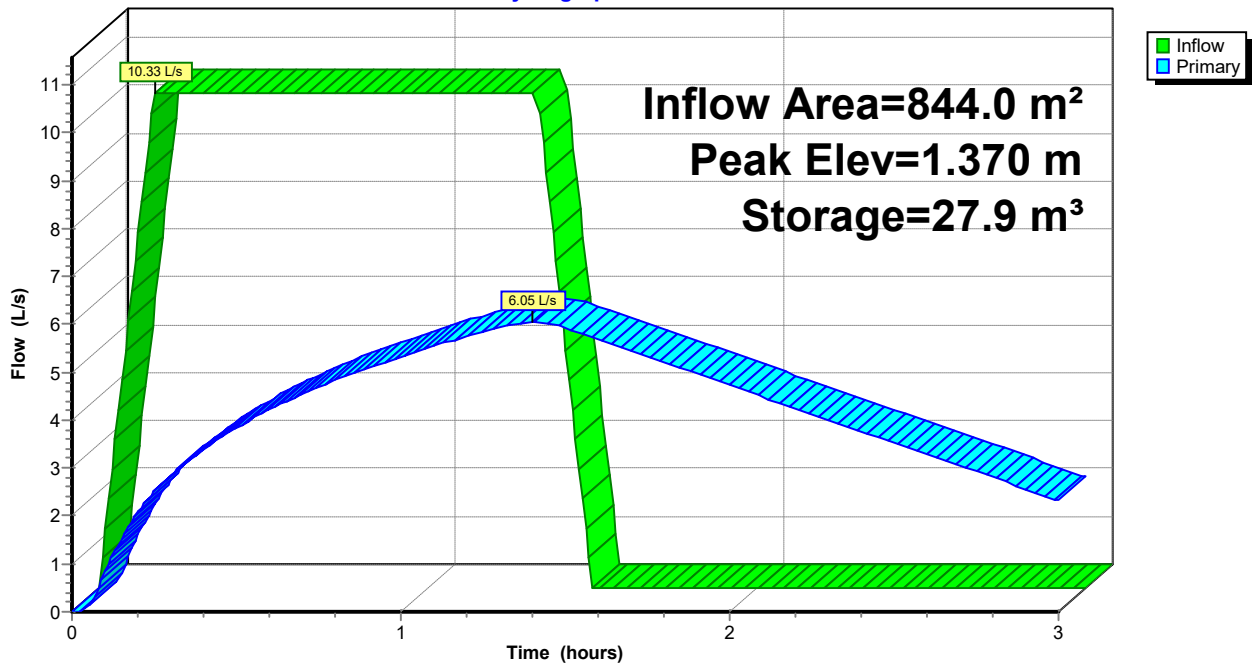
Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	52.9 m ³	3.60 mD x 2.60 mH Vertical Cone/Cylinder x 2

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	50 mm Vert. Orifice/Grate C= 0.600
#2	Primary	1.370 m	32 mm Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=6.05 L/s @ 1.40 hrs HW=1.370 m TW=0.000 m (Dynamic Tailwater)
 1=Orifice/Grate (Orifice Controls 6.05 L/s @ 3.08 m/s)
 2=Orifice/Grate (Controls 0.00 L/s)

Pond 54P: 2 x 25,000L Detention Tank

Hydrograph

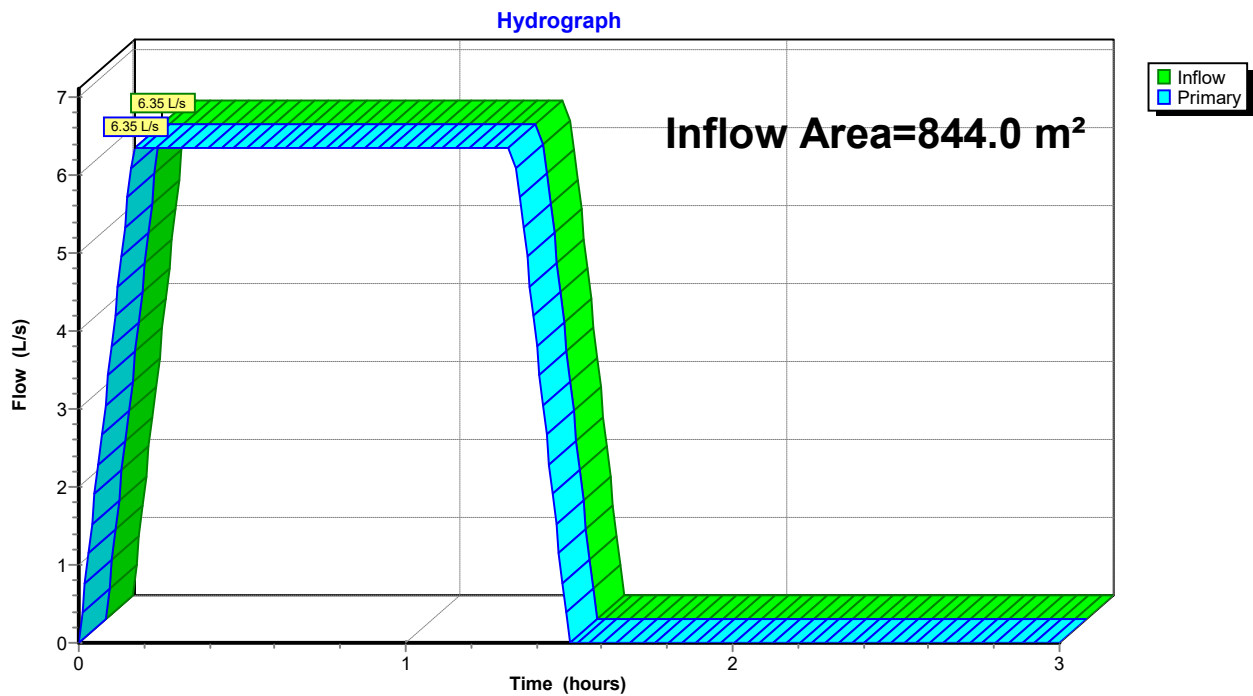


Summary for Link 50L: Pre-Development Flows

Inflow Area = 844.0 m², 0.00% Impervious, Inflow Depth = 36 mm for 10-Year + CCF event
Inflow = 6.35 L/s @ 0.17 hrs, Volume= 30.5 m³
Primary = 6.35 L/s @ 0.17 hrs, Volume= 30.5 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Link 50L: Pre-Development Flows

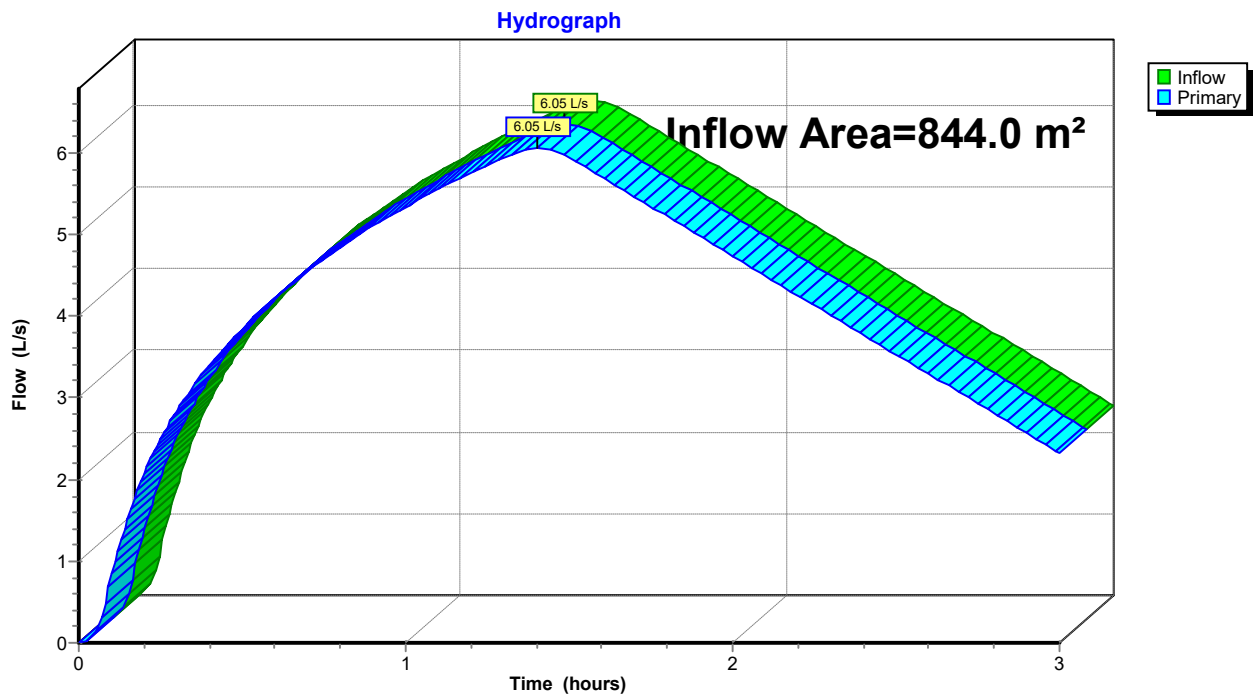


Summary for Link 55L: Post-Development Flows

Inflow Area = 844.0 m², 100.00% Impervious, Inflow Depth > 53 mm for 10-Year + CCF event
Inflow = 6.05 L/s @ 1.40 hrs, Volume= 45.1 m³
Primary = 6.05 L/s @ 1.40 hrs, Volume= 45.1 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Link 55L: Post-Development Flows



Summary for Subcatchment 48S: Area Exceeding Permitted Coverage (844m²) - Pre-Development Conditions

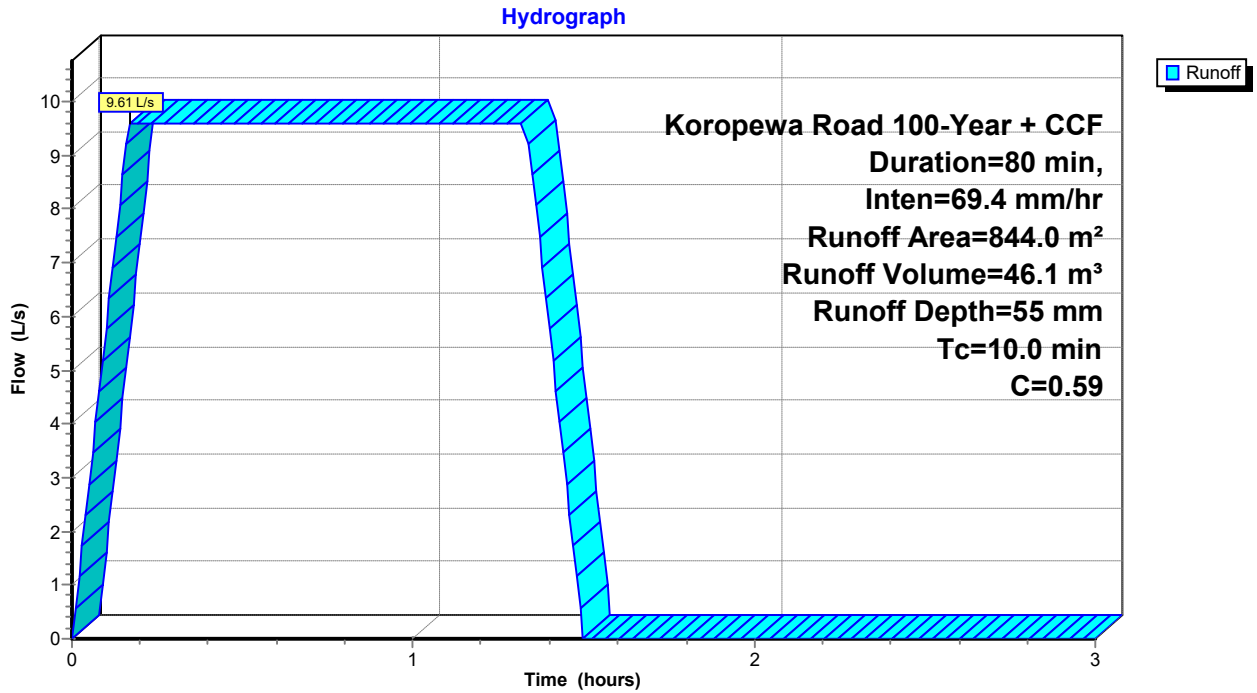
Runoff = 9.61 L/s @ 0.17 hrs, Volume= 46.1 m³, Depth= 55 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 100-Year + CCF Duration=80 min, Inten=69.4 mm/hr

Area (m ²)	C	Description
844.0	0.59	
844.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 48S: Area Exceeding Permitted Coverage (844m²) - Pre-Development Conditions



Summary for Subcatchment 52S: Exceedance Area (844m²) via Factory Roof Area

Runoff = 15.63 L/s @ 0.17 hrs, Volume= 75.0 m³, Depth= 89 mm

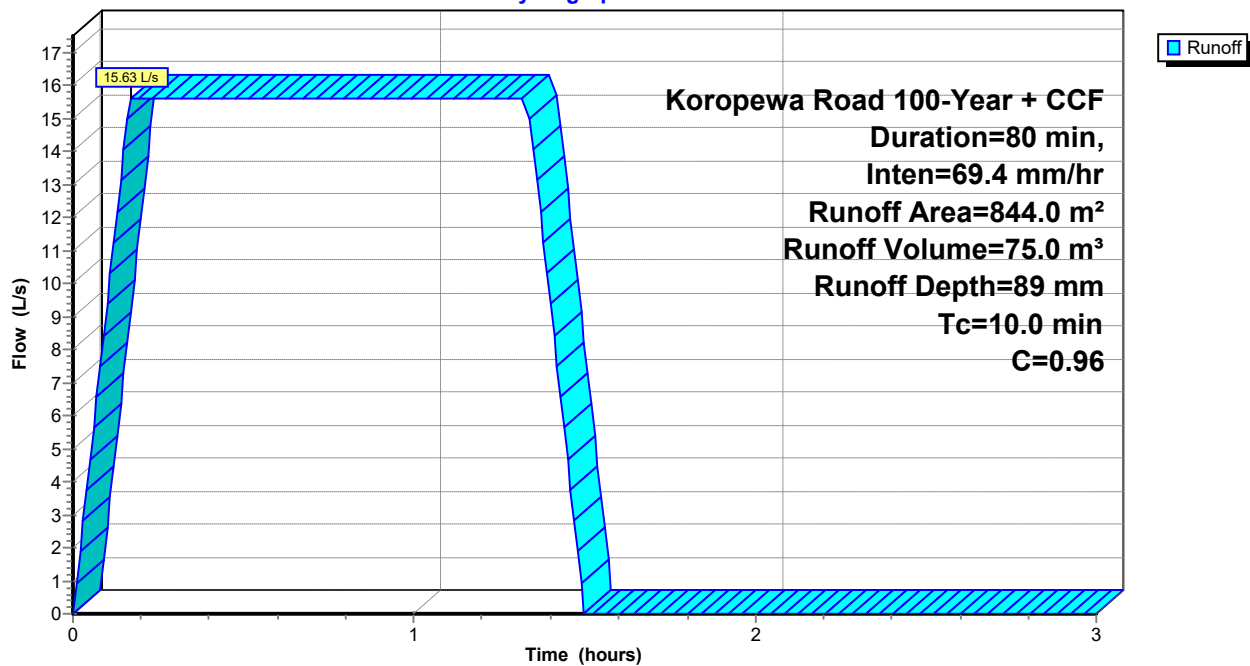
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 100-Year + CCF Duration=80 min, Inten=69.4 mm/hr

Area (m ²)	C	Description
844.0	0.96	
844.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 52S: Exceedance Area (844m²) via Factory Roof Area

Hydrograph



Summary for Pond 54P: 2 x 25,000L Detention Tank

Inflow Area = 844.0 m², 100.00% Impervious, Inflow Depth = 89 mm for 100-Year + CCF event
 Inflow = 15.63 L/s @ 0.17 hrs, Volume= 75.0 m³
 Outflow = 9.52 L/s @ 1.40 hrs, Volume= 64.5 m³, Atten= 39%, Lag= 73.7 min
 Primary = 9.52 L/s @ 1.40 hrs, Volume= 64.5 m³

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 2.164 m @ 1.40 hrs Surf.Area= 20.4 m² Storage= 44.0 m³

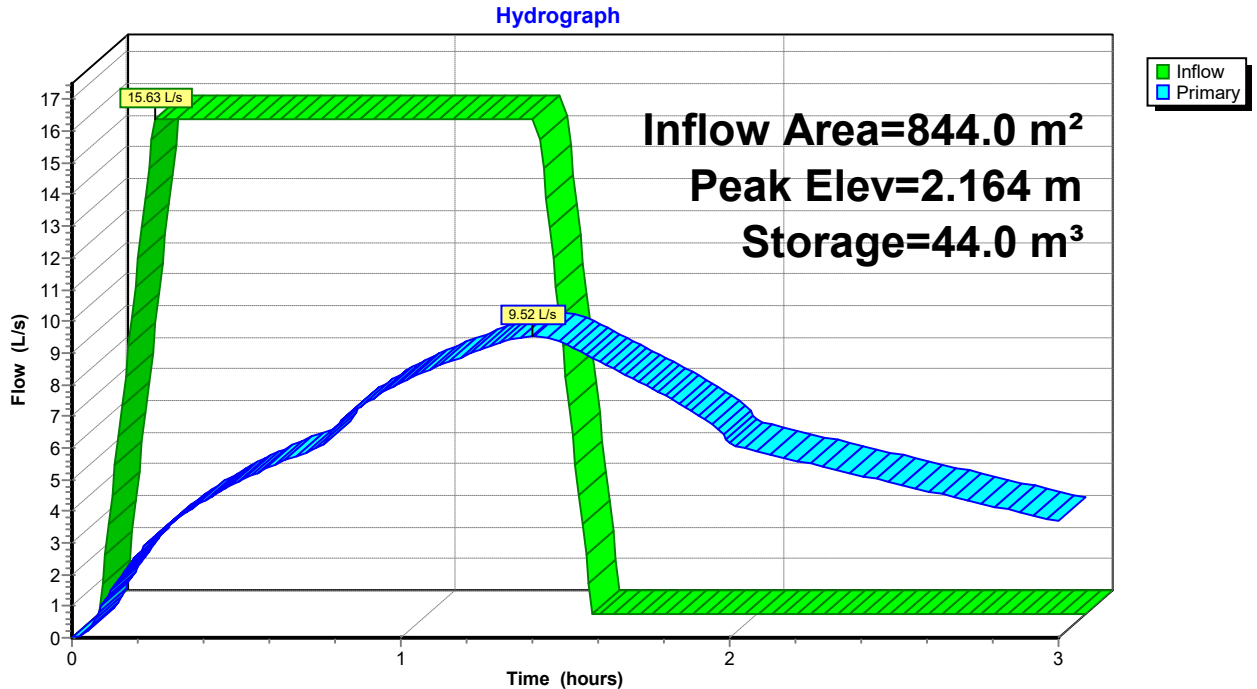
Plug-Flow detention time= 52.6 min calculated for 64.5 m³ (86% of inflow)
 Center-of-Mass det. time= 46.9 min (91.9 - 45.0)

Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	52.9 m ³	3.60 mD x 2.60 mH Vertical Cone/Cylinder x 2

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	50 mm Vert. Orifice/Grate C= 0.600
#2	Primary	1.370 m	32 mm Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=9.52 L/s @ 1.40 hrs HW=2.164 m TW=0.000 m (Dynamic Tailwater)
 1=Orifice/Grate (Orifice Controls 7.63 L/s @ 3.89 m/s)
 2=Orifice/Grate (Orifice Controls 1.88 L/s @ 2.34 m/s)

Pond 54P: 2 x 25,000L Detention Tank

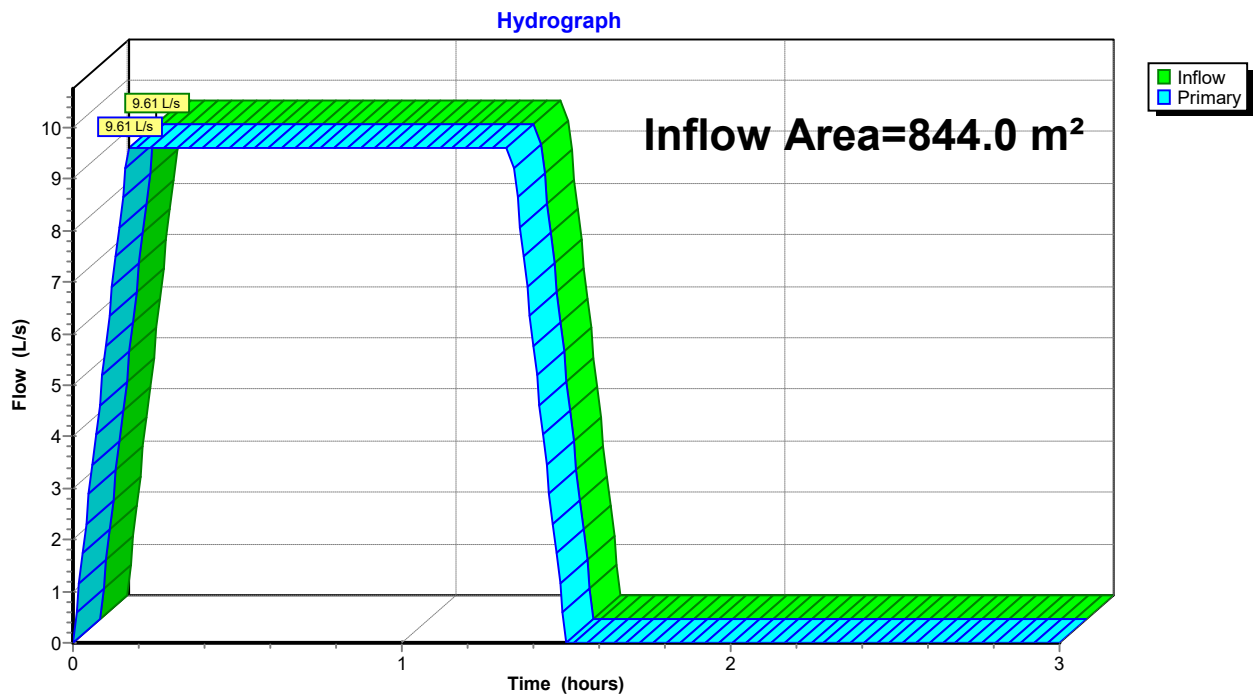


Summary for Link 50L: Pre-Development Flows

Inflow Area = 844.0 m², 0.00% Impervious, Inflow Depth = 55 mm for 100-Year + CCF event
Inflow = 9.61 L/s @ 0.17 hrs, Volume= 46.1 m³
Primary = 9.61 L/s @ 0.17 hrs, Volume= 46.1 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Link 50L: Pre-Development Flows

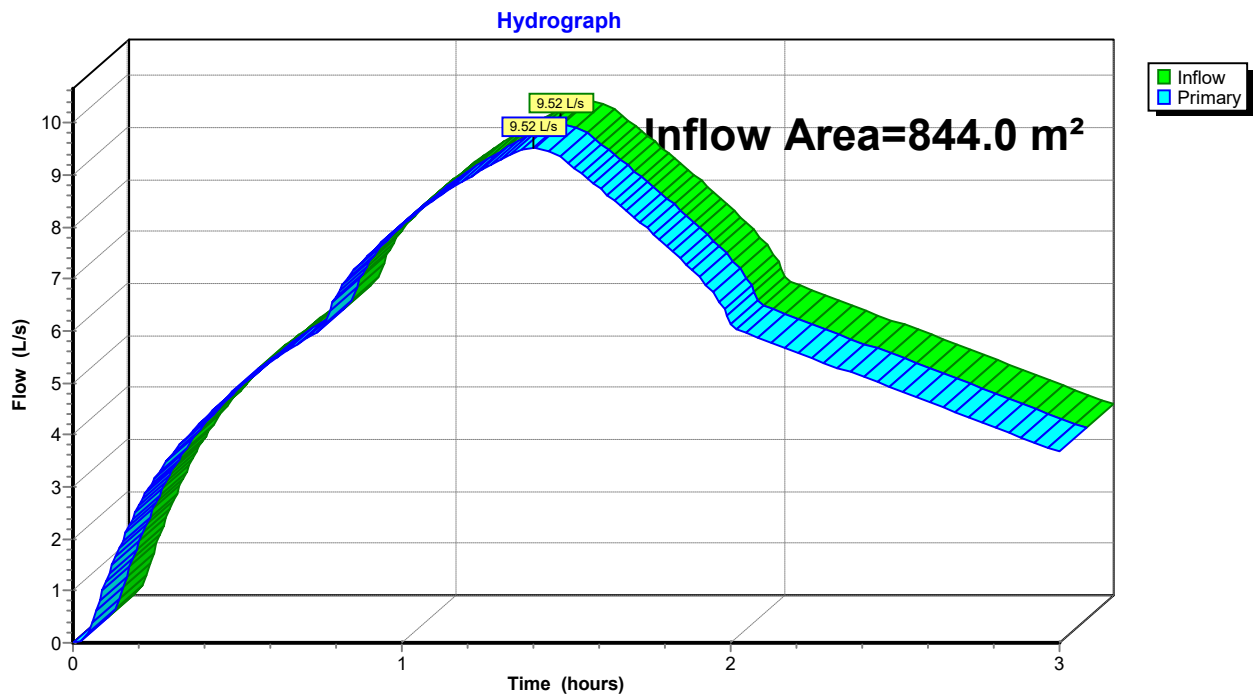


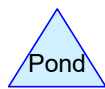
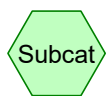
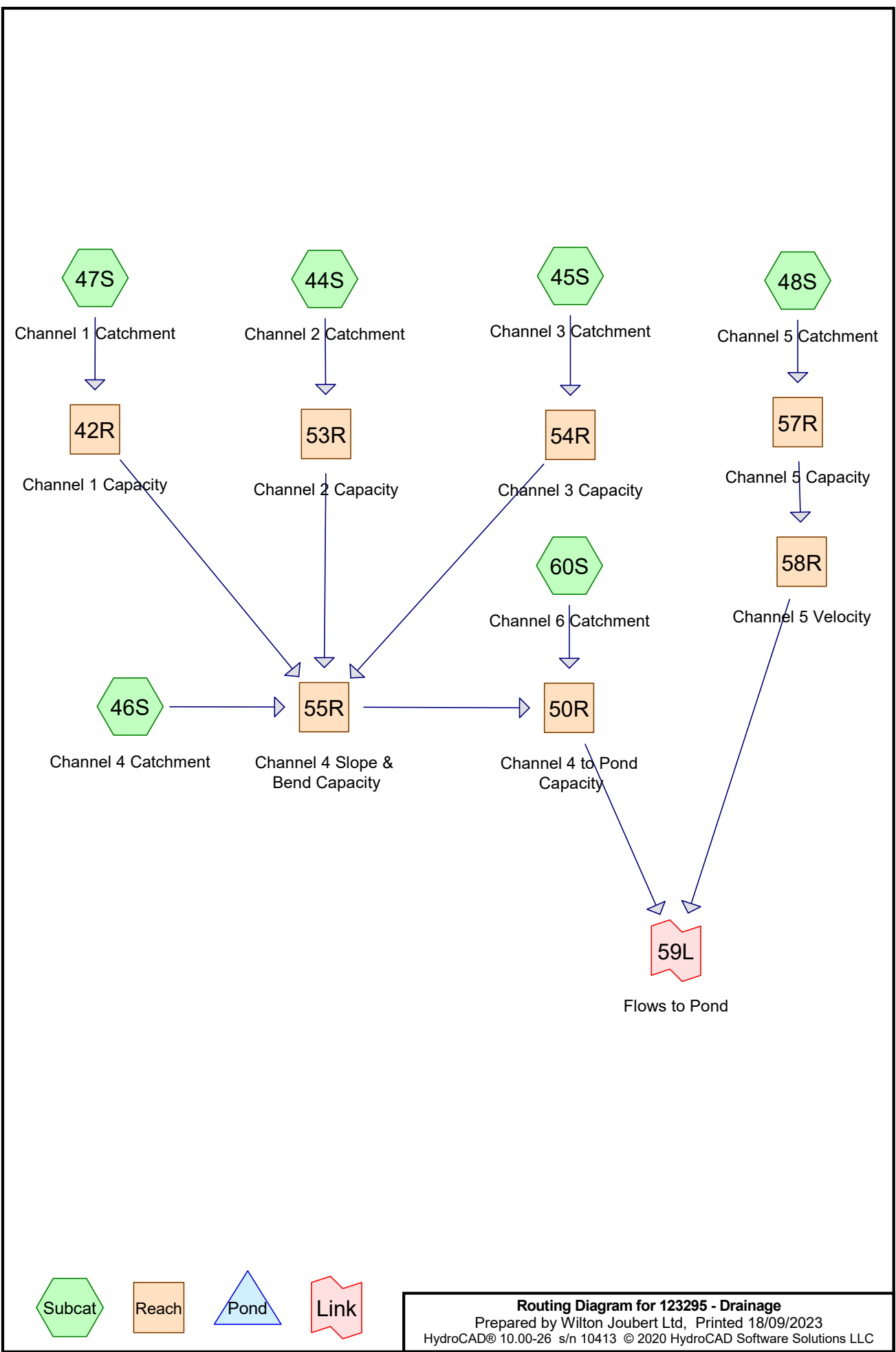
Summary for Link 55L: Post-Development Flows

Inflow Area = 844.0 m², 100.00% Impervious, Inflow Depth > 76 mm for 100-Year + CCF event
Inflow = 9.52 L/s @ 1.40 hrs, Volume= 64.5 m³
Primary = 9.52 L/s @ 1.40 hrs, Volume= 64.5 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Link 55L: Post-Development Flows





Summary for Subcatchment 44S: Channel 2 Catchment

Runoff = 130.38 L/s @ 0.17 hrs, Volume= 469.4 m³, Depth= 54 mm

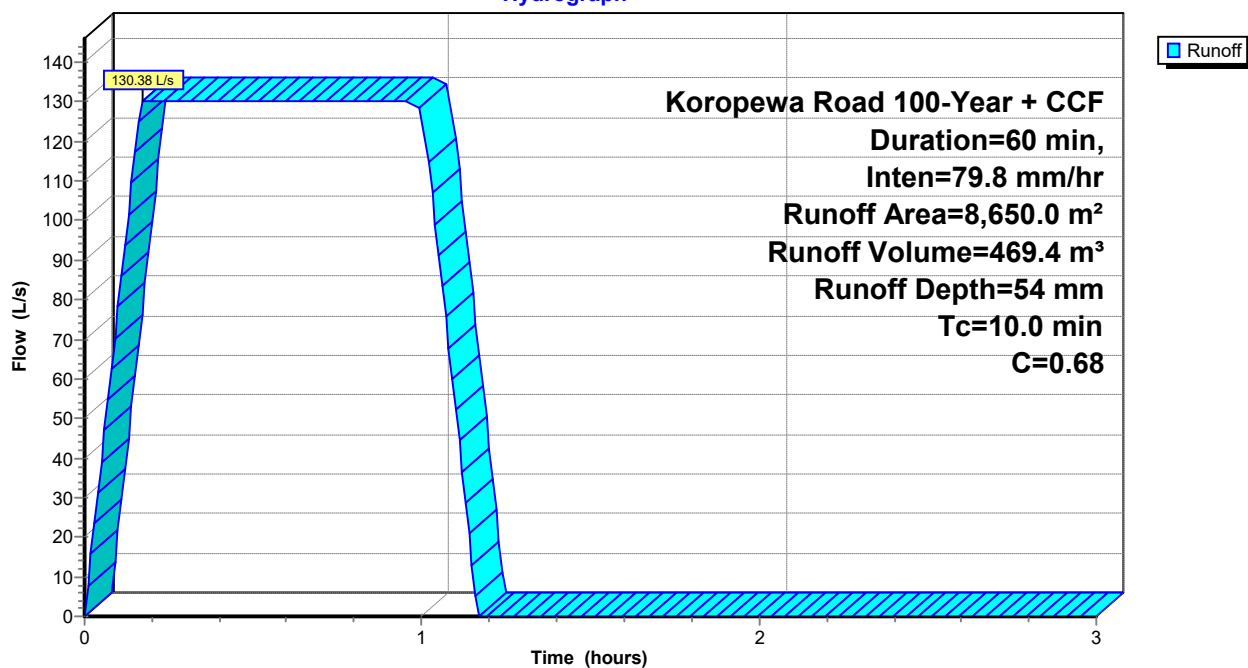
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 100-Year + CCF Duration=60 min, Inten=79.8 mm/hr

Area (m ²)	C	Description
2,055.0	0.96	Primary Flow Catchment
6,595.0	0.59	Secondary Flow Catchment
8,650.0	0.68	Weighted Average
6,595.0		76.24% Pervious Area
2,055.0		23.76% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 44S: Channel 2 Catchment

Hydrograph



Summary for Subcatchment 45S: Channel 3 Catchment

Runoff = 32.26 L/s @ 0.17 hrs, Volume= 116.1 m³, Depth= 50 mm

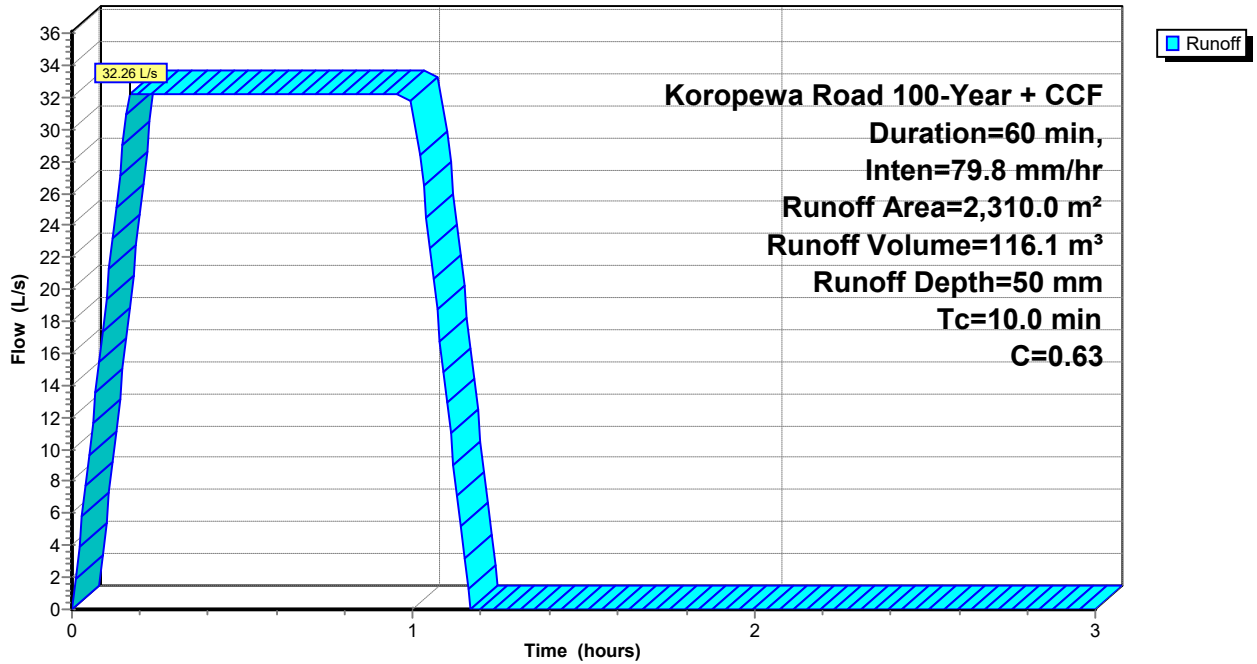
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 100-Year + CCF Duration=60 min, Inten=79.8 mm/hr

Area (m ²)	C	Description
280.0	0.96	Primary Flow Catchment
2,030.0	0.59	Secondary Flow Catchment
2,310.0	0.63	Weighted Average
2,030.0		87.88% Pervious Area
280.0		12.12% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 45S: Channel 3 Catchment

Hydrograph



Summary for Subcatchment 46S: Channel 4 Catchment

Runoff = 78.96 L/s @ 0.17 hrs, Volume= 284.2 m³, Depth= 52 mm

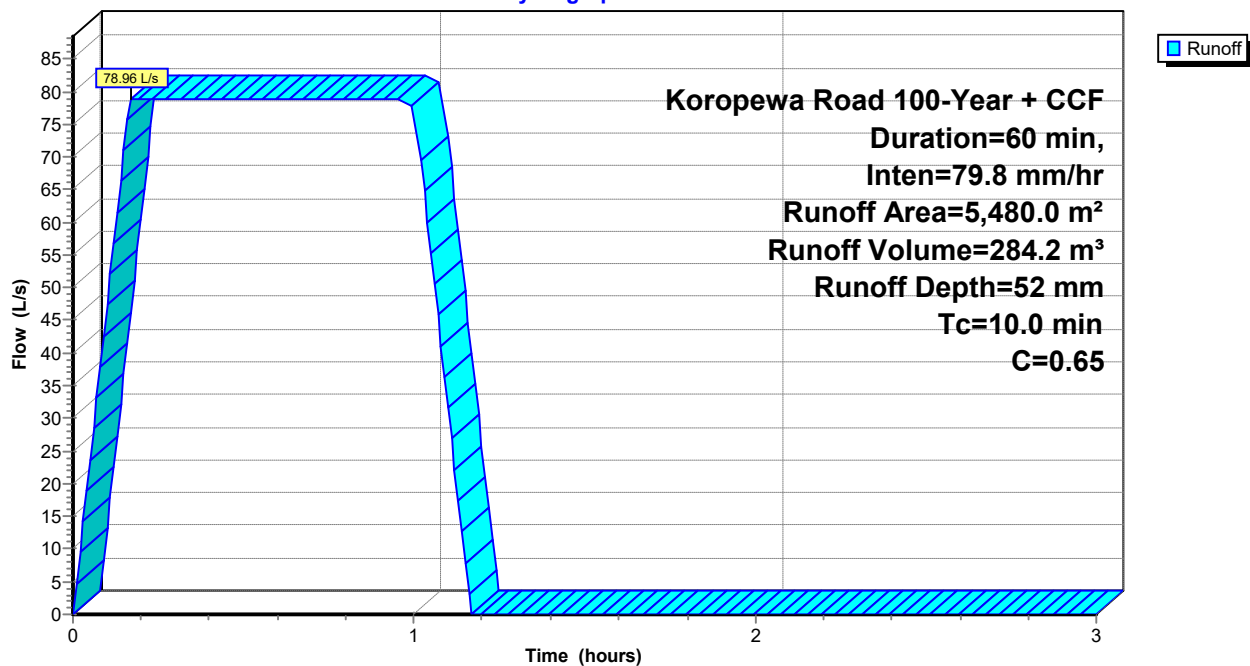
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 100-Year + CCF Duration=60 min, Inten=79.8 mm/hr

Area (m ²)	C	Description
940.0	0.96	Primary Flow Catchment
4,540.0	0.59	Secondary Flow Catchment
5,480.0	0.65	Weighted Average
4,540.0		82.85% Pervious Area
940.0		17.15% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 46S: Channel 4 Catchment

Hydrograph



Summary for Subcatchment 47S: Channel 1 Catchment

Runoff = 115.47 L/s @ 0.17 hrs, Volume= 415.7 m³, Depth= 57 mm

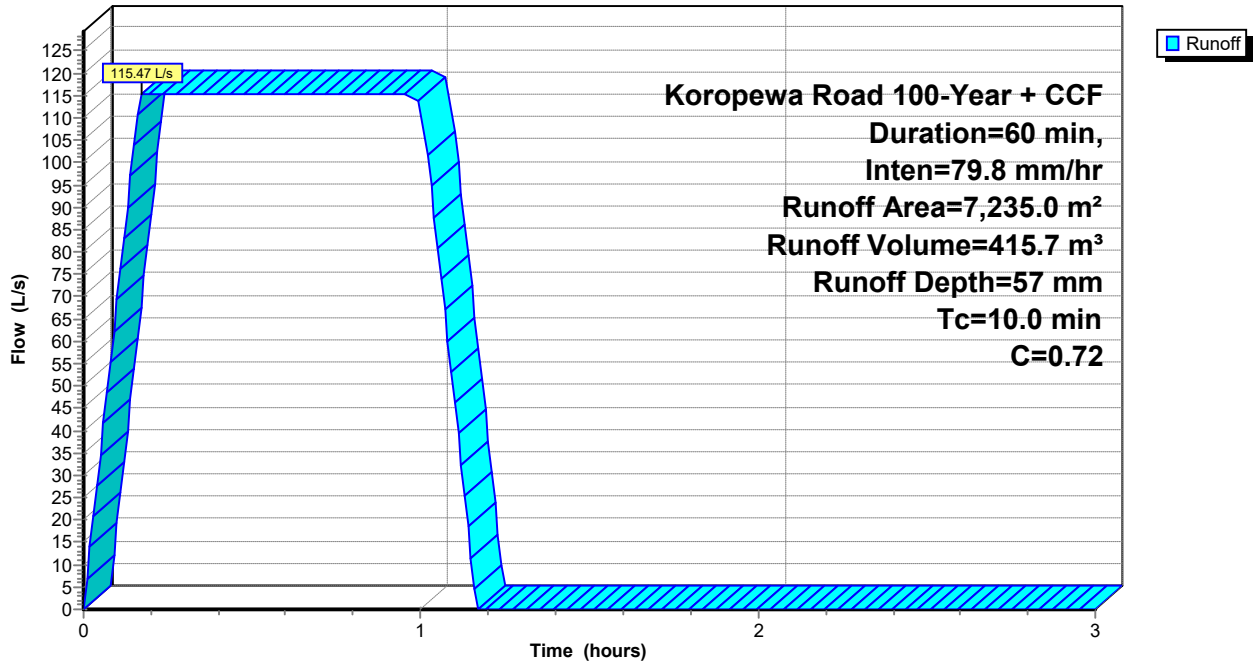
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 100-Year + CCF Duration=60 min, Inten=79.8 mm/hr

Area (m ²)	C	Description
2,525.0	0.96	Primary Flow Catchment
4,710.0	0.59	Secondary Flow Catchment
7,235.0	0.72	Weighted Average
4,710.0		65.10% Pervious Area
2,525.0		34.90% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 47S: Channel 1 Catchment

Hydrograph



Summary for Subcatchment 48S: Channel 5 Catchment

Runoff = 121.09 L/s @ 0.17 hrs, Volume= 435.9 m³, Depth= 63 mm

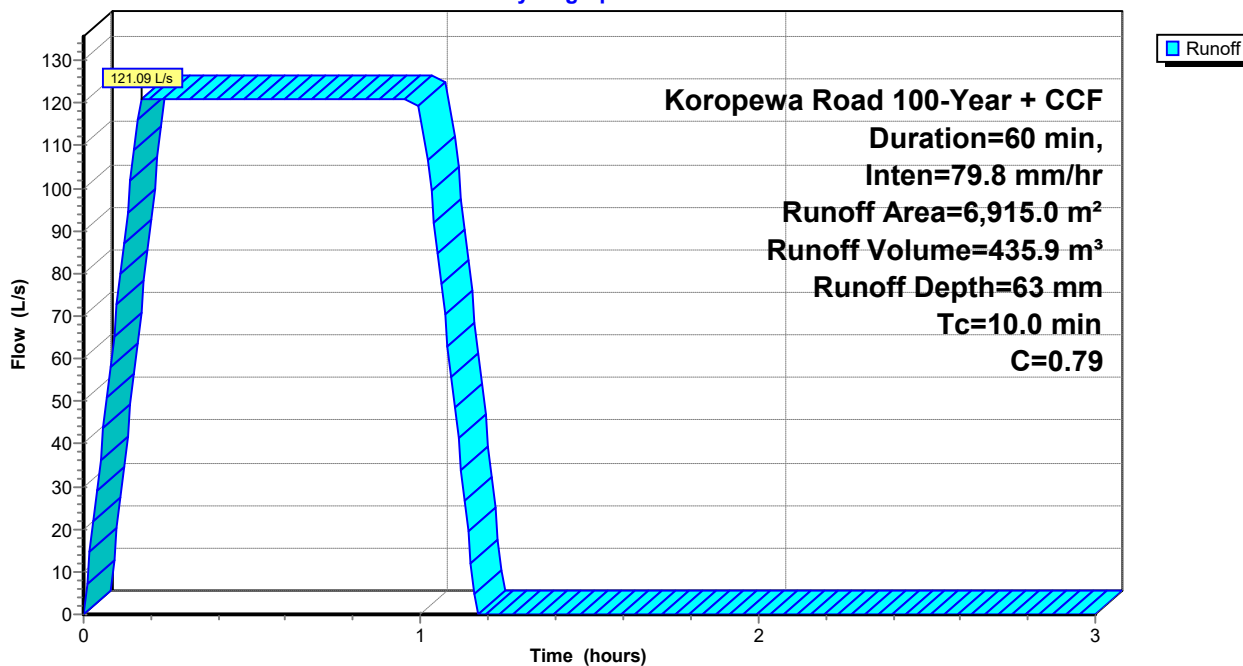
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 100-Year + CCF Duration=60 min, Inten=79.8 mm/hr

Area (m ²)	C	Description
3,705.0	0.96	Primary Flow Catchment
3,210.0	0.59	Secondary Flow Catchment
6,915.0	0.79	Weighted Average
3,210.0		46.42% Pervious Area
3,705.0		53.58% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 48S: Channel 5 Catchment

Hydrograph



Summary for Subcatchment 60S: Channel 6 Catchment

Runoff = 100.96 L/s @ 0.17 hrs, Volume= 363.5 m³, Depth= 61 mm

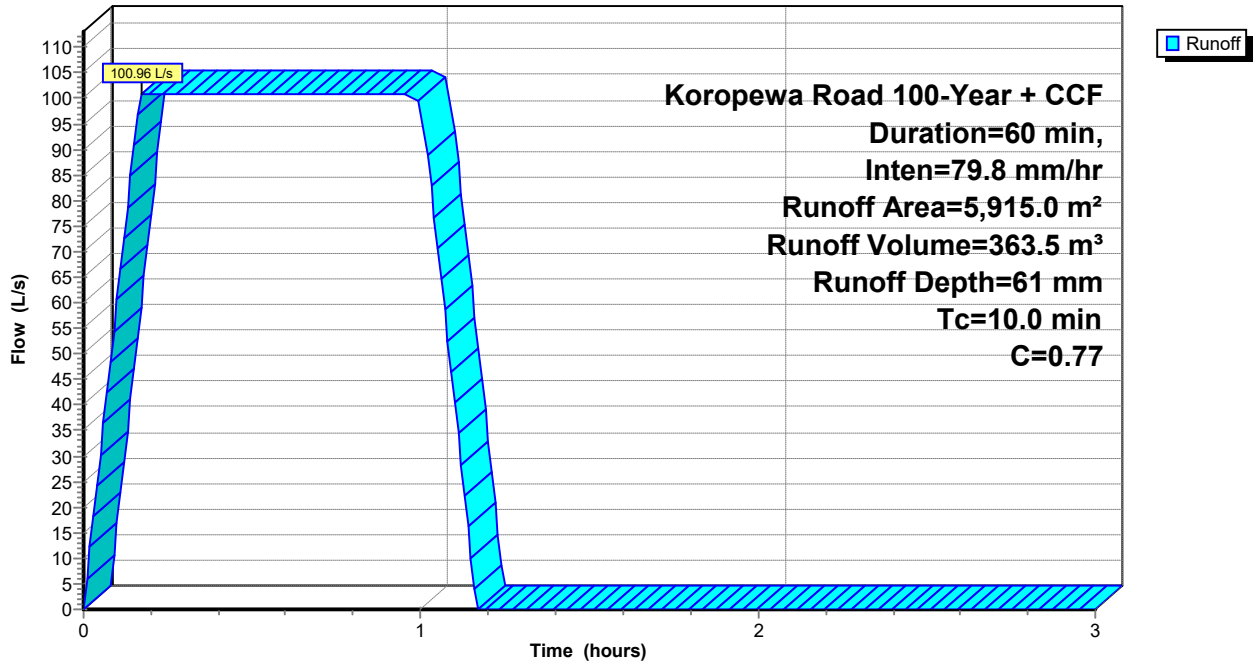
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 100-Year + CCF Duration=60 min, Inten=79.8 mm/hr

Area (m ²)	C	Description
2,915.0	0.96	Primary Flow Catchment
3,000.0	0.59	Secondary Flow Catchment
5,915.0	0.77	Weighted Average
3,000.0		50.72% Pervious Area
2,915.0		49.28% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 60S: Channel 6 Catchment

Hydrograph



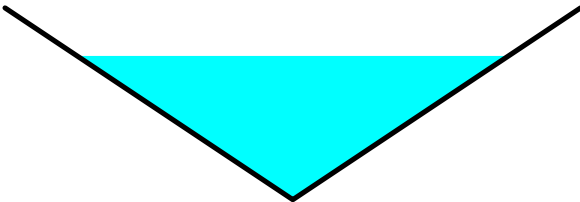
Summary for Reach 42R: Channel 1 Capacity

Inflow Area = 7,235.0 m², 34.90% Impervious, Inflow Depth = 57 mm for 100-Year + CCF event
 Inflow = 115.47 L/s @ 0.17 hrs, Volume= 415.7 m³
 Outflow = 115.77 L/s @ 0.18 hrs, Volume= 415.7 m³, Atten= 0%, Lag= 0.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.68 m/s, Min. Travel Time= 0.2 min
 Avg. Velocity = 0.59 m/s, Avg. Travel Time= 0.3 min

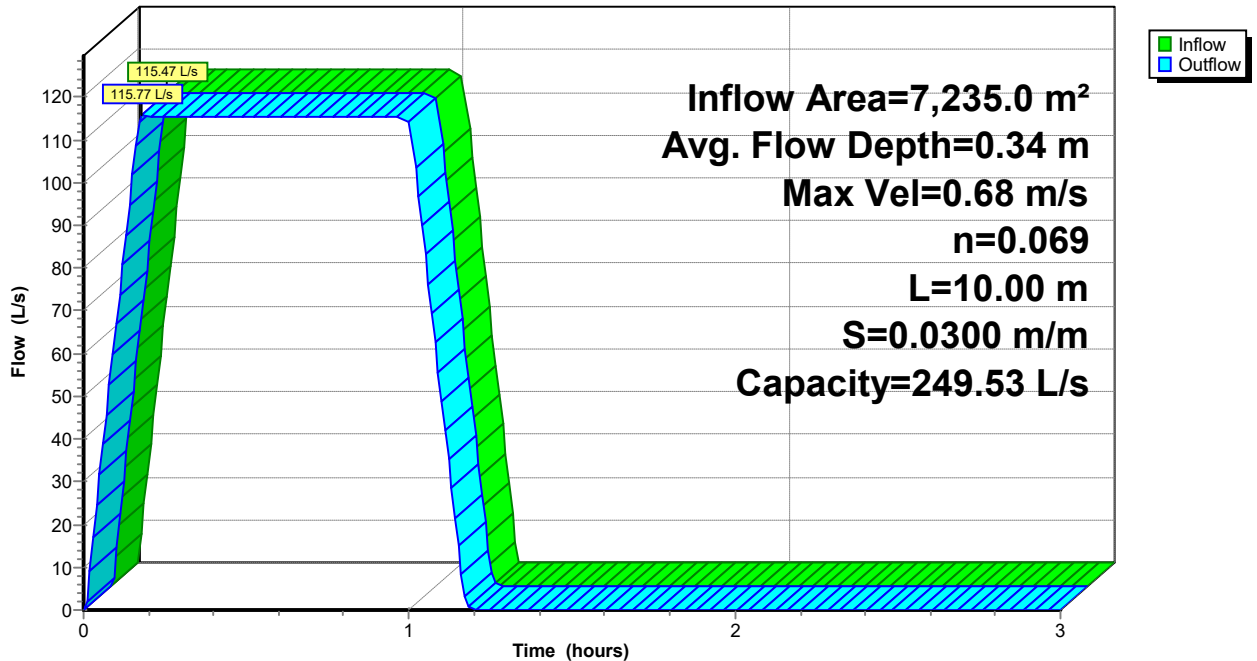
Peak Storage= 1.7 m³ @ 0.18 hrs
 Average Depth at Peak Storage= 0.34 m
 Bank-Full Depth= 0.45 m Flow Area= 0.30 m², Capacity= 249.53 L/s

0.00 m x 0.45 m deep channel, n= 0.069
 Side Slope Z-value= 1.5 m/m Top Width= 1.35 m
 Length= 10.00 m Slope= 0.0300 m/m
 Inlet Invert= 5.000 m, Outlet Invert= 4.700 m



Reach 42R: Channel 1 Capacity

Hydrograph



Summary for Reach 50R: Channel 4 to Pond Capacity

Inflow Area = 29,590.0 m², 29.45% Impervious, Inflow Depth = 56 mm for 100-Year + CCF event
 Inflow = 458.31 L/s @ 0.19 hrs, Volume= 1,648.9 m³
 Outflow = 458.52 L/s @ 0.19 hrs, Volume= 1,648.9 m³, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.23 m/s, Min. Travel Time= 0.1 min
 Avg. Velocity = 0.93 m/s, Avg. Travel Time= 0.2 min

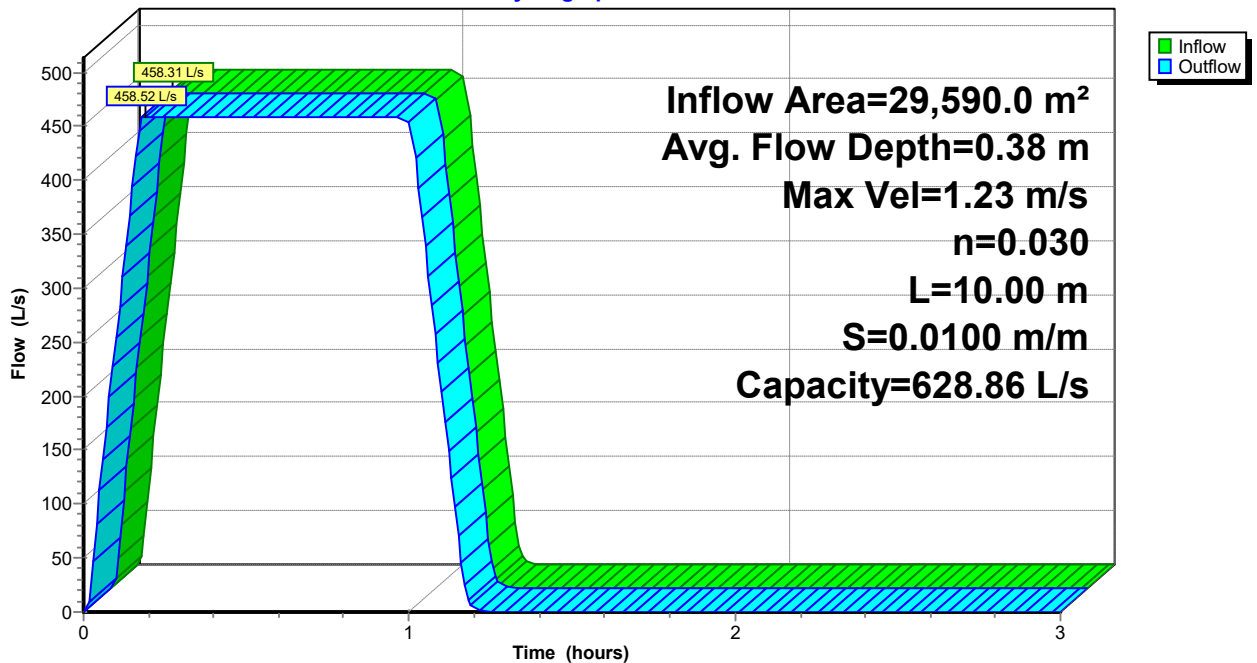
Peak Storage= 3.7 m³ @ 0.19 hrs
 Average Depth at Peak Storage= 0.38 m
 Bank-Full Depth= 0.45 m Flow Area= 0.47 m², Capacity= 628.86 L/s

0.60 m x 0.45 m deep channel, n= 0.030 Earth, grassed & winding
 Side Slope Z-value= 1.0 m/m Top Width= 1.50 m
 Length= 10.00 m Slope= 0.0100 m/m
 Inlet Invert= 3.000 m, Outlet Invert= 2.900 m



Reach 50R: Channel 4 to Pond Capacity

Hydrograph



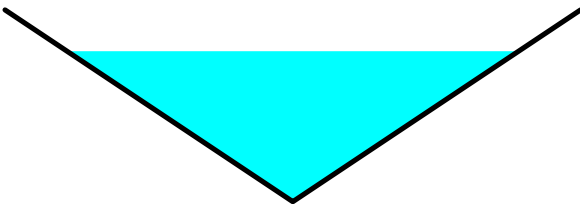
Summary for Reach 53R: Channel 2 Capacity

Inflow Area = 8,650.0 m², 23.76% Impervious, Inflow Depth = 54 mm for 100-Year + CCF event
 Inflow = 130.38 L/s @ 0.17 hrs, Volume= 469.4 m³
 Outflow = 130.73 L/s @ 0.18 hrs, Volume= 469.4 m³, Atten= 0%, Lag= 0.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.70 m/s, Min. Travel Time= 0.2 min
 Avg. Velocity = 0.61 m/s, Avg. Travel Time= 0.3 min

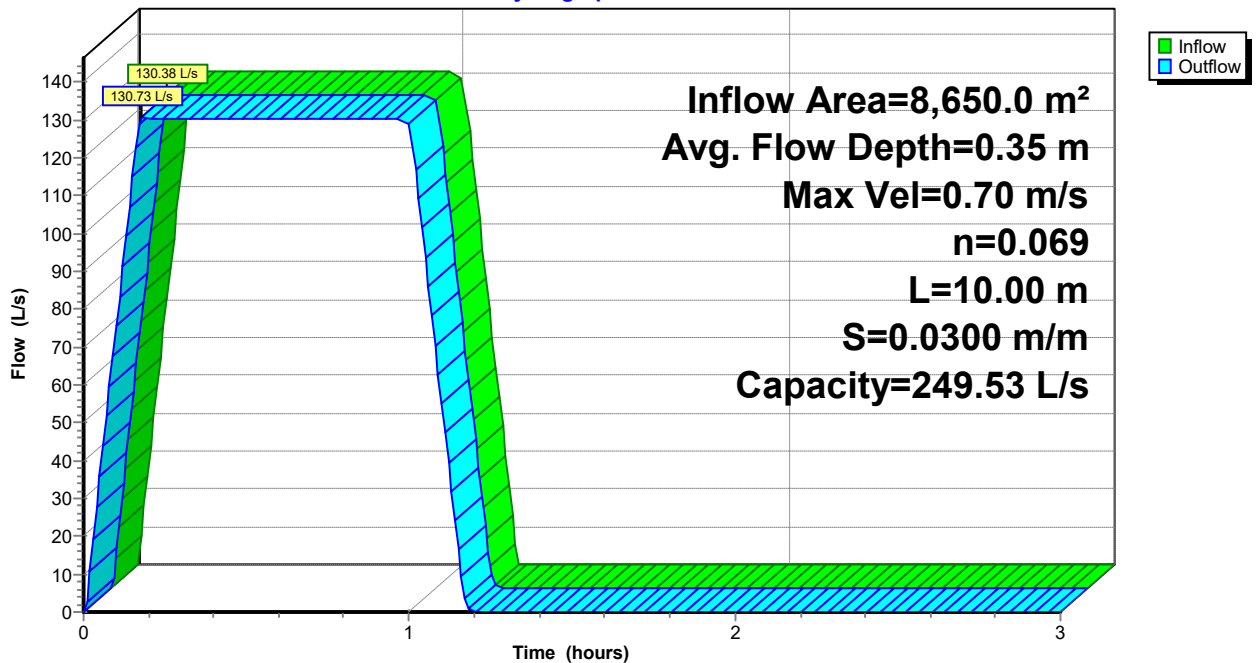
Peak Storage= 1.9 m³ @ 0.18 hrs
 Average Depth at Peak Storage= 0.35 m
 Bank-Full Depth= 0.45 m Flow Area= 0.30 m², Capacity= 249.53 L/s

0.00 m x 0.45 m deep channel, n= 0.069
 Side Slope Z-value= 1.5 m/m Top Width= 1.35 m
 Length= 10.00 m Slope= 0.0300 m/m
 Inlet Invert= 5.000 m, Outlet Invert= 4.700 m



Reach 53R: Channel 2 Capacity

Hydrograph



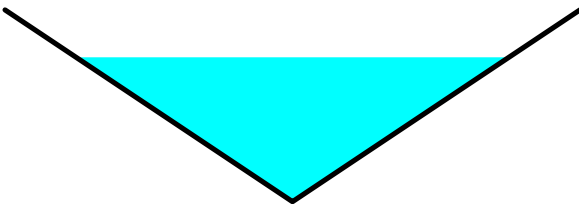
Summary for Reach 54R: Channel 3 Capacity

Inflow Area = 2,310.0 m², 12.12% Impervious, Inflow Depth = 50 mm for 100-Year + CCF event
 Inflow = 32.26 L/s @ 0.17 hrs, Volume= 116.1 m³
 Outflow = 32.33 L/s @ 0.18 hrs, Volume= 116.1 m³, Atten= 0%, Lag= 0.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.61 m/s, Min. Travel Time= 0.3 min
 Avg. Velocity = 0.55 m/s, Avg. Travel Time= 0.3 min

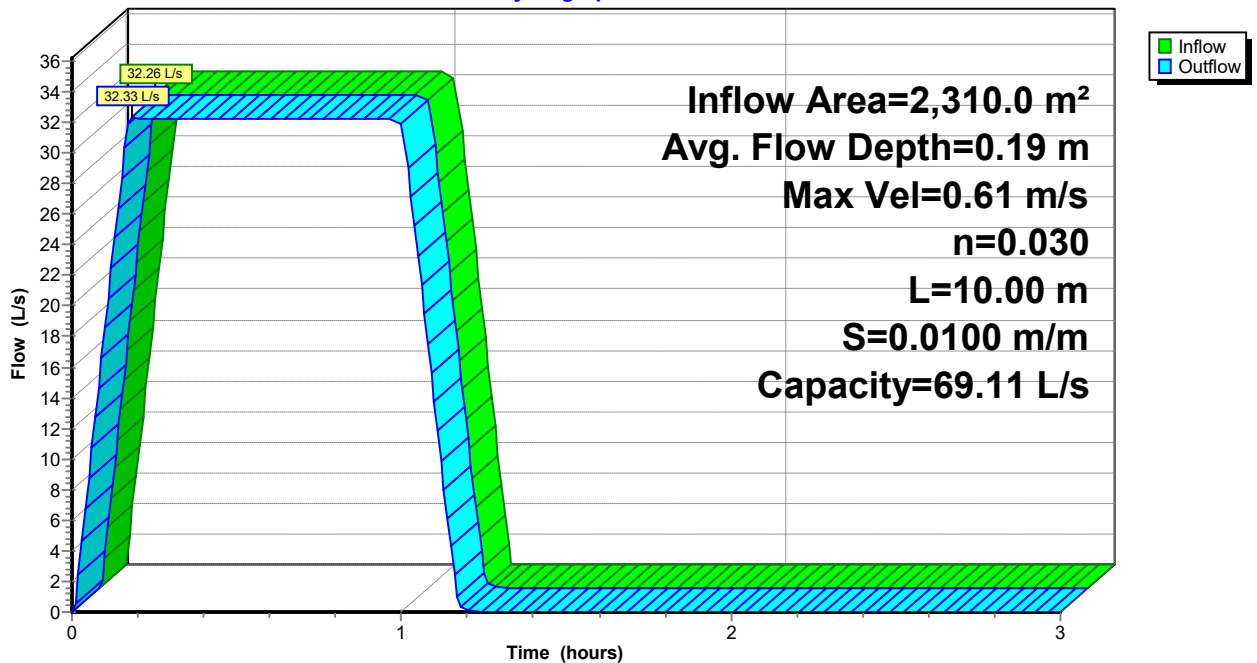
Peak Storage= 0.5 m³ @ 0.18 hrs
 Average Depth at Peak Storage= 0.19 m
 Bank-Full Depth= 0.25 m Flow Area= 0.09 m², Capacity= 69.11 L/s

0.00 m x 0.25 m deep channel, n= 0.030
 Side Slope Z-value= 1.5 m/m Top Width= 0.75 m
 Length= 10.00 m Slope= 0.0100 m/m
 Inlet Invert= 5.000 m, Outlet Invert= 4.900 m



Reach 54R: Channel 3 Capacity

Hydrograph



Summary for Reach 55R: Channel 4 Slope & Bend Capacity

Inflow Area = 23,675.0 m², 24.50% Impervious, Inflow Depth = 54 mm for 100-Year + CCF event
 Inflow = 357.79 L/s @ 0.18 hrs, Volume= 1,285.5 m³
 Outflow = 357.35 L/s @ 0.19 hrs, Volume= 1,285.5 m³, Atten= 0%, Lag= 0.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.62 m/s, Min. Travel Time= 0.3 min
 Avg. Velocity = 0.47 m/s, Avg. Travel Time= 0.4 min

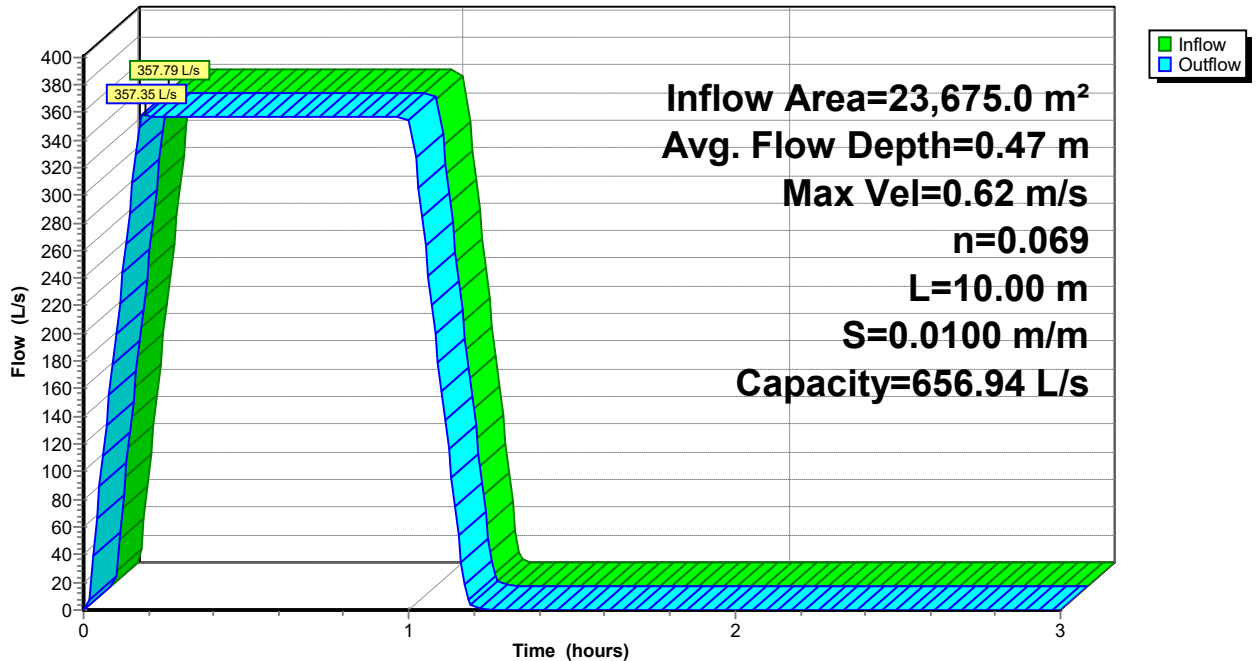
Peak Storage= 5.8 m³ @ 0.19 hrs
 Average Depth at Peak Storage= 0.47 m
 Bank-Full Depth= 0.65 m Flow Area= 0.91 m², Capacity= 656.94 L/s

0.75 m x 0.65 m deep channel, n= 0.069
 Side Slope Z-value= 1.0 m/m Top Width= 2.05 m
 Length= 10.00 m Slope= 0.0100 m/m
 Inlet Invert= 4.000 m, Outlet Invert= 3.900 m



Reach 55R: Channel 4 Slope & Bend Capacity

Hydrograph



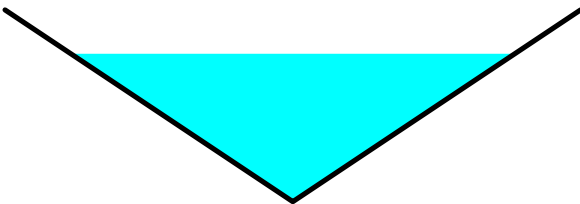
Summary for Reach 57R: Channel 5 Capacity

Inflow Area = 6,915.0 m², 53.58% Impervious, Inflow Depth = 63 mm for 100-Year + CCF event
 Inflow = 121.09 L/s @ 0.17 hrs, Volume= 435.9 m³
 Outflow = 121.43 L/s @ 0.18 hrs, Volume= 435.9 m³, Atten= 0%, Lag= 0.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.85 m/s, Min. Travel Time= 0.2 min
 Avg. Velocity = 0.76 m/s, Avg. Travel Time= 0.2 min

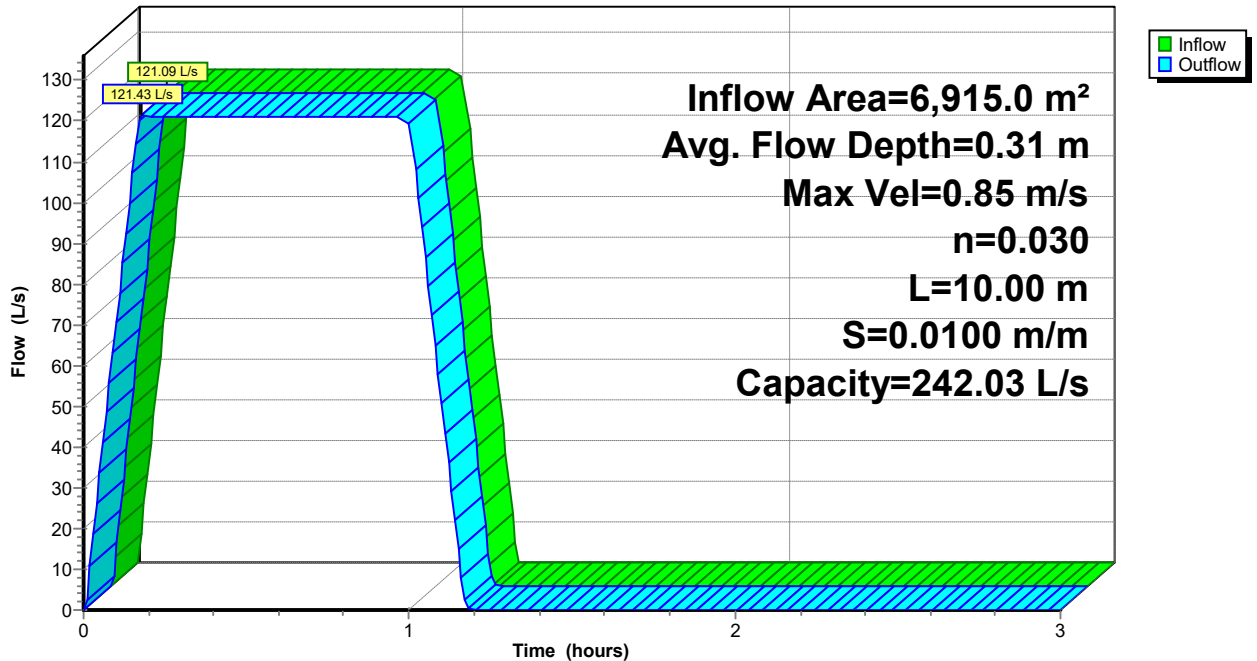
Peak Storage= 1.4 m³ @ 0.18 hrs
 Average Depth at Peak Storage= 0.31 m
 Bank-Full Depth= 0.40 m Flow Area= 0.24 m², Capacity= 242.03 L/s

0.00 m x 0.40 m deep channel, n= 0.030
 Side Slope Z-value= 1.5 m/m Top Width= 1.20 m
 Length= 10.00 m Slope= 0.0100 m/m
 Inlet Invert= 3.000 m, Outlet Invert= 2.900 m



Reach 57R: Channel 5 Capacity

Hydrograph



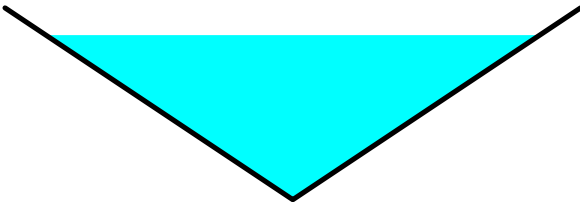
Summary for Reach 58R: Channel 5 Velocity

Inflow Area = 6,915.0 m², 53.58% Impervious, Inflow Depth = 63 mm for 100-Year + CCF event
 Inflow = 121.43 L/s @ 0.18 hrs, Volume= 435.9 m³
 Outflow = 121.32 L/s @ 0.18 hrs, Volume= 435.9 m³, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.69 m/s, Min. Travel Time= 0.2 min
 Avg. Velocity = 0.59 m/s, Avg. Travel Time= 0.3 min

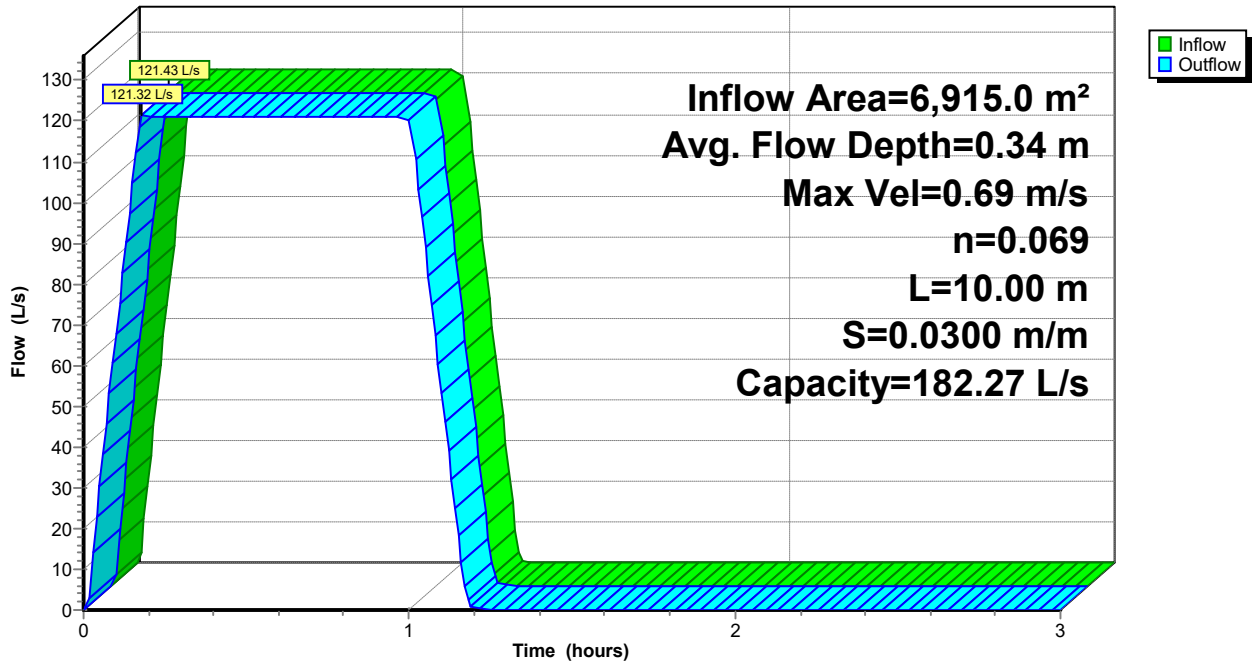
Peak Storage= 1.8 m³ @ 0.18 hrs
 Average Depth at Peak Storage= 0.34 m
 Bank-Full Depth= 0.40 m Flow Area= 0.24 m², Capacity= 182.27 L/s

0.00 m x 0.40 m deep channel, n= 0.069
 Side Slope Z-value= 1.5 m/m Top Width= 1.20 m
 Length= 10.00 m Slope= 0.0300 m/m
 Inlet Invert= 2.000 m, Outlet Invert= 1.700 m



Reach 58R: Channel 5 Velocity

Hydrograph

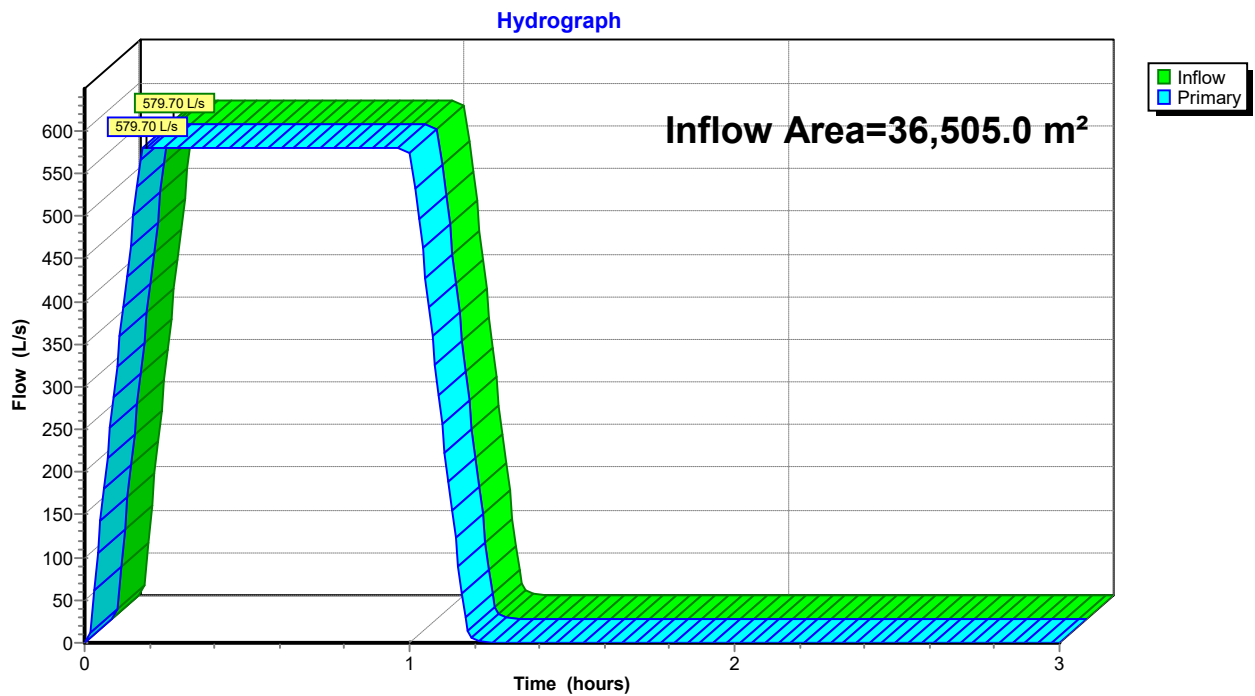


Summary for Link 59L: Flows to Pond

Inflow Area = 36,505.0 m², 34.02% Impervious, Inflow Depth = 57 mm for 100-Year + CCF event
 Inflow = 579.70 L/s @ 0.19 hrs, Volume= 2,084.8 m³
 Primary = 579.70 L/s @ 0.19 hrs, Volume= 2,084.8 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Link 59L: Flows to Pond





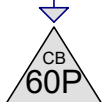
Channel 1 Catchment



375mm Culvert Lot 5



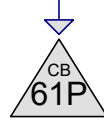
Channel 2 Catchment



375mm Culvert Lot 7



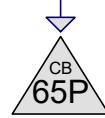
Lot 8 Culvert Catchment



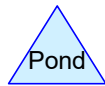
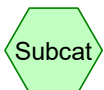
300mm Culvert



Lot 5 Culvert Catchment



300mm Culvert



Routing Diagram for 123295 - Culverts

Prepared by Wilton Joubert Ltd, Printed 16/08/2023

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Summary for Subcatchment 44S: Channel 2 Catchment

Runoff = 86.27 L/s @ 0.17 hrs, Volume= 310.6 m³, Depth= 36 mm

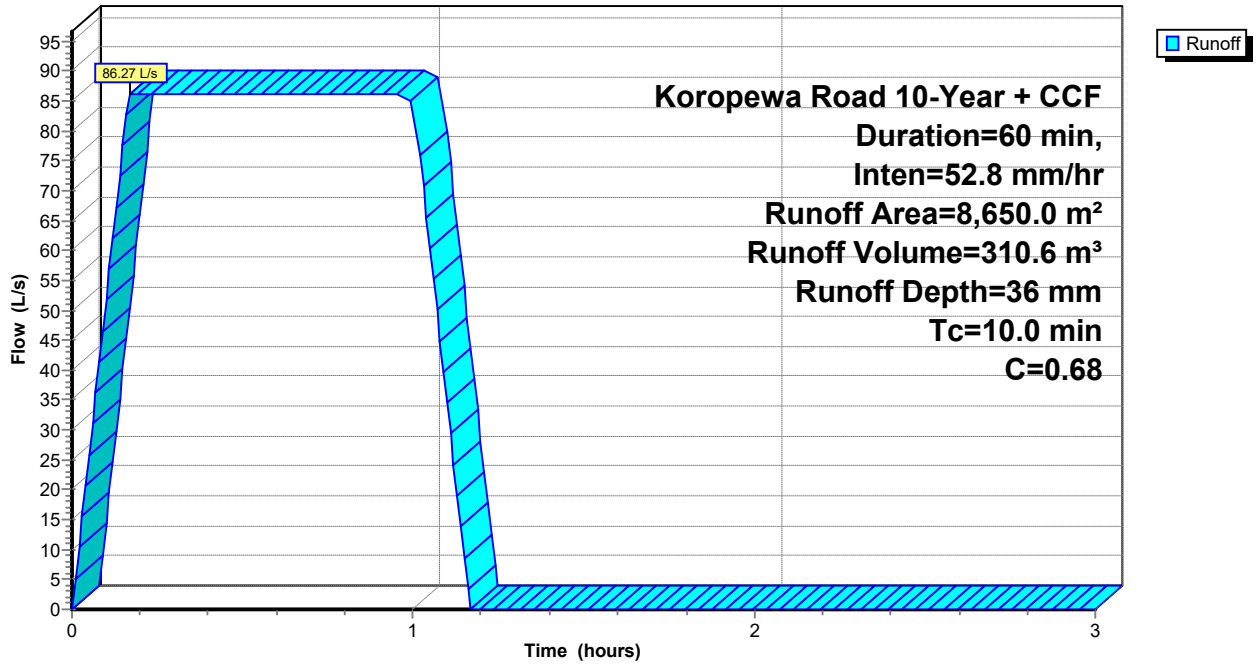
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 10-Year + CCF Duration=60 min, Inten=52.8 mm/hr

Area (m ²)	C	Description
2,055.0	0.96	Primary Flow Catchment
6,595.0	0.59	Secondary Flow Catchment
8,650.0	0.68	Weighted Average
6,595.0		76.24% Pervious Area
2,055.0		23.76% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 44S: Channel 2 Catchment

Hydrograph



Summary for Subcatchment 47S: Channel 1 Catchment

Runoff = 76.40 L/s @ 0.17 hrs, Volume= 275.0 m³, Depth= 38 mm

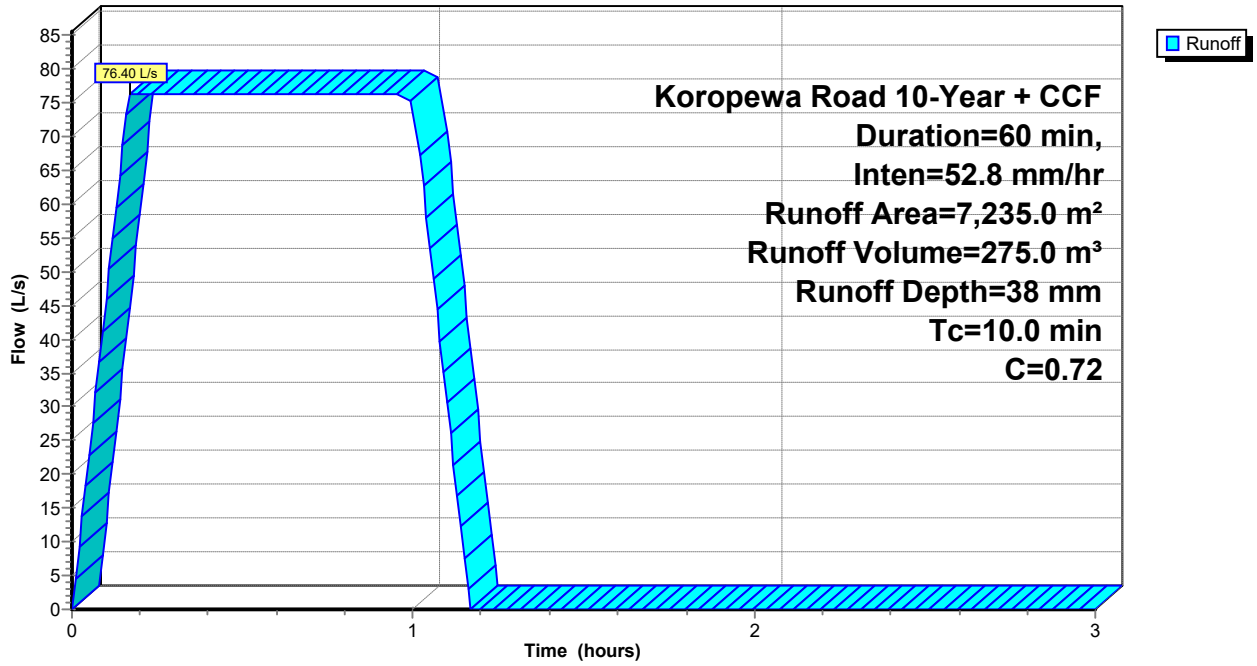
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 10-Year + CCF Duration=60 min, Inten=52.8 mm/hr

Area (m ²)	C	Description
2,525.0	0.96	Primary Flow Catchment
4,710.0	0.59	Secondary Flow Catchment
7,235.0	0.72	Weighted Average
4,710.0		65.10% Pervious Area
2,525.0		34.90% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 47S: Channel 1 Catchment

Hydrograph



Summary for Subcatchment 63S: Lot 8 Culvert Catchment

Runoff = 44.08 L/s @ 0.17 hrs, Volume= 158.7 m³, Depth= 36 mm

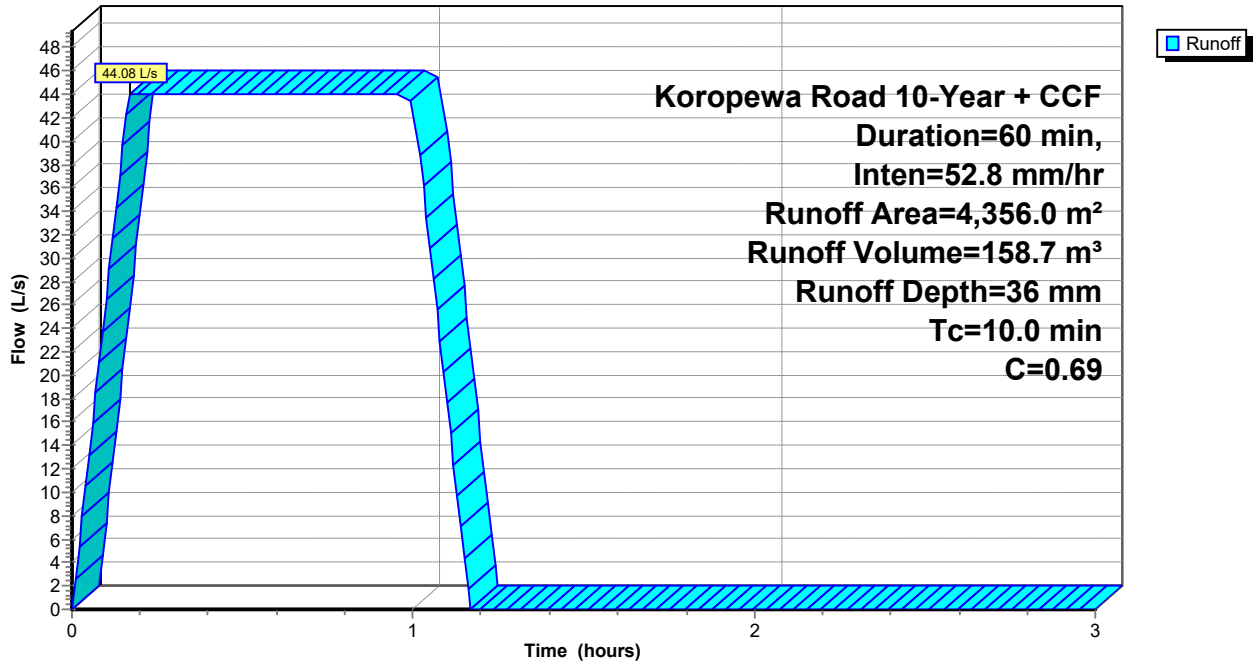
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 10-Year + CCF Duration=60 min, Inten=52.8 mm/hr

Area (m ²)	C	Description
1,190.0	0.96	Primary Flow Catchment
3,166.0	0.59	Secondary Flow Catchment
4,356.0	0.69	Weighted Average
3,166.0		72.68% Pervious Area
1,190.0		27.32% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 63S: Lot 8 Culvert Catchment

Hydrograph



Summary for Subcatchment 64S: Lot 5 Culvert Catchment

Runoff = 55.50 L/s @ 0.17 hrs, Volume= 199.8 m³, Depth= 37 mm

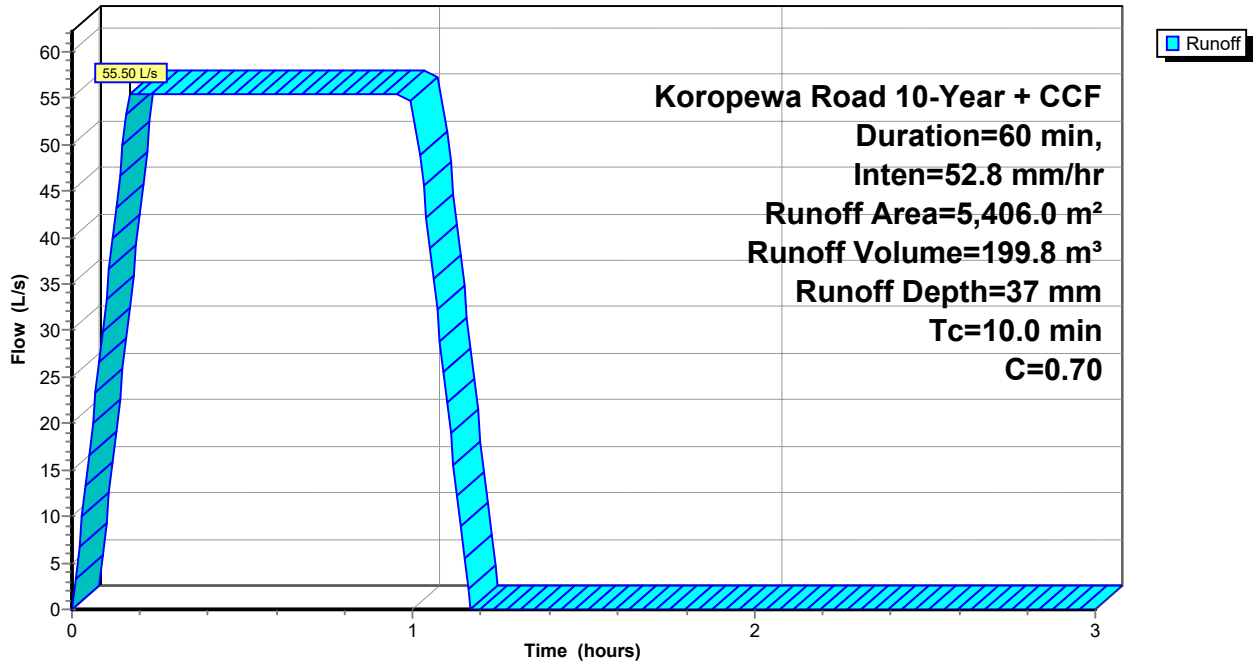
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 10-Year + CCF Duration=60 min, Inten=52.8 mm/hr

Area (m ²)	C	Description
1,655.0	0.96	Primary Flow Catchment
3,751.0	0.59	Secondary Flow Catchment
5,406.0	0.70	Weighted Average
3,751.0		69.39% Pervious Area
1,655.0		30.61% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 64S: Lot 5 Culvert Catchment

Hydrograph



Summary for Pond 60P: 375mm Culvert Lot 7

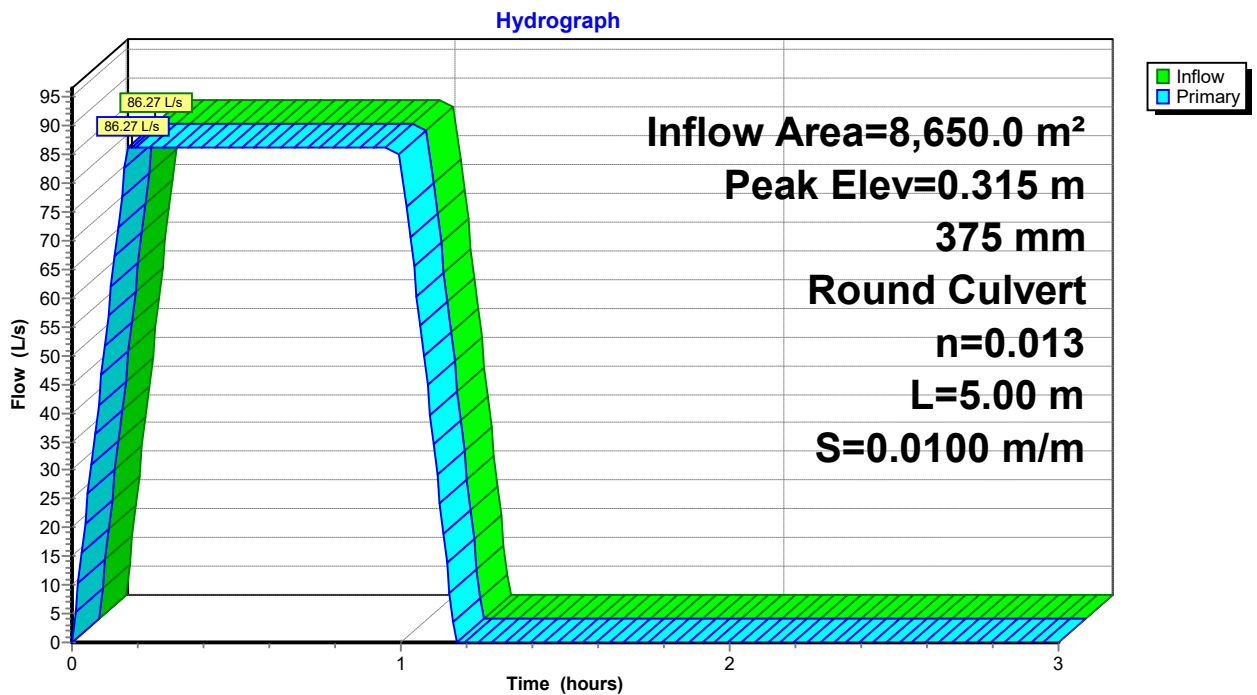
Inflow Area = 8,650.0 m², 23.76% Impervious, Inflow Depth = 36 mm for 10-Year + CCF event
 Inflow = 86.27 L/s @ 0.17 hrs, Volume= 310.6 m³
 Outflow = 86.27 L/s @ 0.18 hrs, Volume= 310.6 m³, Atten= 0%, Lag= 0.6 min
 Primary = 86.27 L/s @ 0.18 hrs, Volume= 310.6 m³

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.315 m @ 0.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	375 mm Round Culvert L= 5.00 m RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 0.000 m / -0.050 m S= 0.0100 m/m Cc= 0.900 n= 0.013, Flow Area= 0.110 m ²

Primary OutFlow Max=86.27 L/s @ 0.18 hrs HW=0.315 m (Free Discharge)
 1=Culvert (Barrel Controls 86.27 L/s @ 1.18 m/s)

Pond 60P: 375mm Culvert Lot 7



Summary for Pond 61P: 300mm Culvert

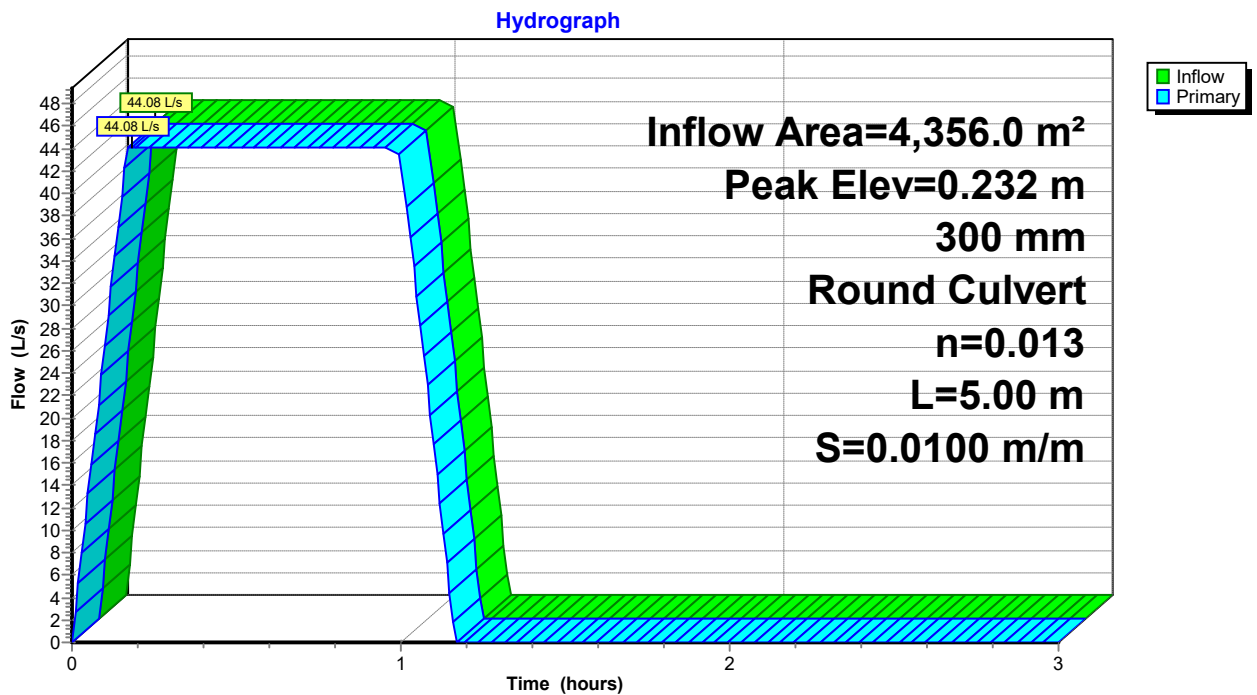
Inflow Area = 4,356.0 m², 27.32% Impervious, Inflow Depth = 36 mm for 10-Year + CCF event
 Inflow = 44.08 L/s @ 0.17 hrs, Volume= 158.7 m³
 Outflow = 44.08 L/s @ 0.18 hrs, Volume= 158.7 m³, Atten= 0%, Lag= 0.6 min
 Primary = 44.08 L/s @ 0.18 hrs, Volume= 158.7 m³

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.232 m @ 0.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	300 mm Round Culvert L= 5.00 m RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 0.000 m / -0.050 m S= 0.0100 m/m Cc= 0.900 n= 0.013, Flow Area= 0.071 m ²

Primary OutFlow Max=44.08 L/s @ 0.18 hrs HW=0.232 m (Free Discharge)
 ←1=Culvert (Barrel Controls 44.08 L/s @ 1.04 m/s)

Pond 61P: 300mm Culvert



Summary for Pond 62P: 375mm Culvert Lot 5

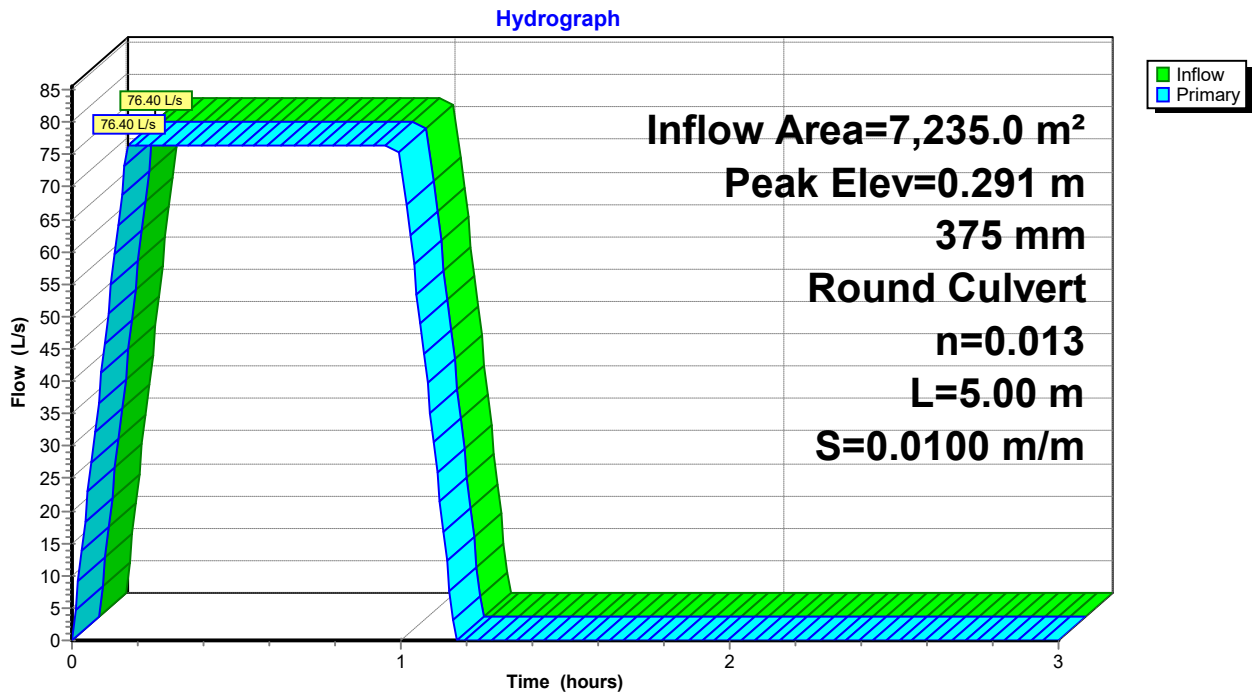
Inflow Area = 7,235.0 m², 34.90% Impervious, Inflow Depth = 38 mm for 10-Year + CCF event
 Inflow = 76.40 L/s @ 0.17 hrs, Volume= 275.0 m³
 Outflow = 76.40 L/s @ 0.17 hrs, Volume= 275.0 m³, Atten= 0%, Lag= 0.0 min
 Primary = 76.40 L/s @ 0.17 hrs, Volume= 275.0 m³

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.291 m @ 0.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	375 mm Round Culvert L= 5.00 m RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 0.000 m / -0.050 m S= 0.0100 m/m Cc= 0.900 n= 0.013, Flow Area= 0.110 m ²

Primary OutFlow Max=76.40 L/s @ 0.17 hrs HW=0.291 m (Free Discharge)
 ←1=Culvert (Barrel Controls 76.40 L/s @ 1.14 m/s)

Pond 62P: 375mm Culvert Lot 5



Summary for Pond 65P: 300mm Culvert

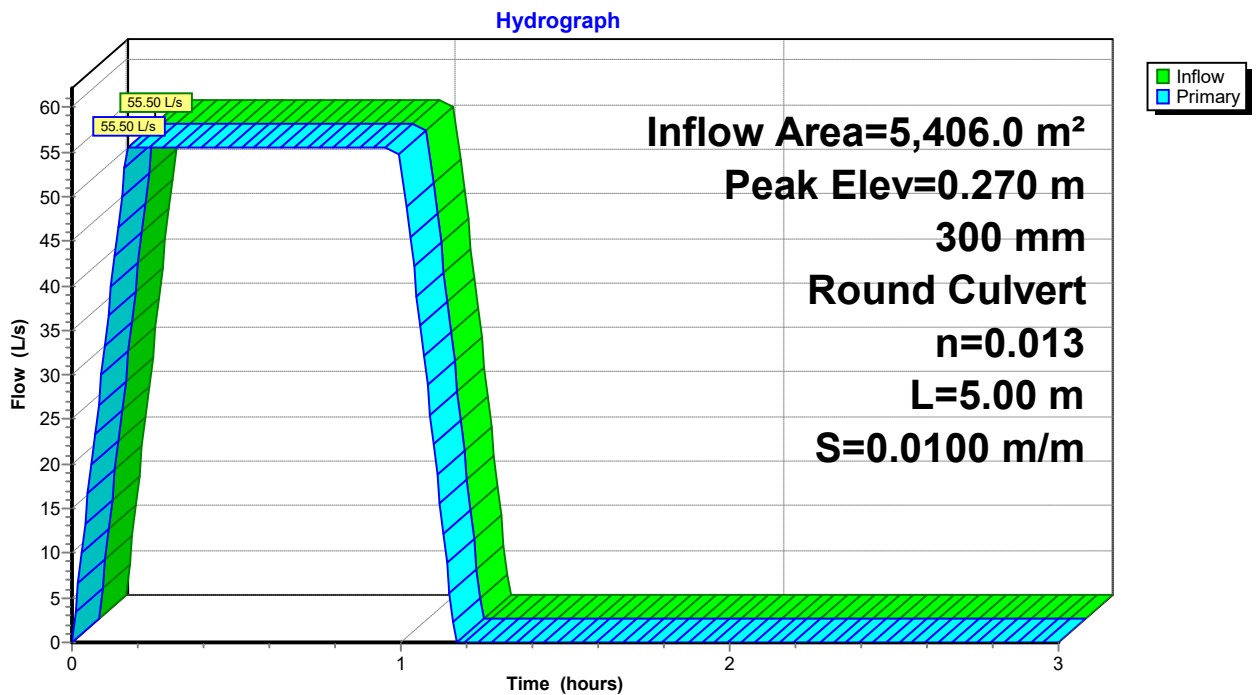
Inflow Area = 5,406.0 m², 30.61% Impervious, Inflow Depth = 37 mm for 10-Year + CCF event
 Inflow = 55.50 L/s @ 0.17 hrs, Volume= 199.8 m³
 Outflow = 55.50 L/s @ 0.17 hrs, Volume= 199.8 m³, Atten= 0%, Lag= 0.0 min
 Primary = 55.50 L/s @ 0.17 hrs, Volume= 199.8 m³

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.270 m @ 0.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	300 mm Round Culvert L= 5.00 m RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 0.000 m / -0.050 m S= 0.0100 m/m Cc= 0.900 n= 0.013, Flow Area= 0.071 m ²

Primary OutFlow Max=55.50 L/s @ 0.17 hrs HW=0.270 m (Free Discharge)
 ↳ **1=Culvert** (Barrel Controls 55.50 L/s @ 1.09 m/s)

Pond 65P: 300mm Culvert



Summary for Subcatchment 44S: Channel 2 Catchment

Runoff = 130.38 L/s @ 0.17 hrs, Volume= 469.4 m³, Depth= 54 mm

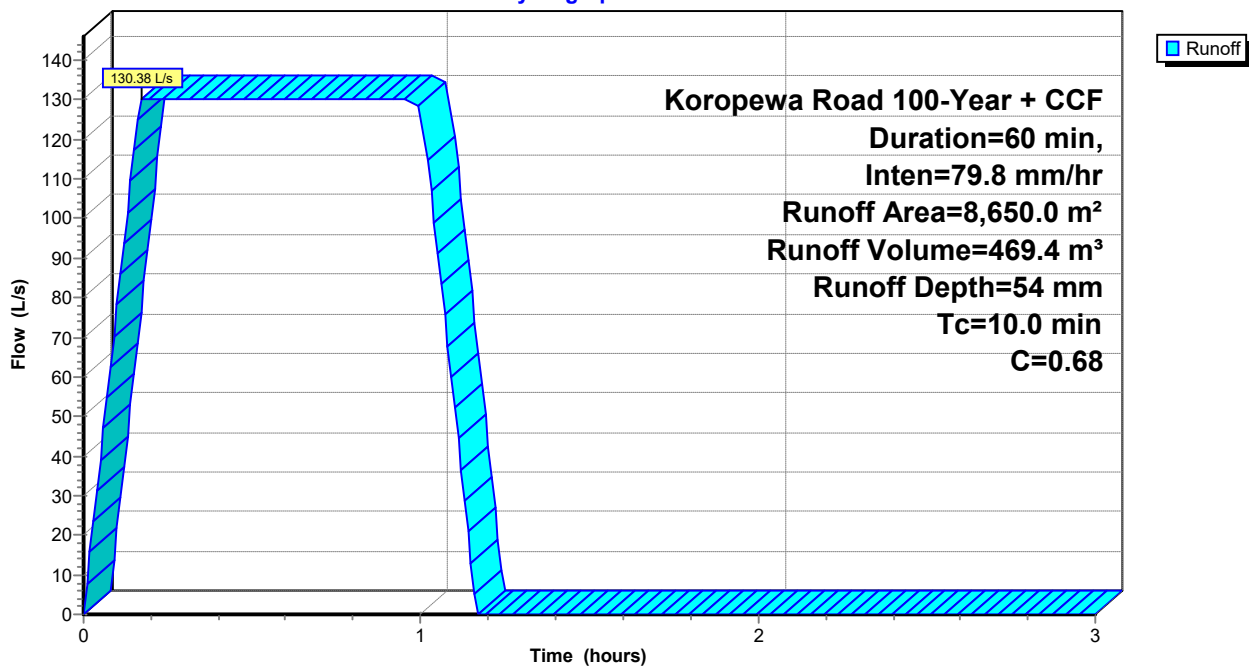
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 100-Year + CCF Duration=60 min, Inten=79.8 mm/hr

Area (m ²)	C	Description
2,055.0	0.96	Primary Flow Catchment
6,595.0	0.59	Secondary Flow Catchment
8,650.0	0.68	Weighted Average
6,595.0		76.24% Pervious Area
2,055.0		23.76% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 44S: Channel 2 Catchment

Hydrograph



Summary for Subcatchment 47S: Channel 1 Catchment

Runoff = 115.47 L/s @ 0.17 hrs, Volume= 415.7 m³, Depth= 57 mm

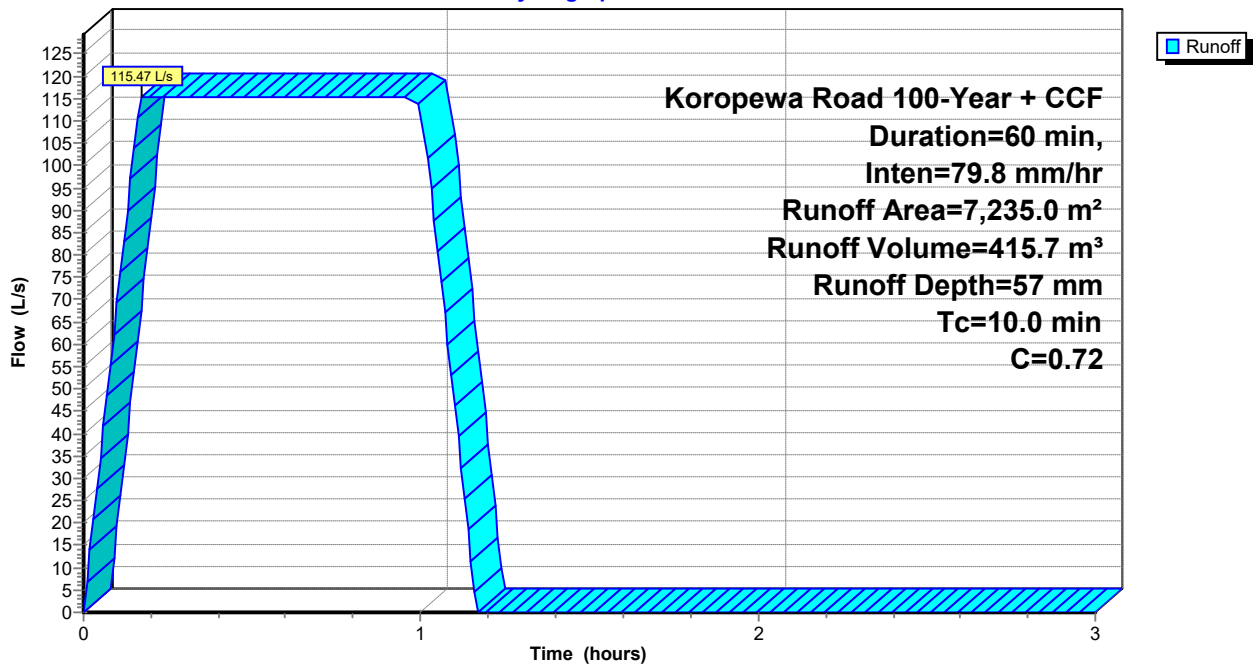
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 100-Year + CCF Duration=60 min, Inten=79.8 mm/hr

Area (m ²)	C	Description
2,525.0	0.96	Primary Flow Catchment
4,710.0	0.59	Secondary Flow Catchment
7,235.0	0.72	Weighted Average
4,710.0		65.10% Pervious Area
2,525.0		34.90% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 47S: Channel 1 Catchment

Hydrograph



Summary for Subcatchment 63S: Lot 8 Culvert Catchment

Runoff = 66.63 L/s @ 0.17 hrs, Volume= 239.9 m³, Depth= 55 mm

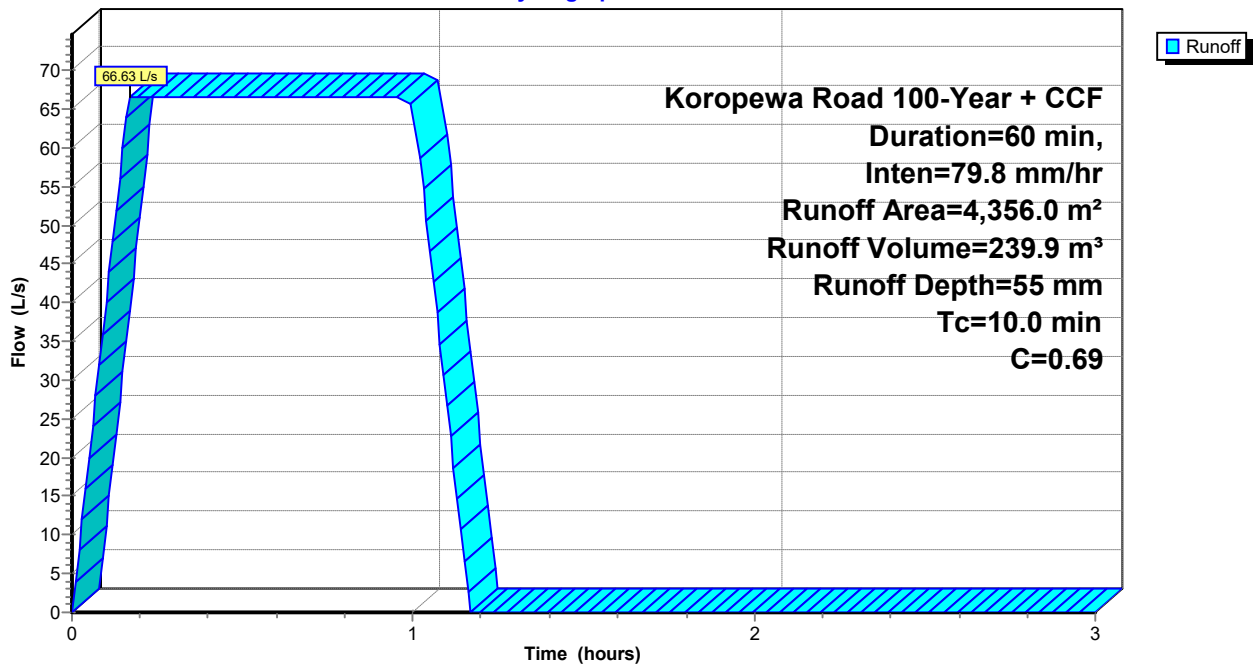
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 100-Year + CCF Duration=60 min, Inten=79.8 mm/hr

Area (m ²)	C	Description
1,190.0	0.96	Primary Flow Catchment
3,166.0	0.59	Secondary Flow Catchment
4,356.0	0.69	Weighted Average
3,166.0		72.68% Pervious Area
1,190.0		27.32% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 63S: Lot 8 Culvert Catchment

Hydrograph



Summary for Subcatchment 64S: Lot 5 Culvert Catchment

Runoff = 83.88 L/s @ 0.17 hrs, Volume= 302.0 m³, Depth= 56 mm

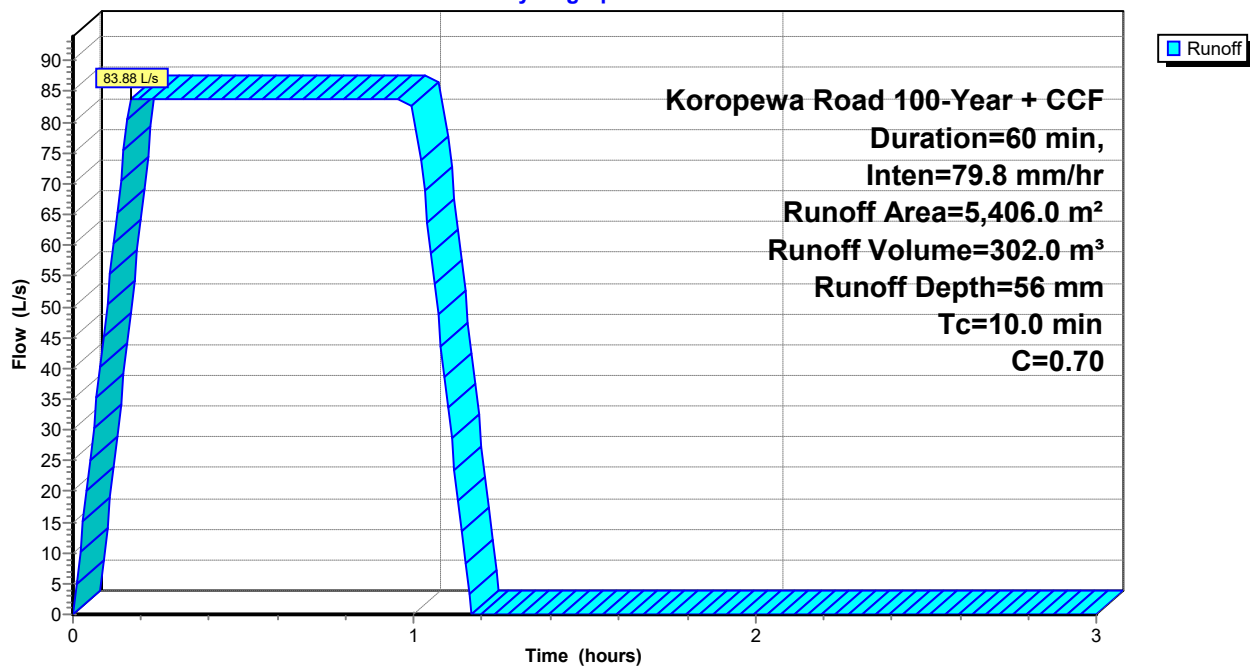
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 100-Year + CCF Duration=60 min, Inten=79.8 mm/hr

Area (m ²)	C	Description
1,655.0	0.96	Primary Flow Catchment
3,751.0	0.59	Secondary Flow Catchment
5,406.0	0.70	Weighted Average
3,751.0		69.39% Pervious Area
1,655.0		30.61% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 64S: Lot 5 Culvert Catchment

Hydrograph



Summary for Pond 60P: 375mm Culvert Lot 7

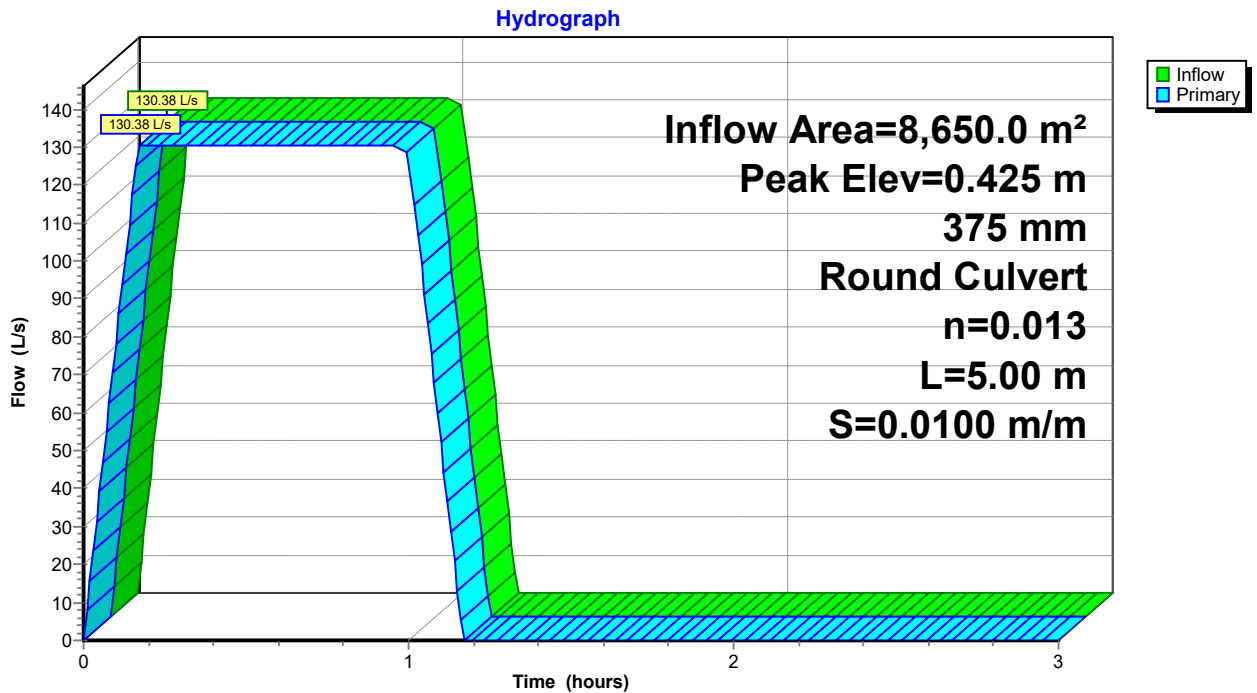
Inflow Area = 8,650.0 m², 23.76% Impervious, Inflow Depth = 54 mm for 100-Year + CCF event
 Inflow = 130.38 L/s @ 0.17 hrs, Volume= 469.4 m³
 Outflow = 130.38 L/s @ 0.17 hrs, Volume= 469.4 m³, Atten= 0%, Lag= 0.0 min
 Primary = 130.38 L/s @ 0.17 hrs, Volume= 469.4 m³

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.425 m @ 0.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	375 mm Round Culvert L= 5.00 m RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 0.000 m / -0.050 m S= 0.0100 m/m Cc= 0.900 n= 0.013, Flow Area= 0.110 m ²

Primary OutFlow Max=130.38 L/s @ 0.17 hrs HW=0.425 m (Free Discharge)
 1=Culvert (Barrel Controls 130.38 L/s @ 1.30 m/s)

Pond 60P: 375mm Culvert Lot 7



Summary for Pond 61P: 300mm Culvert

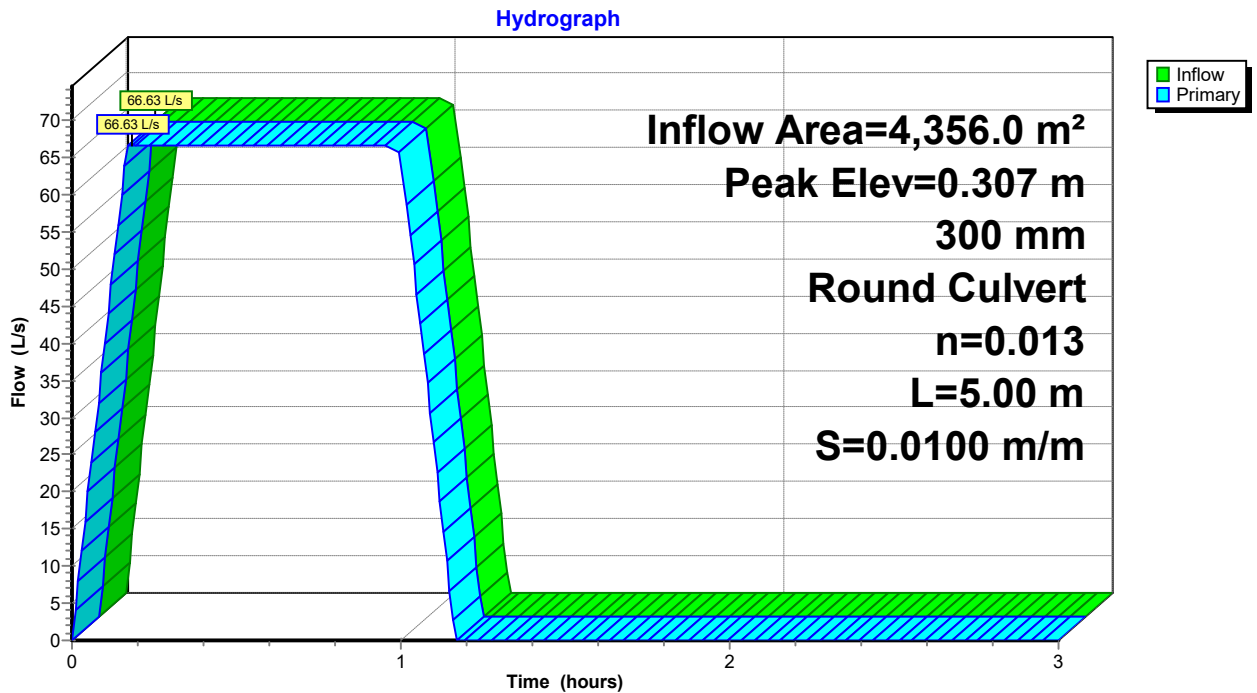
Inflow Area = 4,356.0 m², 27.32% Impervious, Inflow Depth = 55 mm for 100-Year + CCF event
 Inflow = 66.63 L/s @ 0.17 hrs, Volume= 239.9 m³
 Outflow = 66.63 L/s @ 0.18 hrs, Volume= 239.9 m³, Atten= 0%, Lag= 0.6 min
 Primary = 66.63 L/s @ 0.18 hrs, Volume= 239.9 m³

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.307 m @ 0.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	300 mm Round Culvert L= 5.00 m RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 0.000 m / -0.050 m S= 0.0100 m/m Cc= 0.900 n= 0.013, Flow Area= 0.071 m ²

Primary OutFlow Max=66.63 L/s @ 0.18 hrs HW=0.307 m (Free Discharge)
 ←1=Culvert (Barrel Controls 66.63 L/s @ 1.14 m/s)

Pond 61P: 300mm Culvert



Summary for Pond 62P: 375mm Culvert Lot 5

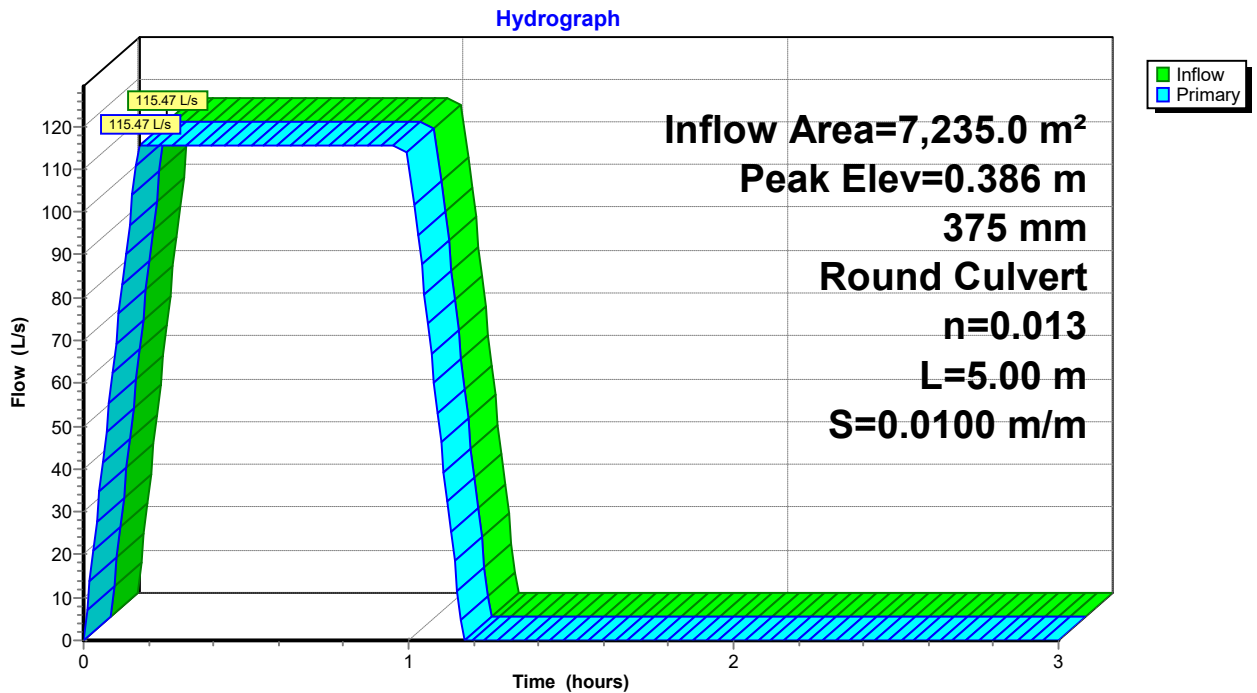
Inflow Area = 7,235.0 m², 34.90% Impervious, Inflow Depth = 57 mm for 100-Year + CCF event
 Inflow = 115.47 L/s @ 0.17 hrs, Volume= 415.7 m³
 Outflow = 115.47 L/s @ 0.17 hrs, Volume= 415.7 m³, Atten= 0%, Lag= 0.0 min
 Primary = 115.47 L/s @ 0.17 hrs, Volume= 415.7 m³

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.386 m @ 0.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	375 mm Round Culvert L= 5.00 m RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 0.000 m / -0.050 m S= 0.0100 m/m Cc= 0.900 n= 0.013, Flow Area= 0.110 m ²

Primary OutFlow Max=115.47 L/s @ 0.17 hrs HW=0.386 m (Free Discharge)
 ←1=Culvert (Barrel Controls 115.47 L/s @ 1.26 m/s)

Pond 62P: 375mm Culvert Lot 5



Summary for Pond 65P: 300mm Culvert

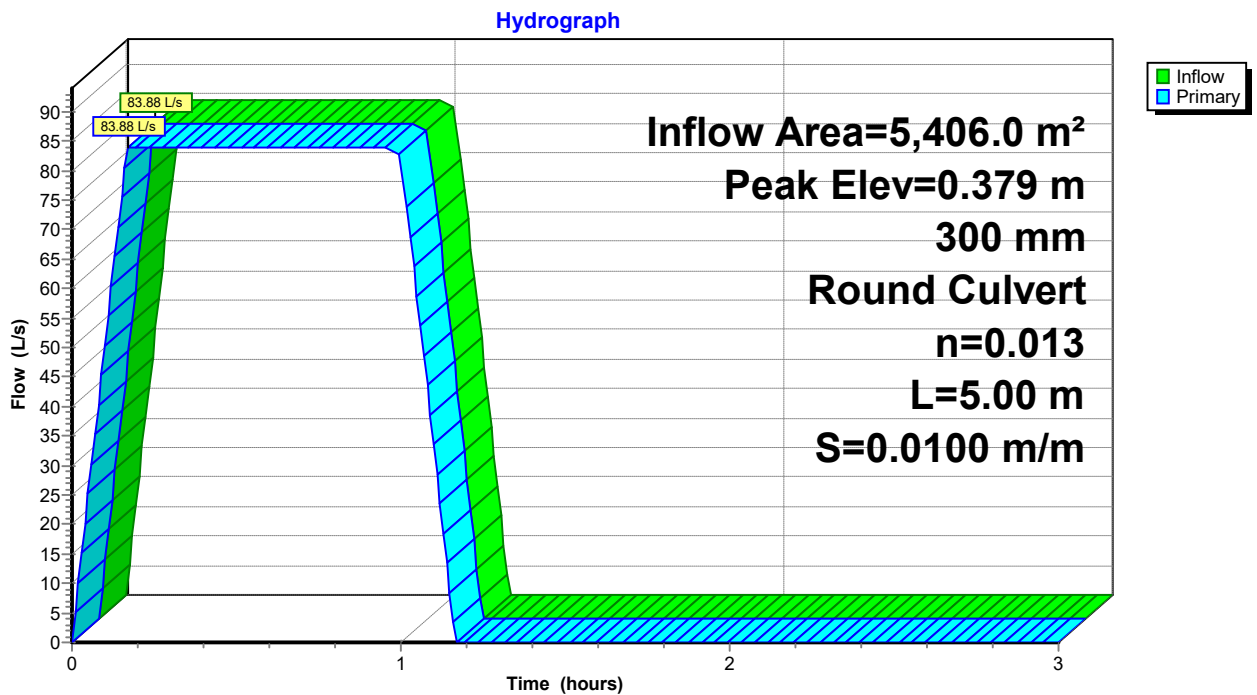
Inflow Area = 5,406.0 m², 30.61% Impervious, Inflow Depth = 56 mm for 100-Year + CCF event
 Inflow = 83.88 L/s @ 0.17 hrs, Volume= 302.0 m³
 Outflow = 83.88 L/s @ 0.17 hrs, Volume= 302.0 m³, Atten= 0%, Lag= 0.0 min
 Primary = 83.88 L/s @ 0.17 hrs, Volume= 302.0 m³

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.379 m @ 0.17 hrs

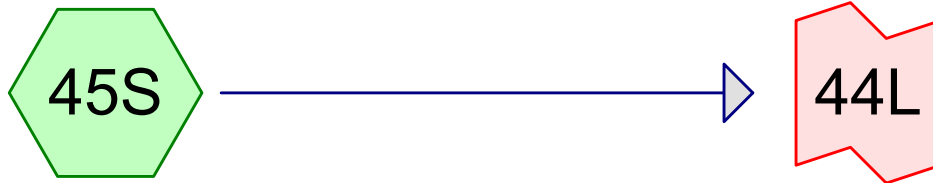
Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	300 mm Round Culvert L= 5.00 m RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 0.000 m / -0.050 m S= 0.0100 m/m Cc= 0.900 n= 0.013, Flow Area= 0.071 m ²

Primary OutFlow Max=83.88 L/s @ 0.17 hrs HW=0.379 m (Free Discharge)
 1=Culvert (Barrel Controls 83.88 L/s @ 1.21 m/s)

Pond 65P: 300mm Culvert



Proposed Attenuation



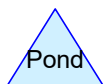
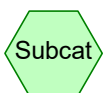
Greenfields - Areas for Attenuation

Pre-Development Flows



Post-Development - Areas for Attenuation

Pond Detention Volume



Summary for Subcatchment 42S: Post-Development - Areas for Attenuation

Runoff = 83.04 L/s @ 0.17 hrs, Volume= 398.6 m³, Depth= 59 mm

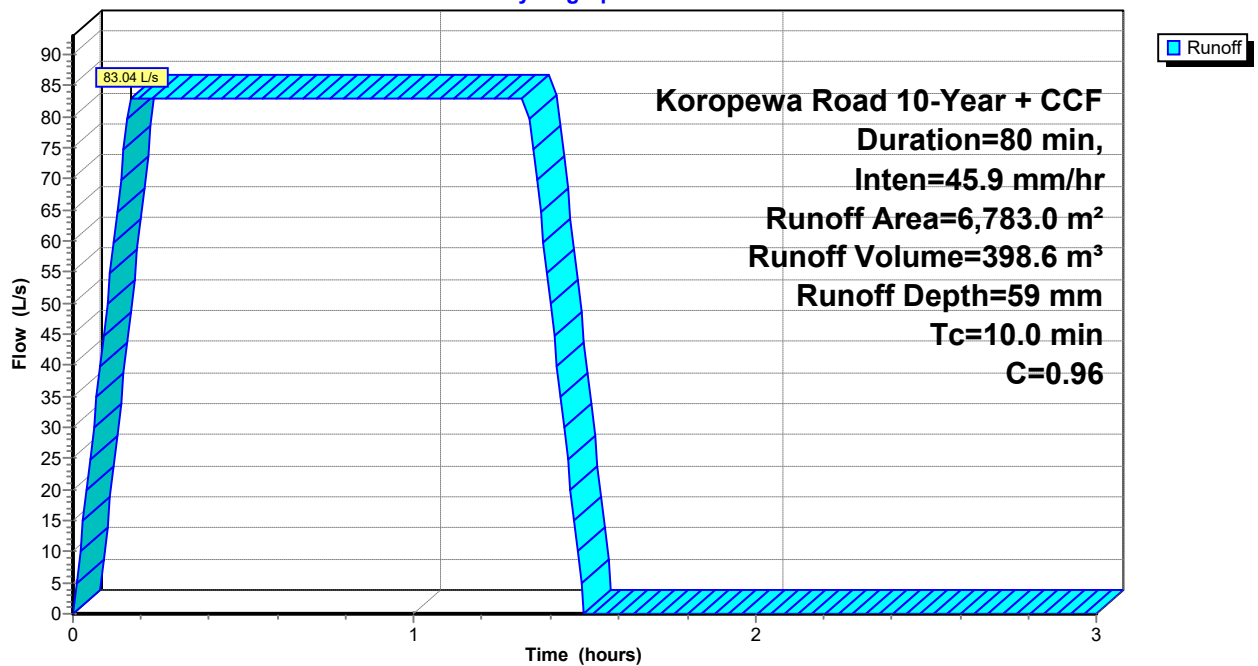
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 10-Year + CCF Duration=80 min, Inten=45.9 mm/hr

Area (m ²)	C	Description
6,783.0	0.96	
6,783.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 42S: Post-Development - Areas for Attenuation

Hydrograph



Summary for Subcatchment 45S: Greenfields - Areas for Attenuation

Runoff = 51.04 L/s @ 0.17 hrs, Volume= 245.0 m³, Depth= 36 mm

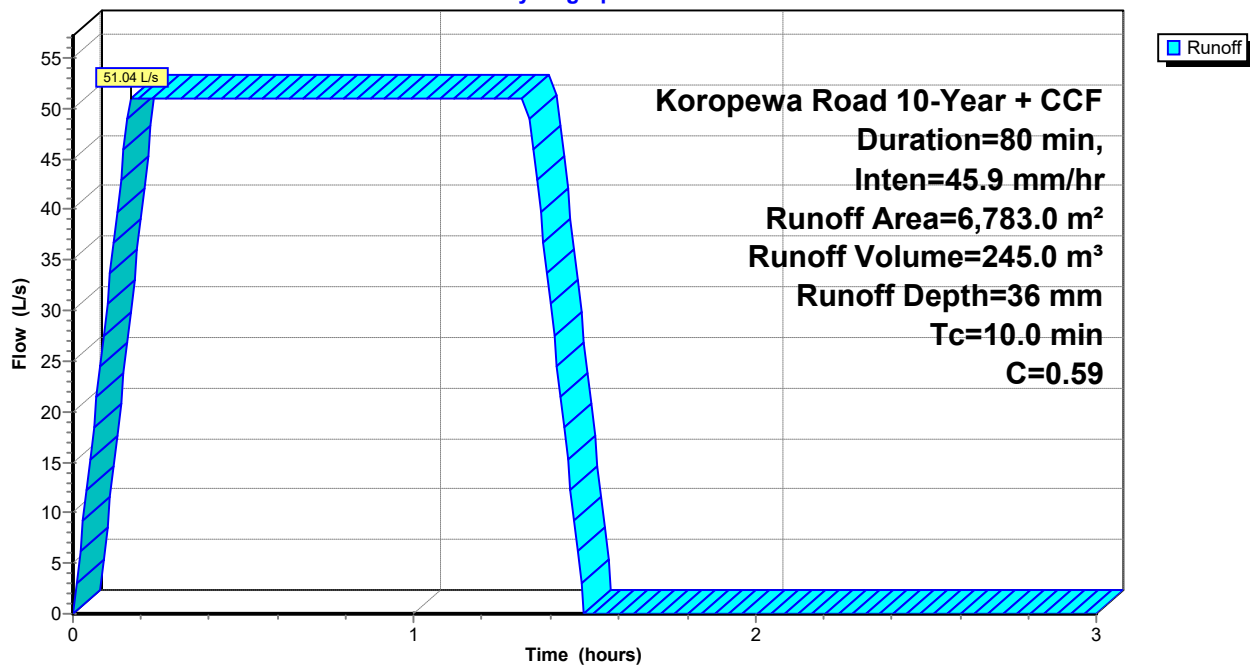
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 10-Year + CCF Duration=80 min, Inten=45.9 mm/hr

Area (m ²)	C	Description
6,783.0	0.59	
6,783.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 45S: Greenfields - Areas for Attenuation

Hydrograph



Summary for Pond 42P: Pond Detention Volume

Inflow Area = 6,783.0 m², 100.00% Impervious, Inflow Depth = 59 mm for 10-Year + CCF event
 Inflow = 83.04 L/s @ 0.17 hrs, Volume= 398.6 m³
 Outflow = 48.73 L/s @ 1.40 hrs, Volume= 314.2 m³, Atten= 41%, Lag= 73.9 min
 Primary = 48.73 L/s @ 1.40 hrs, Volume= 314.2 m³

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.318 m @ 1.40 hrs Surf.Area= 0.0 m² Storage= 252.5 m³

Plug-Flow detention time= 57.2 min calculated for 314.2 m³ (79% of inflow)
 Center-of-Mass det. time= 48.7 min (93.7 - 45.0)

Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	412.5 m ³	Custom Stage Data Listed below

Elevation (meters)	Cum.Store (cubic-meters)
0.000	0.0
0.100	76.0
0.200	154.6
0.300	237.0
0.400	323.0
0.500	412.5

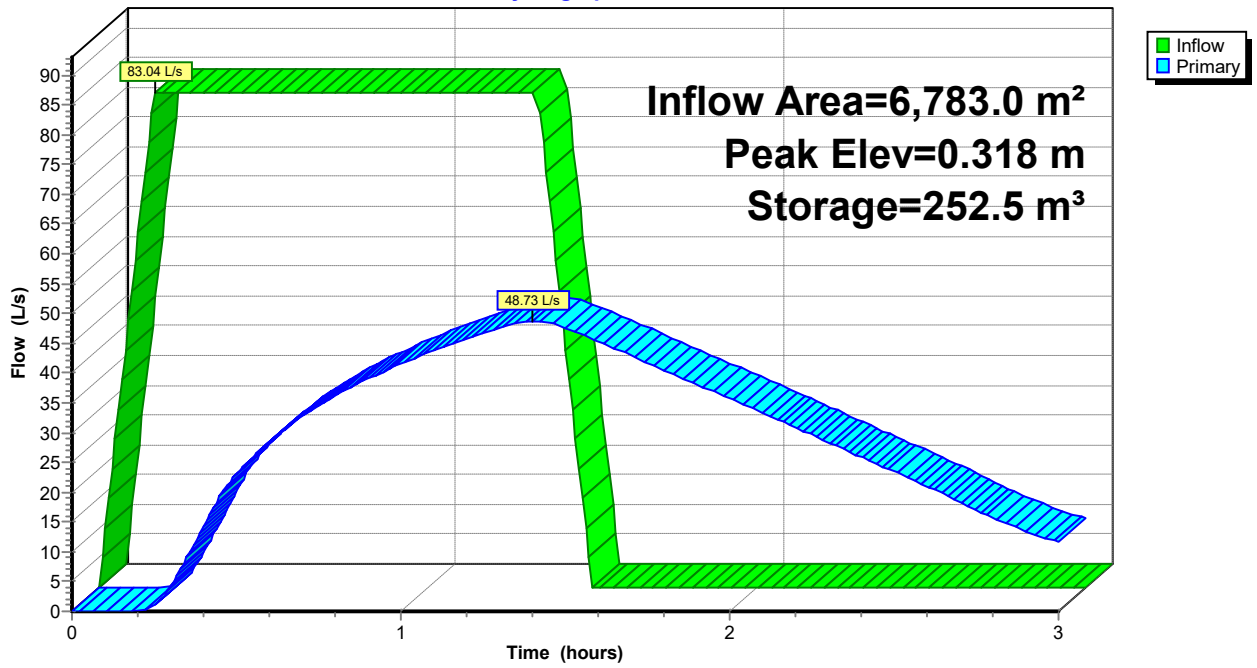
Device	Routing	Invert	Outlet Devices
#1	Primary	0.050 m	100 mm Vert. Orifice/Grate X 5.00 C= 0.600
#2	Primary	0.320 m	100 mm Vert. Orifice/Grate X 2.00 C= 0.600

Primary OutFlow Max=48.73 L/s @ 1.40 hrs HW=0.318 m (Free Discharge)

↑ **1=Orifice/Grate** (Orifice Controls 48.73 L/s @ 1.24 m/s)
 ↓ **2=Orifice/Grate** (Controls 0.00 L/s)

Pond 42P: Pond Detention Volume

Hydrograph

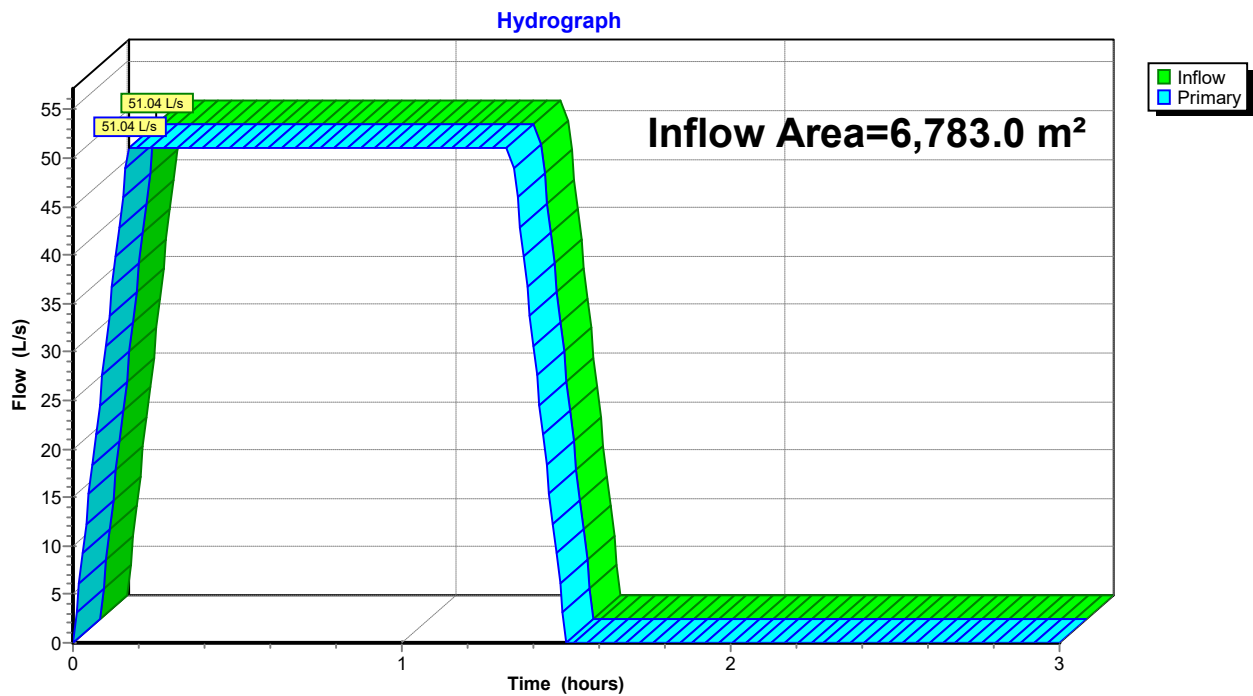


Summary for Link 44L: Pre-Development Flows

Inflow Area = 6,783.0 m², 0.00% Impervious, Inflow Depth = 36 mm for 10-Year + CCF event
Inflow = 51.04 L/s @ 0.17 hrs, Volume= 245.0 m³
Primary = 51.04 L/s @ 0.17 hrs, Volume= 245.0 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Link 44L: Pre-Development Flows



Summary for Subcatchment 42S: Post-Development - Areas for Attenuation

Runoff = 125.62 L/s @ 0.17 hrs, Volume= 602.9 m³, Depth= 89 mm

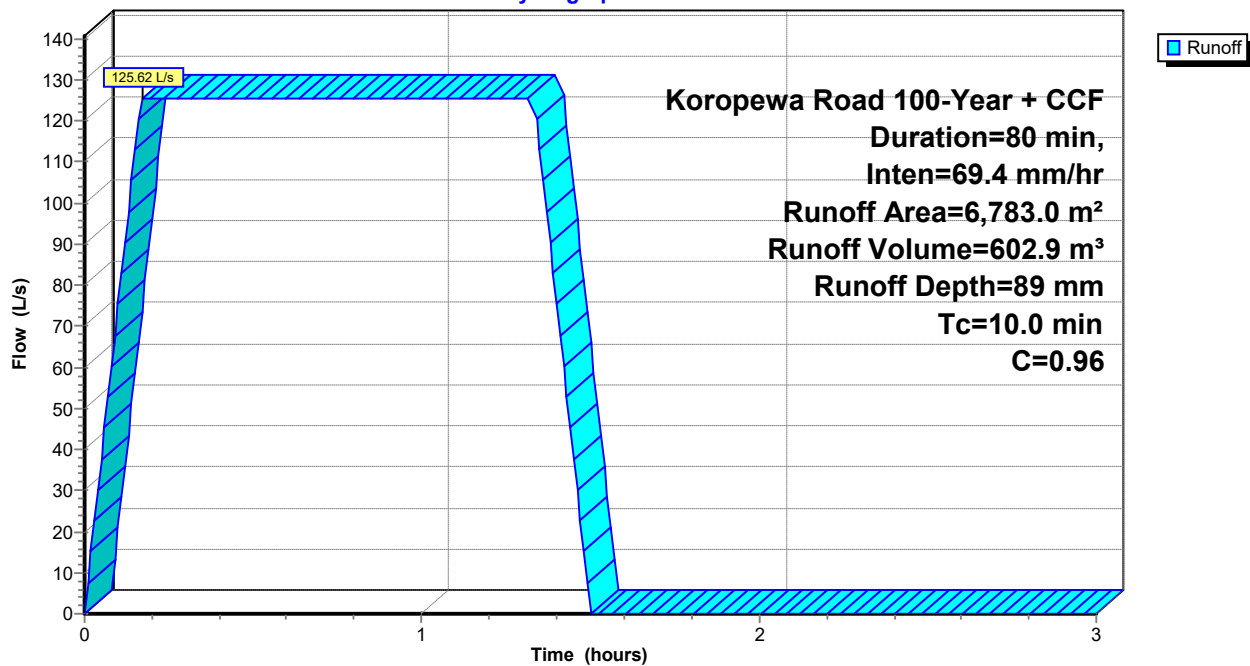
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 100-Year + CCF Duration=80 min, Inten=69.4 mm/hr

Area (m ²)	C	Description
6,783.0	0.96	
6,783.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 42S: Post-Development - Areas for Attenuation

Hydrograph



Summary for Subcatchment 45S: Greenfields - Areas for Attenuation

Runoff = 77.20 L/s @ 0.17 hrs, Volume= 370.5 m³, Depth= 55 mm

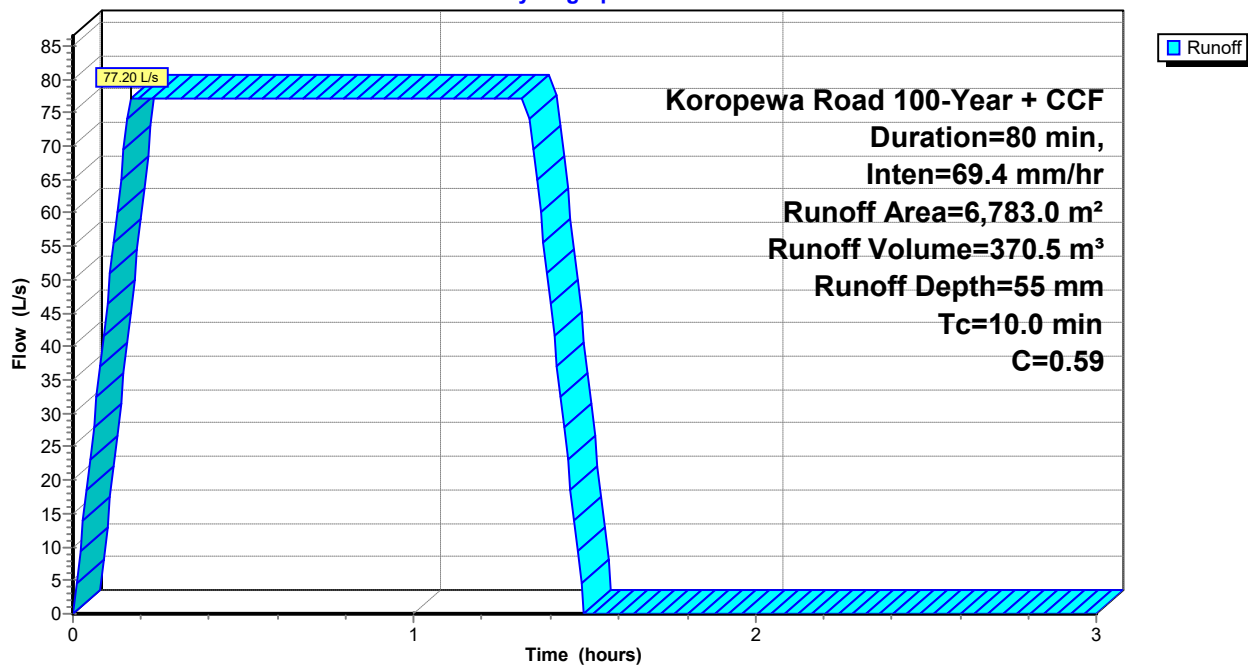
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 100-Year + CCF Duration=80 min, Inten=69.4 mm/hr

Area (m ²)	C	Description
6,783.0	0.59	
6,783.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 45S: Greenfields - Areas for Attenuation

Hydrograph



Summary for Pond 42P: Pond Detention Volume

Inflow Area = 6,783.0 m², 100.00% Impervious, Inflow Depth = 89 mm for 100-Year + CCF event
 Inflow = 125.62 L/s @ 0.17 hrs, Volume= 602.9 m³
 Outflow = 75.96 L/s @ 1.40 hrs, Volume= 480.4 m³, Atten= 40%, Lag= 73.8 min
 Primary = 75.96 L/s @ 1.40 hrs, Volume= 480.4 m³

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.465 m @ 1.40 hrs Surf.Area= 0.0 m² Storage= 381.4 m³

Plug-Flow detention time= 57.6 min calculated for 478.8 m³ (79% of inflow)
 Center-of-Mass det. time= 49.6 min (94.6 - 45.0)

Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	412.5 m ³	Custom Stage Data Listed below

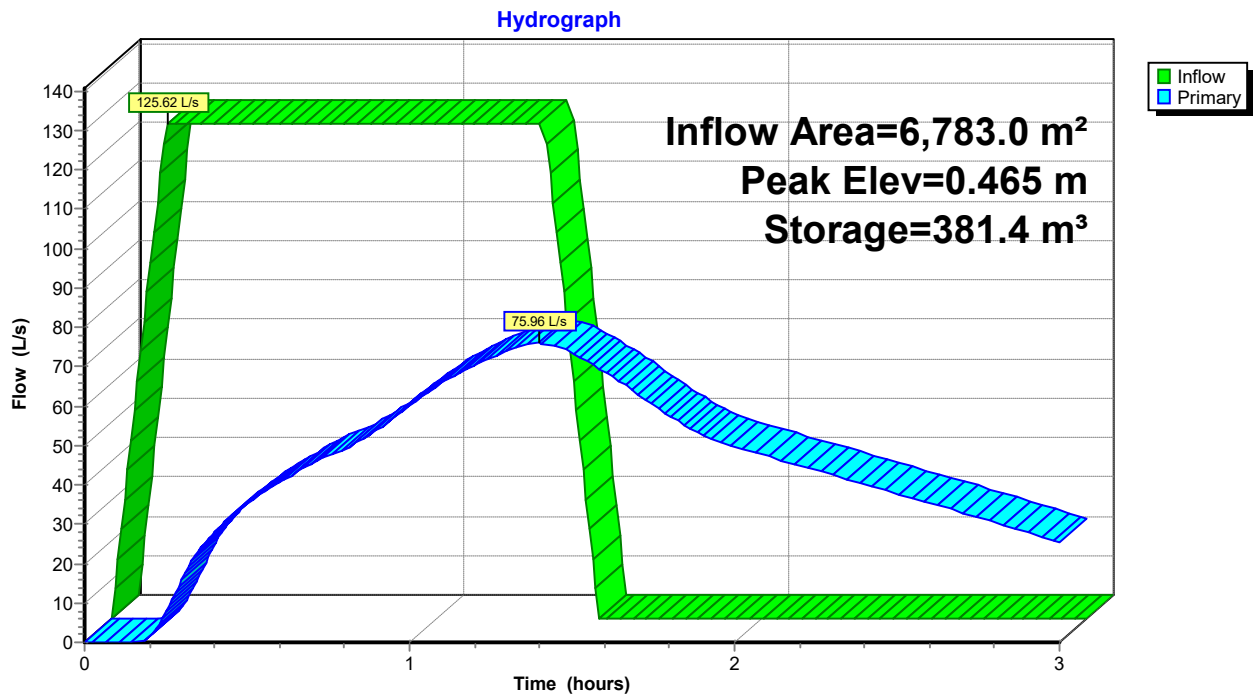
Elevation (meters)	Cum.Store (cubic-meters)
0.000	0.0
0.100	76.0
0.200	154.6
0.300	237.0
0.400	323.0
0.500	412.5

Device	Routing	Invert	Outlet Devices
#1	Primary	0.050 m	100 mm Vert. Orifice/Grate X 5.00 C= 0.600
#2	Primary	0.320 m	100 mm Vert. Orifice/Grate X 2.00 C= 0.600

Primary OutFlow Max=75.96 L/s @ 1.40 hrs HW=0.465 m (Free Discharge)

↑ **1=Orifice/Grate** (Orifice Controls 63.07 L/s @ 1.61 m/s)
 ↓ **2=Orifice/Grate** (Orifice Controls 12.88 L/s @ 0.82 m/s)

Pond 42P: Pond Detention Volume

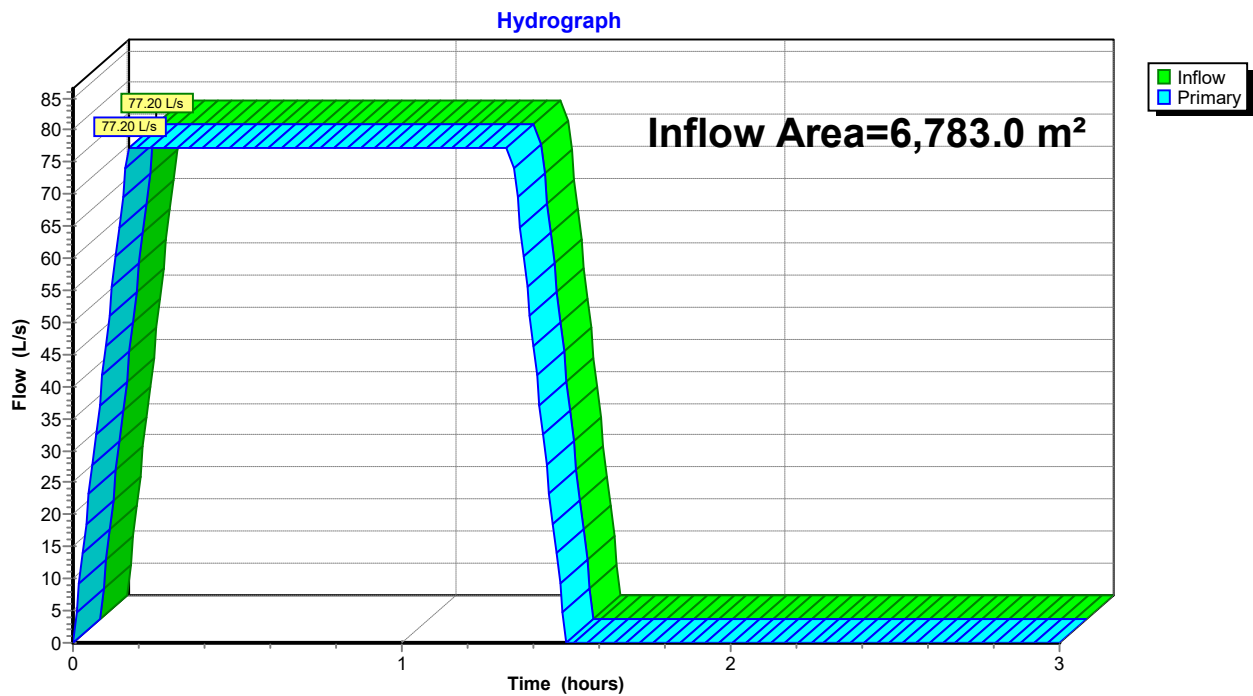


Summary for Link 44L: Pre-Development Flows

Inflow Area = 6,783.0 m², 0.00% Impervious, Inflow Depth = 55 mm for 100-Year + CCF event
Inflow = 77.20 L/s @ 0.17 hrs, Volume= 370.5 m³
Primary = 77.20 L/s @ 0.17 hrs, Volume= 370.5 m³, Atten= 0%, Lag= 0.0 min

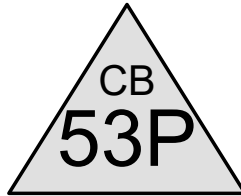
Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Link 44L: Pre-Development Flows





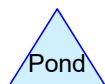
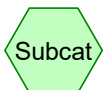
Area for Attenuation



MH Inlet



Outlet Pipe



Summary for Subcatchment 49S: Area for Attenuation

Runoff = 95.50 L/s @ 0.17 hrs, Volume= 343.8 m³, Depth= 51 mm

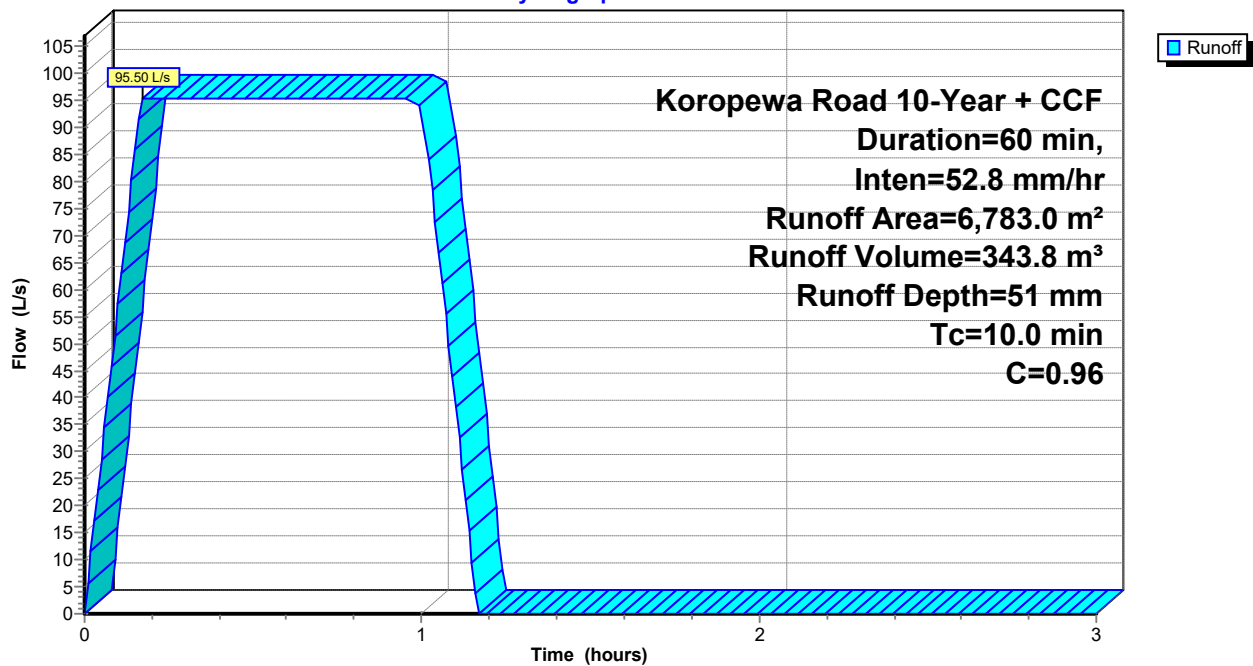
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 10-Year + CCF Duration=60 min, Inten=52.8 mm/hr

Area (m ²)	C	Description
6,783.0	0.96	
6,783.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 49S: Area for Attenuation

Hydrograph



Summary for Pond 52P: Outlet Pipe

Inflow Area = 6,783.0 m², 100.00% Impervious, Inflow Depth = 51 mm for 10-Year + CCF event
 Inflow = 95.50 L/s @ 0.17 hrs, Volume= 343.8 m³
 Outflow = 95.50 L/s @ 0.17 hrs, Volume= 343.8 m³, Atten= 0%, Lag= 0.0 min
 Primary = 95.50 L/s @ 0.17 hrs, Volume= 343.8 m³

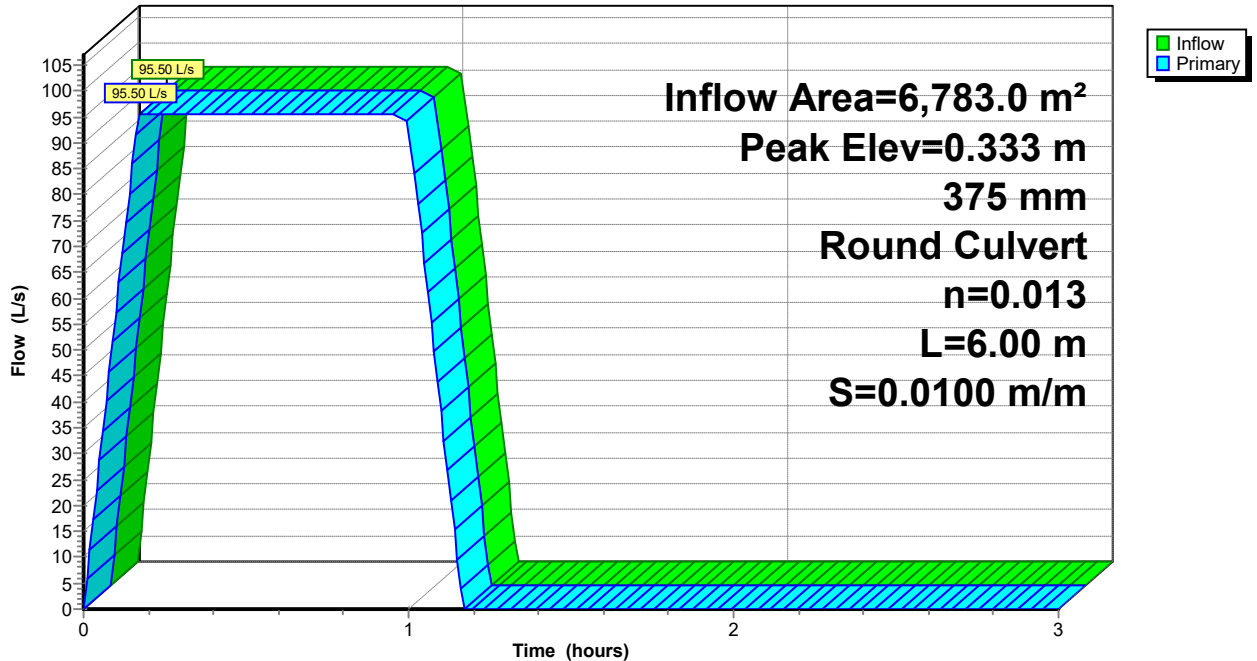
Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.333 m @ 0.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	375 mm Round Culvert L= 6.00 m RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 0.000 m / -0.060 m S= 0.0100 m/m Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.110 m ²

Primary OutFlow Max=95.50 L/s @ 0.17 hrs HW=0.333 m (Free Discharge)
 1=Culvert (Barrel Controls 95.50 L/s @ 1.22 m/s)

Pond 52P: Outlet Pipe

Hydrograph



Summary for Pond 53P: MH Inlet

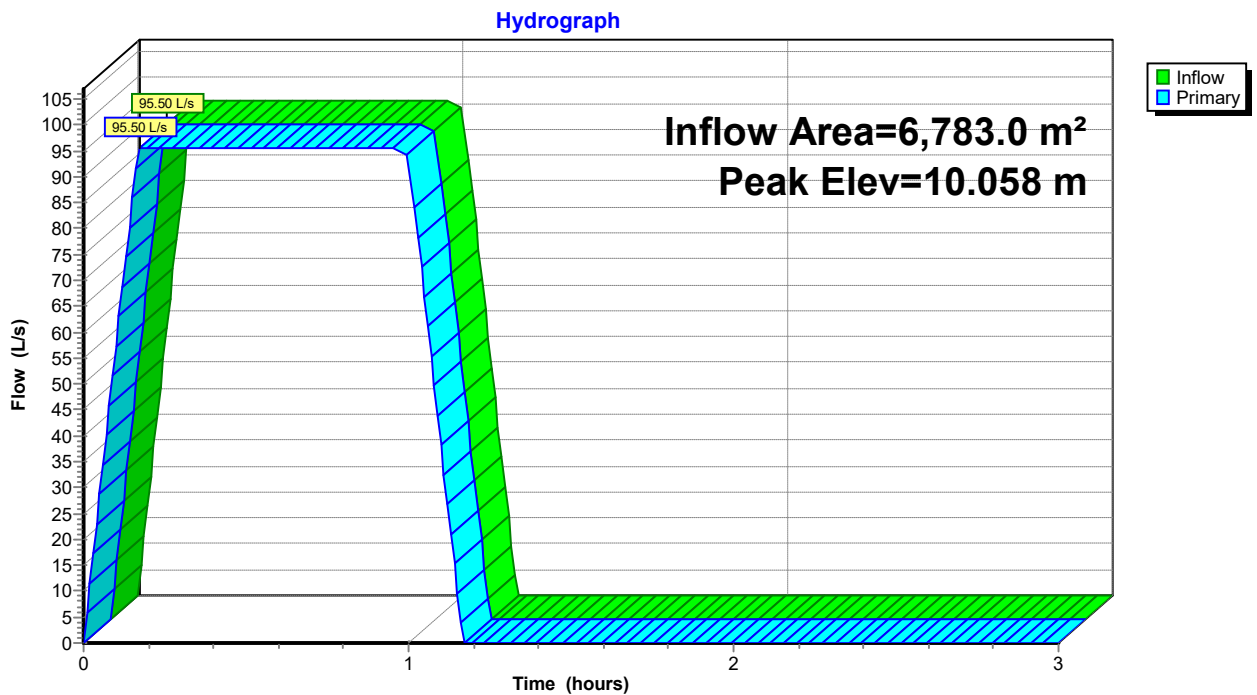
Inflow Area = 6,783.0 m², 100.00% Impervious, Inflow Depth = 51 mm for 10-Year + CCF event
 Inflow = 95.50 L/s @ 0.17 hrs, Volume= 343.8 m³
 Outflow = 95.50 L/s @ 0.17 hrs, Volume= 343.8 m³, Atten= 0%, Lag= 0.0 min
 Primary = 95.50 L/s @ 0.17 hrs, Volume= 343.8 m³

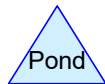
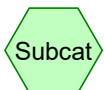
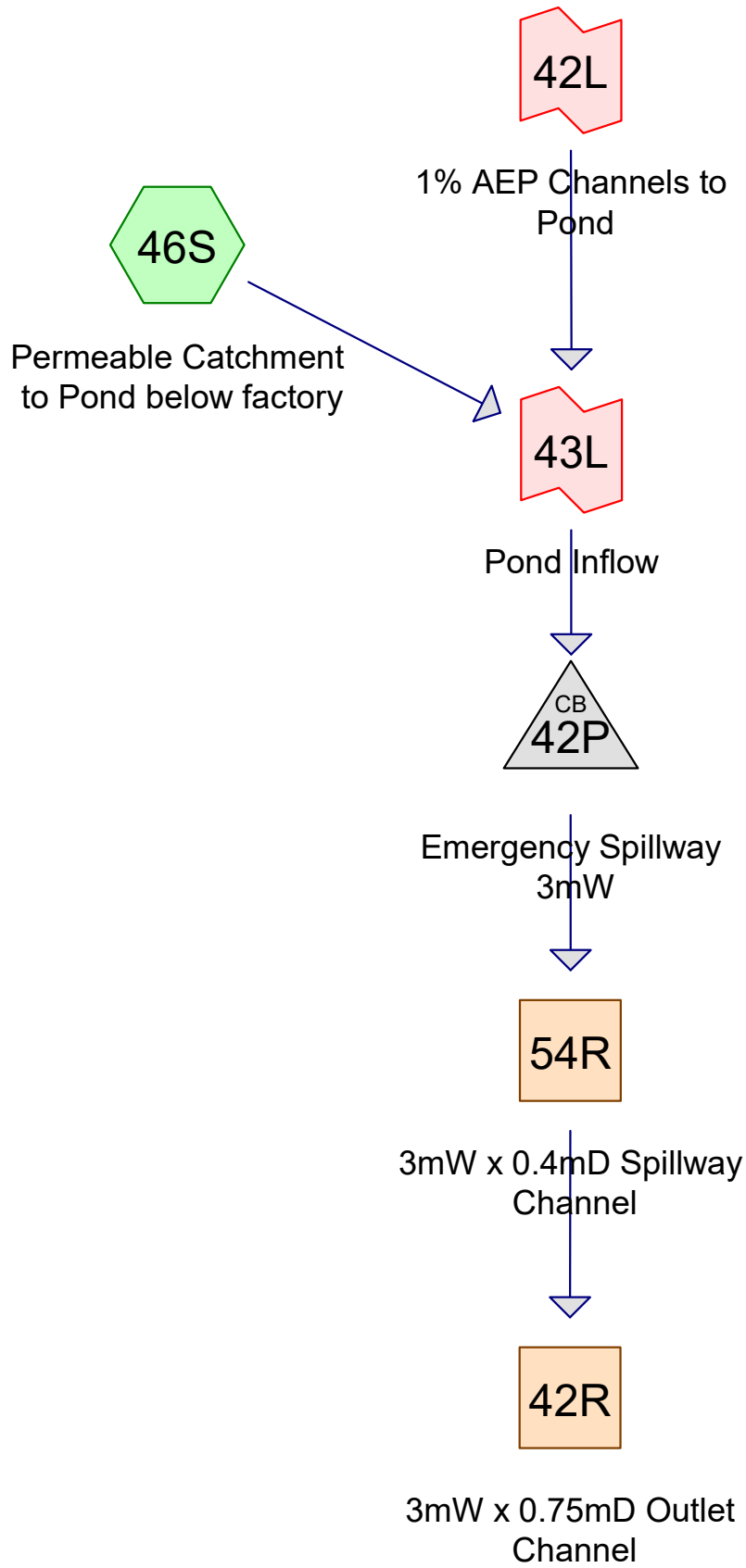
Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 10.058 m @ 0.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.000 m	1,200 mm Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=95.50 L/s @ 0.17 hrs HW=10.058 m TW=0.333 m (Dynamic Tailwater)
 ←1=Orifice/Grate (Weir Controls 95.50 L/s @ 0.44 m/s)

Pond 53P: MH Inlet





Summary for Subcatchment 46S: Permeable Catchment to Pond below factory

Runoff = 15.69 L/s @ 0.17 hrs, Volume= 56.5 m³, Depth= 47 mm

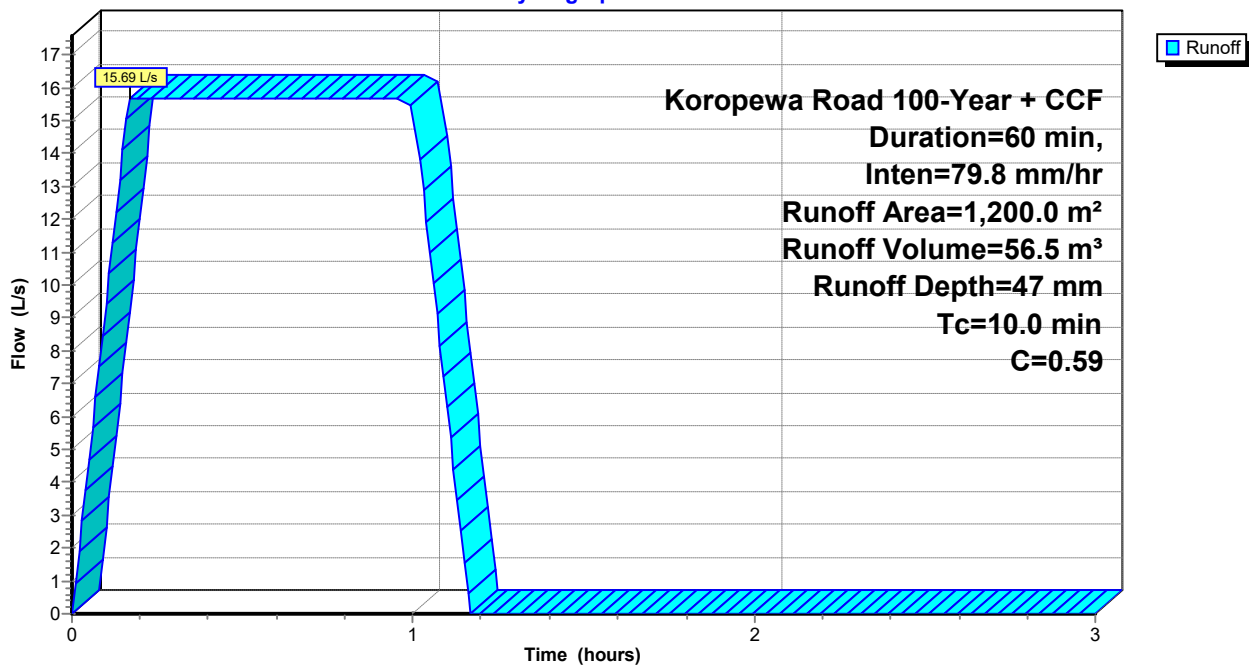
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 100-Year + CCF Duration=60 min, Inten=79.8 mm/hr

Area (m ²)	C	Description
1,200.0	0.59	
1,200.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 46S: Permeable Catchment to Pond below factory

Hydrograph



Summary for Reach 42R: 3mW x 0.75mD Outlet Channel

Inflow Area = 1,200.0 m², 0.00% Impervious, Inflow Depth = 1,612 mm for 100-Year + CCF event
 Inflow = 596.65 L/s @ 0.21 hrs, Volume= 1,934.4 m³
 Outflow = 597.54 L/s @ 0.21 hrs, Volume= 1,934.4 m³, Atten= 0%, Lag= 0.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.68 m/s, Min. Travel Time= 0.2 min
 Avg. Velocity = 0.48 m/s, Avg. Travel Time= 0.3 min

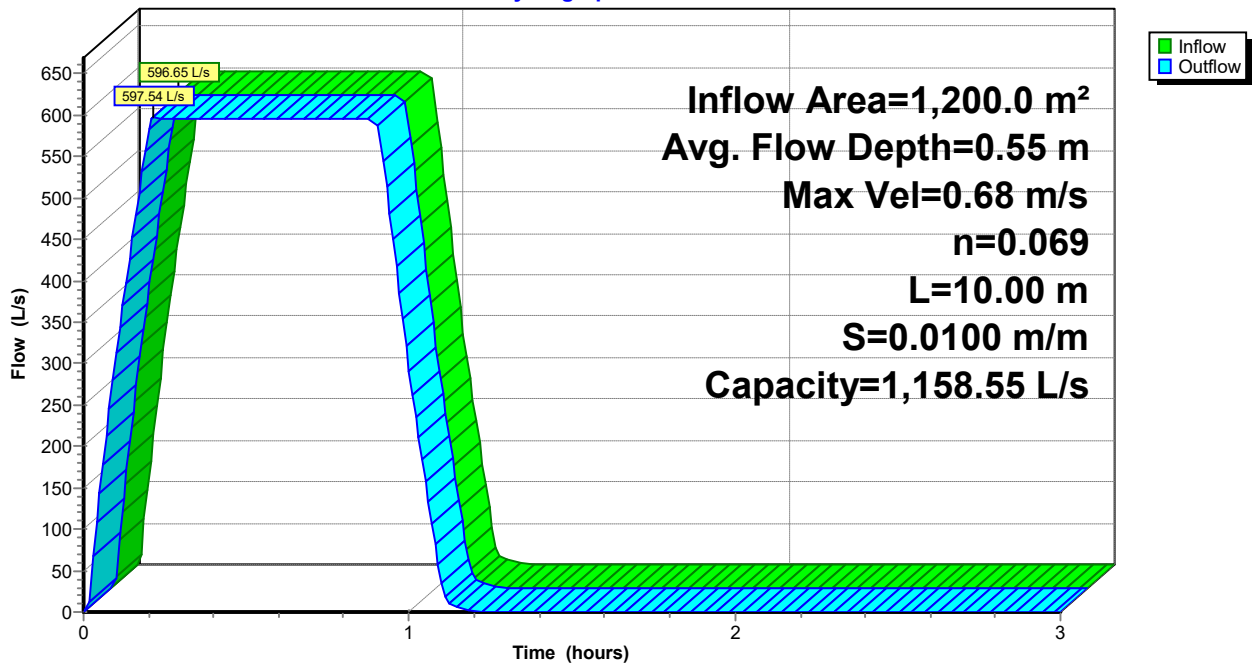
Peak Storage= 8.8 m³ @ 0.21 hrs
 Average Depth at Peak Storage= 0.55 m
 Bank-Full Depth= 0.75 m Flow Area= 1.44 m², Capacity= 1,158.55 L/s

0.80 m x 0.75 m deep channel, n= 0.069 Riprap, 6-inch
 Side Slope Z-value= 1.5 m/m Top Width= 3.05 m
 Length= 10.00 m Slope= 0.0100 m/m
 Inlet Invert= 2.000 m, Outlet Invert= 1.900 m



Reach 42R: 3mW x 0.75mD Outlet Channel

Hydrograph



Summary for Reach 54R: 3mW x 0.4mD Spillway Channel

Inflow Area = 1,200.0 m², 0.00% Impervious, Inflow Depth = 1,612 mm for 100-Year + CCF event
 Inflow = 594.79 L/s @ 0.30 hrs, Volume= 1,934.4 m³
 Outflow = 596.65 L/s @ 0.21 hrs, Volume= 1,934.4 m³, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.30 m/s, Min. Travel Time= 0.1 min
 Avg. Velocity = 0.99 m/s, Avg. Travel Time= 0.2 min

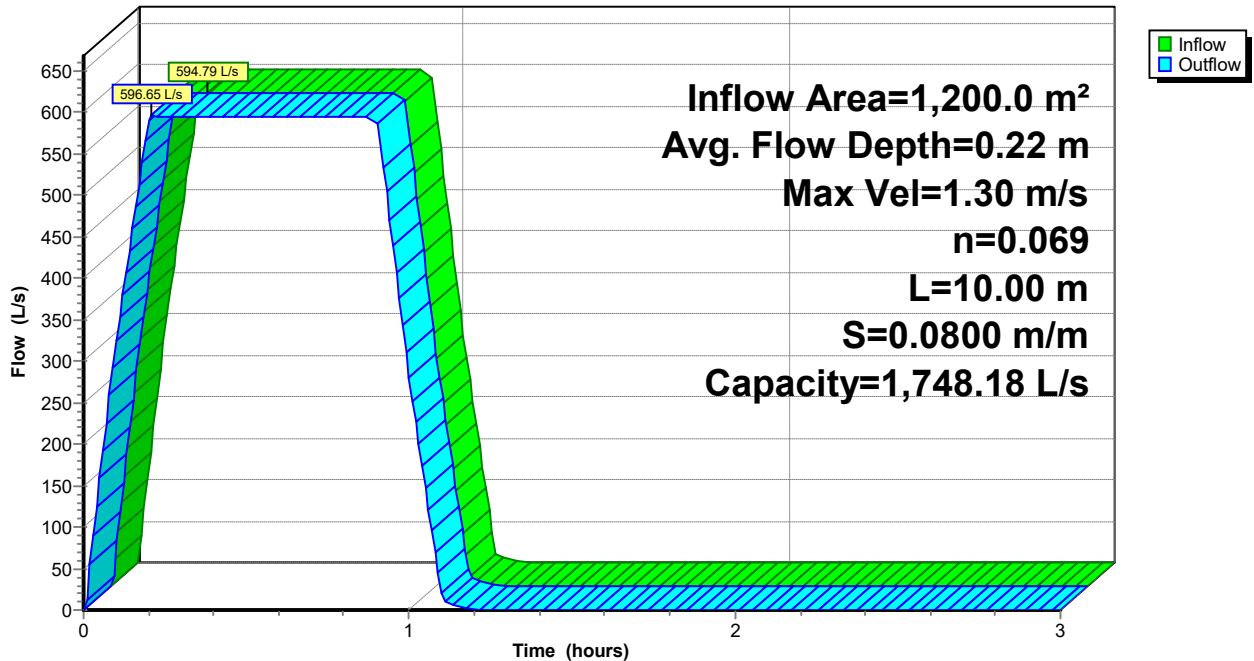
Peak Storage= 4.6 m³ @ 0.21 hrs
 Average Depth at Peak Storage= 0.22 m
 Bank-Full Depth= 0.40 m Flow Area= 0.96 m², Capacity= 1,748.18 L/s

1.80 m x 0.40 m deep channel, n= 0.069 Riprap, 6-inch
 Side Slope Z-value= 1.5 m/m Top Width= 3.00 m
 Length= 10.00 m Slope= 0.0800 m/m
 Inlet Invert= 6.000 m, Outlet Invert= 5.200 m



Reach 54R: 3mW x 0.4mD Spillway Channel

Hydrograph



Summary for Pond 42P: Emergency Spillway 3mW

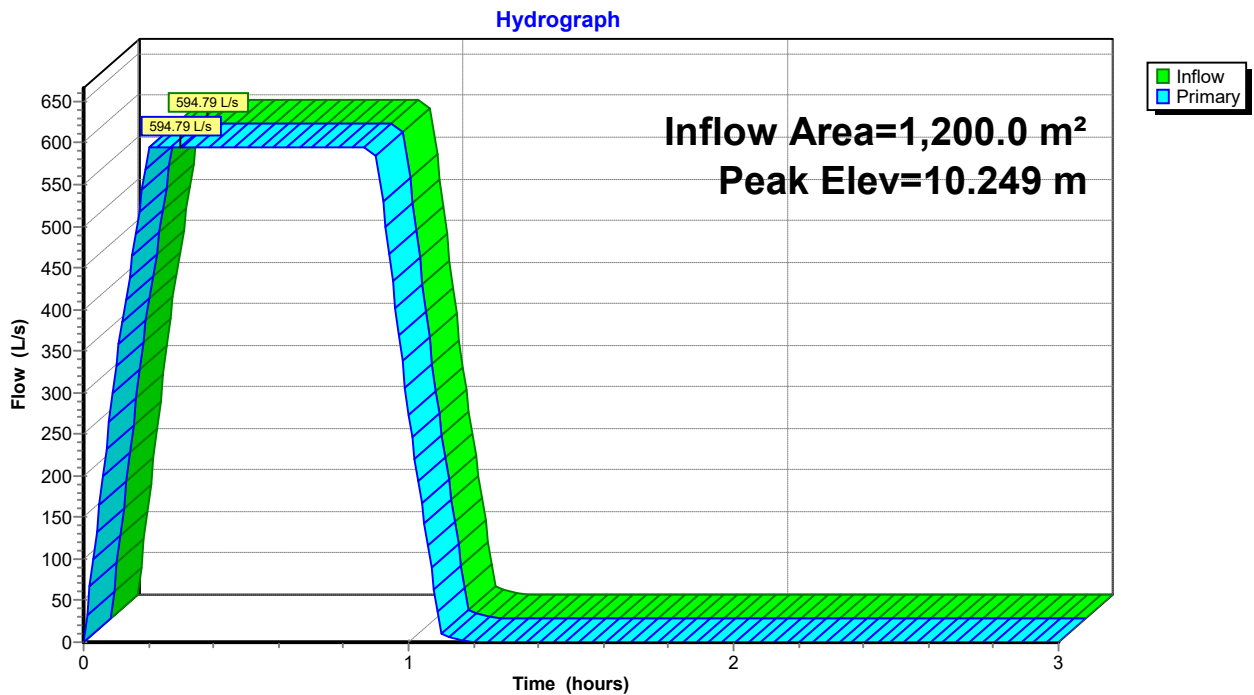
Inflow Area = 1,200.0 m², 0.00% Impervious, Inflow Depth = 1,612 mm for 100-Year + CCF event
 Inflow = 594.79 L/s @ 0.30 hrs, Volume= 1,934.4 m³
 Outflow = 594.79 L/s @ 0.30 hrs, Volume= 1,934.4 m³, Atten= 0%, Lag= 0.0 min
 Primary = 594.79 L/s @ 0.30 hrs, Volume= 1,934.4 m³

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 10.249 m @ 0.30 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.000 m	3.00 m long (Profile 5) Broad-Crested Rectangular Weir Head (meters) 0.150 0.300 0.450 Coef. (Metric) 1.54 1.62 1.69

Primary OutFlow Max=594.79 L/s @ 0.30 hrs HW=10.249 m TW=6.216 m (Dynamic Tailwater)
 ←1=Broad-Crested Rectangular Weir (Weir Controls 594.79 L/s @ 0.80 m/s)

Pond 42P: Emergency Spillway 3mW



Summary for Link 42L: 1% AEP Channels to Pond

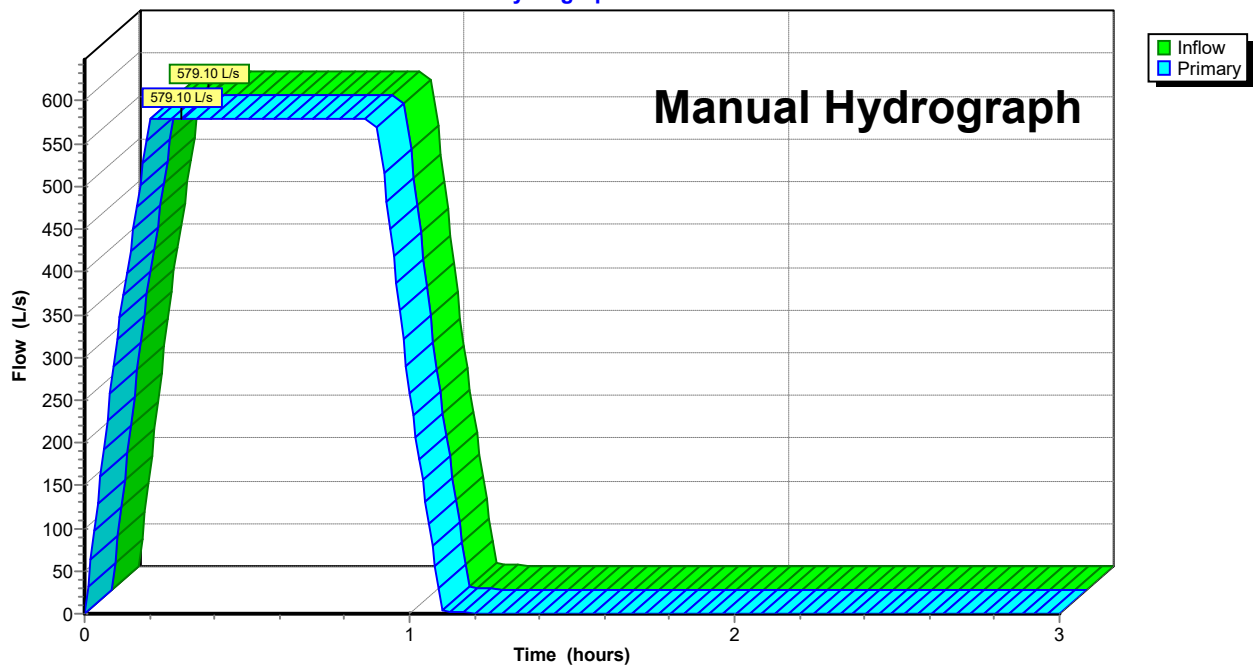
Inflow = 579.10 L/s @ 0.30 hrs, Volume= 1,877.9 m³
 Primary = 579.10 L/s @ 0.30 hrs, Volume= 1,877.9 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

14 Point manual hydrograph, To= 0.00 hrs, dt= 0.10 hrs, m³/s =
 0.0000 0.3222 0.5789 0.5791 0.5791 0.5791 0.5791 0.5791 0.5791 0.5791 0.2576
 0.0038 0.0002 0.0000

Link 42L: 1% AEP Channels to Pond

Hydrograph



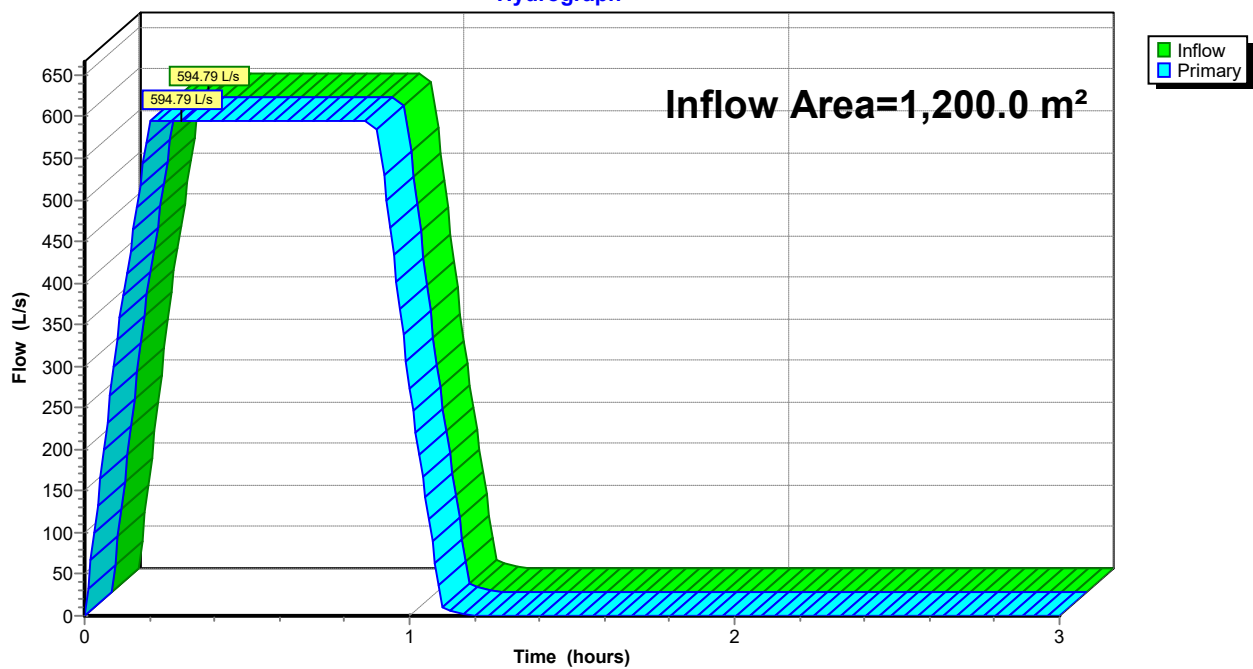
Summary for Link 43L: Pond Inflow

Inflow Area = 1,200.0 m², 0.00% Impervious, Inflow Depth = 1,612 mm for 100-Year + CCF event
Inflow = 594.79 L/s @ 0.30 hrs, Volume= 1,934.4 m³
Primary = 594.79 L/s @ 0.30 hrs, Volume= 1,934.4 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Link 43L: Pond Inflow

Hydrograph





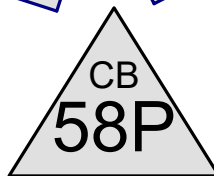
45L

10% AEP Channels to Pond



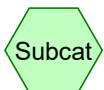
46S

Permeable Catchment to Pond below factory



CB
58P

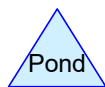
45mL Level Spreader



Subcat



Reach



Pond



Link

Summary for Subcatchment 46S: Permeable Catchment to Pond below factory

Runoff = 10.38 L/s @ 0.17 hrs, Volume= 37.4 m³, Depth= 31 mm

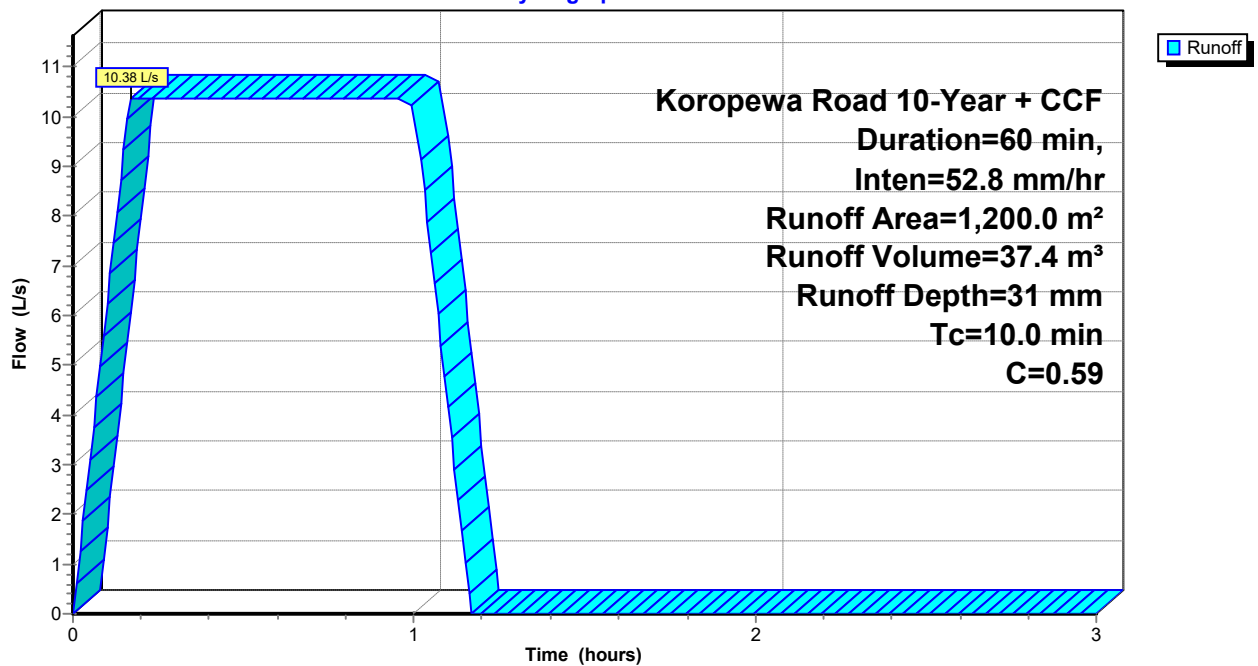
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 10-Year + CCF Duration=60 min, Inten=52.8 mm/hr

Area (m ²)	C	Description
1,200.0	0.59	
1,200.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 46S: Permeable Catchment to Pond below factory

Hydrograph



Summary for Pond 58P: 45mL Level Spreader

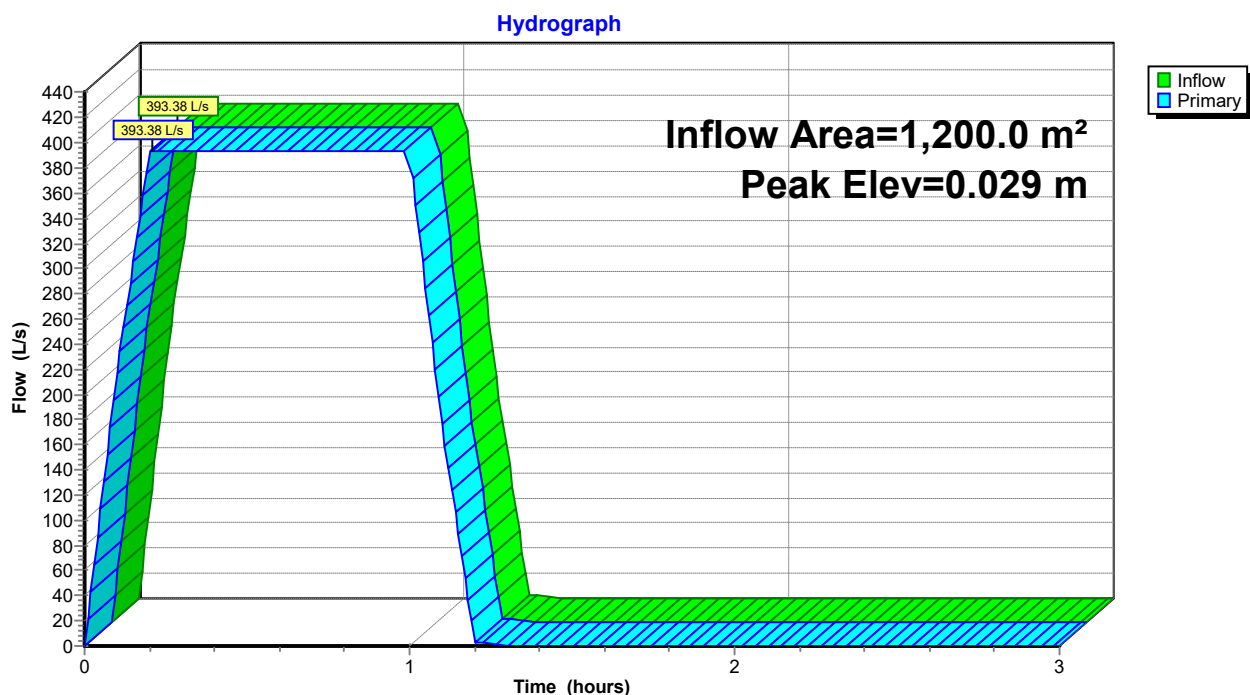
Inflow Area = 1,200.0 m², 0.00% Impervious, Inflow Depth = 1,181 mm for 10-Year + CCF event
 Inflow = 393.38 L/s @ 0.20 hrs, Volume= 1,417.3 m³
 Outflow = 393.38 L/s @ 0.21 hrs, Volume= 1,417.3 m³, Atten= 0%, Lag= 0.6 min
 Primary = 393.38 L/s @ 0.21 hrs, Volume= 1,417.3 m³

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.029 m @ 0.21 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	45.00 m long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=393.38 L/s @ 0.21 hrs HW=0.029 m (Free Discharge)
 ↳1=Sharp-Crested Rectangular Weir (Weir Controls 393.38 L/s @ 0.31 m/s)

Pond 58P: 45mL Level Spreader



Summary for Link 45L: 10% AEP Channels to Pond

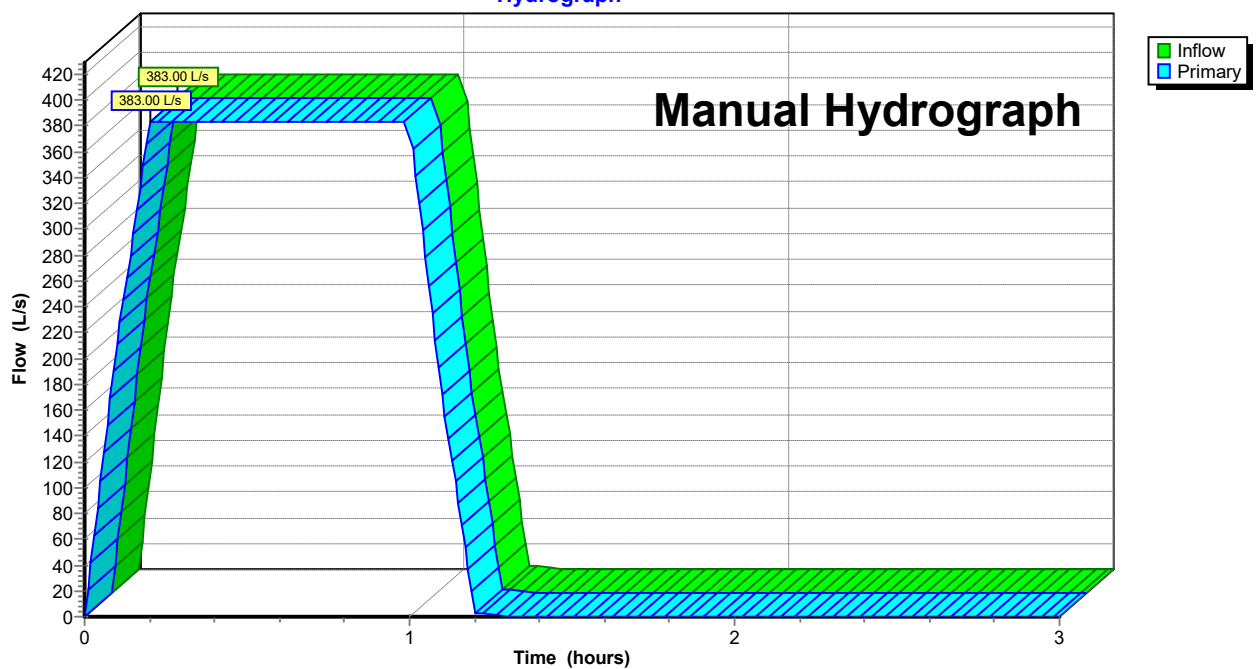
Inflow = 383.00 L/s @ 0.20 hrs, Volume= 1,379.9 m³
 Primary = 383.00 L/s @ 0.20 hrs, Volume= 1,379.9 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

14 Point manual hydrograph, To= 0.00 hrs, dt= 0.10 hrs, m³/s =
 0.0000 0.2110 0.3830 0.3830 0.3830 0.3830 0.3830 0.3830 0.3830 0.3830 0.3830 0.3830
 0.1720 0.0030 0.0000

Link 45L: 10% AEP Channels to Pond

Hydrograph





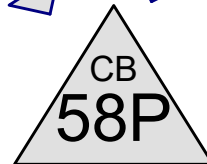
42L

1% AEP Channels to Pond



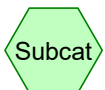
46S

Permeable Catchment to Pond below factory



CB
58P

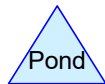
45mL Level Spreader



Subcat



Reach



Pond



Link

Summary for Subcatchment 46S: Permeable Catchment to Pond below factory

Runoff = 15.69 L/s @ 0.17 hrs, Volume= 56.5 m³, Depth= 47 mm

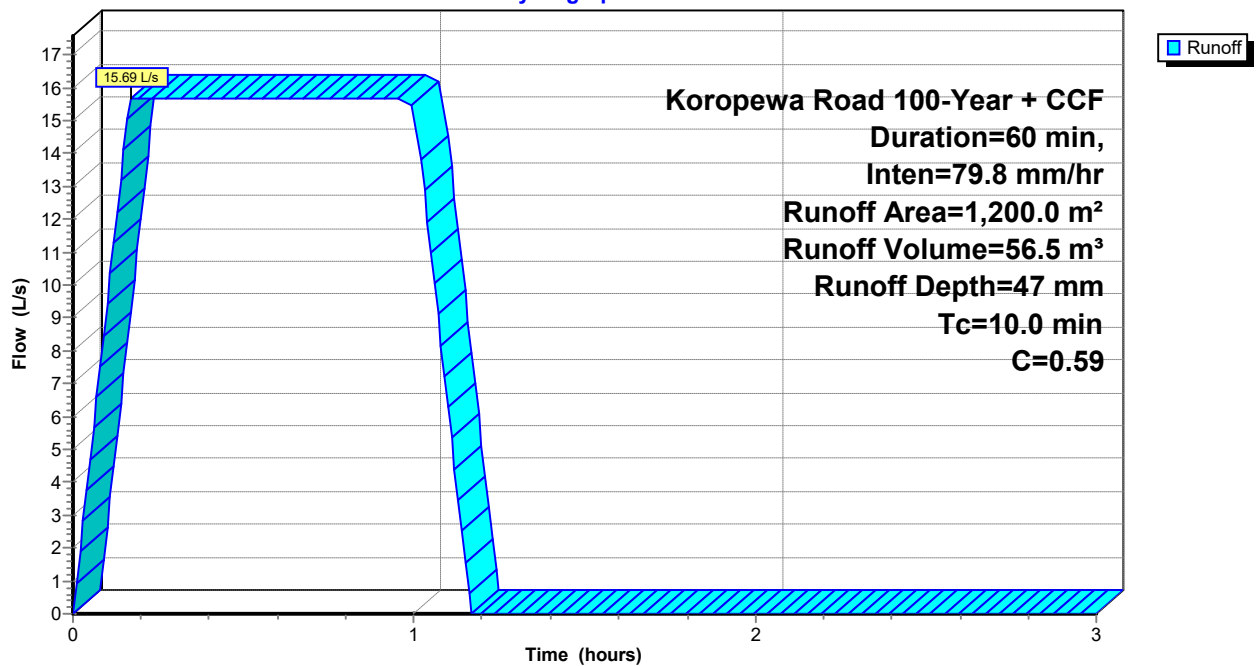
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Koropewa Road 100-Year + CCF Duration=60 min, Inten=79.8 mm/hr

Area (m ²)	C	Description
1,200.0	0.59	
1,200.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 46S: Permeable Catchment to Pond below factory

Hydrograph



Summary for Pond 58P: 45mL Level Spreader

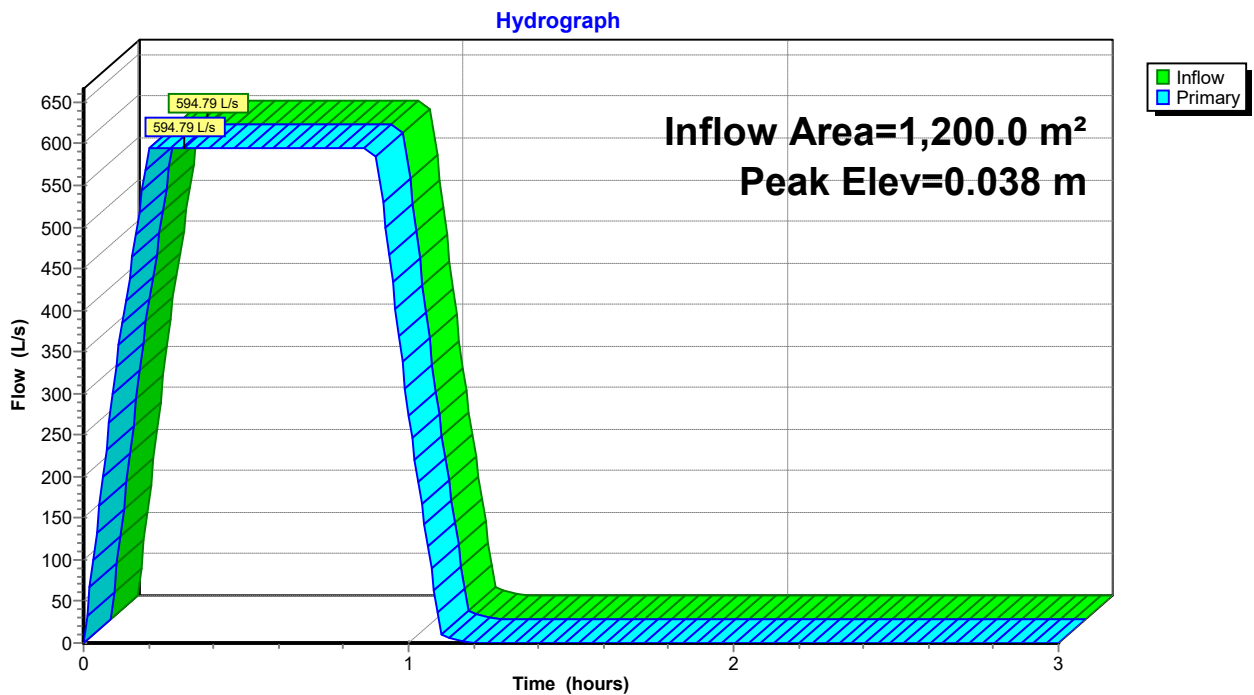
Inflow Area = 1,200.0 m², 0.00% Impervious, Inflow Depth = 1,612 mm for 100-Year + CCF event
 Inflow = 594.79 L/s @ 0.30 hrs, Volume= 1,934.4 m³
 Outflow = 594.79 L/s @ 0.31 hrs, Volume= 1,934.4 m³, Atten= 0%, Lag= 0.6 min
 Primary = 594.79 L/s @ 0.31 hrs, Volume= 1,934.4 m³

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.038 m @ 0.31 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	45.00 m long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=594.79 L/s @ 0.31 hrs HW=0.038 m (Free Discharge)
 ↳1=Sharp-Crested Rectangular Weir (Weir Controls 594.79 L/s @ 0.35 m/s)

Pond 58P: 45mL Level Spreader



Summary for Link 42L: 1% AEP Channels to Pond

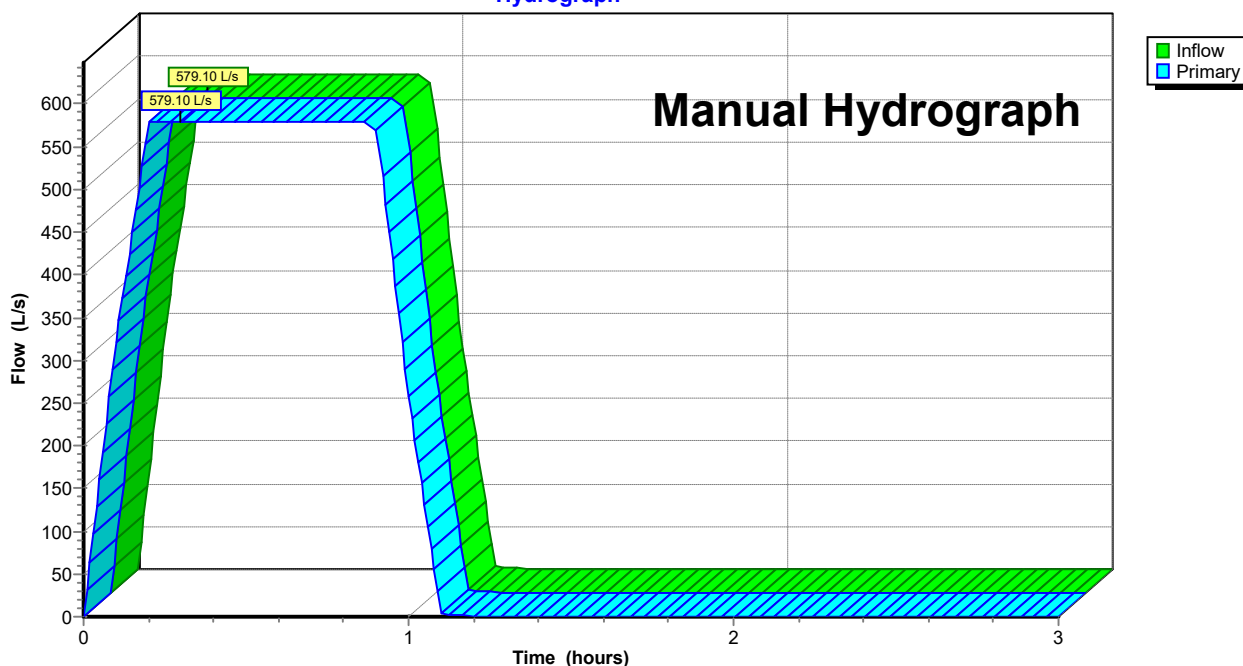
Inflow = 579.10 L/s @ 0.30 hrs, Volume= 1,877.9 m³
 Primary = 579.10 L/s @ 0.30 hrs, Volume= 1,877.9 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

14 Point manual hydrograph, To= 0.00 hrs, dt= 0.10 hrs, m³/s =
 0.0000 0.3222 0.5789 0.5791 0.5791 0.5791 0.5791 0.5791 0.5791 0.5791 0.2576
 0.0038 0.0002 0.0000

Link 42L: 1% AEP Channels to Pond

Hydrograph



HAND AUGER : LOT 2 - HA01

JOB NO.: 122623 SHEET: 1 OF 10
 START DATE: 22/11/2022 NORTHING: GRID:
 DIAMETER: 50mm EASTING:
 SV DIAL: 2862 ELEVATION: Ground
 FACTOR: 1.515 DATUM:

CLIENT: Breakwater Trust
 PROJECT: 29C Koropewa Road, Waipapa
 SITE LOCATION: Lot 2 DP 202022, 29C Koropewa Road, Waipapa

STRATIGRAPHY	SOIL DESCRIPTION	LEGEND	DEPTH (m)	WATER	SHEAR VANE				COMMENTS, SAMPLES, OTHER TESTS
					PEAK STRENGTH (kPa)	REMOULD STRENGTH (kPa)	SENSITIVITY	DCP - SCALA (Blows / mm)	
	Topsoil		0.0 - 0.2						
	NATURAL: Silty CLAY, trace fine to medium sand, brown orange, very stiff, moist, slightly to moderately plastic		0.2 - 0.9		197	48	4.1		
	0.9m: inclusions of minor fine clastic volcanic mineral		0.9		212+	-	-		
	1.3m: Becoming reddish brown with pink orange streaks		1.3		212+	-	-		
	SILT, some clay, minor fine to medium sand, trace fine angular gravel, dark reddish brown, pinkish orange, very stiff, moist, slightly plastic		1.3 - 2.8		212+	-	-		
Kerikeri Volcanic Group	Clayey SILT, minor fine to medium sand, trace fine angular gravel, purple grey, light pink orange streaks and speckles, very stiff, moist, very to slightly plastic		2.8 - 3.0		179	-	-		
	3.0m: inclusions of angular gravel and clastic minerals		3.0		142	124	1.1		
	3.4m: Becoming moist to wet		3.4		121	58	2.1		
			3.2		97	73	1.3		
			3.6		92	50	1.8		
	4.0m: Becoming purple grey with light orange and pink streaks		4.0		155	56	2.8		
			4.2						
			4.4		82	42	2.0		
			4.8		73	45	1.6		
			5.0		89	35	2.5		
	EOH: 5.00m - Target Depth		5.0						

REMARKS
 End of borehole @ 5.00m (Target Depth: 5.00m)
 Groundwater encountered @ 3.10m during drilling. Standing groundwater @ 4.20m.

Target Depth

LOGGED BY: SL
 CHECKED BY: NA

▼ Standing groundwater level
 ▽ GW while drilling



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HAND AUGER : LOT 3 - HA01

JOB NO.: 122623 SHEET: 2 OF 10

START DATE: 22/11/2022

NORTHING:

GRID:

DIAMETER: 50mm

EASTING:

SV DIAL: 772

ELEVATION: Ground

FACTOR: 1.588

DATUM:

CLIENT: Breakwater Trust

PROJECT: 29C Koropewa Road, Waipapa

SITE LOCATION: Lot 2 DP 202022, 29C Koropewa Road, Waipapa

STRATIGRAPHY	SOIL DESCRIPTION	LEGEND	DEPTH (m)	WATER	SHEAR VANE				COMMENTS, SAMPLES, OTHER TESTS
					PEAK STRENGTH (kPa)	REMOULD STRENGTH (kPa)	SENSITIVITY	DCP - SCALA (Blows / mm)	
	Topsoil		0.0 - 0.1						
	NATURAL: Silty CLAY, occasion with minor clastic and fine angular gravel, brown orange, very stiff, moist, slightly plastic		0.1 - 1.7						
	0.7m: Becoming light brown with orange		0.7						
			1.2	▽					
	Clayey SILT, minor fine to medium sand, trace fine clastic minerals with angular gravel, orange brown with dark reddish brown, very stiff, moist, slightly plastic		1.7 - 3.4						
	2.7m: trace fine to medium sand inclusions, becoming orange with occasion black mottles, light brown streaks		2.7						
	3.4m: Becoming brownish orange with light brown streaks.		3.4						
	4.2m: Becoming minor fine sand with occasion purple grey with light pink and orange streaks		4.2						
			1.2	▽	UTP	-	-		
			1.6	▽	UTP	-	-		
			2.0	▽	215	109	2.0		
			2.4	▽	128	84	1.5		
			2.8	▽	177	96	1.8		
			3.2	▽	222	90	2.5		
			3.6	▽	225+	-	-		
			4.0	▽	UTP	-	-		
			4.4	▽	UTP	-	-		
			4.8	▽	UTP	-	-		
			5.0	▽	UTP	-	-		
	EOH: 5.00m - Target Depth		5.0						

REMARKS

End of borehole @ 5.00m (Target Depth: 5.00m)
Groundwater encountered @ 1.20m during drilling. Standing groundwater @ 3.70m.

Target Depth

LOGGED BY: KT

▽ Standing groundwater level

CHECKED BY: NA

▽ GW while drilling



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HAND AUGER : LOT 3 - HA02

JOB NO.: 122623 SHEET: 3 OF 10

START DATE: 22/11/2022

NORTHING:

GRID:

DIAMETER: 50mm

EASTING:

SV DIAL: 772

ELEVATION: Ground

FACTOR: 1.588

DATUM:

CLIENT: Breakwater Trust
PROJECT: 29C Koropewa Road, Waipapa

SITE LOCATION: Lot 2 DP 202022, 29C Koropewa Road, Waipapa

STRATIGRAPHY	SOIL DESCRIPTION	LEGEND	DEPTH (m)	WATER	SHEAR VANE				COMMENTS, SAMPLES, OTHER TESTS
					PEAK STRENGTH (kPa)	REMOULD STRENGTH (kPa)	SENSITIVITY	DCP - SCALA (Blows / mm)	
Topsoil			0.0 - 0.1						
NATURAL: Silty CLAY, trace fine sand, brown orange, very stiff, moist, slightly plastic			0.1 - 1.1						
			0.2						
			0.4		218	77	2.8		
			0.6						
			0.8		225+	-	-		
			1.0						
1.1m: Becoming brownish orange, dark reddish brown, light orange mottles			1.1						
			1.2		UTP	-	-		
			1.4						
Clayey SILT, brownish orange, light pinkish orange mottles, very stiff, moist, slightly plastic			1.5 - 2.8						
			1.6		UTP	-	-		
			1.8						
			2.0		190	92	2.1		
			2.2						
			2.4		135	96	1.4		
			2.6						
2.8m: Inclusions of minor fine to medium sand, trace fine angular gravel with clasts			2.8		UTP	-	-		
			3.0	▽					
			3.2		141	90	1.6		
			3.4						
3.4m: Becoming purple grey with grey, pink and light orange streaks			3.4						
			3.6		151	39	3.9		
			3.8						
4.0m: Becoming grayish brown with orange and black streaks			4.0		225+	-	-		
			4.2						
			4.4		225+	-	-		
			4.6						
			4.8		UTP	-	-		
			5.0		UTP	-	-		
EOH: 5.00m - Target Depth			5.0						

REMARKS
 End of borehole @ 5.00m (Target Depth: 5.00m)
 Groundwater encountered @ 3.00m during drilling. Standing groundwater @ 4.50m.

Target Depth

LOGGED BY: KT
 CHECKED BY: NA

▽ Standing groundwater level
 ▽ GW while drilling



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Generated with CORE-GS by Geotec - WJL - Hand Auger v2 - 6/12/2022 9:13:01 am

HAND AUGER : LOT 5 - HA01

JOB NO.: 122623 SHEET: 5 OF 10
 START DATE: 23/11/2022 NORTHING: GRID:
 DIAMETER: 50mm EASTING:
 SV DIAL: 772 ELEVATION: Ground
 FACTOR: 1.588 DATUM:

CLIENT: Breakwater Trust
 PROJECT: 29C Koropewa Road, Waipapa
 SITE LOCATION: Lot 2 DP 202022, 29C Koropewa Road, Waipapa

STRATIGRAPHY	SOIL DESCRIPTION	LEGEND	DEPTH (m)	WATER	SHEAR VANE				COMMENTS, SAMPLES, OTHER TESTS
					PEAK STRENGTH (kPa)	REMOULD STRENGTH (kPa)	SENSITIVITY	DCP - SCALA (Blows / mm)	
	Topsoil		0.0 - 0.2						
	NATURAL: Silty CLAY, trace fine sand, brownish orange, very stiff, moist, slightly plastic		0.2 - 0.4						
	0.7m: occasion with coarse clasts, white and pink speckles		0.4 - 0.8						
	1.2m: inclusions of minor fine angular gravel		0.8 - 1.2						
	Clayey SILT, trace fine sand, brown orange to dark reddish orange, very stiff, moist, slightly plastic		1.2 - 1.6						
	2.0m: Becoming dark reddish brown, with orange brown streaks, trace fine sand, moist to wet		1.6 - 2.0						
Kerikeri Volcanic Group			2.0 - 2.8						
			2.8 - 3.0	▽					
			3.0 - 3.2						
			3.2 - 3.4						
			3.4 - 3.6						
		3.8m: encountered minor black mottles		3.6 - 3.8					
			3.8 - 4.0						
			4.0 - 4.2						
		4.5m: Becoming dark reddish brown with orange and black mottles		4.2 - 4.4					
			4.4 - 4.6						
		4.6 - 4.8							
		4.8 - 5.0							
	EOH: 5.00m - Target Depth		5.0						

REMARKS
 End of borehole @ 5.00m (Target Depth: 5.00m)
 Groundwater encountered @ 2.80m during drilling. Standing groundwater @ 4.50m.

Target Depth

LOGGED BY: KT
 CHECKED BY: NA

▽ Standing groundwater level
 ▽ GW while drilling



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HAND AUGER : LOT 6 - HA01

JOB NO.: 122623 SHEET: 6 OF 10

START DATE: 23/11/2022 NORTHING: GRID:

DIAMETER: 50mm EASTING:

SV DIAL: 2862 ELEVATION: Ground

FACTOR: 1.515 DATUM:

CLIENT: Breakwater Trust
PROJECT: 29C Koropewa Road, Waipapa

SITE LOCATION: Lot 2 DP 202022, 29C Koropewa Road, Waipapa

STRATIGRAPHY	SOIL DESCRIPTION	LEGEND	DEPTH (m)	WATER	SHEAR VANE				COMMENTS, SAMPLES, OTHER TESTS
					PEAK STRENGTH (kPa)	REMOULD STRENGTH (kPa)	SENSITIVITY	DCP - SCALA (Blows / mm)	
	Topsoil		0.0 - 0.2						
	NATURAL: Silty CLAY, minor fine sand, trace fine angular gravel, brown orange, dark reddish brown, light orange mottles, very stiff, moist to wet, slightly plastic		0.2 - 1.0		212	-	-		
	Clayey SILT, minor fine to medium sand, trace fine angular gravel and clasts, brown orange with dark orange with light purple grey, very stiff, moist, slightly plastic		1.0 - 3.4	23/11/2022	212+	-	-		
			1.0	▼	100	50	2.0		
			1.2		UTP	-	-		
			1.6		UTP	-	-		
			2.0		212+	-	-		
			2.4		182	83	2.2		
			2.6	▼					
			2.8		197	58	3.4		
			3.0						
			3.2		212+	-	-		
	SILT, some clay, minor fine to medium sand with fine angular gravel, trace clasts minerals, brown grey, minor purple grey and light orange streaks, very stiff, moist, very slightly plastic		3.4 - 4.0		212+	-	-		
			3.6		212+	-	-		
			4.0		UTP	-	-		
			4.2						
			4.4		UTP	-	-		
			4.6						
			4.8		UTP	-	-		
			5.0						
	EOH: 5.00m - Target Depth								

REMARKS
End of borehole @ 5.00m (Target Depth: 5.00m)
Groundwater encountered @ 2.50m during drilling. Standing groundwater @ 1.15m.

Target Depth

LOGGED BY: SL ▼ Standing groundwater level
CHECKED BY: NA ▽ GW while drilling



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HAND AUGER : LOT 7 - HA01

JOB NO.: 122623 SHEET: 7 OF 10

START DATE: 23/11/2022

NORTHING:

GRID:

DIAMETER: 50mm

EASTING:

SV DIAL: 2862

ELEVATION: Ground

FACTOR: 1.515

DATUM:

CLIENT: Breakwater Trust
PROJECT: 29C Koropewa Road, Waipapa

SITE LOCATION: Lot 2 DP 202022, 29C Koropewa Road, Waipapa

STRATIGRAPHY	SOIL DESCRIPTION	LEGEND	DEPTH (m)	WATER	SHEAR VANE				COMMENTS, SAMPLES, OTHER TESTS
					PEAK STRENGTH (kPa)	REMOULD STRENGTH (kPa)	SENSITIVITY	DCP - SCALA (Blows / mm)	
	Topsoil		0.0 - 0.2						
	NATURAL: Silty CLAY, trace fine sand, brown orange, very stiff, moist, slightly plastic		0.2 - 1.4						
	Clayey SILT, minor fine to medium sand, dark reddish brown, pink and orange mottles, very stiff, moist, slightly plastic		1.4 - 3.8						
	SILT, some clay, minor fine to medium sand, trace fine angular gravel with clasts, brown grey to grey with purple grey with orange and pink streaks, very stiff, moist, slightly plastic		3.8 - 5.0						
	EOH: 5.00m - Target Depth		5.0						
			0.2		212+	-	-		
			0.4						
			0.6						
			0.8		212+	-	-		
			1.0						
			1.2		209	100	2.1		
			1.4						
			1.6		121	85	1.4		
			1.8						
			2.0		109	76	1.4		
			2.2						
			2.4		212	67	3.2		
			2.6						
			2.8		UTP	-	-		
			3.0						
			3.2		UTP	-	-		
			3.4						
			3.6		212+	-	-		
			3.8						
			4.0		212+	-	-		
			4.2						
			4.4		212	83	2.6		
			4.6						
			4.8		212+	-	-		
			5.0		UTP	-	-		

REMARKS
End of borehole @ 5.00m (Target Depth: 5.00m)
Groundwater encountered @ 3.00m during drilling. Standing groundwater @ 1.30m.

Target Depth

LOGGED BY: SL
CHECKED BY: NA

▼ Standing groundwater level
▽ GW while drilling



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HAND AUGER : LOT 8 - HA01

JOB NO.: 122623 SHEET: 8 OF 10

START DATE: 23/11/2022

NORTHING:

GRID:

DIAMETER: 50mm

EASTING:

SV DIAL: 772

ELEVATION: Ground

FACTOR: 1.588

DATUM:

CLIENT: Breakwater Trust
PROJECT: 29C Koropewa Road, Waipapa

SITE LOCATION: Lot 2 DP 202022, 29C Koropewa Road, Waipapa

STRATIGRAPHY	SOIL DESCRIPTION	LEGEND	DEPTH (m)	WATER	SHEAR VANE				COMMENTS, SAMPLES, OTHER TESTS
					PEAK STRENGTH (kPa)	REMOULD STRENGTH (kPa)	SENSITIVITY	DCP - SCALA (Blows / mm)	
Topsoil			0.0 - 0.1						
NATURAL: Silty CLAY, trace fine sand, brown orange, very stiff, moist, slightly plastic			0.1 - 0.4						
0.4m: occasion with minor fine angular gravel and clasts			0.4		225+	-	-		
			0.6						
			0.8		UTP	-	-		
			1.0						
			1.2		225+	-	-		
1.4m: Becomes light brown with purple grey to grey			1.4						
			1.6		180	128	1.4		
			1.8						
			2.0		170	138	1.2		
			2.2						
Clayey SILT, minor fine to medium sand, trace fine clasts mineral, brown orange with dark reddish brown, very stiff, moist to wet, slightly plastic			2.2 - 3.0						
			2.4		112	61	1.8		
			2.6						
			2.8		209	39	5.4		
			3.0	▼					
			3.2		225+	-	-		
3.3m: Becomes moist to wet			3.3						
			3.4						
			3.6		225+	-	-		
			3.8	▽					
4.0m: Becomes minor fine to medium sand, trace fine angular gravel and clasts, light brown grey to grey			4.0		209	51	4.1		
			4.2						
			4.4		225+	-	-		
4.5m: Becomes moist to wet			4.5						
			4.6						
			4.8		UTP	-	-		
			5.0		UTP	-	-		
EOH: 5.00m - Target Depth			5.0						

REMARKS

End of borehole @ 5.00m (Target Depth: 5.00m)
Groundwater encountered @ 3.80m during drilling. Standing groundwater @ 3.00m.

Target Depth

LOGGED BY: KT
CHECKED BY: NA

▼ Standing groundwater level
▽ GW while drilling



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HAND AUGER : LOT 9 - HA01

JOB NO.: 122623 SHEET: 9 OF 10
 START DATE: 23/11/2022 NORTHING: GRID:
 DIAMETER: 50mm EASTING:
 SV DIAL: 2862 ELEVATION: Ground
 FACTOR: 1.515 DATUM:

CLIENT: Breakwater Trust
 PROJECT: 29C Koropewa Road, Waipapa
 SITE LOCATION: Lot 2 DP 202022, 29C Koropewa Road, Waipapa

STRATIGRAPHY	SOIL DESCRIPTION	LEGEND	DEPTH (m)	WATER	SHEAR VANE				COMMENTS, SAMPLES, OTHER TESTS
					PEAK STRENGTH (kPa)	REMOULD STRENGTH (kPa)	SENSITIVITY	DCP - SCALA (Blows / mm)	
Topsoil			0.0 - 0.2						
NATURAL: Silty CLAY, trace fine sand, brown orange, very stiff, moist, slightly plastic			0.2 - 0.7						
0.7m: Becomes dark red brown, light orange and pink streaks			0.7 - 1.4						
Clayey SILT, minor fine to medium sand, brown orange, very stiff, moist, slightly to moderately plastic			1.4 - 3.0						
2.5m: Inclusions of black mottles			2.5 - 2.7						
2.7m: Becomes grey and orange with pink streaks			2.7 - 3.0						
SILT, some clay, minor fine to medium sand, trace fine angular gravel and clasts, light brown grey, purple grey with light orange and pink streaks, very stiff, moist, very slightly plastic			3.0 - 3.6						
3.6m: Becomes purple grey to grey, light orange and pink streaks			3.6 - 4.3						
4.3m: Becomes moist to wet			4.3 - 5.0						
EOH: 5.00m - Target Depth			5.0						

REMARKS
 End of borehole @ 5.00m (Target Depth: 5.00m)
 Groundwater encountered @ 3.50m during drilling. Standing groundwater @ 2.50m.

Target Depth

LOGGED BY: SL ▼ Standing groundwater level
 CHECKED BY: NA ▽ GW while drilling



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HAND AUGER : LOT 10 - HA01

JOB NO.: 122623 SHEET: 10 OF 10
 START DATE: 23/11/2022 NORTHING: GRID:
 DIAMETER: 50mm EASTING:
 SV DIAL: DR4802 ELEVATION: Ground
 FACTOR: 1.59 DATUM:

CLIENT: Breakwater Trust
 PROJECT: 29C Koropewa Road, Waipapa
 SITE LOCATION: Lot 2 DP 202022, 29C Koropewa Road, Waipapa

STRATIGRAPHY	SOIL DESCRIPTION	LEGEND	DEPTH (m)	WATER	SHEAR VANE				COMMENTS, SAMPLES, OTHER TESTS
					PEAK STRENGTH (kPa)	REMOULD STRENGTH (kPa)	SENSITIVITY	DCP - SCALA (Blows / mm)	
	Topsoil		0.0 - 0.2						
	NATURAL: Clayey SILT, light brown orange, dark reddish brown, very stiff, moist, slightly plastic		0.2 - 1.4						
	Silty CLAY, minor fine to medium sand, trace fine angular gravel, brown grey to grey, purple grey with orange and pink mottles, very stiff, moist, slightly plastic		1.4 - 3.4						
	Slightly Clayey SILT, minor fine to medium sand, trace fine angular gravel, purple grey to grey with light orange and pink streaks, very stiff, moist to wet, very slightly plastic		3.4 - 5.0						
	EOH: 5.00m - Target Depth		5.0						
			0.2						
			0.4		223+	-	-		
			0.6						
			0.8		UTP	-	-		
			1.0						
			1.2		223+	-	-		
			1.4						
			1.6		183	103	1.8		
			1.8						
			2.0		191	111	1.7		
			2.2						
			2.4		178	105	1.7		
			2.6						
			2.8		159	76	2.1		
			3.0						
			3.2		113	80	1.4		
			3.4						
			3.6		223+	-	-		
			3.8						
			4.0		175	35	5.0		
			4.2						
			4.4		143	45	3.2		
			4.6						
			4.8		UTP	-	-		
			5.0		UTP	-	-		

REMARKS
 End of borehole @ 5.00m (Target Depth: 5.00m)
 Groundwater encountered @ 3.50m during drilling. Standing groundwater @ 4.40m.

Target Depth

LOGGED BY: NG
 CHECKED BY: NA

▼ Standing groundwater level
 ▽ GW while drilling



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29 KOROPEWA ROAD, WAIPAPA

LOT 3 DP 202022

DETAILED SITE INVESTIGATION

Job number 2022 548

Prepared for

BREAKWATER TRUST

Consultation

HAIL Reports

Ecological
Assessments

Resource Consent
Applications

Compliance
Monitoring

Water Quality
Monitoring

Environmental
Management

Pest Reduction
Advice

Enrichment
Planting

Restoration
Advice

NZEM Quality System:

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- Appendix A: Figures**
- Appendix B: Conceptual Site Model**
- Appendix C: Property Title**
- Appendix D: NRC Selected Land Use Register**
- Appendix E: Aerial Photographs**
- Appendix F: Contemporary Site Photographs**
- Appendix G: Sampling and Analysis Plan**
- Appendix H: Laboratory Results and Chain of Custody**
- Appendix I: Reference Tables**
- Appendix J: Statement of Qualification as a SQEP**

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EXECUTIVE SUMMARY

The property is located at 29 Koropewa Road, Waipapa and has legal description of Lot 3 DP 202022.

It is planned to subdivide the existing Lots into thirteen new Lots in two Stages. Stage one will involve the creation of three residential sized lots with the balance of the site making up the fourth Lot. Stage two will see the development of an additional seven residential sized lots and an esplanade reserve. The commercial land-use on the bulk of the property (labelled proposed Lot 4 in Stage 1 and proposed Lot 11 in Stage 2), will remain unchanged and was covered off by a PSI undertaken in 2020.

The property has a land use history of citrus and kiwifruit orcharding. All of the property would be assessed as the 'Piece of Land'.

The applicable HAIL categories considered were:

A10 - Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds, and

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.

The piece of land over which the HAIL activities have been carried out covers ~6.1368 ha, the Area of Investigation covers 24,323 m².

Following a desktop study of the property, a site visit with soil sampling was carried out in August 2022. Systematic sampling was undertaken over proposed Lots 1 to 10 (Stage 2 plan).

All sampling results reported the concentration of the identified contaminants of interest at or below the applicable soil guideline value for the most conservative Rural / lifestyle block with 25% produce land-use scenario. A review of the conceptual site model indicates the source – pathway – receptor linkages are incomplete as no source contamination above guideline was identified.

The results of this DSI indicate that soils at Lot 3 DP 202022 are highly unlikely to pose a risk to human health if the proposed sub-division is undertaken in two stages, with subsequent change in land-use to residential in area of proposed Lots 1 to 3 (Stage 1 plan) or on Lots 1 to 10 (Stage 2 plan).

Version one of this report was produced in September 2022 and addressed a scheme plan comparable to the Stage 2 plan referenced in this report. This report was updated in September 2023 to reflect the staged scheme plans and calculated earthworks volumes.

1. INTRODUCTION

1.1 INVESTIGATION OBJECTIVES

NZ Environmental Management Ltd (NZEM) was engaged by Breakwater Trust to undertake a Detailed Site Investigation (DSI) on Lot 3 DP 202022, located at 29 Koropewa Road, Waipapa. The DSI was undertaken in accordance with the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health, 2011 (NESCS). The investigation was undertaken as part of a subdivision application and assesses whether there is any risk to human health on the property if it is used for residential living. The DSI provides information on:

- a) Site information (history and use),
- b) Any likely contaminants from current and historical chemical use, and
- c) Information concerning the location, nature, level and extent of any contamination (i.e. site characterisation).

Information gathered as part of this DSI found that Lot 3 DP 202022 comprises a 6.2234 ha site, listed by the FNDC as having rural production zoning.

The property has a history of orchard use. The HAIL activities considered were:

A10 - Chemical manufacture, application, and bulk storage – Persistent pesticide bulk storage or use including sports turfs, market gardens, orchards, glass houses or spray sheds.

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.

1.2 SITE IDENTIFICATION

Lot 3 DP 202022 is located at 29 Koropewa Road, Waipapa (-35.204058 173.909127).

The site is located on the south side of Koropewa Road, 300m from the intersection of Koropewa Road and Pungaere Road.

Aerial photographs are included in Appendix E.

Certificate of Title is given in Appendix C.

1.3 PROPOSED SITE USE

Stage One

It is proposed to subdivide the existing lot into four new Lots. Proposed Lots 1 to proposed Lot 4 (Appendix A 1).

Proposed Lot 1 (3510 m²). This proposed Lot is the location of the existing sheds and polyhouse. The proposed land use is residential.

Proposed Lot 2 (2430 m²). This proposed Lot is located on land that was previously used for orcharding. The proposed land use is residential.

Proposed Lot 3 (2150 m²). This proposed Lot is located on land that was previously used for orcharding. The proposed land use is residential.

Proposed Lot 4 (5.41 ha). This proposed Lot is located on land that was previously used for orcharding. A portion of this Lot is in commercial use.

Stage Two

It is proposed to further subdivide the existing lot into an additional eight new Lots - proposed Lots 4 to Lot 12 (Note: Lot 4 differs between two scheme plans) (Appendix A 2).

Proposed Lots 1 to 3 as per Stage one.

Proposed Lot 4 (2150 m²). This proposed Lot is located on land that was previously used for orcharding. The proposed land use is residential.

Proposed Lot 5 (2920 m²). This proposed Lot is located on land that was previously used for orcharding. The proposed land use is residential.

Proposed Lot 6 (2810 m²). This proposed Lot is located on land that was previously used for orcharding. The proposed land use is residential.

Proposed Lot 7 (2452 m²). This proposed Lot is located on land that was previously used for orcharding. The proposed land use is residential.

Proposed Lot 8 (2415 m²). This proposed Lot is located on land that was previously used for orcharding. The proposed land use is residential.

Proposed Lot 9 (2238 m²). This proposed Lot is located on land that was previously used for orcharding. The proposed land use is residential.

Proposed Lot 10 (2150 m²). This proposed Lot is located on land that was previously used for orcharding. The proposed land use is residential.

Proposed Lot 11 (3.61 ha). This proposed Lot is located on land that was previously used for orcharding. The land use is in commercial use. This proposed Lot is outside the scope of this investigation.

Proposed Lot 12 (864m²). Esplanade reserve.

All of the above proposed Lots would be considered a Piece of Land excluding proposed Lot 12.

2. SITE DESCRIPTION

2.1 ENVIRONMENTAL SETTING

2.1.1 GEOLOGY AND HYDROLOGY

Soil on the area of investigation within the Site is an Orthic oxidic¹ soil which is mapped as Pungaere gravelly friable clay². The soils are described as being very thin and have a strongly developed, nutty structure that is stable when wet but easily destroyed when dry. Leaching is strong to very strong, and the soils are easily damaged by over-cultivation or compaction in summer. The drainage is described as moderately drained (NRC Soil fact sheets 8.1.3).

The basement geology is Kerikeri Volcanic Group Late Miocene basalt of Kaikohe - Bay of Islands Volcanic Field³.

The contour is gently sloping to the south with the surface drainage patterns shown in Appendix A 7.

Drinking water is derived from rainwater. Irrigation water supply is available on site.

The Kerikeri River defines the southern boundary of Lot 3 DP 202022 and the Whiriwhiritoa Stream is located 90m to the east. According to FNDC maps approximately 500m² of the southern portion of the property could be impacted by a 1:100 flood event from the Kerikeri River⁴ (Appendix A 4).

The property is located over the Kerikeri aquifer. The nearest groundwater bore is located 205m to the north of the Lot. This bore was drilled to 31.9m with the water table at the time of drilling 11.1m bgl (LOC.326665). A bore drilled in 1995 is located 250m to the north. This bore is 57m deep with a water depth of 13.5m bgl at drilling (LOC.203243). A third bore is located 470m to the south and is 109m deep. When this bore was commissioned in 2010 the water was 12m bgl (LOC.210405).

2.2 SITE INSPECTION

A site inspection (walkover) was carried out by H. Windsor on 31 August 2022. Weather conditions at the time of inspection overcast and showery. Photographs were taken and shown in Appendix D.

An aerial photograph taken in July 2022 shows the contemporary site layout minus the shed which has been constructed on the gravel pad since that time (Appendix E 11).

2.2.1 SITE LAYOUT

Lot 3 DP 202022 is an approximately triangular shaped property. Proposed new Lots 1 – 3 (Stage one), and proposed Lots 1 -10 (Stage two)) are located in the north area of the property, near the entrance along the Koropewa Road boundary (Appendix A 1).

¹ <https://soils-maps.landcareresearch.co.nz/>

² <https://nrcgis.maps.arcgis.com/apps/webappviewer/index.html?id=fd6bac88893049e1beae97c3467408a9>

³ <https://data.gns.cri.nz/geology/>

⁴ <https://nrcgis.maps.arcgis.com/apps/webappviewer/index.html?id=81b958563a2c40ec89f2f60efc99b13b>

2.2.2 CURRENT SITE USES

The property is currently largely fallow. Platforms have been formed and gravelled on which a shed for commercial boat building has been constructed on proposed Lot 4⁵ (Stage one plan). The building on Proposed Lot 1 is tenanted for residential use (Appendix F 2). The remainder of the site is in rank grass.

2.2.3 SITE CONDITION AND SURROUNDING ENVIRONMENT

The property is primarily in rank grass cover (Appendix F 1), with power poles and lines crossing from the entrance along the proposed boundary lines of proposed Lots 10 and 3 - 6 (Stage 2 plan).

The area of proposed Lot 1 contains a shed building which has residential living quarters, a lean-to shed and a polyhouse which was being utilised (Appendix F 2).

No staining or odour was noted during the site visit. A small fire area was identified in the location of ~ proposed Lot 7 (Stage 2 plan) and pallets were stacked in this location (Appendix F 3). A pile of soil and posts was located in the area of proposed Lot 9 (Stage 2 plan) (Appendix F 4) and a number of long shelterbelt support poles were lying on the ground having recently been removed from the ground (Appendix F 6).

All the outer boundaries were lined with shelterbelt trees, predominantly bamboo and Japanese cypress.

Surrounding land use is a mix of residential, lifestyle and production land. According to NRC maps the land is not erosion prone⁶.

⁵ This building has been undertaken since site visit.

⁶ <https://localmaps.nrc.govt.nz/localmapsviewer/?map=79f54a18dcae4fbd9e1cf774aa2de871#>

3. HISTORICAL SITE USE

3.1 SUMMARY OF SITE HISTORY

The history of the land was obtained by reviewing council property files, aerial photographs, and title information, from the Preliminary Site Investigation and from discussion with the current landowner.

Information regarding the title information is summarised in Appendix I 3. Aerial photographs are provided in Appendix E.

The rohe map on Te Puni Kokiri show the location of the property as being within the Nga Puhī rohe.

Aerial photographs are provided in Appendix E with a summary table in Appendix E 12.

Aerial photographs show the site in pasture from the 1950's until the mid-1970's (Appendix E 1 – E 3). The landowner JD Lundemann planted the first orchard trees/vines between 1975 and 1977. An aerial photograph taken in 1977 shows citrus orchard planting in the north of the property (Appendix E 3). By 1981 the Lot is fully planted in orchard trees, possibly in a mix of kiwifruit and citrus (Appendix E 4).

When Barry Darlington purchased the property in 2000 the Lot was (likely) planted entirely in kiwifruit (Appendix A 5 & A 6). Between 2003 and 2009 shelterbelt trees were removed and replaced by shade cloth shelter rows and the shed, which was originally built in ~1995, was extended. An implement lean-to shed was built along the Koropewa Road boundary; a permit for this shed was not sighted in the FNDC property file.

Barry Darlington died in 2014 and the property passed to his son Murray. A garden was established, and a polyhouse was constructed close to the existing shed, in which bananas and feijoas were grown. Between 2015 and 2017 the kiwifruit infrastructure was removed although the windbreak material shelterbelts remained. Murray Darlington passed away in 2018 and the property has had minimal input or maintenance until the present time (pers. comm., Maria Vlug).

Between 2021 and 2022 the windbreak material shelterbelts were removed and building platforms formed in the area of proposed Lot 11 (Stage 2 scheme plan) (Appendix E 10).

Up until the mid-1970's, a range of persistent organochlorine (e.g. DDT and dieldrin) and metal-based pesticides (e.g. lead arsenate and mercury-based compounds) were extensively used on agriculture and on horticultural crops in New Zealand. Spray schedules were recommended by growers' advisory groups, marketing boards and chemical supply companies (Gaw et al. 2013). Many chemicals that would be most persistent in soils, such as DDT, were subsequently banned and/or withdrawn from use (Pattle et al. 2007). Chemical use on citrus in the Kerikeri area, was generally restricted to use of oils and copper sprays (pers. comm., Joan Jurisich (ex-plant nursery grower Kerikeri)).

In the 1980's until 1992 kiwifruit vines in New Zealand were generally sprayed throughout the season as required to manage pests and disease. Sprays were generally hydrogen cyanamide type sprays such as Hi-Cane to promote budbreak, with some use of organophosphate pesticides. General application over this period may also have included fertilisers such as manganese sulphate, Calmag, sulphate of potash, CAN and superphosphate. After 1992 there was a reduced amount of fungicides sprayed and a move toward more "soft" pesticides.

The Site was not listed on the NRC selected land use register in September 2022 but following submission of Version 1 of this report to the NRC, it was entered onto the selected land use database under categories A10 and I. There were two incidents lodged against the Site in the property files, however they are not relevant to this investigation (Appendix D). A summary of land use history is shown in Appendix I 4. A summary of information obtained from FNDC property file is tabled in Appendix I 2.

3.1.1 Previous Investigation

A Preliminary Site Investigation was carried out by NZE staff on Lot 3 DP 202022 in 2020⁷ to support pre-purchase due diligence. Sampling for heavy metals and pesticides was carried out around the existing buildings, the water riser area and in general orchard areas where future building was anticipated.

- The HAIL section identified was A. 10. Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds.
- Eleven samples were collected and analysed and compared to the NESCS commercial land use scenario. All results were compliant with this standard.
- When compared to the NESCS Rural / lifestyle block 25% produce land use scenario all results were compliant (2020 lab results shown in Appendix H).
- Four of the samples were collected within the proposed Lot 1 area of this DSI, however none were collected in the areas of proposed Lots 2 to 10 (Stage 2 scheme plan, Appendix A 2, Appendix A 7).

⁷ NZ Environmental, 2020. Preliminary Site Investigation, 29 Koropewa Road. Report 2020 397.

4. SAMPLING AND ANALYSIS PLAN SUMMARY

4.1 SAMPLING DESIGN PLAN

The 'Piece of Land' identified in this investigation includes all of the site excluding the area of proposed esplanade reserve (Appendix A 2).

Sampling and analysis (of the identified contaminants of concern) was undertaken as part of the DSI. The aim of the sampling is to:

- determine the presence of and/or general extent of any soil contamination and the potential adverse impact of such contamination on human health, and
- obtain sufficient information to make an estimate of risk posed by contamination to human health.

As per NESCS 2012 requirements, standards only need to be developed for the contaminants of interest (COI) for the piece of land, given the activities and industries that have occurred or likely to have occurred. Based on the land use summary, the following NESCS priority contaminants were considered as potential COI for 29 Koropewa Road, Waipapa:

- Metals (including arsenic, cadmium and copper)

Sampling undertaken during the PSI in 2020 indicated pesticides were not a COI. There were no indications of likely fuel storage in or around the Lot and as such hydrocarbons were not considered contaminants of interest (COI) ⁸.

NZEM utilise a qualitative screening approach to the selection of the COI that although does not guarantee that other hazardous substances are not present in the land, it does indicate a lower probability that those contaminants will occur in the soil (MfE 2011).

The land-use history obtained as part of this investigation indicates that potential contaminants would likely be confined to the area of use.

- Systematic sampling was utilised to inform the Conceptual Site Model (CSM) and the risk assessment. The grid was designed to detect a hotspot of 20m radius.
- One target sample was collected in an identified fire area.
- The Sampling and Analysis Plan is shown in Appendix G.
- Sampling was carried out using a stainless-steel spade (grab technique).
- Most samples were collected from a depth of between 0-150mm.
- Depth samples at 0.3m and 0.5m were collected with a hand auger.
- Two of the systematic samples were collected proximate to holes where CCA treated timber had recently been removed from the ground.
- One sample was collected proximate to a pile of soil and timber posts.

⁸ Other potential COI such as BaP, dioxins and PCP were not considered applicable as orchards are not considered as one of the hazardous activities or industries such as timber treatment, coal fired power generation, chemical manufacture etc that are more normally associated with BaP, dioxins and PCP.

- One sample was collected proximate to a removed shelterbelt support pole lying on the ground.
- Field screening techniques were not utilised.
- Background samples were not collected.

4.2 FIELD AND LABORATORY QUALITY ASSURANCE/ QUALITY CONTROL

To avoid cross contamination, disposable nitrile gloves were worn during sampling and changed between every sample. Sampling equipment was cleaned between each sample as per section 5.3 of MfE 2021, Contaminated Land Management Guidelines No 5.

The labelled samples were couriered to Hill Laboratories under chain of custody documentation (Appendix H). As per the contaminants of interest identified as part of the DSI, the laboratory was instructed, where applicable, to analyse the sample for COI.

- Twenty-four of the field samples were analysed for heavy metals.

Two duplicates were collected as part of this DSI. The field duplicates were collected at the same time as the primary soil samples using the same procedures.

- Quality assurance (QA) sample 548022 was collected as a duplicate of soil sample 548004.
- Quality assurance (QA) sample 548023 was collected as a duplicate of soil sample 548017.

All samples are kept in storage for two months by the laboratory in case re-analysis of the samples is required.

Laboratory testing was carried out by Hills Laboratories Ltd. The lab is an NZS/ISO/IEC 17025:2005 accredited laboratory which incorporates the aspects of ISO 9000 relevant to testing laboratories. Original laboratory transcripts are attached to this report (Appendix H).

5. SAMPLING RESULTS

5.1 SOIL SAMPLING

A total of twenty-five samples were collected over the part of the site with potential change in landuse to residential (proposed Lots 1 – 10 as per Stage 2 scheme plan which included proposed Lots 1 – 3 from Stage one scheme plan). Sampling included two duplicates and two depth samples. Samples were collected by H. Windsor on 31 August 2022. Samples were primarily collected as systematic samples as per the Sampling and Analysis Plan (Appendix G).

- Soils were largely collected as per the plan, with additional sampling undertaken.
- One additional targeted sample was collected in an identified fire area.
- Two depth samples were collected at 0.3m and 0.5m bgl. The 0.3m sample was analysed by the lab and the 0.5m was held by the lab.

5.2 FIELD OBSERVATIONS

A table showing the GPS location and log of sampled soils is shown in Appendix I 1 and Appendix I 6.

5.3 BASIS FOR GUIDELINE VALUES

The laboratory results are compared to the Soil Contaminant Standards, (SCS_{health}), at which exposure is judged to be acceptable because any adverse effects on human health for most people are likely to be no more than minor. The SCS_{health} , have been calculated for five generic land-use exposure types to reflect different land use scenarios.

The scenario used for assessing SCS_{health} in Version 2 of this DSI was: Rural / lifestyle block. Rural residential land use, including home-grown produce consumption (25 percent). Applicable to the residential vicinity of farm houses for protection of farming families, but not the productive parts of agricultural land.

The scenario used for assessing SCS_{health} in Version 1 of this DSI was: Residential - Standard residential lot, for single dwelling sites with gardens, including homegrown produce consumption (10 per cent). Although the zoning is Rural Production, this scenario was chosen as applicable due to the size of proposed Lots 1 – 10 and close residential land-use (as per Stage 2 scheme plan).

In early August 2023 NZE were asked to reassess the site with respect to the Rural / lifestyle block guideline values as a build pre subdivision was proposed and as such the land area was greater, and this guideline value was considered more applicable. To cover off any future potential changes, this, the most stringent guideline was applied to this version (Version 2) of the report.

$SCS_{(health)}$, have two functions:

- 1) Health-based trigger values - SCS_{health} , represent a human health risk threshold above which:
 - a) The effects on human health may be unacceptable over time,
 - b) Further assessment of a site is required to be undertaken.

- 2) Remediation targets - SCS_{health} , represent the maximum concentrations of contaminants at or beneath which land is considered 'safe for human use' and the risk to people is considered to be acceptable.

5.4 BACKGROUND CONCENTRATIONS

Predicted Background Concentration (PBC) estimates of the background concentration (mg/kg) of arsenic, cadmium, chromium, copper, lead, nickel and zinc across New Zealand are available by Landcare Research on the Land Resource Information Systems portal NZ⁹. The effective median, and 95th quantile is calculated based on geological unit classification (Appendix A 5). For Northland, however the numbers of samples these values are based on are limited and to our understanding, the FNDC do not accept these background figures at this time.

More statistically robust background concentrations are available for volcanic soils for the Auckland region and includes some data from northland soils. These are shown in Appendix A 5 and Table 1.

5.5 RESULTS

The laboratory tests undertaken show the concentrations of the selected NES analytes. The results are summarised in Table 1. All values are mg/kg dry weight. The laboratory report is given in Appendix H.

The laboratory results were compared to the NESCS 2012 soil contaminant standard values, at which exposure is judged to be acceptable because any adverse effects on human health for most people are likely to be no more than minor.

- A total of twenty-five samples were collected across the site, of which twenty-four were analysed.
- When compared to the NESCS applicable standard Rural / lifestyle block (2012), soil chemistry showed all results for compliant with applicable standard.
- Samples collected in the fire pile (548024) and proximate to post holes (548015, 548018) and posts storage (548014, 548019) returned results well below the applicable guideline values.

⁹ <https://iris.scinfo.org.nz/layer/48470-abc-predicted-background-soil-concentrations-new-zealand/>

Table 1 – Laboratory Results

31/08/2022	Total Recoverable Arsenic	Total Recoverable Cadmium	Total Recoverable Chromium	Total Recoverable Copper	Total Recoverable Lead
	As	Cd	Cr	Cu	Pb
All values reported as dry weight	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Detection limit	2	0.1	0.4	2	0.4
548001	3	0.36	132	39	11
548002	17	0.16	84	40	12
548003	<2	<0.10	162	22	9
548004	2	0.66	134	49	10
548005	5	0.43	91	42	6
548006	4	0.50	127	32	9
548007	2	<0.10	156	26	10
548008	6	0.61	106	45	9
548009	4	0.58	109	37	7
548010	12	0.16	138	35	10
548011	5	0.53	119	39	7
548012	9	0.53	122	70	9
548013	3	0.30	95	30	8
548014	5	0.38	102	29	9
548015	7	0.71	124	35	8
548016	8	0.63	108	46	7
548017	4	0.52	80	37	8
548018	4	0.47	72	41	12
548019	4	0.38	104	32	8
548020	4	0.42	79	67	7
548021	3	0.47	90	29	8
548022	3	0.65	145	51	8
548023 (0.3m depth)	4	0.52	78	38	8
548024 (fire)	5	0.65	104	47	10
NES Soil Guideline Values April 2012					
Rural residential/lifestyle block 25% produce	17	0.80	290	>10000	160
Background Auckland Volcanic Soils	0.4 - 12	<0.1 - 0.65	3 - 125	20 - 90	<1.5 - 65
95% UCL (n=21)	5 ± 2	0.4 ± 0.1	111 ± 11	39 ± 5	9 ± 1
mean	5	0.4	111	39	9
minimum	2	0.2	72	22	6
maximum	17	0.7	162	70	12

5.5.1 Statistical Analysis of Results

- As all returned results were compliant with the applicable standards.
- Statistical analysis of the results is shown in Table 1. All result for 95% UCL are below applicable standard.
- Quality assurance sampling showed the percentage variability between all samples ranged from 0% to 40%. Variability of less than 30% to 50% would be considered acceptable with the noted variability between all samples within this range. Variability can be used to represent the analytical precision (or uncertainty in analytical results) and can better define the area around the guideline value where analytical results are ambiguous (MfE 2011, Guideline No 5). The soil chemistry and variability are considered representative of the soils at the site.

6. SOIL DISTURBANCE

Soil Regulation 8(3) of the NESCS does allow for relatively small-scale soil disturbance that may occur on land, such as minor landscaping, foundation excavations, and replacement of underground services, to occur without the need for resource consent (MfE 2011). Providing the requirements around controlling exposure and disposal are met, the disturbance and removal of lower volumes of soil is considered a low-risk activity.

The NESCS requires that:

- a) Controls are in place to minimise people's contact (for example, in dust or water) with the soil and kept in place until soil is reinstated.
- b) Soil reinstated to erosion resistant state within 1 month (for example, foundations laid, access metalled, grass sown or garden mulched).
- c) Integrity of soil containing structures are not compromised.
- d) Soil taken to authorised facility regulation 8(3e). The closest is Puwera Landfill.
- e) Soil disturbed is less than 25 m³ (in-situ volume) per 500 m² of land per year (not including samples for lab testing).
- f) Soil removed is less than 5 m³ (in-situ volume) per 500 m² of land per year.
- g) Activity duration less than 2 months.

For this site:

- Earthworks have been calculated for both Stages of the subdivision and are shown in Appendix I 7.
- Earthworks associated with any future builds are unknown.
- Calculated allowable earthworks volumes as per e) and f) above are tabled in Appendix I 5.
- For Stage one a cut volume of 451m³ has been calculated with an allowable volume of ~3068m³.
- For Stage two a cut volume of 704.8m³ has been calculated with an allowable volume of ~2664m³ (excluding Stage one Lots and esplanade).
- Earthworks volumes (cut volume) are below regulation 8(3) for both Stage one and Stage two earthworks either separately or if undertaken concurrently. As such a resource consent is not required unless soil is removed from site at quantities greater than that shown in Appendix I 5.
- A Site Management Plan is not required for managing COI as no contamination above applicable standard was identified.

7. RISK ASSESSMENT

The NESCS identifies contaminants as a problem when the contaminants are at a concentration and a place where they have, or are reasonably likely to have, an adverse effect on human health and the environment (NESCS 2012). The NESCS 2012 further states that a key decider under the NESCS is whether, under the intended land-use, the exposure to soil is reasonably likely to harm human health.

7.1 CONCEPTUAL SITE MODEL

A Conceptual Site Model (CSM) was developed and shown in Appendix B.

The CSM for 29 Koropewa Road, Waipapa was based on a review of available title information, aerial photographs, the site history, council records, a site inspection and soil sampling results.

Land use on area of investigation at 29 Koropewa Road, Waipapa comprises:

a) Pre 1975	Pastoral	- Consider fertiliser and pesticide use A10.
b) 1975 - 2017	Citrus and kiwifruit orchard	- Consider fertiliser and pesticide use A10. Leaching from CCA I.
c) 2017 - present	Fallow	- Consider accidental discharge from fires

The current potential pathways and/or receptors identified include direct dermal contact with chemicals in soil through play or contact with soil during maintenance, crop uptake of chemicals from soil leading to ingestion and dermal contact or dust inhalation associated with earthworks (Appendix B).

No priority pathways such as sand layers or buried pipelines were identified in the Area of Investigation.

7.2 CONTAMINANT CHARACTERISATION

This DSI was undertaken to characterise the extent of any elevated COI within the soil on the proposed Lots 1 to Lot 11 area of Lot 3 DP 202022 (Stage two plan). Systematic soil sampling across this area which returned results within the Rural / lifestyle block 25% land-use scenario, indicating that the soil would not be considered as contaminated from past HAIL land use under the NESCS.

The likelihood that the contaminant poses a risk to any receptors is low.

7.3 RISK SUMMARY

The risk to human health within the Area of Investigation located at 29 Koropewa Road, Waipapa, was assessed in the context of the proposed site use; that of Residential land use.

- Soils disturbance volumes associated with the subdivision are below the regulation 8(3) requirements, assuming all soil remains on site.
- The concentrations of COI are below the most conservative Rural / lifestyle block 25% guideline values.
- A review of the Conceptual Site Model shows there is no source contamination and as such the source – receptor - pathway linkages are incomplete.
- Pursuant to regulation 9 (3)(b) - *it is demonstrated that soil contamination does not exceed the applicable standard in regulation 7.*

8. DISCUSSION

This DSI was undertaken to determine if soil within the Area of Investigation on Lot 3 DP 202022 is contaminated, and information contained within this report is considered appropriate to the nature of the proposed activity, the level of certainty and availability of information about the past use of the land, the contaminants present (or potentially present), and the level of risk posed.

The information collated in this DSI indicates the following results:

- The land has a history of citrus and kiwifruit orcharding.
- The site is listed on the NRC Selected Land Use Register under categories A10 and I.
- The HAIL categories in the Area of Investigation were identified as *A10 - Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds*, and *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*.
- The 'Piece of Land' identified as HAIL site on Lot 3 DP 202022 under category A.10 comprises 61,368 m². As such 3,068 m³ of soil disturbance is permitted and 614 m³ of soil removal is permitted per year to meet the requirements of Section 6 above (regulation 8(3)).
- Earthworks cut volumes as part of Stage one of the proposed subdivision are calculated at 451m³. Soil will not be removed from site.
- Earthworks cut volumes as part of Stage two of the proposed subdivision are calculated at 1858m³. Soil will not be removed from site.
- A total of twenty-five samples were collected in soils at the site. As per the identified contaminants of interest, metals were analysed by Hill Laboratories in twenty-four of those samples with the remaining (0.5m depth) sample held by the laboratory.
- The guideline value chosen as applicable was Rural / lifestyle block with 25% produce land-use scenario.
- The soil chemistry analyses show all results below the applicable standard.
- A review of the conceptual site model following this investigation shows that the source – exposure – receptor linkages are incomplete, and no source contamination was considered to be present.

9. CONCLUSIONS

A study of the history of the land, including sampling and analysis of the soils, on the Area of Investigation on Lot 3 DP 202022 was undertaken in August 2022. Additional information gathered in a previous site investigation in 2020 was also referenced.

- The data set is appropriate for statistical calculations as per Contaminated Land Management Guideline No.5 (2021) Appendix G.
- All reported concentrations are at or below the applicable guideline values.
- The QA/QC replicate assessment indicates the data is suitable for the purposes of the investigation.

As such soil contamination does not exceed the applicable standard for NESCS purposes (Contaminated Land Management Guidelines No.5, (2021) 7.4.2).

As per regulation 9 (3)(b) - *it is demonstrated that soil contamination does not exceed the applicable standard in NESCS regulation 7.*

- Therefore, it is *highly unlikely* that the proposed subdivision with any subsequent change of use and soil disturbance of Lot 3 DP 202022 poses a risk to human health.
- The proposed Staged subdivision may be assessed as a Controlled Activity.

10. RECOMMENDATIONS

It is recommended that no further fires are lit on the site and all tanalised or CCA treated timber and rubbish such as shade cloth are removed from the area and disposed of either at an approved facility or stored under cover.

11. REPORT LIMITATIONS

This DSI report was carried out to characterise soil chemistry on the Proposed Lots areas as per subdivision plan provided for DSI Version 1 in 2022 (Appendix A 3). The Stage 2 plan provide in September 2023 (Appendix A 2) closely resembles this subdivision plan and as such the soil sampling plan utilised in 2022 is considered appropriate to inform Version 2 of this report. No change in land use has occurred between September 2022 and September 2023 with the land remaining fallow in the sampling area.

The laboratory test results provide an approximation of the concentration of the analytes tested in the soil and are subject to the limitations inherent to the laboratory techniques used.

Depth sampling was undertaken, and results were within the applicable standard at 0.3m depth. Analysis of 0.5m depth sample was not undertaken.

The information in this document is based on publicly available documents which were presumed to be accurate.

With time the site conditions and applicable environmental standards may change and as such the report conclusions may not apply at a future date.

Any future land use change on the Area of Investigation may require further investigation.

NZ Environmental Management will not be held liable for any future discovery of isolated hot spots or discharge unknown at the time of sampling, such as buried drums of chemicals.

12. SQEP CERTIFICATE OF REPORT

DETAILED SITE INVESTIGATION CERTIFYING STATEMENT

I, Heather Windsor of NZ Environmental Management Ltd, certify that:

1. This Detailed 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 (the NESCS) because it has been:

- done by a suitably qualified and experienced practitioner, and
- done in accordance with the current edition of Contaminated Land Management Guidelines No 5 – Site investigation and analysis of soils, and
- reported on in accordance with the current edition of Contaminated Land Management Guidelines No 1 – Reporting on contaminated sites in New Zealand, and
- the report is certified by a suitably qualified and experienced practitioner.

2. This detailed site investigation concludes that: For activities under R9 of the NESCS (controlled activity)] does not exceed the applicable standard in Regulation 7 of the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations

Evidence of the qualifications and experience of the suitably qualified and experienced practitioner(s) who have done this investigation and certified this report is appended to this detailed site investigation report (Appendix J).

Signed and dated:



4 September 2023

13. BIBLIOGRAPHY & REFERENCES

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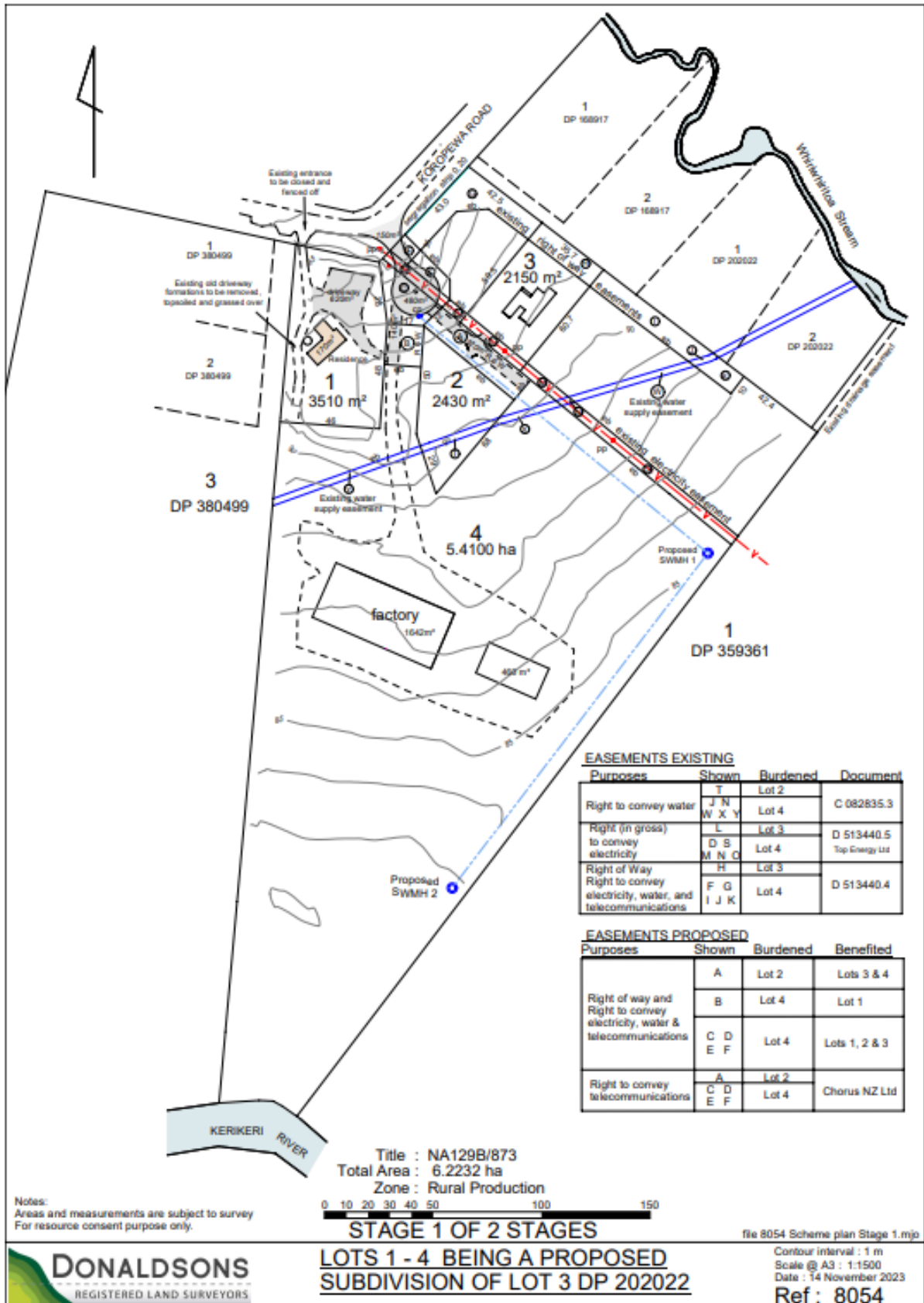
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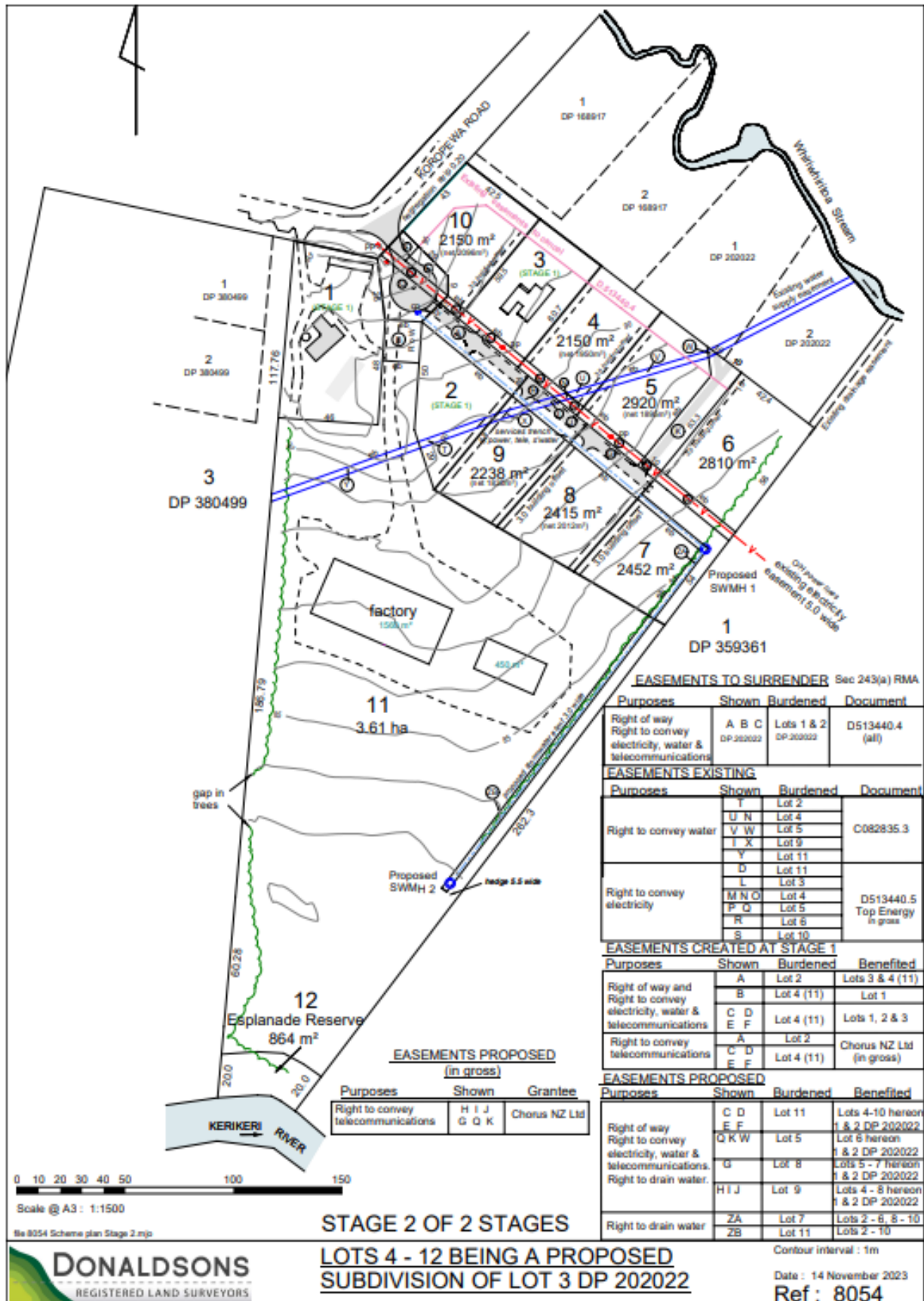
14. GLOSSARY

Area of Interest	An area or target within the piece of land identified as having hazardous substances on or in it at elevated levels or above background. Reported concentrations are below the soil contaminant standards for the applicable land use scenario with in-situ soils unlikely to pose a risk to human health. May require further investigation, management, or remediation for more conservative land use scenarios (largely applicable to soil removal offsite).
Area of Investigation	Location within a Piece of Land upon which there is a proposed change in land use.
Control Area	An investigated and defined area of contaminated soil on a piece of land, with hazardous substances in or on it that are above the soil contaminant standards for the applicable land use scenario and where the contaminants are reasonably likely to have adverse effects on the human health. The control area is reported as an area requiring remediation or management.
COI	Contaminants of Interest
CSM	Conceptual Site Model
DSI	Detailed Site Investigation
FNDC	Far North District Council
HAIL	Hazardous Activities and Industries List
mg/kg	Milligrams per kilogram
NES	National Environmental Standard
NESCS	Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011
NZKGI	New Zealand Kiwifruit Growers Incorporated
NZMS	New Zealand Map Series
NRC	Northland Regional Council
OCP	Organochlorine Pesticides
Piece of Land	The NESCS applies to any “piece of land” on which an activity or industry described in the current edition of the Hazardous Activities and Industries List (HAIL) is being undertaken, has been undertaken or is more likely than not to have been undertaken (see regulation 5(7)).
PSI	Preliminary Site Investigation
ppm	Parts per million
RAP	Remediation Action Plan
SVR	Site Validation Report
UCL	Upper Confidence Limit

APPENDIX A
Figures



A 1 – Stage 1 Scheme Plan



A 2 – Stage 2 Scheme Plan



A 3 – Draft Subdivision Scheme Plan provided 2022 (used in DSI version 1)



- River Flood Hazard Zone 1 - one-in-10-year flood extent: an area with a 10% chance of flooding annually
- River Flood Hazard Zone 2 - one-in-50-year flood extent: an area with a 2% chance of flooding annually
- River Flood Hazard Zone 3 - one-in-100-year flood extent: an area with a 1% chance of flooding annually

A 4 – NRC flood map

Element (Total Recoverable)	Non-Volcanic Range	Volcanic Range
Arsenic (As)	0.4 – 12	
Barium (Ba)	8 – 350	
Boron (B)	2 - 45	<2 – 260
Cadmium (Cd)	< 0.1 – 0.65	
Chromium (Cr)	2 – 55	3 – 125*
Cobalt (Co)	0.2 – 35	10 – 170
Copper (Cu)	1 – 45	20 – 90
Lead (Pb)	< 1.5 – 65*	
Magnesium (Mg)	470 – 10,300	190 – 76,600
Manganese (Mn)	10 – 2,500*	
Mercury (Hg)	<0.03 – 0.45	
Nickel (Ni)	0.9 – 35	4 – 320
Nitrogen (total, N)	300 – 8,500	
Phosphorus (P)	75 – 1,220	245 – 3,730
Potassium (K)	220 – 3,660	
Sulphur (S)	85 – 2,300	
Tin (Sn)	< 0.7 – 4*	
Vanadium (V)	8 – 160*	15 – 370
Zinc (Zn)	9 – 180	54 – 1,160
Total Organic Carbon (TOC)	0.6 – 14%	

- Notes:
- Background ranges for major elements (N, P, S, TOC) include statistical outlier and extreme values outside the non-outlier volcanic soil range. All other elements do not include values obtained that were statistical outliers or extremes outside the non-outlier volcanic soil range.
 - *Work suggests special cases have been found to apply for Tl Point Basalts (Cr), Mt Smart Volcanics (Pb, Sn), Franklin Basalts (Sn), and Awhitu-type Mineral Sands (Mn, V) and as such these lithologies need to be considered individually.

A 5 – Background Soil Concentrations –Soil in Auckland Region (Table 3 from ARC technical publication No. 153, October 2001).



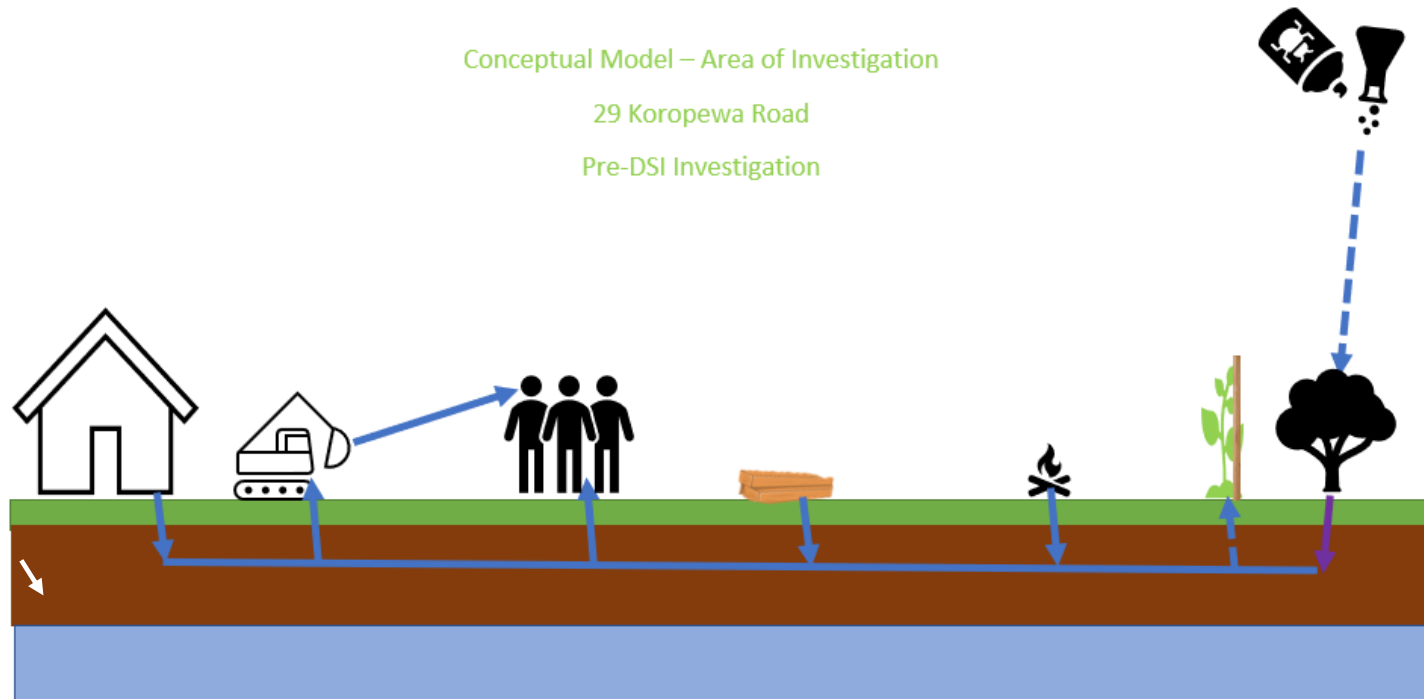
A 6 – Sampling sites located within Area of Investigation on Piece of Land



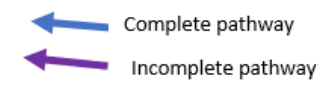
A 7 – Sampling sites locations undertaken for Preliminary Site Investigation Report 2020 397

APPENDIX B
Conceptual Site Model

Conceptual Model – Area of Investigation
 29 Koropewa Road
 Pre-DSI Investigation



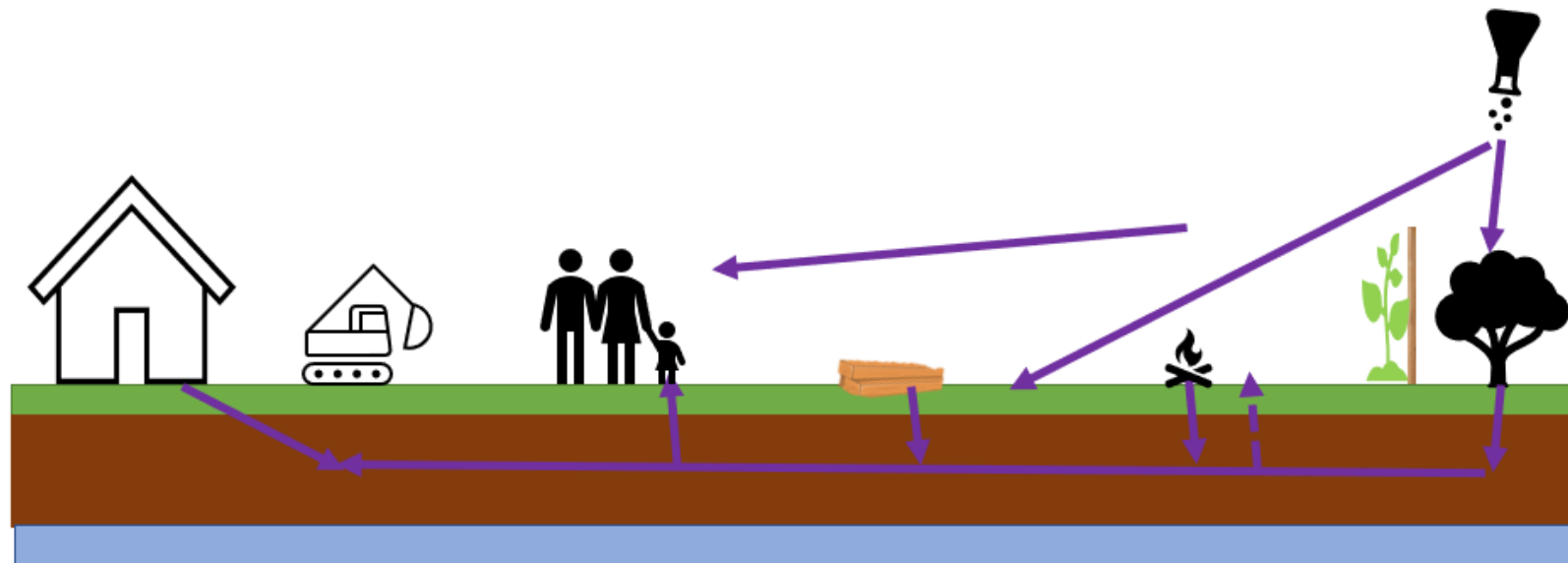
- historic crop sprays or fertiliser to soil or groundwater. [potentially partially complete -PSI testing indicated no pesticide COI]
- Crop uptake of chemicals from soil => ingestion [potentially complete, only produce production is located inside polyhouse]
- Direct dermal contact with chemicals in soil through contact with soil or ingestion [potentially complete]
- Dermal contact or dust inhalation associated with maintenance [potentially complete]
- Accidental leaching of CCA to ground from treated timber [potentially complete]
- Accidental release of CCA to ground from burning treated timber [potentially complete]



Conceptual Model – Area of Investigation



29 Koropewa Road

Post-DSI Investigation



- historic crop sprays or fertiliser to soil or groundwater.
- Crop uptake of chemicals from soil => ingestion
- Direct dermal contact with chemicals in soil through contact with soil or ingestion
- Dermal contact or dust inhalation associated with maintenance
- Accidental leaching of CCA to ground from treated timber
- Accidental release of CCA to ground from burning treated timber

- [incomplete – soil compliant with applicable standard]
- [incomplete – soil compliant with applicable standard]
- [incomplete – soil compliant with applicable standard]
- [incomplete – soil compliant with applicable standard]
- [incomplete – soil compliant with applicable standard]
- [incomplete – soil compliant with applicable standard]

 Complete pathway
 Incomplete pathway

APPENDIX C
Land Title



RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
Search Copy




R. W. Muir
Registrar-General
of Land

Identifier NA129B/873
Land Registration District North Auckland
Date Issued 09 June 2000

Prior References
NA102A/553

Estate Fee Simple
Area 6.2232 hectares more or less
Legal Description Lot 3 Deposited Plan 202022
Registered Owners
Maria Ann Vlug and Smith & Partners Trustee Co. Limited

Interests

Appurtenant hereto is a water right specified in Easement Certificate C082835.3
Subject to a water right over parts marked B, E, G and H on DP 202022 specified in Easement Certificate C082835.3
Appurtenant hereto is a right to drain water specified in Easement Certificate D513440.4 - 9.6.2000 at 3:44 pm
Subject to a right of way, and to electricity, telecommunications and water supply rights over parts marked A B and C on DP 202022 specified in Easement Certificate D513440.4 - 9.6.2000 at 3:44 pm
The easements specified in Easement Certificate D513440.4 are subject to Section 243 (a) Resource Management Act 1991
Subject to a right (in gross) to transmit electricity over parts marked D, E, F on DP 202022 in favour of Top Energy Limited created by Transfer D513440.5 - 9.6.2000 at 3:44 pm
The easements created by Transfer D513440.5 are subject to Section 243 (a) Resource Management Act 1991

APPENDIX D
NRC Selected Land Use Register

Regarding 29 Koropewa Rd, Waipapa, being Lot 3 DP 202022.

The property that you have enquired about is not listed on the NRC Selected Land-use Register (SLR) for any current or historical Hazardous Activities and Industries List (HAIL) activities. Please note that the SLR is not a comprehensive list of all sites that have a HAIL land use history. It is a live record and therefore continually being updated.

There are two environmental incidents recorded on the property:

IRIS ID	Logged Date	Request Subject	Description	Further information from file
REQ.609823	1/11/2021	Sewage	Alleged sewage overflow @ Koropewa Rd, Waipapa	Greywater discharge not connected to onsite wastewater system, landowner requested to address this.
REQ.611249	17/03/2022	Earthworks and vegetation clearance	Earthworks @ Koropewa Rd, Waipapa	Earthworks undertaken met permitted activity criteria.

There are no resource consents recorded on the property.

NRC has aerial images of the site for the following years that can be provided upon request: 2000, 2007, 2010, 2015

As per Rule C.6.8.1 of the [Proposed Regional Plan for Northland](#), copies of site investigation reports, where land disturbance has occurred, must be provided to the regional council within three months of completion of the investigation. Reports can be sent to contamination@nrc.govt.nz

Kind regards,
Heather

Ngā mihi

Heather Giles

Environmental Monitoring Officer – Waste Management

Northland Regional Council » Te Kaunihera ā rohe o Te Taitokerau

P 09 470 1210 ext 9212

M 027 615 3952



APPENDIX E
Aerial Photographs and Documents



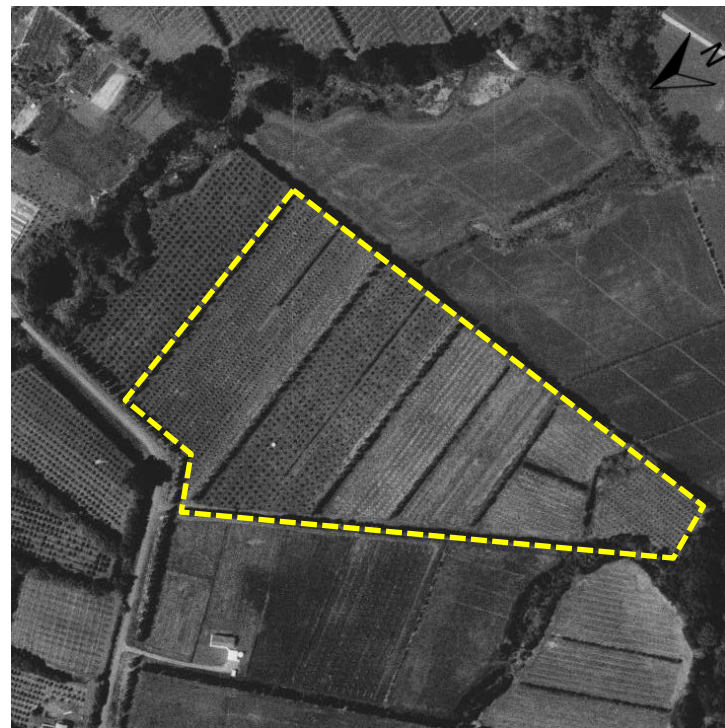
E 1 Aerial view taken 1953 (Source Retrolens)



E 2 Aerial view taken 1968 (Source Retrolens)



E 3 Aerial view taken 1977 (Source Retrolens)



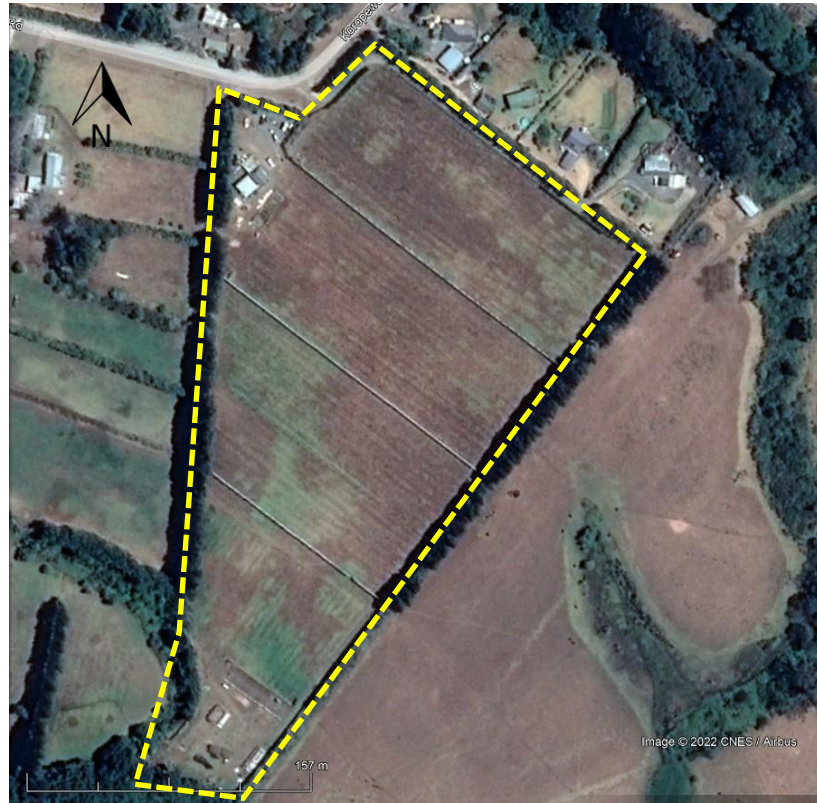
E 4 Aerial view taken 1981 (Source Retrolens)



E 5 Aerial view taken 2000 (Source LINZ)



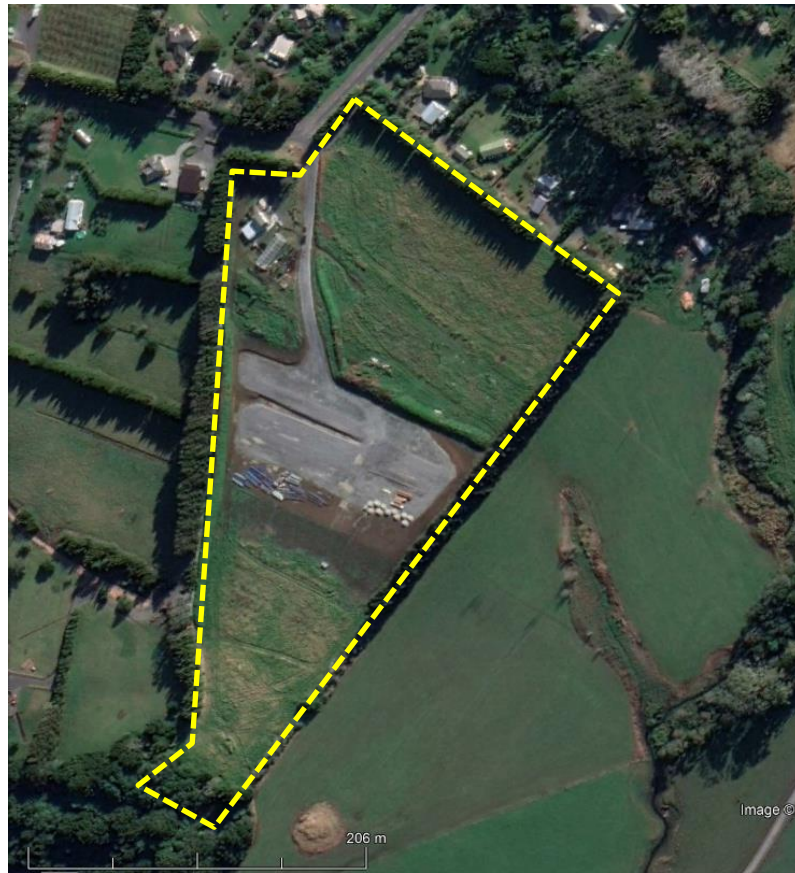
E 6 Aerial view taken 2003 (Source Google Earth)



E 9 Aerial view taken 2017 (Source Google Earth)



E 10 Aerial view taken 2021 showing drainage direction (Source Google Earth)



E 11 Aerial view taken July 2022 before erection of building (Source Google Earth)

Year of photograph	Landuse on Area of Investigation	HAIL category
1953	Pasture	
1968	Pasture	
1977	Citrus orchard	A 10
1981	Citrus & possibly kiwifruit orchard	A 10
2000	Orchard (mix citrus & possibly kiwifruit) and shed	A 10
2003	Orchard (kiwifruit) and shed	A 10
2009	Orchard (kiwifruit) and shed extended	A 10
2013	Orchard (kiwifruit) and shed	A 10
2015	Orchard (kiwifruit) and shed	A 10
2016	Orchard (kiwifruit) with southern area cleared to grass and shed. White shelterbelts present	A 10, I
2017	All orchard cleared, white shelterbelts still present	A 10, I
2021	Pasture , shelterbelts removed, white shade cloth still on ground. White shed or similar in east corner, some piles of material on ground.	A 10, I
2022	Building platforms gravelled	A 10, I

E 12 Summary of Aerial Photographs

APPENDIX F
Site Photographs

Plate no. F1	Date: 31/8/22	
Description: Looking south-east from entrance across Area of Investigation		


Plate no. F2	Date: 31/8/22	
Description: Area of proposed Lot 1 on right of photo with entrance in foreground		

Plate no. F3	Date: 31/8/22	
Description: Small fire area with stacked pallets		

Plate no. F4	Date: 31/8/22	
Description: Pile of soil and posts		

Plate no. F5	Date: 31/8/22	
Description: Looking north toward Area of Investigation from building platforms on proposed Lot 12		

Plate no. F6	Date: 31/8/22	
Description: Post hole in grass near soil sample location 548015		

APPENDIX G
Sampling and Analysis Plan

Sampling and Analysis Plan - Job # 2022 548		Date: 31/8/22	
Site Location:	Address:	Grid Reference:	
	29 Koropewa Road, Waipapa	(-35.204058 173.909127)	
Objectives:	Investigation Objectives: To investigate if there are any COI on property with history of citrus and kiwifruit orcharding. If so characterise contaminants and compare to residential standard.		
	Sampling Objectives: To obtain representative soil samples over the area of investigation which is a piece of land including any COI from treated timber infrastructure.		
Site History:	Ex citrus and kiwifruit orchard		
Current Landuse:	Area of Investigation Fallow, remainder of lot under commercial development and fallow.		
Intended Landuse:	Residential		
CSM Summary: Refer CSM:	Source	Pathway	Receptor
	chemicals from horticulture. Leaching from CCA timber infrastructure	Direct dermal (play, gardening, maintenance) accidental ingestion, produce ingestion, inhalation	Adult and child
Media investigated:	soil		
Analytes:	Heavy metals		
Reference Background Concentration:	Cavanagh, J E, 2016. User Guide: Background soil concentrations and soil guideline values for the protection of ecological receptors (Eco-SGVs) –Consultation Draft https://iris.scinfo.org.nz/layer/48470-pbc-predicted-background-soil-concentrations-new-zealand/		
Number of samples - statistical spacial sampling:	$G = \frac{R}{0.59}$ (1)		
	$N = \frac{A}{G^2}$ (2)	G= 20 0.59	N= 24323 1149
	*		Number of sampling points= 21
Sampling Pattern:	Systematic (note selection of sites on proposed Lot 1 takes into account PSI sampling locations)		
Sample Depths:	Primarily to 0.15m with 0.3 and 0.5m samples collected		
Composites:	None		
Quality Assurance/Quality Control:	2 x QA		
Sampling Method & Equipment:	shovel		
	Additional detail:		
Decontamination:			
	Spade/auger/trowel:	As per section 5.3 Contaminated land management guidelines No 5, 2021	

G = distance between two sampling points (the grid size of the sampling pattern, in metres)
R = radius of the smallest hotspot that the sampling intends to detect, in metres
A = size of the sampling area, in square metres.
N = number of sampling points needed

<p>Soil Investigation Design Plan:</p>				
<p>Sampling preferred order:</p>	<p>1,3,4,7-23, 5,6,2</p>			
<p>Lab Details:</p>	<p>Name of Lab: Hill</p>	<p>Containers required: Psoil 250</p>	<p>Analysis required: Heavy metal</p>	<p>Other:</p>
<p>Courier Details:</p>	<p>Name of Courier: Aramex</p>	<p>Date sent: 1/9/22</p>	<p>Container used:</p>	<p>Track Number:</p>

APPENDIX H

Laboratory Results and Chain of Custody Documentation

pg 1



Hill Laboratories
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Quote No 119631
Primary Contact Heather Windsor 293087
Submitted By Heather Windsor 293087
Client Name NZ Environmental Management Limited 293085
Address 350 Kerikeri Road, Kerikeri 0230

Phone Mobile 021 075 1959
Email

Charge To NZ Environmental Management Limited 293085

Client Reference Koropewa

Order No

Results To Reports will be emailed to Primary Contact by default. Additional Reports will be sent as specified below.

- Email Primary Contact Email Submitter Email Client
 Email Other
 Other

Dates of testing are not routinely included in the Certificates of Analysis. Please inform the laboratory if you would like this information reported.

ADDITIONAL INFORMATION / KNOWN HAZARDS
Hold 548025

Quoted Sample Types

Soil (Soil)

No.	Sample Name	Sample Date/Time	Sample Type	Tests Required
1	548001	31/8/22	soil	Heavy Metals
2	548002			
3	548003			
4	548004			
5	548005			
6	548006			
7	548007			
8	548008			
9	548009			
10	548010			

ANALYSIS REQUEST

Job No: Date Recv: 05-Sep-22 09:48
R J Hill Laboratories Limited
28 Duke Street Frankton 3204
Private Bag 3205
Hamilton 3240 New Zealand

306 9038

Received by: Steffi Varghese
T 0508 HILL LAB (44 555 22)
T +64 7 858 2000
E mail@hill-labs.co.nz
W www.hill-laboratories.com



CHAIN OF CUSTODY RECORD

Sent to Hill Laboratories Date & Time: 31/8/22
Name: Heather Windsor

Tick if you require COC to be emailed back
Signature: [Redacted]

Received at Hill Laboratories Date & Time:

Name:
Signature:

Condition Temp:
 Room Temp Chilled Frozen 13.5

Sample & Analysis details checked
Signature:

Priority Low Normal High

Urgent (ASAP, extra charge applies, please contact lab first)

NOTE: The estimated turnaround time for the types and number of samples and analyses specified on this quote is by 4:30 pm, 2 working days following the day of receipt of the samples at the laboratory.

Requested Reporting Date:

17



Hill Laboratories

TRIED, TESTED AND TRUSTED

Quote No 119631
Primary Contact Heather Windsor 293087
Submitted By Heather Windsor 293087
Client Name NZ Environmental Management Limited 293085
Address 350 Kerikeri Road, Kerikeri 0230

Phone **Mobile** 021 075 1959

Email

Charge To NZ Environmental Management Limited 293085

Client Reference Koropewa

Order No

Results To Reports will be emailed to Primary Contact by default. Additional Reports will be sent as specified below.

- Email Primary Contact Email Submitter Email Client
 Email Other
 Other

Dates of testing are not routinely included in the Certificates of Analysis. Please inform the laboratory if you would like this information reported.

ADDITIONAL INFORMATION / KNOWN HAZARDS

Quoted Sample Types

Soil (soil)

No.	Sample Name	Sample Date/Time	Sample Type	Tests Required
11	548011	31/8/22	soil	Heavy Metals
12	548012			
13	548013			
14	548014			
15	548015			
16	548016			
17	548017			
18	548018			
19	548019			
20	548020			

ANALYSIS REQUEST

R J Hill Laboratories Limited
28 Duke Street Frankton 3204
Private Bag 3205
Hamilton 3240 New Zealand
T 0608 HILL LAB (44 555 22)
T +64 7 858 2000
E mail@hill-labs.co.nz
W www.hill-laboratories.com

Office use only
(Job No)

CHAIN OF CUSTODY RECORD

Sent to Hill Laboratories **Date & Time:** 31/8/22
Name: Heather Windsor
 Tick if you require COC to be emailed back
Signature: [Redacted]

Received at Hill Laboratories **Date & Time:**
Name:
Signature:

Condition **Temp:**
 Room Temp Chilled Frozen
 Sample & Analysis details checked
Signature:

Priority Low Normal High
 Urgent (ASAP, extra charge applies, please contact lab first)

NOTE: The estimated turnaround time for the types and number of samples and analyses specified on this quote is by 4:30 pm, 2 working days following the day of receipt of the samples at the laboratory.

Requested Reporting Date:



Hill Laboratories

TRIED, TESTED AND TRUSTED

Quote No 119631
Primary Contact Heather Windsor 293087
Submitted By Heather Windsor 293087
Client Name NZ Environmental Management Limited 293085
Address 350 Kerikeri Road, Kerikeri 0230

ANALYSIS REQUEST

R J Hill Laboratories Limited
 28 Duke Street Frankton 3204
 Private Bag 3205
 Hamilton 3240 New Zealand
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T +64 7 856 2000
E mail@hill-labs.co.nz
W www.hill-laboratories.com

Office use only
(Job No)

CHAIN OF CUSTODY RECORD

Phone **Mobile** 021 075 1959

Email

Charge To NZ Environmental Management Limited 293085

Client Reference Koropewa

Order No

Results To Reports will be emailed to Primary Contact by default. Additional Reports will be sent as specified below.

- Email Primary Contact Email Submitter Email Client
 Email Other
 Other

Dates of testing are not routinely included in the Certificates of Analysis. Please inform the laboratory if you would like this information reported.

ADDITIONAL INFORMATION / KNOWN HAZARDS

Sent to Hill Laboratories **Date & Time:** 31/8/22

Name: Heather Windsor
 Tick if you require COC to be emailed back
Signature: [Redacted]

Received at Hill Laboratories **Date & Time:**

Name:
Signature:

Condition Room Temp Chilled Frozen **Temp:**

Sample & Analysis details checked
Signature:

Priority Low Normal High

Urgent (ASAP, extra charge applies, please contact lab first)

NOTE: The estimated turnaround time for the types and number of samples and analyses specified on this quote is by 4:30 pm, 2 working days following the day of receipt of the samples at the laboratory.

Requested Reporting Date:

Quoted Sample Types

Soil (soil)

No.	Sample Name	Sample Date/Time	Sample Type	Tests Required
21	548021	31/8/22	soil	Heavy metals
22	548022	↓	↓	↓
23	548023	↓	↓	↓
24	548024	↓	↓	↓
5				
6				
7				
8				
9				
10				



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R J Hill Laboratories Limited
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W www.hill-laboratories.com

Certificate of Analysis

Page 1 of 2

Client:	NZ Environmental Management Limited	Lab No:	3069038	SPV1
Contact:	Heather Windsor C/- NZ Environmental Management Limited 350 Kerikeri Road Kerikeri 0230	Date Received:	05-Sep-2022	
		Date Reported:	07-Sep-2022	
		Quote No:	119631	
		Order No:		
		Client Reference:	Koropewa	
		Submitted By:	Heather Windsor	

Sample Type: Soil

Sample Name:	548001	548002	548003	548004	548005
	31-Aug-2022	31-Aug-2022	31-Aug-2022	31-Aug-2022	31-Aug-2022
Lab Number:	3069038.1	3069038.2	3069038.3	3069038.4	3069038.5

Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt.	3	17	< 2	2	5
Total Recoverable Cadmium	mg/kg dry wt.	0.36	0.16	< 0.10	0.66	0.43
Total Recoverable Chromium	mg/kg dry wt.	132	84	162	134	91
Total Recoverable Copper	mg/kg dry wt.	39	40	22	49	42
Total Recoverable Lead	mg/kg dry wt.	6.5	15.4	7.1	7.8	5.9
Total Recoverable Nickel	mg/kg dry wt.	11	12	9	10	6
Total Recoverable Zinc	mg/kg dry wt.	20	60	13	23	14

Sample Name:	548006	548007	548008	548009	548010
	31-Aug-2022	31-Aug-2022	31-Aug-2022	31-Aug-2022	31-Aug-2022
Lab Number:	3069038.6	3069038.7	3069038.8	3069038.9	3069038.10

Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt.	4	2	6	4	12
Total Recoverable Cadmium	mg/kg dry wt.	0.50	< 0.10	0.61	0.58	0.16
Total Recoverable Chromium	mg/kg dry wt.	127	156	106	109	138
Total Recoverable Copper	mg/kg dry wt.	32	26	45	37	35
Total Recoverable Lead	mg/kg dry wt.	8.8	10.4	8.7	6.7	9.7
Total Recoverable Nickel	mg/kg dry wt.	9	12	11	10	14
Total Recoverable Zinc	mg/kg dry wt.	17	21	25	19	34

Sample Name:	548011	548012	548013	548014	548015
	31-Aug-2022	31-Aug-2022	31-Aug-2022	31-Aug-2022	31-Aug-2022
Lab Number:	3069038.11	3069038.12	3069038.13	3069038.14	3069038.15

Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt.	5	9	3	5	7
Total Recoverable Cadmium	mg/kg dry wt.	0.53	0.53	0.30	0.38	0.71
Total Recoverable Chromium	mg/kg dry wt.	119	122	95	102	124
Total Recoverable Copper	mg/kg dry wt.	39	70	30	29	35
Total Recoverable Lead	mg/kg dry wt.	7.2	8.8	7.5	8.7	8.4
Total Recoverable Nickel	mg/kg dry wt.	10	14	9	9	11
Total Recoverable Zinc	mg/kg dry wt.	19	78	20	21	23

Sample Name:	548016	548017	548018	548019	548020
	31-Aug-2022	31-Aug-2022	31-Aug-2022	31-Aug-2022	31-Aug-2022
Lab Number:	3069038.16	3069038.17	3069038.18	3069038.19	3069038.20

Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt.	8	4	4	4	4
Total Recoverable Cadmium	mg/kg dry wt.	0.63	0.52	0.47	0.38	0.42
Total Recoverable Chromium	mg/kg dry wt.	108	80	72	104	79
Total Recoverable Copper	mg/kg dry wt.	46	37	41	32	67 #1
Total Recoverable Lead	mg/kg dry wt.	7.3	8.4	11.9	7.5	7.1



This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised. The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked # or any comments and interpretations, which are not accredited.

Sample Type: Soil						
Sample Name:	548016 31-Aug-2022	548017 31-Aug-2022	548018 31-Aug-2022	548019 31-Aug-2022	548020 31-Aug-2022	
Lab Number:	3069038.16	3069038.17	3069038.18	3069038.19	3069038.20	
Heavy Metals, Screen Level						
Total Recoverable Nickel	mg/kg dry wt	10	12	12	8	9
Total Recoverable Zinc	mg/kg dry wt	26	23	29	30	18
Sample Name:	548021 31-Aug-2022	548022 31-Aug-2022	548023 31-Aug-2022	548024 31-Aug-2022		
Lab Number:	3069038.21	3069038.22	3069038.23	3069038.24		
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	3	3	4	5	
Total Recoverable Cadmium	mg/kg dry wt	0.47	0.65	0.52	0.65	
Total Recoverable Chromium	mg/kg dry wt	90	145	78	104	
Total Recoverable Copper	mg/kg dry wt	29	51	38	47	
Total Recoverable Lead	mg/kg dry wt	8.3	8.0	8.1	9.6	
Total Recoverable Nickel	mg/kg dry wt	15	12	10	12	
Total Recoverable Zinc	mg/kg dry wt	20	26	25	26	

Analyst's Comments

#1 It should be noted that the replicate analyses performed on this sample as part of our in-house Quality Assurance procedures showed greater variation than would normally be expected. This may reflect the heterogeneity of the sample. The average of the results of the replicate analyses has been reported. Replicate 1: 28 mg/kg, Replicate 2: 105 mg/kg.

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Laboratories, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Soil			
Test	Method Description	Default Detection Limit	Sample No
Environmental Solids Sample Drying*	Air dried at 35°C Used for sample preparation. May contain a residual moisture content of 2-5%.	-	1-24
Heavy Metals, Screen Level	Dried sample, < 2mm fraction. Nitric/Hydrochloric acid digestion US EPA 200.2. Complies with NES Regulations. ICP-MS screen level, interference removal by Kinetic Energy Discrimination if required.	0.10 - 4 mg/kg dry wt	1-24

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed on 07-Sep-2022. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

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Martin Cowell - BSc
Client Services Manager - Environmental

PSI Lab Results - Report 2020 397



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Certificate of Analysis Page 1 of 2

Client: NZ Environmental Limited	Lab No: 2487595	SPv1
Contact: Heather Windsor	Date Received: 04-Dec-2020	
C/- NZ Environmental Limited	Date Reported: 11-Dec-2020	
350 Kerikeri Road	Quote No: 78538	
Kerikeri 0230	Order No:	
	Client Reference: Koropewa Rd	
	Submitted By: Heather Windsor	

Sample Type: Soil

Sample Name:	397001 03-Dec-2020	397002 03-Dec-2020	397011 03-Dec-2020	Composite of 397003 & 397004	Composite of 397005 & 397006
Lab Number:	2487595.1	2487595.2	2487595.11	2487595.17	2487595.18
Heavy Metals, Screen Level					
Total Recoverable Arsenic mg/kg dry wt	12	8	3	12	7
Total Recoverable Cadmium mg/kg dry wt	< 0.10	0.14	0.47	0.22	0.36
Total Recoverable Chromium mg/kg dry wt	26	47	66	115	132
Total Recoverable Copper mg/kg dry wt	35	47	29	56	41
Total Recoverable Lead mg/kg dry wt	13.8	17.1	8.1	13.8	9.1
Total Recoverable Nickel mg/kg dry wt	14	19	35	15	10
Total Recoverable Zinc mg/kg dry wt	83	61	29	159	33

Sample Name:	Composite of 397007 & 397008	Composite of 397009 & 397010	Composite of 397002, 397003 & 397005	Composite of 397008, 397009 & 397011
Lab Number:	2487595.19	2487595.20	2487595.21	2487595.22

Individual Tests

Dry Matter g/100g as rovd	-	-	74	70	-
---------------------------	---	---	----	----	---

Heavy Metals, Screen Level

Total Recoverable Arsenic mg/kg dry wt	7	3	-	-	-
Total Recoverable Cadmium mg/kg dry wt	0.45	0.36	-	-	-
Total Recoverable Chromium mg/kg dry wt	75	62	-	-	-
Total Recoverable Copper mg/kg dry wt	50	32	-	-	-
Total Recoverable Lead mg/kg dry wt	9.8	8.3	-	-	-
Total Recoverable Nickel mg/kg dry wt	14	14	-	-	-
Total Recoverable Zinc mg/kg dry wt	43	19	-	-	-

Organochlorine Pesticides Screening in Soil

Aldrin mg/kg dry wt	-	-	< 0.014	< 0.014	-
alpha-BHC mg/kg dry wt	-	-	< 0.014	< 0.014	-
beta-BHC mg/kg dry wt	-	-	< 0.014	< 0.014	-
delta-BHC mg/kg dry wt	-	-	< 0.014	< 0.014	-
gamma-BHC (Lindane) mg/kg dry wt	-	-	< 0.014	< 0.014	-
cis-Chlordane mg/kg dry wt	-	-	< 0.014	< 0.014	-
trans-Chlordane mg/kg dry wt	-	-	< 0.014	< 0.014	-
2,4'-DDD mg/kg dry wt	-	-	< 0.014	< 0.014	-
4,4'-DDD mg/kg dry wt	-	-	< 0.014	< 0.014	-
2,4'-DDE mg/kg dry wt	-	-	< 0.014	< 0.014	-
4,4'-DDE mg/kg dry wt	-	-	< 0.014	< 0.014	-
2,4'-DDT mg/kg dry wt	-	-	< 0.014	< 0.014	-
4,4'-DDT mg/kg dry wt	-	-	< 0.014	< 0.014	-
Total DDT Isomers mg/kg dry wt	-	-	< 0.08	< 0.09	-
Dieldrin mg/kg dry wt	-	-	< 0.014	< 0.014	-
Endosulfan I mg/kg dry wt	-	-	< 0.014	< 0.014	-



This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised. The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked * or any comments and interpretations, which are not accredited.

Sample Type: Soil					
Sample Name:	Composite of 397007 & 397008	Composite of 397009 & 397010	Composite of 397002, 397003 & 397005	Composite of 397008, 397009 & 397011	
Lab Number:	2487595.19	2487595.20	2487595.21	2487595.22	
Organochlorine Pesticides Screening in Soil					
Endosulfan II	mg/kg dry wt	-	-	< 0.014	< 0.014
Endosulfan sulphate	mg/kg dry wt	-	-	< 0.014	< 0.014
Endrin	mg/kg dry wt	-	-	< 0.014	< 0.014
Endrin aldehyde	mg/kg dry wt	-	-	< 0.014	< 0.014
Endrin ketone	mg/kg dry wt	-	-	< 0.014	< 0.014
Heptachlor	mg/kg dry wt	-	-	< 0.014	< 0.014
Heptachlor epoxide	mg/kg dry wt	-	-	< 0.014	< 0.014
Hexachlorobenzene	mg/kg dry wt	-	-	< 0.014	< 0.014
Methoxychlor	mg/kg dry wt	-	-	< 0.014	< 0.014

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analyses. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Laboratories, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Soil			
Test	Method Description	Default Detection Limit	Sample No
Environmental Solids Sample Drying*	Air dried at 35°C Used for sample preparation. May contain a residual moisture content of 2-5%.	-	1-2, 11, 17-20
Heavy Metals, Screen Level	Dried sample, < 2mm fraction. Nitric/Hydrochloric acid digestion US EPA 200.2. Complies with NES Regulations. ICP-MS screen level, interference removal by Kinetic Energy Discrimination if required.	0.10 - 4 mg/kg dry wt	1-2, 11, 17-20
Organochlorine Pesticides Screening in Soil	Sonication extraction, GC-ECD analysis. Tested on as received sample. In-house based on US EPA 8081.	0.010 - 0.06 mg/kg dry wt	21-22
Dry Matter (Env)	Dried at 103°C for 4-22hr (removes 3-5% more water than air dry) , gravimetry. (Free water removed before analysis, non-soil objects such as sticks, leaves, grass and stones also removed). US EPA 3550.	0.10 g/100g as rcvd	21-22
Composite Environmental Solid Samples*	Individual sample fractions mixed together to form a composite fraction.	-	2, 11

*These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 09-Dec-2020 and 11-Dec-2020. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

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Graham Corban MSc Tech (Hons)
Client Services Manager - Environmental

APPENDIX I
Reference Tables

DSI			NZTM	
Site	Location	Description	East	North
548001	Grid sample in north corner	Brown silty CLAY topsoil, friable	1682827	6103981
548002	Grid sample by shed on proposed Lot 1	Red brown silty CLAY topsoil, compacted with 50% sub-angular medium gravels	1682764	6103941
548003	Grid sample in ex orchard area near new entrance in bund material	Red silty CLAY topsoil	1682804	6103954
548004	Grid sample in orchard area ~35m south of 001	Dark Brown silty CLAY topsoil+ worm	1682829	6103952
548005	Grid sample in south east corner proposed Lot 1	Dark Brown silty CLAY topsoil granular	1682784	6103855
548006	Grid sample near polyhouse proposed Lot 1	Dark brown silty CLAY topsoil, compacted on edge of drain	1682785	6103898
548007	Grid sample in orchard area ~35m south of 003	Red brown silty CLAY topsoil	1682804	6103928
548008	Grid sample in orchard area ~35m south of 004	Dark brown silty CLAY topsoil	1682864	6103917
548009	Grid sample in orchard area ~35m east of 008	Dark brown silty CLAY topsoil, moist, stiff	1682894	6103920
548010	Grid sample in orchard area ~35m south of 007	Red brown silty CLAY topsoil	1682817	6103896
548011	Grid sample in orchard area ~35m south of 008	Dark brown silty CLAY topsoil	1682868	6103879
548012	Grid sample in orchard area ~35m south of 009	Dark brown silty CLAY topsoil	1682899	6103890
548013	Grid sample in orchard area ~35m east of 012	Dark brown silty CLAY topsoil	1682928	6103896
548014	Grid sample in orchard area ~35m south of 010, sample taken by pile of soil and posts.	Dark brown silty CLAY topsoil	1682825	6103847
548015	Grid sample in orchard area ~35m south of 011. Beside hole where tanalised shelter pole removed	Dark brown silty CLAY topsoil	1682872	6103850
548016	Grid sample in orchard area ~35m south of 012	Dark brown silty CLAY topsoil	1682904	6103854
548017	Grid sample in orchard area ~35m south of 013	Dark brown silty CLAY topsoil	1682936	6103852
548018	Grid sample in orchard area ~35m east of 017. By post hole in corner	Brown silty CLAY topsoil	1682971	6103962
548019	Grid sample in orchard area ~35m south of 015. Near post on ground.	Dark brown silty CLAY topsoil	1682869	6103822
548020	Grid sample in orchard area ~35m south of 016	Dark brown silty CLAY topsoil	1682906	6103815
548021	Grid sample in orchard area ~35m south of 017	Dark brown silty CLAY topsoil	1682946	6103823
548022	Duplicate of 548004	Dark Brown silty CLAY topsoil+ worm	1682829	6103952
548023	Duplicate of 548017	Dark brown silty CLAY topsoil	1682936	6103852
548024	Fire area near 020	Dark brown silty CLAY topsoil	1682909	6103827
548025	0.3m depth below 009	Dark brown silty CLAY	1682894	6103920

I 1 Location and descriptions of sampled soils

Building/Resource Consent Number	Date	Activity	Applicable to Area of Investigation	Applicable HAIL category
			Y/N	
2000086-RMASUB	Jun-99	subdivision	Y	A 10
791263-TCPBIC	May-82	subdivision	N	
BC-1995-91/0	11/07/1994	Implement shed concrete floor polythene	Y	A10
BC-2007-382/1	12/09/2018	Extension to implement shed	Y	
EBC-2022-1610/0	12/07/2022	Industrial building - contemporary	N	
BC-2007-382/0	21/11/2006	Extension to implement shed	Y	
BC-2007-382/2	14/11/2018	code compliance correspondence	Y	

I 2 FNDC Property file detail

Certificate of Title	From	Registered Owners	Occupation	Area
	21/04/1964	D'Oly Downs Limited		61.0020ha
	14/06/1966	George Francis Herrick	farmer	
	26/04/1967	Fredwick Douglas Lundemann & John Douglas Lundemann	farmers	
	1/10/1975	John Douglas Lundemann	farmer	
NA52C/575	2/10/1982	John Douglas Lundemann	farmer	10.5270ha
NA75D/653	18/12/1987	John Douglas Lundemann & Rosemary Elizabeth Ludemann	farmer & wife	7.8500ha
	1/11/1993	John Douglas Lundemann	farmer	
	13/03/1995	Noel Brian Birchall & Colin Raymond Clarke	company manager & chartered accountant	
NA102A/553	18/10/1995	Noel Brian Birchall & Colin Raymond Clarke	company manager & chartered accountant	7.0390ha
	4/03/1996	Brian David Lyle Murray & Cherie Patricia Murray	farmers	
NA129B/873	9/06/2000	Barry Clive Darlington		6.2232ha
	10/07/2015	Murray Darlington		
	10/08/2020	Zehavit Darlington		
	26/02/2021	Maria Ann Vlug and Simith & Partners Trustee Co. Ltd		


I 3 Title History

Site History	Area of Investigation
Land use history	Prior to 1975 - Pastoral
	1975 - 1995 - Mix citrus and kiwifruit
	1995 - 2017 - Kiwifruit
	2017 - present - Fallow
Known incidents	None known, not fire areas identified
Management practices	Unknown. Likely standard commercial practice for citrus and kiwifruit growing.
Waste disposal	Unknown
Chemical storage practices	Unknown, likely in secure shed on site since 1994. Offsite prior to 1994
Chemicals used on the site	Unknown . Possibly copper, Hi-Cane, OCPs, fertilisers
Environmental incidents	None known.
Certificates of title	Appendix C
Location of surface water drains and stormwater drainage channels	Appendix E 10
Information on fill material	NA
Potable drinking water source	Roof water. Irrigation water available.
Proposed sewage disposal (if any)	On site septic system
Proposed sewage disposal (if any)	

I 4 Landuse History

Proposed Lot	Size of Proposed Lots (m ²)	Approximate Area of Piece of Land (m ²)	Earthworks disturbance volumes not requiring consent (annual) m ³	Earthworks removal volumes not requiring consent (annual) m ³
Stage One				
1	3510	3510	176	35
2	2430	2430	122	24
3	2150	2150	108	22
4	54100	53236	2662	532
Lot 3 DP 202022	62232	61368	3068	614
Stage Two				
4	2150	2150	108	22
5	2920	2920	146	29
6	2810	2810	141	28
7	2452	2452	123	25
8	2415	2415	121	24
9	2238	2238	112	22
10	2150	2150	108	22
11	36100	35180	1759	352
12	864	NA	NA	NA
Area excluding Stage 1	54142	53278	2664	533

I 5 Allowable Annual Earthworks Volumes under Regulation 8(3)

	Borehole Log			Project: Vlug	
				Job #: 2022 548	
				Date: 31/8/22	
				Sample #: 548009	
				Drilling method: Hand auger	
		Auger Diameter: 5cm			
Location: 29 Koropewa Road, Waipapa					
Northing: 6103920			Easting: 1682894		
Soil Description:		Moisture:	Depth (m)	Soil Type:	water table:
Dark brown silty CLAY		Moist	0.0	TS	
Dark brown silty CLAY		Moist	0.1	TS	
Dark brown silty CLAY		Moist	0.2	TS	
Dark brown silty CLAY		Moist	0.3	TS	
Dark brown silty CLAY		Moist	0.4	TS	
Red brown silty CLAY		Moist	0.5	CL	
Red brown silty CLAY		Moist	0.6	CL	
Red brown silty CLAY		Moist	0.7	CL	
Red brown silty CLAY		Moist	0.8	CL	
Red brown silty CLAY		Moist	0.9	CL	
Red brown silty CLAY		Moist	1.0	CL	Not encountered
			1.1		
			1.2		
			1.3		
			1.4		
			1.5		
				Logged by:	HW
Soil Type key: TS (topsoil), F (fill), Cl (clay) St (silt), Sd (sand), P (peat), R (rock)					

I 6 Soil log from sample site 548009

Table 1: Estimated Stage 1 Earthworks Quantities

	Earthworks Area (m ²)	Cut Volume (m ³)
Lot 11 ROW	480	357
Lot 2 ROW	320	94
Total	800	451

Table 2: Estimated Drainage Channel Earthworks Quantities

Channel (per Drawing C201)	Length (m)	Cross-Sectional Area (m ²)	Estimated EW Area (m ²)	Estimated Cut Volume (m ³)
1	128	0.29	166.4	37.4
2	128	0.29	166.4	37.4
3	66.5	0.094	49.9	6.2
4a	55	0.91	110	50.1
4b	147.5	0.43	221.3	63.1
5	291.1	0.24	349.3	69.8
6	219.3	0.24	263.2	52.6
Outlet	25	1.44	75	34.6
Level Spreader	45	1.44	135	64.8
		Total	1,370.1	416

Table 3: Estimated Stage 2 Earthworks Quantities

	Earthworks Area (m ²)	Cut Volume (m ³)	Fill Volume (m ³)
ROW Lots 8&9	464	135.6	-
ROW Lot 5	281	80.2	-
Attenuation Pond	2,080	73	718
Drainage Channels	1,370.1	416	-
Total	4,195.1	704.8	718

Under the assumptions detailed above, the following quantities have been estimated:

- For Stage 1, a cut volume of 451m³ over an area of 800m²
- For Stage 2, a cut volume of 705m³ and a fill volume of 718m³ over an area of 4,195m²
- For both stages combined, a cut volume of 1,156m³ and a fill volume of 718m³ over an area of 4,195m².

I 7 Supplied Earthworks volumes

APPENDIX J Statement of Qualification as a SQEP

As per the NESCS User Guide Suitably Qualified and Experienced Practitioner requirements Heather Windsor holds a Bachelor of Science degree. She has over 10 years experience investigating and reporting on contaminated land and is a Certified Environmental Practitioner (CEnvP).



Content	Required	Required if relied on*
Introduction	✓	
- Investigation objectives	✓	
- Site Identification	✓	
- Proposed site use	✓	
Site Description	✓	
- Environmental setting	✓	
- Site layout	✓	
- Current site uses	✓	
- Surrounding land uses	✓	
- Geophysical surveys		
- Site inspection		✓
Historical Site use	✓	
- Summary of site history	✓	
review of existing investigation reports		✓
review of council records		✓
review of aerial photographs		✓
Sampling and Analysis Plan (can be appended)	✓	
-Contaminants of potential concern and/or analyte selection	✓	
- Media to be sampled	✓	
- Background concentration levels if relevant, contaminant standard and/or environmental guideline value calculation [#] or selection [^]	✓	
- Sample design	✓	
- Number of samples, including justification for number selected and potential limitations of methodology adopted in the context of investigation objectives	✓	
- Sample depth	✓	
- Field sampling technique	✓	
- Quality Assurance/ Quality control	✓	
Sampling Results	✓	
- Summary of work undertaken with rationale for any departure from, or addition to sampling and analysis plan	✓	
- Field observations	✓	
- Evaluation of analytical laboratory results with comparison to background concentrations if relevant contaminant standards and or environmental guideline values	✓	
- Results of field and laboratory sample quality assurance/quality control	✓	
Disposal of Soil		
Risk Assessment	✓	
- Conceptual Site model	✓	
- Evaluate the probability contamination exists on the site	✓	
- Characterise the source through adequate delineation of contamination horizontally and vertically and assessment of contaminant concentrations	✓	
- Identify and characterise potential pathways and receptors or each exposure area through relevant site properties (eg geology, building construction, site use)	✓	
- Determine the likelihood the contamination poses a risk to identified receptors including potential receptors	✓	
- Evaluate the level of that risk pursuant to regulation 9(1)(b) and or regulation 9 (3)(b) - <i>it is demonstrated that soil contamination does not exceed the applicable standard in regulation 7</i>	✓	
- Describe limitations of data collected and the assumptions and uncertainties inherent in the data and models used	✓	
Management of proposed activity (may not be part of DSI)		
Discussion	✓	
Conclusion	✓	
Recommendations if relevant to report purpose	✓	
Report Limitations	✓	
SQEP Certificate of Report	✓	
References	✓	



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Date

15 August 2022

Further to our brief discussion onsite at Waipapa, please find enclosed a report explaining the land resources on your property and the suitability of your land for horticulture or arable use.

Should you or your planning consultant have any queries or any matters I have raised in the report require further explanation, please do not hesitate to contact me.

Yours sincerely

Bob Cathcart

Land and Environmental Management Consultant
AgFirst Northland



Independent
Agriculture
& Horticulture
Consultant
Network

Property Report

Prepared for Allan Shaw
Waipapa

Bob Cathcart
28 July 2022

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Disclaimer:

The content of this report is based upon current available information and is only intended for the use of the party named. All due care was exercised by AgFirst Northland Ltd in the preparation of this report. Any action in reliance on the accuracy of the information contained in this report is the sole commercial decision of the user of the information and is taken at their own risk. Accordingly, AgFirst Northland Ltd

Land Resources Report prepared for:

Allan Shaw
29c Koropewa Road
Waipapa

The Property

The Shaw property comprises approximately 6.2 hectares of south-facing land extending southwards from a narrow frontage on Koropewa Road to an equally narrow boundary on the banks of the Kerikeri River, immediately upstream of the Waipapa commercial and industrial area. A former orchard on the western boundary is now in large residential sections and industrial and commercial development, previously some 440 metres from the eastern boundary has spread to within only 140 metres of the boundary. Residential properties extend along the northern boundary.

Slopes on the property range from undulating to a gently rolling hillside, 4° to 7°, onto a flat area of floodplain. Drainage depressions run down both eastern and western sides of the property, that on the eastern side in a boundary drain and the western one in a swale inside of the boundary.

The property once supported an approx. 3.5ha green kiwifruit orchard, but the crop became infected with *Psa*, *Pseudomonas syringae* pv. *Actinidiae* (kiwifruit vine canker), and possibly other fungal and bacterial diseases due to wet soil conditions, and the vines had to be removed. Support frames and irrigation lines have also been removed. An approx. 1.0hectare platform has been cut across the middle of the property, levelled and topped with aggregate, and a road formed from Koropewa Road to this platform. There is a building in the northwest corner of the property.

Soil Types

This part of Waipapa comprises a series of flat-topped ridges with entrenched valleys, the edges of a very large, dissected plateau formed approximately 3 million years ago by basalt lava flows from volcanoes in the vicinity of Okaihau. The lava flows cover sedimentary rocks of the Northland Allochthon, which would have been overlain in places by ash from local rhyolite/dacite volcanoes, including nearby Mangapararua.

Streams have become entrenched in 30 – 60-metre-deep valleys draining the high rainfall Puketū plateau area. Basalt sediment washed off the plateau has covered most of the valley sides but, in places the underlying and less-permeable sedimentary and dacite material is close to the surface or is exposed. Being less free-draining than the basalt, the sedimentary and ash layers force groundwater to the surface, to emerge as seepages in the basalt soils around the valley sides.

The soils formed on the lava flows would have initially been clothed with higher fertility broadleaf forest, but over time, kauri assumed dominance and old, strongly leached and extremely low-fertility ironstone (laterite) soils were developed. The southern end of the

property extends onto the floodplain of the Kerikeri River, has alluvial clay soils and would have carried kahikatea-dominant bush.

The soil types on this land, as mapped by Cox, Sutherland & Taylor⁽¹⁾, are Pungaere gravelly friable clay, running down onto Kamo silt loam on the floodplain of the Kerikeri River. These maps were field surveyed at a scale of 1:63,360, in places updated to 1:50,000, and published at 1:100,000. (They should not be enlarged beyond a scale of 1:50,000.) Notes appended to the published maps and unpublished reports by the same authors acknowledge that these soil maps are restricted by scale and only indicative of broader soil groups. Local experience has shown that mapping at a more detailed scale will identify a range of soil types from deeper, more free-draining phases of Pungaere soils, through shallow and bouldery soils on steeper valley sides, to mature Okaihau soils.

*Iron and aluminium 'gravel'
in Pungaere soil*



A field survey of the soils on the property confirms that the sloping land is generally Pungaere gravelly friable clay, a mature and strongly leached Brown Loam, a laterite or ironstone soil formed on basalt lava flows. While there are some small patches of deeper soil with few ironstone nodules, older, more strongly leached phases of Pungaere soils, or in places even older Okaihau soils predominate. 'Gravelly' in its name is reference to nodules of iron, aluminium and manganese in the soil profile. [Now classified nationally as a 'Nodular Typic Oxidic' soil.] The iron and aluminium nodules can form a dense pan in the subsoil, particularly in hollows or around seepage areas, impeding root penetration and resulting in unstable trees. Cyclone Bola involved three days of rain before very strong winds in Northland and citrus and other orchard trees and shelterbelts were blown over.

At low pH, which this subsoil naturally is, iron, aluminium and manganese ions are 'free' in the soil, forming insoluble compounds with other plant nutrients, like phosphorous. Not only does the 'free' iron and aluminium in this layer fix nutrients and make them unavailable to plants, the high levels of iron and aluminium are toxic to plant roots and the mycorrhiza associated with them, effectively forming a chemical 'pan' or barrier as well as, sometimes, a physical pan.

In the 8 profiles dug on the sloping land of this property during a recent survey, gravelly nodules were encountered to a greater or lesser extent from 20cm below the surface at all sites, none forming a cemented or physical barrier to root penetration to at least 30cms. Denser gravel accumulations, with an even greater concentration of clay were encountered in a profile dug in the drainage depression below the building, tending more towards Otaha gravelly clay loam or Otaha clay.

Beyond 50cm depth in each profile, there was an increasing concentration of clay, fine sediment weathered in and leached down through the soil. There are soil profiles exposed in a cutting across the middle of the section in which there are greater concentrations of gravelly nodules and even more clay beneath.

More detailed surveys⁽²⁾ of extensive areas mapped as Pungaere gravelly friable clay have shown that this is a highly variable soil type, the depth of topsoil and other soil physical and chemical characteristics being very dependent on position on the landscape. Rather than a single or uniform soil type, it is more a family of soils, all with common parentage but each influenced by its unique environment. In some instances, Pungaere soils are associated with eroded phases of Okaihau gravelly friable clay and earlier soil surveys only recorded a 'Hill phase', a shallow soil on steeper slopes, with Okaihau soils on easier slopes.

The soil profile above the gravelly layer becomes deeper on lower and easier slopes towards the edges of the flats, showing that sediment washed off upper slopes has been deposited on lower slopes to create a deeper soil. Included in the deposited sediment is clay leached from soil on upper slopes, so, while a deeper soil, it tends to be a heavier soil and more prone to winter wetness.

Reports by NZ Soil Bureau pedologists⁽³⁾ on similar sites on the nearby Kapiro Landcorp block questioned the use of these ironstone soils for horticulture, pointing out that the presence of hard nodules greatly reduced the water holding capacity of soils in summer. While this soil dryness can now be managed by irrigation from the Kerikeri Irrigation Scheme, the frequency of high intensity rainstorms and extended periods of wet weather can cause these same soils to become waterlogged for parts of the year. Because tree roots do not extend to depth in the iron and aluminium-rich subsoil, tree crops and shelterbelts can become unstable and prone to windthrow during these wet periods, and the incidence of root diseases is greatly increased. As a consequence, this soil type is not suited to deep-rooted orchard plants'

The Soil Bureau report also advised against frequent cultivation, pointing out that the thin, friable topsoil has a weak structure when dry and can be easily turned to a structureless 'dust mulch', prone to sheet and rill erosion. The report also advises avoiding exposure of plant-toxic subsoils because replanting any vegetation and/or reinstating topsoil layer is very difficult.

The flats at the southern end, comprising approximately 11% of the total area of the property, have Kamo clay loam soils, which have developed on alluvium from mainly basaltic parent material. In this case, the alluvium will be mainly clay eroded from the old ironstone soils within the catchment. Kamo clay loam is a heavy soil which shows signs of gleying below 20cm in the profile, due to a fluctuating watertable, meaning it is anaerobic for a significant part of the year. As well, this is part of the floodplain of the Kerikeri River, an area on which floodwaters pond before entering the entrenched gorge section of the river. At best, this land could be used for short-season crops (maize or sweetcorn) in summer but there would remain at risk of crops drowning in or being spoiled by ponded floodwaters.

Land Use Capability

Unfortunately, the NZ Land Resource Inventory Land Use Capability (LUC) Database⁽⁴⁾ contains some anomalies in respect of parts of the Far North District. Because this database covers the whole of New Zealand, is digital and easily accessible, it will most likely be used to identify highly productive land under the National Policy Statement for Highly Productive Land and is used as a planning tool by most councils in New Zealand, it is important that the data is correct. Despite requests for corrections, there has been no updating.

In this instance, old basaltic soils have been assessed as Class 2s1 on the NZLRI database, which by definition⁽⁵⁾ are *“flat to undulating slopes on young basaltic lava flows, basaltic scoria and occasional ash below 200 m asl with fertile free draining Allophanic (brown and red loam) soils”*. This description fits the highly productive and versatile young Kiripaka, Ohaeawai, and Maunu soils on relatively recent basalt lava flows and around scoria cones near Kaikohe and around Whangarei. Harmsworth’s⁽⁵⁾ extended legend description then continues and lists much older and more limited basaltic soils, soils which do not fit the Land Use Capability Handbook⁽⁶⁾ definition of Class 2 land – *“very good land with slight physical limitations to arable use, readily controlled by management and soil conservation”*.

Class 2 land is potentially highly productive and versatile land, suitable for many cultivated crops, vineyards and berry fields, pasture, tree crops or production forestry. As previously explained, Pungaere soils are not highly productive, are not versatile, they are suited to a narrow range of orchard crops and frequent cultivation is not recommended. By the time the LUC for basalt volcanic soils reaches Class 3, this difference is recognised, and the older soils are separated from the younger ones – younger soils being Class 3s1 and the very best older soils Class 3s2. This separation of old and strongly leached from younger and more versatile soils continues into Class 4.

In my opinion, this separation of younger Red and Brown Loam soils, those on Taheke volcanics⁽⁷⁾, from the much older and less versatile soils on Horeke volcanic, should not have started earlier in the Classification. Only younger Maunu, Ohaeawai, Kiripaka and Papakauri soils should be in class 2s1, and some of the older, generally heavier (more clay), more strongly leached and less versatile Whakapai, Waimate North and Kerikeri soils in a new Class 2s, but none of the older ironstone soils. I have defined new land use capability units in this manner in whole-farm surveys of properties with volcanic soils I have mapped to assess horticultural potential in the Waimate North, Ohaeawai and Remuera districts of the Far North.

In summary, I have assessed the easier sloping land on this property as Class 4s2, Harmsworth’s definition⁽⁵⁾, not Class 2s1. Broad drainage depressions through the property with gleyed volcanic soils, with higher clay content, more distinct iron and aluminium ‘gravel’ development, and pathways for storm runoff from farmland, urban development and sealed roads are assessed as Class 5w (no LUC Unit number assigned). While suited to pastoral farming, the risk of soil erosion in these floodways is too great to allow cultivation and, even grazing would need to be carefully managed in winter to avoid pugging as pugging would lead to gully erosion.

Old basalt topsoils are very thin and have a strongly developed nutty structure that is stable when wet but easily destroyed by compaction when too wet. These older volcanic soils should be allowed to dry after rain for a few days before running heavy equipment or stock over them. Over cultivation when too dry causes the topsoil to become a fine powdery surface layer known as a ‘dust mulch’ that seals the surface, repelling water and increasing runoff. Because the shallow topsoils are generally free draining, they are drought prone. The iron and aluminium-rich subsoil is toxic to plant roots, causing both pasture and crop species to be shallow-rooted, exacerbating drought problems.

The alluvial Kamo soils have been assessed as Class 3w2, as shown on the NZLRI database. If this area became part of a designed ponding area to reduce flood flows in the Kerikeri River, the flats would become Class 4w1 or even 6w1, depending on the frequency depth and duration of ponding.

Current Land Uses	hectares	% of property
Excavated and constructed paved area/platform & roads	1.40	22.6
Building site, etc.	0.30	4.8
Shelterbelts	0.30	4.8
Kamo soils on river flat	0.70	11.3
Pungaere soils on slope	<u>3.50</u>	<u>56.5</u>
	6.20	100.0

That is, of the 6.2 ha of land within the property, only 4.2ha or two-thirds is available for primary production. 3.5 ha of cold, south-facing Pungaere soil is available for very limited horticultural, pastoral or production forestry use and 0.7ha of river flat is flood-prone, suited to pastoral farming and an occasional short-season maize or sweet corn crop. Even with a short season crop, there is a high risk of the crop being lost to flooding.

The approx. 1.0ha constructed pad area could be used for ‘non-soil’ glasshouse production, although that use could take place anywhere in the Kerikeri area, regardless of any former soil type.

Restrictions on Land Use

Wet Soils and Flood Risk - As noted, the sloping land on the property was previously used for kiwifruit production. There is evidence of some subsurface land drainage, a series of large diameter slotted pvc pipes across the slope to intercept seepage from underlying strata. These drainage lines would need to be excavated channels, much deeper with filter ‘stockings’ wrapped around pipes bedded in clean gravel backfill to intercept subsurface flow and to effectively lower the watertable and, even then, there would still be ‘springs’ or seepages welling up between the interceptor drains. This is particularly so near the foot of the slope where the aerial imagery shows gaps within the kiwifruit orchard.

The property is also affected by runoff from properties along Koropewa Road and from the road itself. A broad grass swale would be required to carry this overland flow. It could then be captured and carried in a surface drain, excavated between the foot of the slope and the alluvial flats.

The heavy clay soils on the flats would remain wet for at least four months of the year. They need surface drains at approximately 30metre intervals with subsurface ‘laser drains’ (slotted pvc piping bedded in washed gravel) and mole drains. This would enable them to be grazed or to grow short season, fast maturing summer crops, provided there are no summer floods. It is understood that flood risk reduction measures being considered for Waipapa provide for flood storage on these alluvial flats to reduce pressure on the Waipapa commercial area, on the land between Waipapakoura River and Waipapa Road, and the overflow from this area northwards across Waipapa Road. This could result in floodwaters ponding on these flats for one or more days following heavy rain in the catchment.

Reverse Sensitivity – The subject property has residential-scale sections and development on its western and northern boundaries, industrial development within 150metres of part of its eastern boundary and the Waipapa commercial and industrial area within 450 metres of the rest of its eastern boundary. Only the narrow southern boundary on the Kerikeri Rover is well-separated from populated land. Otherwise, the property is effectively surrounded by dwellings. Even if the soils were suited to horticulture and despite an orchard having been originally established on the property, the encroachment of dwellings to within close proximity of the boundaries now makes management of a commercial orchard extremely difficult. Despite compliance with regulations and with industry good practice, the orchardist or market gardener would be subject of complaints.

Kiwifruit require a winter chill to stimulate bud-break or, in relatively frost-free areas, Hydrogen cyanamide (often referred to by the brand name Hi-Cane) is widely used in spring to promote budbreak and improve yield. While growers and their spray contractors are responsible for keeping sprays on the orchard and not allowing them to drift on to neighbouring properties, a stenching agent added to the spray can be detected often well beyond any actual spray drift. There is considerable pressure to ban the use of ‘Hi-Cane’.

Other chemicals already required and likely to be required more frequently as new pests take advantage of a warmer climate, machinery working during early morning or late evening calm conditions, or, in an extreme situation, when helicopters are used to spray crops or disperse frosty air, will also attract reverse sensitivity complaints. Cold air draining down the property would carry the smell of agricultural chemicals down into the commercial and industrial centre of Waipapa.

Potential for Horticulture - As the sections above on soils and land use capability explain, the soil types on the property are, at best, very marginally suited to orcharding, market gardening or other forms of horticulture. They are not highly versatile soils and are capable of economically growing only a very limited range of tree, vine or crop species. The land is colder because it is south-facing and has seepage areas and overland flow paths too wet for horticulture and at risk of overland stormwater flow, causing crop damage and soil erosion.

The parcel of land has insufficient horticultural potential and has insufficient usable land to attract commercial investment in horticulture, even if the soil limitations could be mitigated.

National Policy Statement for Highly Productive Land

Councils are under increasing pressure from Government to protect highly productive land from non-agricultural uses. The Proposed National Policy Statement for Highly Productive Land identifies land recorded as Class 1, 2 and 3 in the New Zealand Land Resource Inventory database as ‘highly productive land’ unless more detailed surveys have been conducted and are in use by district and regional councils.

As noted above, there are anomalies in the NZLRI Land Use Capability database in parts of the Far North District, errors which have previously been identified and the Crown Research Institute (Manaaki Whenua – Landcare Research) advised. If the District Council is to have confidence in the planning and decision-making tools it is using to implement the National Policy Statement or its own District and Regional Plan rules, these anomalies or mistakes in the original assessments need to be corrected. In particular, the assessment of very old, almost

sterile ironstone soils as Class 2, even Class 3, fails to recognise the physical and chemical limitations of these soils. They are not highly versatile soils, being suited to a very limited range of land uses and have no particular features that make them suited to any specialist crop.

Implementation of the National Policy Statement relies on the NZLRI land use capability database to identify highly productive (or potentially highly productive) soils. There is a risk in using a database prepared at a 1:50,000 scale to identify small areas. The 3rd Edition of the Land Use Capability Assessment Handbook, the 'bible' in respect of mapping and assessing land use capability in New Zealand, suggests that the smallest area of interest at a scale of 1:50,000 is 10 hectares. The NZLRI database is at best indicative when considering land for horticultural use and more detailed surveys are required to confirm the uniformity of soil type, slope and aspect within actually or potentially highly productive areas.

Mapping at a scale of 1:10,000 would provide more accurate data for planning decisions within areas identified as being generally suited to horticulture. The Hall property is a little over 6ha but contains five or more quite different land use capability units, only two of which are marginally suited to some forms of horticulture or arable use.

Is this highly productive or potentially highly productive land?

As described above, the best of the sloping land on the Hall property, recorded as Class 2s1 on the NZLRI, has been re-assessed as Land Use Capability Class 4s2. A very detailed soil and land use capability survey, as would be undertaken in designing a drainage system and planning the layout of an orchard, would identify seepage areas, patches of even heavier soils and/or ironstone gravel, and overland flow paths, recording these areas as Classes 5w and 6w, depending on the 'age' of the soil and its physical limitations.

On this property, Pungaere soils are not highly versatile. They are neither highly productive nor potentially highly productive. The encroachment of housing and commercial development on the boundaries of this property prevents the potential of even very small patches of soil suited to a limited range of crops from being realised.

Summary

1. The soils on the Hall property are wrongly assessed as Class 2s1 on the NZ Land Resource Inventory Land Use Capability database. This LUC Unit should be restricted to highly productive and highly versatile soils (Maunu, Kiripaka, Ohaeawai and some Waimate North soils) on younger basalt volcanics.
2. Pungaere soils on this property are highly variable, some areas are severely limited by seepages and poor natural drainage. This soil type suffers from high concentrations of iron and aluminium beyond 20cm depth in its profile, creating both a chemical and, in places, a physical barrier to plant root penetration. Pungaere gravelly clay is not recognised as a highly productive or versatile soil.
3. Areas of deeper Pungaere soil, patches within the former kiwifruit orchard on this property, are at best Class 4s2, a unit defined by Harmsworth in the report accompanying the NZLRI database for Northland. Some shallow soil areas within the former kiwifruit orchard, some seepage areas, drainage depressions and areas with dense gravelly subsoil over heavy clay will be Class 6.
4. The Hall land is surrounded by housing development, with commercial and industrial development in Waipapa, immediately downhill of the property. Redevelopment for horticulture would attract opposition, particularly the use of chemicals required to enhance bud-break in kiwifruit and to control pests and diseases.

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7. Kermode, L.O., 1982, Whangaroa-Kaikohē, NZMS 290, Sheet P04/05, 1:100,000, New Zealand Land Inventory Rock Types, Department of Lands and Survey, Wellington

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DECISION ON LAND USE CONSENT APPLICATION UNDER THE RESOURCE MANAGEMENT ACT 1991

Decision

Pursuant to section 34(1) and sections 104, 104B and Part 2 of the Resource Management Act 1991 (the Act), the Far North District Council grants land use resource consent for a Discretionary, subject to the conditions listed below to:

Council Reference:	2230218-RMALUC
Applicant:	Breakwater Trust
Property Address:	29 Koropewa Road, Kerikeri 0295
Legal Description:	LOT 3 DP 202022 BLK X KERIKERI SD - SUBJ TO & INT IN ESMTS
Description of Application:	To construct a second shed for the purposes of storing materials associated with the Boat Building Activity in the Rural Production Zone breaching Traffic Intensity as a Discretionary Activity.

Conditions

Pursuant to sections 108 of the Act, this consent is granted subject to the following conditions:

1. The activity shall be carried out in accordance with the information provided in the application and the approved plans prepared by Total Design, referenced Site Plan, dated 18.07.2022; and the plans prepared by ITM, referenced;
 - i. Elevations, - North & South, Drawing No: A104, dated 19.12.2021; 36
 - ii. Elevations – East & West, Drawing No A105, dated 19.12.2021; 37
 - iii. Setout Plan, Drawing No A102, dated 19.12.2021;and attached to this consent with the Council's "Approved Stamp".
2. Prior to Code of Compliance being issued on the shed, the consent holder shall ensure that the development is carried out in accordance with the recommendations within the Stormwater Neutrality Report, prepared by LDE Development and Engineering, Project Reference 20665, dated July 18, 2022.
3. The exterior of the building shall be finished in a natural recessive colours and materials. This scheme shall be maintained for the lifetimes of the building and shall only be altered with written approval from Council's Delegated Officer and then only in strict compliance with any Council conditions.
4. The commercial vehicle crossing shall be constructed in accordance with conditions 6 and 7 of RC 2300369-RMAVAR/A prior to the Code of Compliance being issued for the shed.

Advice Notes

Lapsing of Consent

1. Pursuant to section 125 of the Act, this resource consent will lapse 5 years after the date of commencement of consent unless, before the consent lapses;
 - a) The consent is given effect to; or
 - b) An application is made to the Council to extend the period of consent, and the council decides to grant an extension after taking into account the statutory considerations, set out in section 125(1)(b) of the Act.

Right of Objection

2. If you are dissatisfied with the decision or any part of it, you have the right (pursuant to section 357A of the Act) to object to the decision. The objection must be in writing, stating reasons for the objection and must be received by Council within 15 working days of the receipt of this decision.

Archaeological Sites

3. Archaeological sites are protected pursuant to the Heritage New Zealand Pouhere Taonga Act 2014. It is an offence, pursuant to the Act, to modify, damage or destroy an archaeological site without an archaeological authority issued pursuant to that Act. Should any site be inadvertently uncovered, the procedure is that work should cease, with the Trust and local iwi consulted immediately. The New Zealand Police should also be consulted if the discovery includes koiwi (human remains). A copy of Heritage New Zealand's Archaeological Discovery Protocol (ADP) is attached for your information. This should be made available to all person(s) working on site.

General Advice Notes –

4. If there is an increase in person's on-site beyond what has been approved under 2300369, additional resource consent will be required for Scale of Activity.
5. If additional impermeable surfaces are required beyond what has been included in this resource consent, additional resource consent will be required for Stormwater Management.
6. Prior to conducting the upgrade of any vehicle crossing in or close to Koropewa Road reserve the consent holder shall submit a Corridor Access Request (CAR) and subsequently obtain a Work Access Permit (WAP)

Reasons for the Decision

1. By way of an earlier report that is contained within the electronic file of this consent, it was determined that pursuant to sections 95A and 95B of the Act the proposed activity will not have, and is not likely to have, adverse effects on the environment that are more than minor, there are also no affected persons and no special circumstances exist. Therefore, under delegated authority, it was determined that the application be processed without notification.
2. The application is for a Discretionary resource consent as such under section 104 the Council can consider all relevant matters. In particular the matters listed in the assessment criteria within Chapter 15.1.6A.7 are of particular relevance.
3. In regard to section 104(1)(a) of the Act the actual and potential effects of the proposal will be acceptable as the application is clear that the additional shed associated with

the boat building activities are for storage purposes only, so material's do not need to be left outside. The scale of the business is not increasing as a result of the application. The conditions of consent within 2300369-RMAVAR remain in place, in particular the condition restricting the number of persons allowed on site as a permitted activity. Therefore, the additional shed is not considered to create adverse effects in terms of additional traffic.

4. In regard to section 104(1)(ab) of the Act there are no offsetting or environmental compensation measures proposed or agreed to by the applicant for the activity.
5. In regard to section 104(1)(b) of the Act the following statutory documents are considered to be relevant to the application:
 - a. Operative Far North District Plan 2009,
 - b. Proposed Far North District Plan 2022
 - c. National Policy Statement for Highly Productive Land.

Operative Far North District Plan

The activity is consistent with the relevant objectives, policies and assessment criteria of the Operative District Plan because

Chapter 8.6 Rural Production Zone

Objectives: 8.6.3.2, 8.6.3.7

Policies: 8.6.4.1, 8.6.4.4, 8.6.4.7

The proposal provides for efficient use and development of the zone while ensuring a wide range of activities be carried. The proposal will allow for materials to be stored inside, protecting the characteristics and amenity of the rural environment with existing landscaping along the boundaries providing visual screening.

Chapter 15 Transportation:

Objectives: 15.1.3.3, 15.1.3.4.

Policies: 15.1.4.1, 15.1.4.3.

The effects on traffic have been evaluated and the effects of traffic on the natural and physical environment are less than minor. The application has provided for sufficient parking to meet the requirements of the District Plan and provides for safe access and manoeuvring for vehicles.

Proposed Far North District Plan

The activity is consistent with the relevant objectives, policies and assessment criteria of the Proposed District Plan because

Horticultural

Objectives: HZ-O3.

Policies: HZ-O2, HZ-P7.

Given the activity has been approved, many of the objectives and policies within this zone are not relevant. There is open space available for small horticultural activities to be carried out in the future, if required. The proposal remains consistent with the surrounding area and ensures the rural amenity is retained by way of existing boundary planting.

Transportation

Objectives: TRAN-O4.

Policies: TRAN-P2,

The proposal enables safe, efficient, and effective access, parking and manoeuvring on-site. The proposal is setback from the road sufficiently to maintain the character and amenity of the local environment, with established existing boundary planting to provide further screening.

For this resource consent application, the relevant provisions of both an operative and any proposed plan must be considered. Weighting is relevant if different outcomes arise from assessments of objectives and policies under both the operative and proposed plans.

As the outcomes sought are the same under the operative and the proposed plan frameworks, no weighting is necessary.

National Policy Statement for Highly Productive Land.

The NZLRI data base, has assessed the soils Class 2s1, which is potentially highly productive. The applicant has provided a Property Report prepared by Independent Agriculture & Horticultural Consultant Network which has provided an assessment on the Productive potential of the soils and class

The report has been able to demonstrate that the soils do not meet the definition of Highly productive land within the NPS. Therefore, the proposal is not contrary to the objectives and policies of the NPS HPL.

6. In regard to section 104(1)(c) of the Act there are no other matters relevant to the application.
7. Based on the assessment above the activity will be consistent with Part 2 of the Act.

The activity will avoid, remedy or mitigate any potential adverse effects on the environment while providing for the sustainable management of natural and physical resources and is therefore in keeping with the Purpose and Principles of the Act. There are no matters under section 6 that are relevant to the application. The proposal is an efficient use and development of the site that will maintain existing amenity values without compromising the quality of the environment. The activity is not considered to raise any issues in regard to Te Tiriti o Waitangi.
8. Overall, for the reasons above it is appropriate for consent to be granted subject to the imposed conditions.

Approval

This resource consent has been prepared by Shanay Howard, Planning NZ. I have reviewed this and the associated information (including the application and electronic file material) and for the reasons and subject to the conditions above, and under delegated authority, grant this resource consent.



[

Name: Pat Killalea

Date: 20th December 2022.

Title: Principal Planner



Far North
District Council

FAR NORTH DISTRICT COUNCIL

**FAR NORTH OPERATIVE DISTRICT PLAN
DECISION ON RESOURCE CONSENT APPLICATION (LANDUSE)**

Resource Consent Number: 2300369-RMALUC

Pursuant to section 104B of the Resource Management Act 1991 (the Act), the Far North District Council hereby grants resource consent to:

Breakwater Trust

To construct an industrial boatbuilding shed breaching scale of activity and traffic intensity in the Rural Production zone.

Subject Site Details

Address: 29 Koropewa Road, Kerikeri
Legal Description: LOT 3 DP 202022
Certificate of Title reference: NA-129B/873

Pursuant to [Section 108](#) of the Act, this consent is issued subject to the following [conditions](#):

General Conditions

1. The activity shall be carried out in accordance with the approved site plan, elevations and floor plans prepared by Total Design, referenced Proposed New Building Breakwater Trust sheets 1-4, dated 11/02/2021, and attached to this consent with the Council's "Approved Stamp" affixed to it.

Prior to Construction

2. The consent holder shall, prior to the construction of the building or site development works commencing, clearly identify the extent of flooding (e.g. onsite visible markers) on the property, to ensure that the earthworks, proposed building and stormwater management and mitigation system are located outside of this area.
3. The consent holder shall in conjunction with obtaining building consent for the proposed building, provide for approval of Council's Resource Consent Engineer or designate a stormwater management and mitigation plan for proposed building and access. The design shall be prepared by a suitably qualified engineer. The system shall be designed such that the total stormwater discharged from the site, after development, is no greater than the predevelopment flow from the site for 10% and 1% AEP rainfall events plus allowance for climate change. (Note: consultation with council engineers prior to design commencing is recommended).

Construction

4. All construction works on-site are to be carried out in accordance with the noise limits recommended for residential areas in NZS6803P 1984. "Measurement and assessment of noise from construction, maintenance and demolition work"
5. The consent holder shall within 3 months of the issue of this consent upgrade the existing western entrance (adjacent to 33 Koropewa Rd vehicle crossing) to comply with the Council's Engineering Standard FNDC/S/2, and section 3.3.17 of the Engineering Standard and NZS4404:2004. Seal or concrete the entrance plus splays for a minimum distance of 5m from the existing seal edge. Removal of vegetation is required on bend to improve sight line distances, and improvement of grade to meet vehicle breakover requirements. This entrance shall remain single width, and is not to be used by commercial vehicles. Note: A corridor access request and traffic management plan approval will be required from Northern Transport Alliance (NTA) prior to commencing work in the legal road.
6. The consent holder shall prior to the occupation of proposed building or activity commencing provide to Council's Development Engineer or designate for approval a specific design prepared by a suitably qualified engineer for upgrading the existing vehicle crossing (current entrance to R.O.W on bend to 29 Koropewa Rd to a concreted double width commercial vehicle crossing (see associated Advice Notes below).
7. The consent holder shall prior to the occupation of proposed building or activity commencing construct the vehicle crossing as approved under condition 6 above and ensure for the duration of this consent that commercial and heavy vehicles access and egress to/from the site is from this upgraded crossing only.

Post Construction and Conduct of Activity

8. The consent holder shall prior to the occupation of proposed building or activity commencing and for the duration of this consent ensure that formed, surfaced, and drained access, manoeuvring, and parking for 15 vehicles, including one accessibility park, constructed in accordance with NZS4121:2001 is provided and maintained.
9. The consent holder shall maintain the vegetation along the western boundary to provide visual screening between the boat building activity and Lots 1 and 2 DP 380499. This vegetation shall not be removed except with written approval from Council's Delegated Officer and then only in strict compliance with any Council conditions. Note: This does not restrict vegetation clearance required to maintain sight distances at the vehicle crossing.
10. The exterior of the building shall be finished in a natural recessive colours and materials. This scheme shall be maintained for the lifetimes of the building and shall only be altered with written approval from Council's Delegated Officer and then only in strict compliance with any Council conditions.
11. The number of persons employed on site or making use of the facilities shall be restricted to 20 persons per day. (Note: this does not include occasional visitors, customers or deliveries)
12. The boatbuilding activity shall only be carried out within the building to reduce noise emissions from the site.

13. The boat building activity hours of operation shall be limited to 7.30am to 5pm weekdays.
14. Within 6 months of the activity commencing the consent holder will provide Council's Resource Consents Monitoring Officer with a noise management plan prepared by a suitably qualified person. The report shall verify whether noise emissions comply with the permitted standards for noise in the Rural Production zone and, if required, make recommendations to ensure ongoing compliance with the permitted standards.
15. In accordance with section 128 of the Resource Management Act 1991, within 12 months of the activity establishing and annually thereafter, the Far North District Council may serve notice on the consent holder of its intention to review the conditions of this consent. The review may be initiated for any of the following purposes:
 - To require the adoption of the best practicable option to remove or reduce any adverse noise effect on the environment.
 - To deal with any inadequacies or inconsistencies the Far North District Council or duly delegated Council Officer considers there to be, in the conditions of the consent, following the establishment of the activity the subject of this consent.
 - To deal with any material inaccuracies that may in future be found in the information made available with the application (notice may be served at any time for this reason).

The consent holder shall meet all reasonable costs of any such review

Advice Notes

1. Archaeological sites are protected pursuant to the Heritage New Zealand Pouhere Taonga Act 2014. It is an offence, pursuant to the Act, to modify, damage or destroy an archaeological site without an archaeological authority issued pursuant to that Act. Should any site be inadvertently uncovered, the procedure is that work should cease, with the Trust and local iwi consulted immediately. The New Zealand Police should also be consulted if the discovery includes koiwi (human remains). A copy of Heritage New Zealand's Archaeological Discovery Protocol (ADP) is attached for your information. This should be made available to all person(s) working on site.
2. Prior to conducting the upgrade of any vehicle crossing in or close to Koropewa Road reserve the consent holder shall submit a Corridor Access Request (CAR) and subsequently obtain a Work Access Permit (WAP)
3. Ground suitability assessment may be required at building consent stage for proposed building.
4. National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations 2011 - Land within this lot has been identified as land that will potentially be covered by the above legislation. It will be the responsibility of the lot owner to address the regulations if proposing any further development on the site. Activities covered by the regulations include the removing or replacing of a fuel storage system; soil sampling, disturbance and/or removal; subdivision; and changing the use of the land.
5. The proposed activity is to comply with the permitted noise levels as set out in the District Plan. Any issue of non-compliance with the prescribed levels will necessitate

monitoring by Council, the costs of which may be required to be recovered from the applicant.

6. Activities involving discharges to air, land or water may be subject to the requirements of the Northland Regional Council Regional Plan.

Reasons for the Decision

1. The Council has determined (by way of an earlier report and resolution) that the adverse environmental effects associated with the proposed activity are less than minor and that there are no affected persons or affected customary rights group or customary marine title group.

2. District Plan Rules Affected:

Resource consent was required for a breach of rule 15.1.6a.2.1 Traffic Intensity and rule 8.6.5.1.11 Scale of Activities. An assessment of the proposal against the traffic intensity and scale of activities assessment criteria is contained in the s.95 notification report. It concluded that, subject to consent conditions, the adverse effects on the wider environment and on the owners and occupiers of adjacent properties would be less than minor.

Adverse effects will be minor:

It is considered the relevant and potential effects have been addressed and it has been concluded that the adverse effects will be less than minor.

Positive effects of the proposal:

Under s104(1)(a) the positive and potential effects of the proposal are:

- a. A local business will be able to expand.

Objectives and policies of the District Plan:

The following objectives and policies of the District Plan have been considered:

Relevant Rural Production Zone Objectives and Policies

8.6.3.2 To enable the efficient use and development of the Rural Production Zone in a way that enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety.

8.6.3.3 To promote the maintenance and enhancement of the amenity values of the Rural Production Zone to a level that is consistent with the productive intent of the zone.

8.6.3.6 To avoid, remedy or mitigate the actual and potential conflicts between new land use activities and existing lawfully established activities (reverse sensitivity) within the Rural Production Zone and on land use activities in neighbouring zones.

8.6.3.7 To avoid remedy or mitigate the adverse effects of incompatible use or development on natural and physical resources.

8.6.3.8 To enable the efficient establishment and operation of activities and services that have a functional need to be located in rural environments.

8.6.4.2 That standards be imposed to ensure that the offsite effects of activities in the Rural Production Zone are avoided, remedied or mitigated.

8.6.4.4 That the type, scale and intensity of development allowed shall have regard to the maintenance and enhancement of the amenity values of the Rural Production Zone to a level that is consistent with the productive intent of the zone.

8.6.4.7 *That although a wide range of activities that promote rural productivity are appropriate in the Rural Production Zone, an underlying goal is to avoid the actual and potential adverse effects of conflicting land use activities.*

8.6.4.8 *That activities whose adverse effects, including reverse sensitivity effects, cannot be avoided remedied or mitigated are given separation from other activities*

8.6.4.9 *That activities be discouraged from locating where they are sensitive to the effects of or may compromise the continued operation of lawfully established existing activities in the Rural Production zone and in neighbouring zones.*

Relevant Transportation Objectives and Policies

15.1.3.1 *To minimise the adverse effects of traffic on the natural and physical environment.*

15.1.3.3 *To ensure that appropriate provision is made for on-site car parking for all activities, while considering safe cycling and pedestrian access and use of the site.*

15.1.3.4 *To ensure that appropriate and efficient provision is made for loading and access for activities.*

15.1.3.5 *To promote safe and efficient movement and circulation of vehicular, cycle and pedestrian traffic, including for those with disabilities.*

15.1.4.1 *That the traffic effects of activities be evaluated in making decisions on resource consent applications.*

15.1.4.6 *That the number, size, gradient and placement of vehicle access points be regulated to assist traffic safety and control, taking into consideration the requirements of both the New Zealand Transport Agency and the Far North District Council.*

The objectives and policies of the Rural Production zone emphasise compatibility with productive landuses, rural amenity and wellbeing. The transportation objectives and policies emphasise ensuring road safety, reducing effects from traffic and ensuring adequate parking. The proposal has been assessed against these provisions using the relevant criteria from 11.1 Scale of Activities and 11.12 Traffic Intensity. Subject to compliance with recommended consent conditions the adverse effects of the proposed activity will be less than minor.

The proposal is not contrary to the relevant objectives and policies of the District Plan.

3. In accordance with an assessment under s104(1)(b) of the RMA the proposal is consistent with the relevant statutory documents.
 - a) The Northland Regional Policy Statement 2018
 - b) National Environmental Standards (NESCS)
4. In accordance with an assessment under s104(1)(c) of the RMA the following non – statutory documents are considered appropriate
 - a) FNDC Engineering Standards and Guidelines
5. No other matters were considered relevant in making this decision.
6. Part 2 Matters

The Council has taken into account the purpose & principles outlined in sections 5, 6, 7 & 8 of the Act. It is considered that granting this resource consent application achieves the purpose of the Act.

7. In summary it is considered that the activity is consistent with the sustainable management purpose of the RMA.



Louise Wilson
Team Leader Resource Consents

Date: 29 July 2021

Approval

This resource consent has been prepared by Louise Wilson, Team Leader Resource Consents and is granted under delegated authority (pursuant to section 34A of the Resource Management Act 1991) from the Far North District Council by:



Independent Hearings Commissioner
William (Bill) Smith

Date 29 July 2021



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Approved Plan attachment above

Right of Objection

If you are dissatisfied with the decision or any part of it, you have the right (pursuant to section 357A of the Act) to object to the decision. The objection must be in writing, stating reasons for the objection and must be received by Council within 15 working days of the receipt of this decision.

Lapsing of Consent

Pursuant to section 125 of the Act, this resource consent will lapse 5 years after the date of commencement of consent unless, before the consent lapses;

The consent is given effect to; or

An application is made to the Council to extend the period of consent, and the council decides to grant an extension after taking into account the statutory considerations, set out in section 125(1)(b) of the Act.

**DECISION ON SECTION 127 APPLICATION
UNDER THE RESOURCE MANAGEMENT ACT 1991**

Decision

Pursuant to section 34(1) and sections 104, 104B, 127 and Part 2 of the Resource Management Act 1991 (the Act), the Far North District Council **grants** resource consent to change and cancel conditions of resource consent RC 2220253-RMAOBJ.

Council Reference:	RC 2300369-RMAVAR/A
Applicant:	Breakwater Trust
Property Address:	29C Koropewa Road, Waipapa
Legal Description:	Lot 3 DP 202022
Description of Application:	The proposal seeks to amend condition 1 of RC 2300369-RMALUC being a consent to construct a building and establish a boat building business breaching Traffic Intensity and Scale of Activities in the Rural Production Zone. The amendment is to increase the size of the boat building shed by 148m ² (10%) to accommodate a smoko room patio and a covered store entrance.

The following changes and/or cancellations to the conditions of resource consent RC 2300369-RMALUC are made:

(~~Strikethrough~~ indicates deletions and underline indicates additions and changes)

For clarity a complete set of conditions, as amended, are provided in Schedule 1 to this decision.

Condition 1 to be amended

The activity shall be carried out in general accordance with the ~~approved site plan, elevations and floor plans prepared by Total Design, referenced Proposed New Building Breakwater Trust sheets 1-4, dated 11/02/2021,~~ approved plan, prepared by Total Design and amended by Northland Planning (30.09.2022), referenced Site Plan, drawing No 1 of 15 and the plans prepared by Total Design, referenced;

- Floor Plans, Drawing No 2 of 13, dated 20.06.2022
- Elevations, Drawing No 3 of 13, dated 20.06.2022

and attached to this consent with the Council's "Approved Stamp" affixed to it.

Advice Notes

Lapsing of Consent

1. The granting of this section 127 application does not alter the lapse date of the original consent. The consent holder is recommended to check that the original consent does not lapse before it is given effect to.

Right of Objection

2. If you are dissatisfied with the decision or any part of it, you have the right (pursuant to section 357A of the Act) to object to the decision. The objection must be in writing, stating reasons for the objection and must be received by Council within 15 working days of the receipt of this decision.

Reasons for the Decision

1. By way of an earlier report that is contained within the electronic file of this consent, it was determined that pursuant to sections 95A and 95B of the Act the proposed activity will not have, and is not likely to have, adverse effects on the environment that are more than minor, there are no affected persons and no special circumstances exist. Therefore, under delegated authority, it was determined that the application be processed without notification.
2. The proposed change is within the scope of the original resource consent and therefore can be considered under section 127.
3. In regard to sections 104(1)(a) and 127(3) of the Act the actual and potential effects of the proposed change will be acceptable.
4. In regard to sections 104(1)(ab) and 127(3) of the Act there are no offsetting or environmental compensation measures proposed or agreed to by the applicant for the activity.
5. In regard to sections 104(1)(b) and 127(3) of the Act the following statutory documents are considered to be relevant to the application:
 - a. Operative Far North District Plan 2009,
 - b. Proposed Far North District Plan 2022

Operative Far North District Plan

The proposed change is consistent with the relevant objectives and policies of the Operative District Plan because

Chapter 8.6 Rural Production Zone

Objectives: 8.6.3.2, 8.6.3.7

Policies: 8.6.4.1, 8.6.4.4, 8.6.4.7

The variation enables the efficient use and development of the zone while ensuring a wide range of activities be carried while maintaining the characteristics and amenity of the rural environment with existing landscaping along the boundaries providing visual screening.

Proposed Far North District Plan

Horticultural

Objectives: HZ-O3
Policies: HZ-O2, HZ-P7

Given the activity has been approved, many of the objectives and policies within this zone are not relevant. There is open space available for small horticultural activities to be carried out in the future, if required. The variation remains consistent with the surrounding area and ensures the rural amenity is retained by way of existing boundary planting. Therefore, the variation remains consistent with the objectives and policies within the Horticultural zone.

For this resource consent application, the relevant provisions of both an operative and any proposed plan must be considered. Weighting is relevant if different outcomes arise from assessments of objectives and policies under both the operative and proposed plans.

As the outcomes sought are the same under the operative and the proposed plan frameworks, no weighting is necessary.

6. In regard to sections 104(1)(c) and 127 of the Act there are no other matters relevant to the application.
7. Based on the assessment above the proposed change will be consistent with Part 2 of the Act.

The proposed change will avoid, remedy or mitigate any potential adverse effects on the environment while providing for the sustainable management of natural and physical resources and is therefore in keeping with the Purpose and Principles of the Act. There are no matters under section 6 that are relevant to the proposed change. The proposal remains an efficient use and development of the site that will maintain existing amenity values without compromising the quality of the environment. The activity is not considered to raise any issues in regard to Te Tiriti o Waitangi.

8. Overall, for the reasons above it is appropriate for the change(s) and cancellation of the conditions of consent to be granted.

Approval

This resource consent has been prepared by Shanay Howard (Planning NZ), resource planner. I have reviewed this and the associated information (including the application and electronic file material) and for the reasons and subject to the conditions above, and under delegated authority, grant this resource consent.



Name: Pat Killalea

Date: 1st November 2022

Title: Principal Planner

Schedule 1

Complete set of Consent Conditions for RC 2300369-RMALUC as Amended by RC 2300369-RMAVAR/A

General Conditions

1. The activity shall be carried out in general accordance with the approved plan, prepared by Total Design and amended by Northland Planning (30.09.2022), referenced Site Plan, drawing No 1 of 15 and the plans prepared by Total Design, referenced;
 - Floor Plans, Drawing No 2 of 13, dated 20.06.2022
 - Elevations, Drawing No 3 of 13, dated 20.06.2022and attached to this consent with the Council's "Approved Stamp" affixed to it.

Prior to Construction

2. The consent holder shall, prior to the construction of the building or site development works commencing, clearly identify the extent of flooding (e.g. onsite visible markers) on the property, to ensure that the earthworks, proposed building and stormwater management and mitigation system are located outside of this area.
3. The consent holder shall in conjunction with obtaining building consent for the proposed building, provide for approval of Council's Resource Consent Engineer or designate a stormwater management and mitigation plan for proposed building and access. The design shall be prepared by a suitably qualified engineer. The system shall be designed such that the total stormwater discharged from the site, after development, is no greater than the predevelopment flow from the site for 10% and 1% AEP rainfall events plus allowance for climate change. (Note: consultation with council engineers prior to design commencing is recommended).

Construction

4. All construction works on-site are to be carried out in accordance with the noise limits recommended for residential areas in NZS6803P 1984. "Measurement and assessment of noise from construction, maintenance and demolition work"
5. The consent holder shall within 3 months of the issue of this consent upgrade the existing western entrance (adjacent to 33 Koropewa Rd vehicle crossing) to comply with the Council's Engineering Standard FNDC/S/2, and section 3.3.17 of the Engineering Standard and NZS4404:2004. Seal or concrete the entrance plus splays for a minimum distance of 5m from the existing seal edge. Removal of vegetation is required on bend to improve sight line distances, and improvement of grade to meet vehicle breakover requirements. This entrance shall remain single width, and is not to be used by commercial vehicles. Note: A corridor access request and traffic management plan approval will be required from Northern Transport Alliance (NTA) prior to commencing work in the legal road.
6. The consent holder shall prior to the occupation of proposed building or activity commencing provide to Council's Development Engineer or designate for approval a specific design prepared by a suitably qualified engineer for upgrading the existing vehicle crossing (current entrance to R.O.W on bend to 29 Koropewa Rd to a concreted double width commercial vehicle crossing (see associated Advice Notes below).

7. The consent holder shall prior to the occupation of proposed building or activity commencing construct the vehicle crossing as approved under condition 6 above and ensure for the duration of this consent that commercial and heavy vehicles access and egress to/from the site is from this upgraded crossing only.

Post Construction and Conduct of Activity

8. The consent holder shall prior to the occupation of proposed building or activity commencing and for the duration of this consent ensure that formed, surfaced, and drained access, manoeuvring, and parking for 15 vehicles, including one accessibility park, constructed in accordance with NZS4121:2001 is provided and maintained.
9. The consent holder shall maintain the vegetation along the western boundary to provide visual screening between the boat building activity and Lots 1 and 2 DP 380499. This vegetation shall not be removed except with written approval from Council's Delegated Officer and then only in strict compliance with any Council conditions. Note: This does not restrict vegetation clearance required to maintain sight distances at the vehicle crossing.
10. The exterior of the building shall be finished in a natural recessive colours and materials. This scheme shall be maintained for the lifetimes of the building and shall only be altered with written approval from Council's Delegated Officer and then only in strict compliance with any Council conditions.
11. The number of persons employed on site or making use of the facilities shall be restricted to 20 persons per day. (Note: this does not include occasional visitors, customers or deliveries)
12. The boatbuilding activity shall only be carried out within the building to reduce noise emissions from the site.
13. The boat building activity hours of operation shall be limited to 7.30am to 5pm weekdays.
14. Within 6 months of the activity commencing the consent holder will provide Council's Resource Consents Monitoring Officer with a noise management plan prepared by a suitably qualified person. The report shall verify whether noise emissions comply with the permitted standards for noise in the Rural Production zone and, if required, make recommendations to ensure ongoing compliance with the permitted standards.
15. In accordance with section 128 of the Resource Management Act 1991, within 12 months of the activity establishing and annually thereafter, the Far North District Council may serve notice on the consent holder of its intention to review the conditions of this consent. The review may be initiated for any of the following purposes:
 - To require the adoption of the best practicable option to remove or reduce any adverse noise effect on the environment.
 - To deal with any inadequacies or inconsistencies the Far North District Council or duly delegated Council Officer considers there to be, in the conditions of the consent, following the establishment of the activity the subject of this consent.
 - To deal with any material inaccuracies that may in future be found in the information made available with the application (notice may be served at any time for this reason).

The consent holder shall meet all reasonable costs of any such review

Advice Notes

1. Archaeological sites are protected pursuant to the Heritage New Zealand Pouhere Taonga Act 2014. It is an offence, pursuant to the Act, to modify, damage or destroy an archaeological site without an archaeological authority issued pursuant to that Act. Should any site be inadvertently uncovered, the procedure is that work should cease, with the Trust and local iwi consulted immediately. The New Zealand Police should also be consulted if the discovery includes koiwi (human remains). A copy of Heritage New Zealand's Archaeological Discovery Protocol (ADP) is attached for your information. This should be made available to all person(s) working on site.
2. Prior to conducting the upgrade of any vehicle crossing in or close to Koropewa Road reserve the consent holder shall submit a Corridor Access Request (CAR) and subsequently obtain a Work Access Permit (WAP)
3. Ground suitability assessment may be required at building consent stage for proposed building.
4. National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations 2011 - Land within this lot has been identified as land that will potentially be covered by the above legislation. It will be the responsibility of the lot owner to address the regulations if proposing any further development on the site. Activities covered by the regulations include the removing or replacing of a fuel storage system; soil sampling, disturbance and/or removal; subdivision; and changing the use of the land.
5. The proposed activity is to comply with the permitted noise levels as set out in the District Plan. Any issue of non-compliance with the prescribed levels will necessitate monitoring by Council, the costs of which may be required to be recovered from the applicant.
6. Activities involving discharges to air, land or water may be subject to the requirements of the Northland Regional Council Regional Plan.

Lapsing of Consent

7. The granting of this section 127 application does not alter the lapse date of the original consent. The consent holder is recommended to check that the original consent does not lapse before it is given effect to.

Right of Objection

8. If you are dissatisfied with the decision or any part of it, you have the right (pursuant to section 357A of the Act) to object to the decision. The objection must be in writing, stating reasons for the objection and must be received by Council within 15 working days of the receipt of this decision.

NOTICE OF WRITTEN APPROVAL

Written Approval of Affected Parties in accordance with Section 95E of the Resource Management Act

PART A – To be completed by Applicant

Applicant/s Name:

Breakwater Trust

Address of proposed activity:

29 Koropewa Road, Waipapa

Legal description:

Lot 3 DP 202022

Description of the proposal (including why you need resource consent):

To undertake a subdivision in the Rural Production zone to create 10 Residential allotments, a balance commercial allotment, road to vest and esplanade reserve.
Landuse Consent is triggered for breaches of Stormwater Management, Setback from boundaries & Access.
Consent under the NES for Assessing and Managing contaminants in soil to protect human health.

Details of the application are given in the attached documents & plans (list what documents & plans have been provided to the party being asked to provide written approval):

1. Scheme Plan V5, prepared by Donaladsons ref 8054
2. _____
3. _____
4. _____
5. _____
6. _____

Notes to Applicant:

1. Written approval must be obtained from all registered owners and occupiers.
2. The **original copy** of this signed form and **signed plans and accompanying documents** must be supplied to the Far North District Council.
3. The amount and type of information provided to the party from whom you seek written approval should be sufficient to give them a full understanding of your proposal, its effects and why **resource consent is needed**.

PART B – To be completed by Parties giving approval

Notes to the party giving written approval:

1. If the owner and the occupier of your property are different people then separate written approvals are required from each.
2. You should only sign in the place provided on this form and accompanying plans and documents if you **fully understand** the proposal and if you **support** or have **no opposition** to the proposal. Council will not accept conditional approvals. If you have conditions on your approval, these should be discussed and resolved with the applicant directly.
3. Please note that when you give your written approval to an application, council cannot take into consideration any actual or potential effects of the proposed activity on you unless you formally withdraw your written approval **before** a decision has been made as to whether the application is to be notified or not. After that time you can no longer withdraw your written approval.
4. Please sign and date all associated plans and documentation as referenced overleaf and return with this form.
5. If you have any concerns about giving your written approval or need help understanding this process, please feel free to contact the duty planner on 0800 920 029 or (09) 401 5200.

Full name/s of party giving approval:

Address of affected property including legal description: Lot 2 DP 202022 Lot 2 DP168917

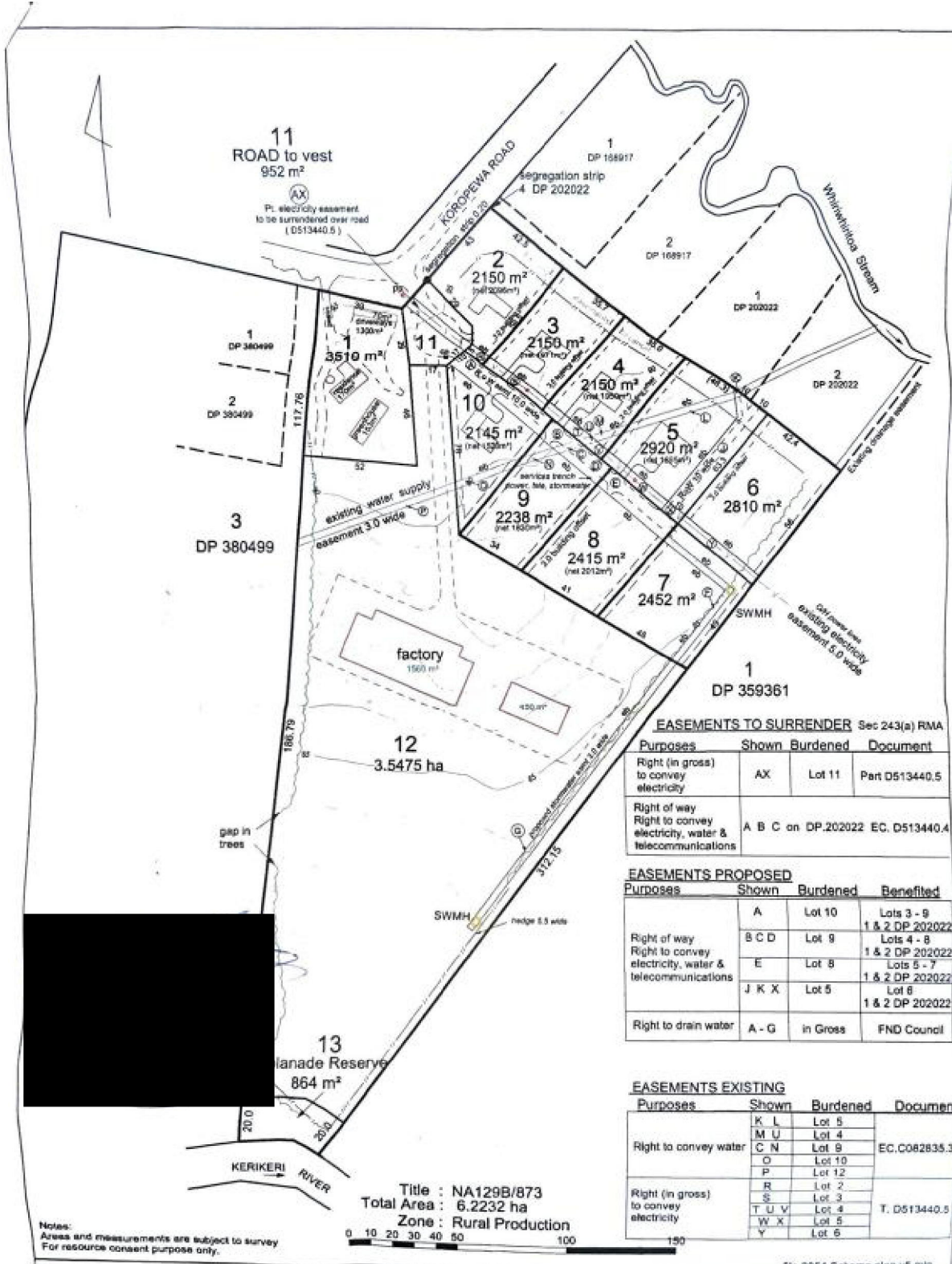
Contact Phone Number/s and email address: email:

I am/we are the OWNER(S) / OCCUPIER(S) of the property (circle which is applicable)

Please note: in most instances the approval of all the legal owners and the occupiers of the affected property will be necessary.

1. I/We have been provided with the details concerning the application submitted to Council and understand the proposal and aspects of non-compliance with the Operative District Plan.
2. I/We have signed each page of the plans and documentation in respect of this proposal (these need to accompany this form).
3. I/We understand and accept that once I/we give my/our approval the Consent Authority (Council) cannot take account of any actual or potential effect of the activity and/or proposal upon me/us when considering the application and the fact that any such effect may occur shall not be relevant grounds upon which the Consent Authority may refuse to grant the application.
4. I/We understand that at any time before the notification decision is made on the application, I/we may give notice in writing to Council that this approval is withdrawn.

Signature	<input type="text"/>	Date	<input type="text"/> 20.05.2023
Signature	<input type="text"/>	Date	<input type="text"/> 20.05.2023
Signature	<input type="text"/>	Date	<input type="text"/>
Signature	<input type="text"/>	Date	<input type="text"/>



EASEMENTS TO SURRENDER Sec 243(a) RMA

Purposes	Shown	Burdened	Document
Right (in gross) to convey electricity	AX	Lot 11	Part D513440.5
Right of way Right to convey electricity, water & telecommunications	A B C	on DP.202022	EC. D513440.4

EASEMENTS PROPOSED

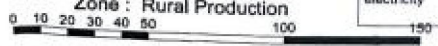
Purposes	Shown	Burdened	Benefited
Right of way Right to convey electricity, water & telecommunications	A	Lot 10	Lots 3 - 9 1 & 2 DP 202022
	B C D	Lot 9	Lots 4 - 8 1 & 2 DP 202022
	E	Lot 8	Lots 5 - 7 1 & 2 DP 202022
	J K X	Lot 5	Lot 6 1 & 2 DP 202022
Right to drain water	A - G	in Gross	FND Council

EASEMENTS EXISTING

Purposes	Shown	Burdened	Document
Right to convey water	K L	Lot 5	
	M U	Lot 4	
	C N	Lot 9	EC.C082835.3
	O	Lot 10	
	P	Lot 12	
Right (in gross) to convey electricity	R	Lot 2	
	S	Lot 3	
	T U V	Lot 4	T. D513440.5
	W X	Lot 5	
	Y	Lot 6	

Notes:
Areas and measurements are subject to survey
For resource consent purpose only.

Title : NA129B/873
Total Area : 6.2232 ha
Zone : Rural Production



file 8054 Scheme plan v5.mxd



LOTS 1 - 13 BEING A PROPOSED SUBDIVISION OF LOT 3 DP 202022

Contour interval : 1 m
Scale @ A3 : 1 : 1000
Date : 20 March 2023
Ref : 8054



NOTICE OF WRITTEN APPROVAL

Written Approval of Affected Parties in accordance with Section 95E of the Resource Management Act

PART A – To be completed by Applicant

Applicant/s Name:	Breakwater Trust
Address of proposed activity:	29 Koropewa Road, Waipapa
Legal description:	Lot 3 DP 202022
Description of the proposal (including why you need resource consent):	<p>To undertake a subdivision in the Rural Production zone to create 10 Residential allotments, a balance commercial allotment, road to vest and esplanade reserve.</p> <p>Landuse Consent is triggered for breaches of Stormwater Management, Setback from boundaries & Access.</p> <p>Consent under the NES for Assessing and Managing contaminants in soil to protect human health.</p>
Details of the application are given in the attached documents & plans (list what documents & plans have been provided to the party being asked to provide written approval):	<ol style="list-style-type: none"> 1. <u>Scheme Plan V5, prepared by Donaladsons ref 8054</u> 2. _____ 3. _____ 4. _____ 5. _____ 6. _____

Notes to Applicant:

1. Written approval must be obtained from all registered owners and occupiers.
2. The **original copy** of this signed form and **signed plans and accompanying documents** must be supplied to the Far North District Council.
3. The amount and type of information provided to the party from whom you seek written approval should be sufficient to give them a full understanding of your proposal, its effects and why resource consent is needed.

PART B – To be completed by Parties giving approval

Notes to the party giving written approval:

1. If the owner and the occupier of your property are different people then separate written approvals are required from each.
2. You should only sign in the place provided on this form and accompanying plans and documents if you **fully understand** the proposal and if you **support** or have **no opposition** to the proposal. Council will not accept conditional approvals. If you have conditions on your approval, these should be discussed and resolved with the applicant directly.
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4. Please sign and date all associated plans and documentation as referenced overleaf and return with this form.
5. If you have any concerns about giving your written approval or need help understanding this process, please feel free to contact the duty planner on 0800 920 029 or (09) 401 5200.

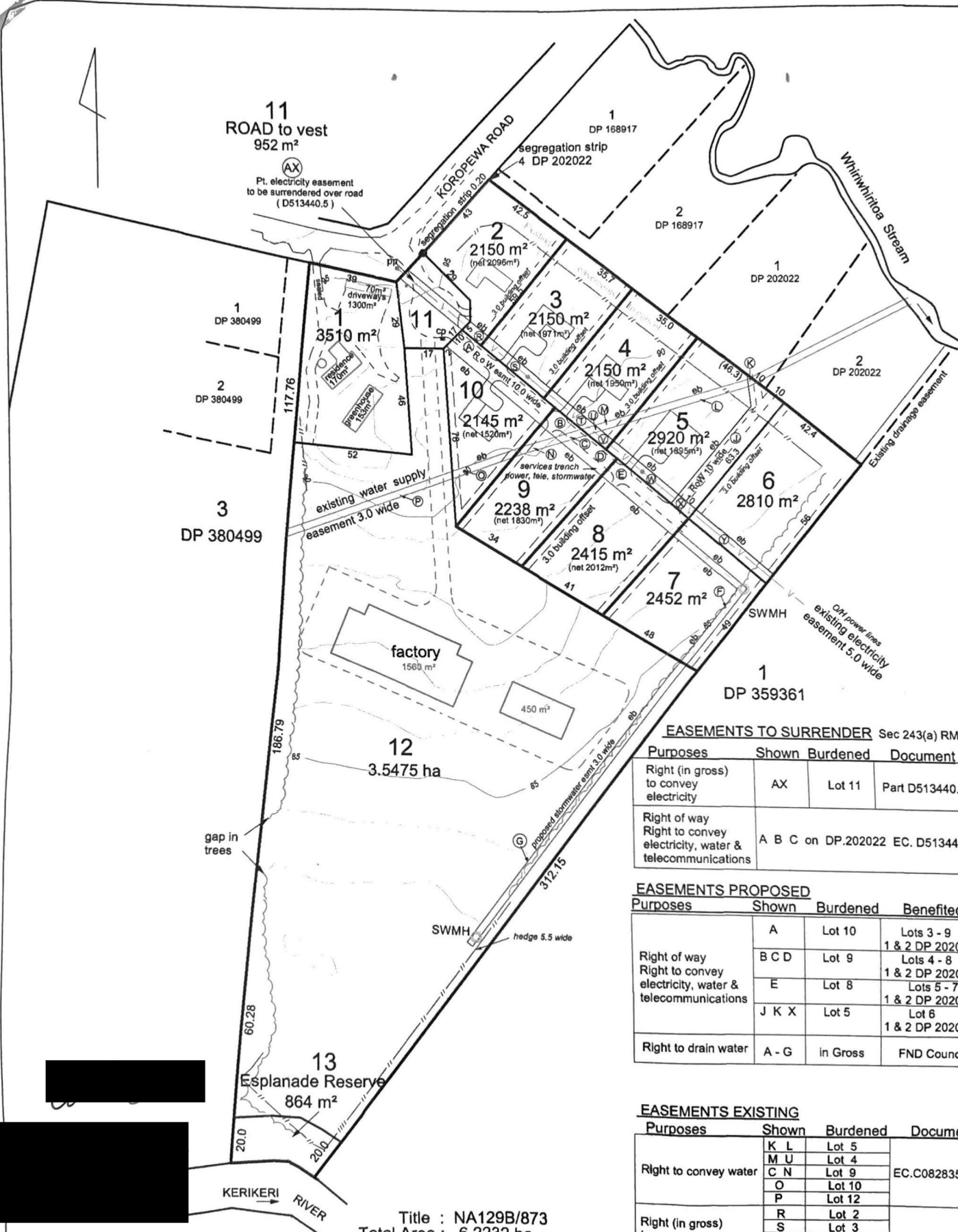
Full name/s of party giving approval:	[Redacted]	
Address of affected property including legal description	[Redacted]	1 DP168917
Contact Phone Number/ and email address	[Redacted]	email: [Redacted]

I am/we are the OWNER(S) / OCCUPIER(S) of the property (circle which is applicable)

Please note: in most instances the approval of all the legal owners and the occupiers of the affected property will be necessary.

1. I/We have been provided with the details concerning the application submitted to Council and understand the proposal and aspects of non-compliance with the Operative District Plan.
2. I/We have signed each page of the plans and documentation in respect of this proposal (these need to accompany this form).
3. I/We understand and accept that once I/we give my/our approval the Consent Authority (Council) cannot take account of any actual or potential effect of the activity and/or proposal upon me/us when considering the application and the fact that any such effect may occur shall not be relevant grounds upon which the Consent Authority may refuse to grant the application.
4. I/We understand that at any time before the notification decision is made on the application, I/we may give notice in writing to Council that this approval is withdrawn.

Signature	[Redacted]	Date	3 June 2023
Signature	[Redacted]	Date	3 June 2023
Signature	[Redacted]	Date	
Signature	[Redacted]	Date	



11
ROAD to vest
952 m²

ⓐ
Pt. electricity easement
to be surrendered over road
(D513440.5)

EASEMENTS TO SURRENDER Sec 243(a) RMA

Purposes	Shown	Burdened	Document
Right (in gross) to convey electricity	AX	Lot 11	Part D513440.5
Right of way Right to convey electricity, water & telecommunications	A B C	on DP.202022	EC. D513440.4

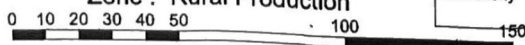
EASEMENTS PROPOSED

Purposes	Shown	Burdened	Benefited
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	B C D	Lot 9	Lots 4 - 8 1 & 2 DP 202022
	E	Lot 8	Lots 5 - 7 1 & 2 DP 202022
	J K X	Lot 5	Lot 6 1 & 2 DP 202022
Right to drain water	A - G	in Gross	FND Council

EASEMENTS EXISTING

Purposes	Shown	Burdened	Document
Right to convey water	K L	Lot 5	EC.C082835.3
	M U	Lot 4	
	C N	Lot 9	
	O	Lot 10	
	P	Lot 12	
Right (in gross) to convey electricity	R	Lot 2	T. D513440.5
	S	Lot 3	
	T U V	Lot 4	
	W X	Lot 5	
	Y	Lot 6	

Title : NA129B/873
Total Area : 6.2232 ha
Zone : Rural Production



Notes:
Areas and measurements are subject to survey
For resource consent purpose only.

file 8054 Scheme plan v5.mjo

DONALDSONS
REGISTERED LAND SURVEYORS

**LOTS 1 - 13 BEING A PROPOSED
SUBDIVISION OF LOT 3 DP 202022**

Contour interval : 1 m
Scale @ A3 : 1:1000
Date : 20 March 2023
Ref : 8054



NOTICE OF WRITTEN APPROVAL

Written Approval of Affected Parties in accordance with Section 95E of the Resource Management Act

PART A – To be completed by Applicant

Applicant/s Name: **Breakwater Trust**

Address of proposed activity: **29 Koropewa Road, Waipapa**

Legal description: **Lot 3 DP 202022**

Description of the proposal (including why you need resource consent):
 To undertake a subdivision in the Rural Production zone to create 10 Residential allotments, a balance commercial allotment, road to vest and esplanade reserve.
 Landuse Consent is triggered for breaches of Stormwater Management, Setback from boundaries & Access.
 Consent under the NES for Assessing and Managing contaminants in soil to protect human health.

Details of the application are given in the attached documents & plans (list what documents & plans have been provided to the party being asked to provide written approval):

1. Scheme Plan V5, prepared by Donaladsons ref 8054
2. _____
3. _____
4. _____
5. _____
6. _____

Notes to Applicant:

1. Written approval must be obtained from all registered owners and occupiers.
2. The **original copy** of this signed form and **signed plans and accompanying documents** must be supplied to the Far North District Council.
3. The amount and type of information provided to the party from whom you seek written approval should be sufficient to give them a full understanding of your proposal, its effects and why resource consent is needed.

PART B – To be completed by Parties giving approval

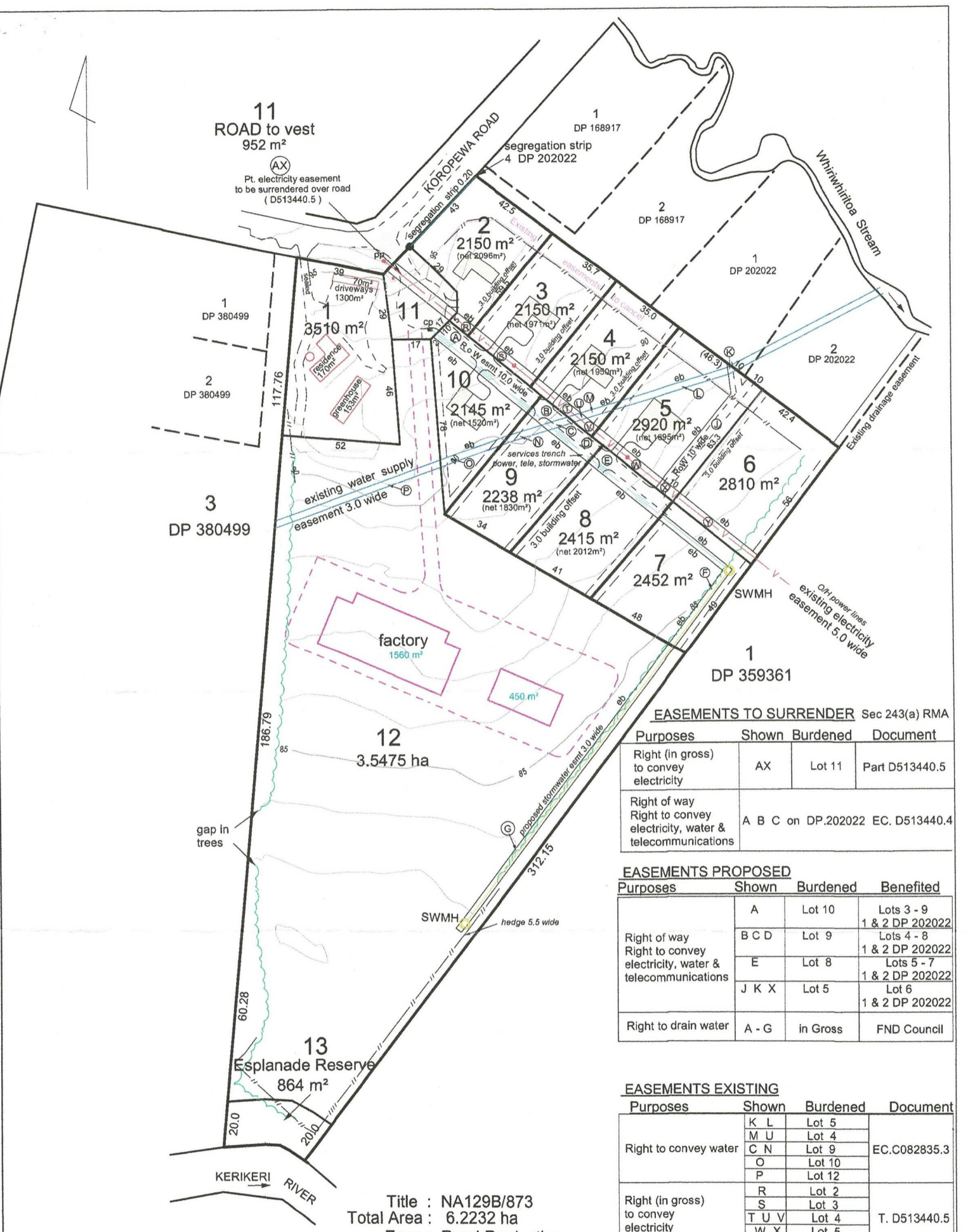
- Notes to the party giving written approval:**
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 2. You should only sign in the place provided on this form and accompanying plans and documents if you **fully understand** the proposal and if you **support** or have **no opposition** to the proposal. Council will not accept conditional approvals. If you have conditions on your approval, these should be discussed and resolved with the applicant directly.
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 4. Please sign and date all associated plans and documentation as referenced overleaf and return with this form.
 5. If you have any concerns about giving your written approval or need help understanding this process, please feel free to contact the duty planner on 0800 920 029 or (09) 401 5200.

Full name/s of party giving approval:	Bronwyn Waddell, Celia Honiss & Jill Christie	
Address of affected property including legal description	29A Koropewa Road Lot 2 DP 202022 Lot 1 DP202022	
Contact Phone Number/s and email address	Daytime:	email:

I am/we are the OWNER(S) / OCCUPIER(S) of the property (circle which is applicable)
Please note: in most instances the approval of all the legal owners and the occupiers of the affected property will be necessary.

1. I/We have been provided with the details concerning the application submitted to Council and understand the proposal and aspects of non-compliance with the Operative District Plan.
2. I/We have signed each page of the plans and documentation in respect of this proposal (these need to accompany this form).
3. I/We understand and accept that once I/we give my/our approval the Consent Authority (Council) cannot take account of any actual or potential effect of the activity and/or proposal upon me/us when considering the application and the fact that any such effect may occur shall not be relevant grounds upon which the Consent Authority may refuse to grant the application.
4. I/We understand that at any time before the notification decision is made on the application, I/we may give notice in writing to Council that this approval is withdrawn.

Signature		Date	2 - 8 - 23
Signature		Date	19/6/2023
Signature		Date	8/9/23
Signature	<input type="text"/>	Date	<input type="text"/>



Notes:
 Areas and measurements are subject to survey
 For resource consent purpose only.

Title : NA129B/873
 Total Area : 6.2232 ha
 Zone : Rural Production



EASEMENTS TO SURRENDER Sec 243(a) RMA

Purposes	Shown	Burdened	Document
Right (in gross) to convey electricity	AX	Lot 11	Part D513440.5
Right of way Right to convey electricity, water & telecommunications	A B C on DP.202022		EC. D513440.4

EASEMENTS PROPOSED

Purposes	Shown	Burdened	Benefited
Right of way Right to convey electricity, water & telecommunications	A	Lot 10	Lots 3 - 9 1 & 2 DP 202022
	B C D	Lot 9	Lots 4 - 8 1 & 2 DP 202022
	E	Lot 8	Lots 5 - 7 1 & 2 DP 202022
	J K X	Lot 5	Lot 6 1 & 2 DP 202022
Right to drain water	A - G	in Gross	FND Council

EASEMENTS EXISTING

Purposes	Shown	Burdened	Document
Right to convey water	K L	Lot 5	EC.C082835.3
	M U	Lot 4	
	C N	Lot 9	
	O	Lot 10	
	P	Lot 12	
Right (in gross) to convey electricity	R	Lot 2	T. D513440.5
	S	Lot 3	
	T U V	Lot 4	
	W X	Lot 5	
	Y	Lot 6	

file 8054 Scheme plan v5.mjo



LOTS 1 - 13 BEING A PROPOSED SUBDIVISION OF LOT 3 DP 202022

Contour interval : 1 m
 Scale @ A3 : 1:1000
 Date : 20 March 2023
 Ref : 8054



NOTICE OF WRITTEN APPROVAL

Written Approval of Affected Parties in accordance with Section 95E of the Resource Management Act

PART A – To be completed by Applicant

Applicant/s Name:	Breakwater Trust
Address of proposed activity:	29 Koropewa Road, Waipapa
Legal description:	Lot 3 DP202022
Description of the proposal (including why you need resource consent):	<p>To undertake a staged subdivision in the Rural Production Zone which will create 10 rural residential allotments and one balance lot and an esplanade reserve across both stages. Revoke existing access easement as part of Stage 2 under s243(e) of the RMA.</p> <p>Land Use consent is required for breaches of stormwater management, setback from boundaries, access, building coverage and scale of activities.</p> <p>Consent under the NES for Assessing and Managing contaminants in soil to Protect Human Health. Variation to existing approved decisions under s127 of the RMA.</p>
Details of the application are given in the attached documents & plans (list what documents & plans have been provided to the party being asked to provide written approval):	<ol style="list-style-type: none"> 1. <u>Scheme Plan Stages 1 & 2</u> 2. _____ 3. _____ 4. _____ 5. _____ 6. _____

Notes to Applicant:

1. Written approval must be obtained from all registered owners and occupiers.
2. The **original copy** of this signed form and **signed plans and accompanying documents** must be supplied to the Far North District Council.
3. The amount and type of information provided to the party from whom you seek written approval should be sufficient to give them a full understanding of your proposal, its effects and why resource consent is needed.

PART B – To be completed by Parties giving approval

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5. If you have any concerns about giving your written approval or need help understanding this process, please feel free to contact the duty planner on 0800 920 029 or (09) 401 5200.

Full name/s of party giving approval:

[Redacted]

Address of affected property including legal description

Lot 2 DP202022 / 29B Koropewa Road, Waipapa

Contact Phone Number/s and email address

Daytime: 09 407 7117 email: matt.tyler@wwc.co.nz

I am/we are the OWNER(S) / OCCUPIER(S) of the property (circle which is applicable)

Please note: in most instances the approval of all the legal owners and the occupiers of the affected property will be necessary.

1. I/We have been provided with the details concerning the application submitted to Council and understand the proposal and aspects of non-compliance with the Operative District Plan.
2. I/We have signed each page of the plans and documentation in respect of this proposal (these need to accompany this form).
3. I/We understand and accept that once I/we give my/our approval the Consent Authority (Council) cannot take account of any actual or potential effect of the activity and/or proposal upon me/us when considering the application and the fact that any such effect may occur shall not be relevant grounds upon which the Consent Authority may refuse to grant the application.
4. I/We understand that at any time before the notification decision is made on the application, I/we may give notice in writing to Council that this approval is withdrawn.

Signature [Redacted]

Date 3/12/2023

Signature [Redacted]

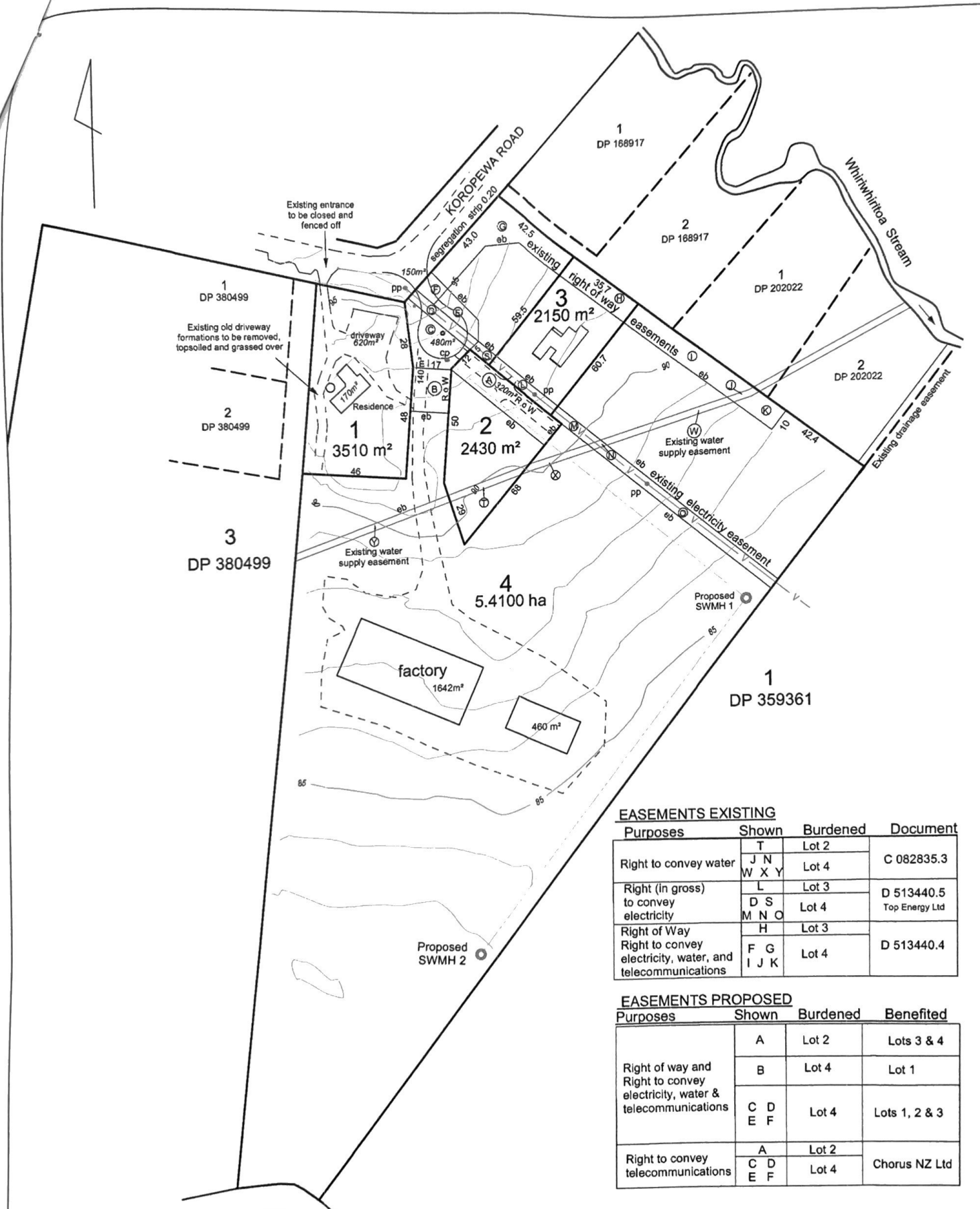
Date 3/12/2023

Signature [Redacted]

Date

Signature [Redacted]

Date



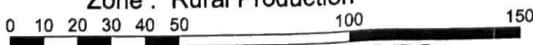
EASEMENTS EXISTING

Purposes	Shown	Burdened	Document
Right to convey water	T	Lot 2	C 082835.3
	J N W X Y	Lot 4	
Right (in gross) to convey electricity	L	Lot 3	D 513440.5 Top Energy Ltd
	D S M N O	Lot 4	
Right of Way	H	Lot 3	D 513440.4
Right to convey electricity, water, and telecommunications	F G I J K	Lot 4	

EASEMENTS PROPOSED

Purposes	Shown	Burdened	Benefited
Right of way and Right to convey electricity, water & telecommunications	A	Lot 2	Lots 3 & 4
	B	Lot 4	Lot 1
	C D E F	Lot 4	Lots 1, 2 & 3
Right to convey telecommunications	A	Lot 2	Chorus NZ Ltd
	C D E F	Lot 4	

Title : NA129B/873
 Total Area : 6.2232 ha
 Zone : Rural Production



Notes:
 Areas and measurements are subject to survey
 For resource consent purpose only.

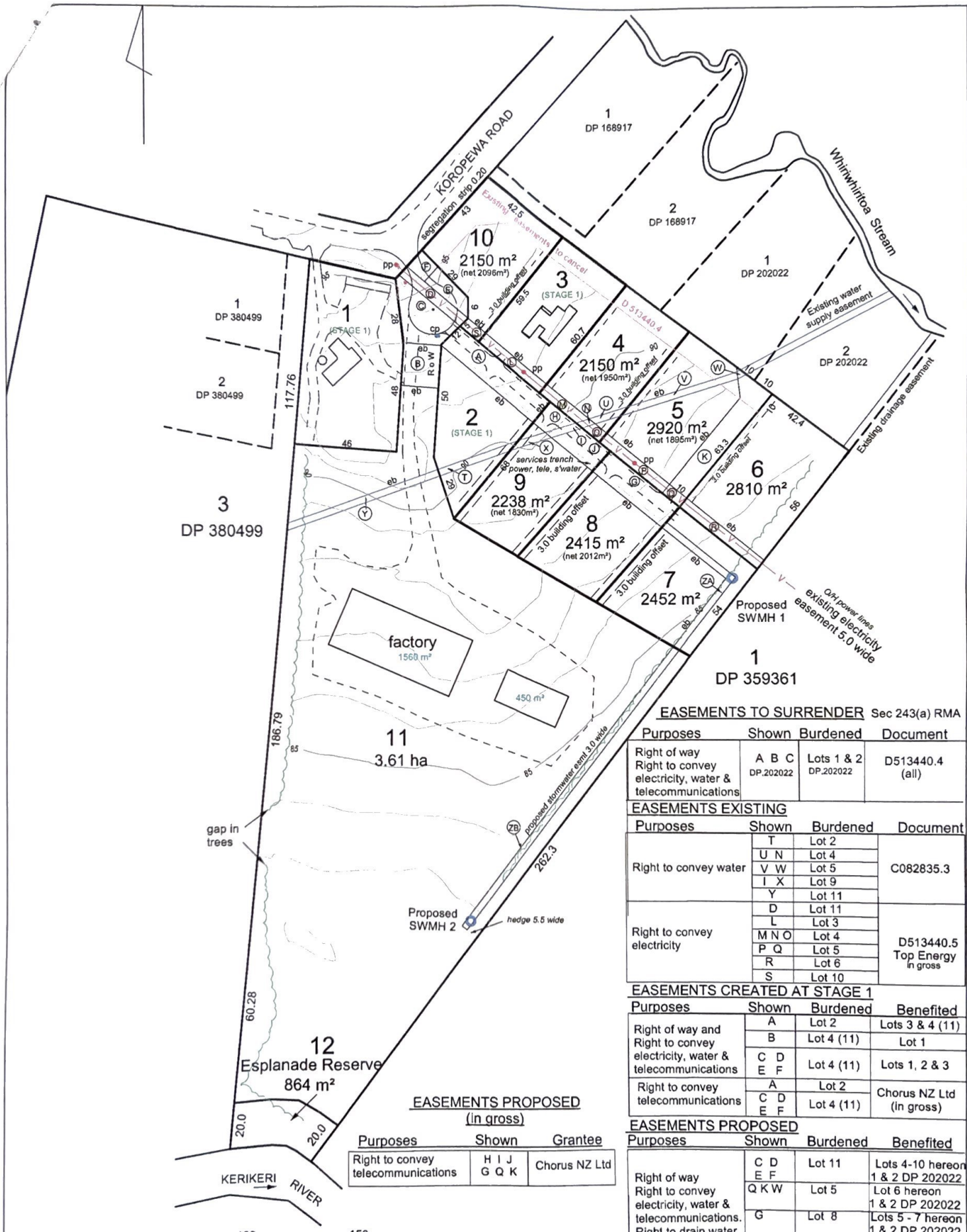
STAGE 1 OF 2 STAGES

file 8054 Scheme plan Stage 1.mjo

LOTS 1 - 4 BEING A PROPOSED SUBDIVISION OF LOT 3 DP 202022

Contour interval : 1 m
 Scale @ A3 : 1:1500
 Date : 14 November 2023
 Ref : 8054

KPD
NT



EASEMENTS TO SURRENDER Sec 243(a) RMA

Purposes	Shown	Burdened	Document
Right of way Right to convey electricity, water & telecommunications	A B C DP.202022	Lots 1 & 2 DP.202022	D513440.4 (all)

EASEMENTS EXISTING

Purposes	Shown	Burdened	Document
Right to convey water	T	Lot 2	C082835.3
	U N	Lot 4	
	V W	Lot 5	
	I X	Lot 9	
Right to convey electricity	Y	Lot 11	D513440.5 Top Energy In gross
	D	Lot 11	
	L	Lot 3	
	M N O	Lot 4	
	P Q	Lot 5	
	R	Lot 6	
S	Lot 10		

EASEMENTS CREATED AT STAGE 1

Purposes	Shown	Burdened	Benefited
Right of way and Right to convey electricity, water & telecommunications	A	Lot 2	Lots 3 & 4 (11)
	B	Lot 4 (11)	Lot 1
	C D E F	Lot 4 (11)	Lots 1, 2 & 3
Right to convey telecommunications	A	Lot 2	Chorus NZ Ltd (In gross)
	C D	Lot 4 (11)	
	E F	Lot 4 (11)	

EASEMENTS PROPOSED

Purposes	Shown	Burdened	Benefited
Right of way Right to convey electricity, water & telecommunications. Right to drain water.	C D E F	Lot 11	Lots 4-10 hereon 1 & 2 DP 202022
	Q K W	Lot 5	Lot 6 hereon 1 & 2 DP 202022
	G	Lot 8	Lots 5 - 7 hereon 1 & 2 DP 202022
	H I J	Lot 9	Lots 4 - 8 hereon 1 & 2 DP 202022
Right to drain water	ZA	Lot 7	Lots 2 - 6, 8 - 10
	ZB	Lot 11	Lots 2 - 10

EASEMENTS PROPOSED (in gross)

Purposes	Shown	Grantee
Right to convey telecommunications	H I J G Q K	Chorus NZ Ltd

STAGE 2 OF 2 STAGES

LOTS 4 - 12 BEING A PROPOSED SUBDIVISION OF LOT 3 DP 202022

Contour interval : 1m
Date : 14 November 2023
Ref : 8054

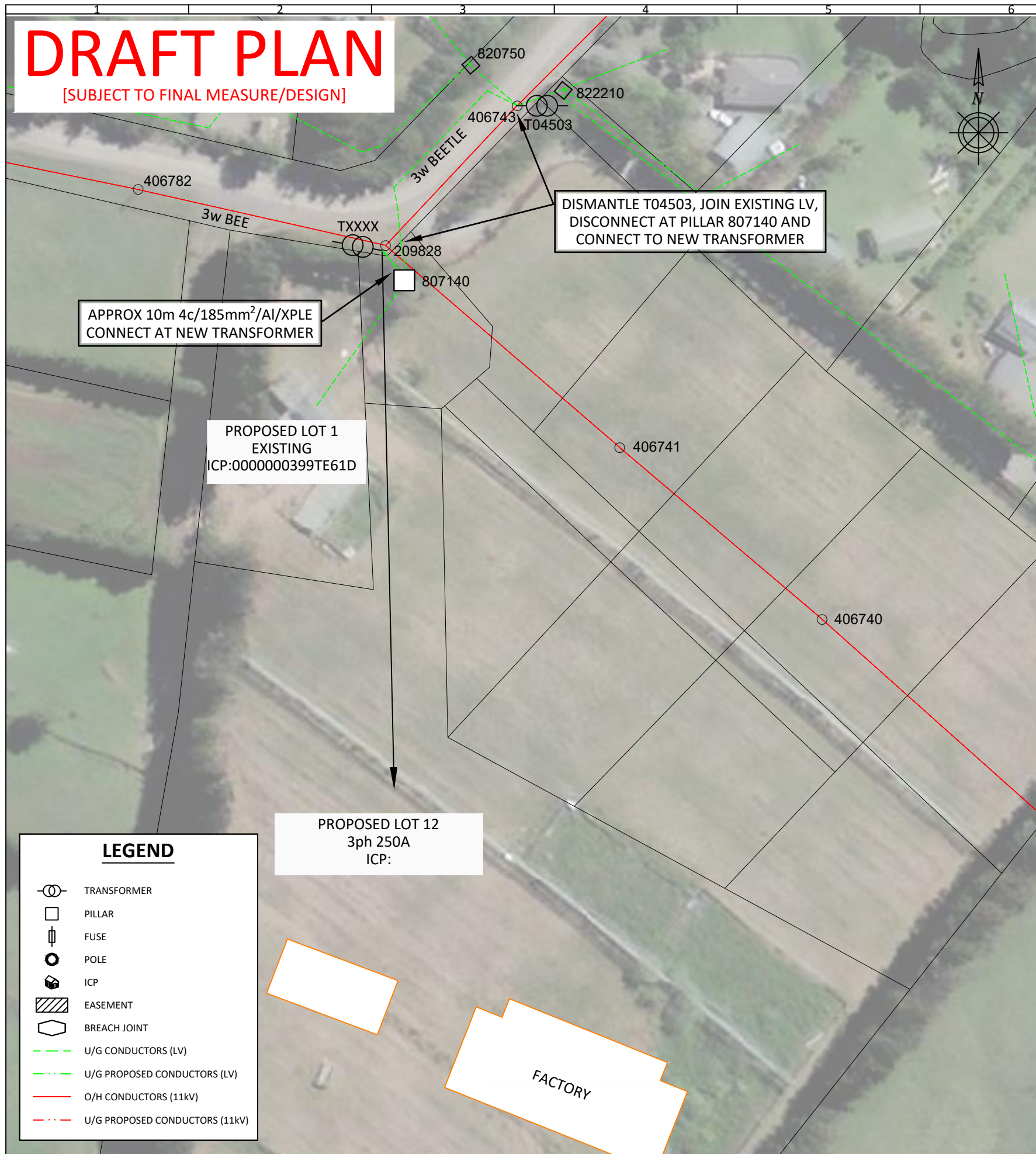
Scale @ A3 : 1:1500

file 8054 Scheme plan Stage 2.mjo

KPO
MTT

DRAFT PLAN

[SUBJECT TO FINAL MEASURE/DESIGN]



CONSTRUCTION DETAILS

TOP ENERGY RESPONSIBILITY

HVUG - FIT POLE 209828 WITH HV FUSE ARM, 11KV CABLE RISE FOR A 3c/35mm²/Al/XPLE/11KV CABLE TERM AND EARTHING. SUPPLY/ INSTALL APPROX. 10m OF 11KV UNDERGROUND CABLE (3c/35mm²/Al/XPLE/11KV) FROM THE ABOVE POLE TO NEW TRANSFORMER SITE.

TRANSFORMER UPGRADE - SUPPLY/ INSTALL A 300kVA PAD MOUNT TRANSFORMER AND EARTH BANK AT THE BASE OF POLE 209828. DISMANTLE TRANSFORMER T04503.

LVUG - ROAD RESERVE - ARRANGE SUPPLY/ INSTALL OF DUCT FOR NEW UNDERGROUND CABLE. SUPPLY/ INSTALL APPROX. 10m OF LVUG CABLE (4c/185mm²/Al/XPLE) FROM PROPOSED TRANSFORMER TO PILLAR 807140. JOIN EXISTING LVUG SUPPLYING PILLAR 820750 AND 822210. UPGRADE PILLAR 807140 TO AN EP3 PILLAR. RECONNECT EXISTING SERVICES.

SERVICE MAIN CONNECTION - PROVIDE A 3ph 250A PER PHASE FUSED CONNECTION POINT AT NEW TRANSFORMER. CONNECT SERVICE MAIN CABLE (INSTALLED BY OTHERS) TO THE ABOVE CONNECTION POINT.

FINAL INSPECTION - INSPECT, TEST AND LIVEN NEW CONNECTION.

CUSTOMER RESPONSIBILITY

SERVICE MAIN CABLE - CUSTOMER TO ARRANGE THEIR PREFERRED ELECTRICAL CONTRACTOR TO SUPPLY/ INSTALL THE LV UG SERVICE MAIN CABLE FROM THE NEW PILLAR TO THE PROPOSED NEW METER LOCATION.

NOTES:

POSSIBLE LAND BASE INACCURACIES. PROPERTY BOUNDARIES AND TOP ENERGY ASSET LOCATIONS SHOWN ON THE PLAN ARE AN INDICATION ONLY AND ARE SUBJECT TO ONSITE VERIFICATION.

BERM TO BE REINSTATED TO ITS EXISTING STATE, INCLUDING RE-SEEDING THE GRASS.

SAP WORK ORDERS - (FIF) 40085458 / (CF) 40085159 / (CAPC/TX) 40085461 / (CAPC/LV) 40085462

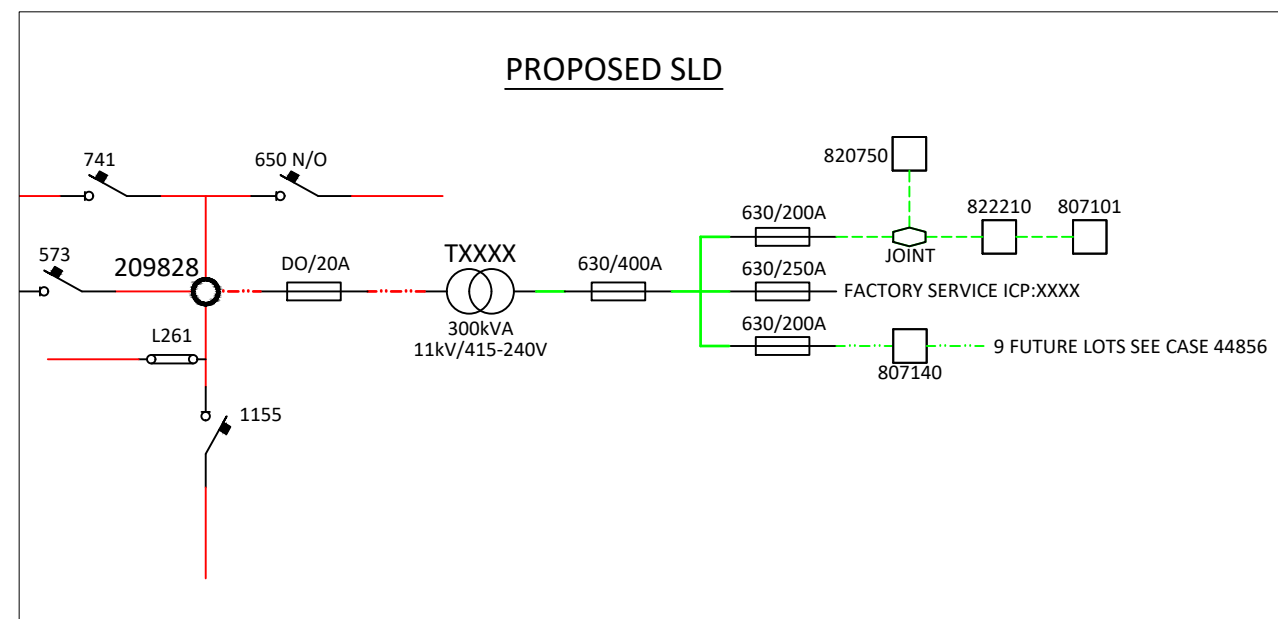
REFERENCE DRAWINGS

10G-1961-1 TRANSFORMER EARTH BANK

13C-5200-1 CABLE RISE 11KV

10U0-0500-1 TRENCH PROFILE

13C-5800-1 STANDARD LV CABLES & CONNECTIONS



LEGEND

- TRANSFORMER
- PILLAR
- FUSE
- POLE
- ICP
- EASEMENT
- BREACH JOINT
- U/G CONDUCTORS (LV)
- U/G PROPOSED CONDUCTORS (LV)
- O/H CONDUCTORS (11KV)
- U/G PROPOSED CONDUCTORS (11KV)

PROPOSED LOT 12
3ph 250A
ICP:

FACTORY

REV	DESCRIPTION	DRAWN	DRAWN DATE	CHECKED	CHECKED DATE	APPROVED	APPROVED DATE

C:\VAULT\DESIGNS\TE DRAWINGS\03 - PROJECTS\CIW - CUSTOMER INITIATED WORK\CIW-40000 TO 49999\CIW-40968\CIW-40968-1.DWG

Top Energy
TePuna Hihiko
Level 2 John Butler Centre
60 Kerikeri Road, Kerikeri
PO Box 43, Kerikeri Q245
Ph: 09 401 5440
Fax: 09 401 5605
www.topenergy.co.nz

DRAWN: AC	DRAWN DATE: 11/22
DESIGNED: -	DESIGNED DATE: -
CHECKED: -	CHECKED DATE: -
APPROVED: -	APPROVED DATE: -

PROJECT: NEW CONNECTION/ UPGRADE	
SUBSTATION: WAIPAPA	FEEDER: 0405
DRAWING TITLE: BREAKWATER TRUST 29c KOROPEWA RD, WAIPAPA	

DRAWING NUMBER: CIW-40968-1	REV: A
SERVICE FUSING: 3ph 250A	

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Work Pack Ref:

**DECISION ON LAND USE CONSENT APPLICATION
UNDER THE RESOURCE MANAGEMENT ACT 1991**

Decision

Pursuant to section 34(1) and sections 104, 104A and Part 2 of the Resource Management Act 1991 (the Act), the Far North District Council **grants** land use resource consent for a Controlled activity, subject to the conditions listed below to:

Applicant:	Breakwater Trust
Council Reference:	2240001-RMALUC
Property Address:	29 Koropewa Road, Kerikeri 0295
Legal Description:	LOT 3 DP 202022 BLK X KERIKERI SD - SUBJ TO & INT IN ESMTS

The activities to which this decision relates are listed below:

Activity A:

To construct a dwelling breaching Stormwater Management in the Rural Production Zone.

Activity B:

To construct a dwelling changing the use of a piece of land under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations 2011

Conditions

Pursuant to sections 108 of the Act, this consent is granted subject to the following conditions:

1. The activity shall be carried out in general accordance with the approved plans prepared by A1 Homes, referenced "*Proposed New Home for: Allan & Sian Shaw Address: 29 Koropewa Road, Waipapa*", dated 03/04/2023, Job Number PO811, and attached to this consent with the Council's "Approved Stamp" affixed to them:
 - a. Prepared by A1 Homes, referenced '*Allan & Sian Shaw: 29 Koropewa Road, Waipapa*, and Job Number PO811:
 - i. Location Plan – Sheet 2
 - ii. Site Plan – Sheet 3
2. Prior to making an application for Code of Compliance Certificate, the consent holder shall ensure that the stormwater disposal system is installed in accordance with the design details and recommendations of the Stormwater Mitigation Report prepared by Wilton Joubert, drawing number 126668-C200, Issue B, dated 29/06/2023.
3. Within 2 months of the Code of Compliance being issued for the proposed dwelling, the consent holder shall either:

- a. Remove the facilities within the existing shed which result in the building being defined as a 'residential unit'; or
- b. Obtain resource consent to allow for the second residential unit on the site; or
- c. Provide confirmation to Council's resource consents monitoring officer that the building can comply with the permitted standards in the District Plan for 'Residential Intensity'.

Advice Notes

Lapsing of Consent

1. Pursuant to section 125 of the Act, this resource consent will lapse 5 years after the date of commencement of consent unless, before the consent lapses;
 - a) The consent is given effect to; or
 - b) An application is made to the Council to extend the period of consent, and the council decides to grant an extension after taking into account the statutory considerations, set out in section 125(1)(b) of the Act.

Right of Objection

2. If you are dissatisfied with the decision or any part of it, you have the right (pursuant to section 357A of the Act) to object to the decision. The objection must be in writing, stating reasons for the objection and must be received by Council within 15 working days of the receipt of this decision.

Archaeological Sites

3. Archaeological sites are protected pursuant to the Heritage New Zealand Pouhere Taonga Act 2014. It is an offence, pursuant to the Act, to modify, damage or destroy an archaeological site without an archaeological authority issued pursuant to that Act. Should any site be inadvertently uncovered, the procedure is that work should cease, with the Trust and local iwi consulted immediately. The New Zealand Police should also be consulted if the discovery includes koiwi (human remains). A copy of Heritage New Zealand's Archaeological Discovery Protocol (ADP) is attached for your information. This should be made available to all person(s) working on site.

Reasons for the Decision

1. By way of an earlier report that is contained within the electronic file of this consent, it was determined that pursuant to sections 95A and 95B of the Act the proposed activity will not have, and is not likely to have, adverse effects on the environment that are more than minor, there are also no affected persons, and no special circumstances exist. Therefore, under delegated authority, it was determined that the application be processed without notification.
2. The application is for a Controlled resource consent as such under section 104A the Council must grant this application and may only impose conditions in relation to those matters over which control is reserved, these matters are found in section 8.6.5.2.1 of the Operative District Plan.
3. In regard to section 104(1)(a) of the Act the actual and potential effects of the proposal will be acceptable as:

- a. The mitigation measures proposed as part of the development will ensure that there will be no adverse effects on the wider environment.
 - b. In addition, it was affirmed in the Detailed Site Investigation (DSI) that the soil disturbance will not exceed the permitted volumes in accordance with the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations 2011. Furthermore, the DSI concludes that it is highly unlikely that there would be a risk to human health if the activity is done to the piece of land.
4. In regard to section 104(1)(ab) of the Act there are no offsetting or environmental compensation measures proposed or agreed to by the applicant for the activity.
 5. In regard to section 104(1)(b) of the Act there are no other matters relevant to the application.
 6. In regard to section 104(1)(c) of the Act there are no other matters relevant and reasonably necessary to determine the application.
 7. Based on the assessment above the activity will be consistent with Part 2 of the Act.

The activity will avoid, remedy or mitigate any potential adverse effects on the environment while providing for the sustainable management of natural and physical resources and is therefore in keeping with the Purpose and Principles of the Act. There are no matters under section 6 that are relevant to the application. The proposal is an efficient use and development of the site that will maintain existing amenity values without compromising the quality of the environment. The activity is not considered to raise any issues in regard to Te Tiriti o Waitangi.
 8. Overall, for the reasons above it is appropriate for consent to be granted subject to the imposed conditions.

Approval

This resource consent has been prepared by Amit Nandi, Duty Planner. I have reviewed this and the associated information (including the application and electronic file material) and for the reasons and subject to the conditions above, and under delegated authority, grant this resource consent.



Simeon Mclean
Team Leader Resource Consents

Date: 03 August 2023



Zoned: Rural Production
 Title : NA129B/873
 Total Area : 6.2232 ha

OVERALL SCHEME PLAN
LOTS 1 - 12 BEING A PROPOSED
SUBDIVISION OF LOT 3 DP 202022



Contour interval : 1 m
 Date : 14 November 2023
 Ref : 8054