

Statement from Dr Benjamin A. Payne on behalf of Susanne E. Payne and David A. Payne (Submitters 160) regarding B1 Rural Zones of the Proposed Timaru District Plan (Proposed PDP).

Hearing B – Rural Zones | Monday, 22 July 2024

Kia ora koutou and Good Afternoon,

My name is Ben Payne and I will present at this hearing on a number of matters relevant to my parents' situation as the owners of Peelview Orchard on the northern boundary of Geraldine.

As I presented at Hearing A – Strategic Directions I will not provide further introduction on this occasion, however this is included with the attached appendix. Also within the appendix to this statement are a number of maps showing the changes in orchard area, maps providing a timeline of the changes in Council's proposed zoning for the area between the draft plan and the proposed plan and the LINZ context plan with an attached table itemising the 38 titles over the 56.134ha of the relevant area. Some mention of this is made in my presentation today.

Following me, Lynette Wharfe will speak to her professional evidence statement particularly related to:

GRUZ – 02	Character and qualities of the General Rural Use Zone
RLZ – 02	Character and qualities of the Rural Lifestyle Zone

My parents made submissions and further submissions on both the GRUZ and RLZ chapters of the plan. Many of the submissions have been allocated to the Subdivision, Zoning or Versatile land hearings so will be addressed at later hearings.

Overview

Peelview Orchard remains as a small unsustainable pocket of production, in a broader precinct of lifestyle and residential land-use. The orchard, which has been operating since 1928 and should therefore have existing land use rights, is no longer compatible within the current use-profile of the area.

The key issues in the GRUZ topic relate to reverse sensitivity and management of sensitive activities. These have been very real issues for my parents over a number of years. Previous operative plans and policy frameworks have led to the destruction of their orchard as an economic unit.

Overall, we want to see zoning rules which enable rural activities in areas that remain genuinely rural. However, we seek the removal of restrictive rules around minimum allotment sizes and prescriptive infrastructure requirements within the rural lifestyle zone to give people like my parents' flexibility where past council decisions have rendered continued productive use uneconomic.

GRUZ - 02

We hope that the council can learn from our experience and ensure that other primary production units are not undermined as ours has been. We are pleased to see that the council is seeking to address these issues – it is too late for us – the damage has been done.

In particular we **do not support** 'sensitive activities' having a higher amenity in the General Rural Use Zone. Such expectations are what have killed our operation. If sensitive activities want to locate in the rural zone, they need to accept the amenity associated with primary production activities – not demand, or be entitled to, a greater level of amenity.

GRUZ-O2 3) higher levels of amenity immediately around sensitive activities

Where sensitive activities are enabled in rural areas there should not be an expectation of their amenity being protected. The results of this expectation are demonstrably clear in our situation and any risk of this happening elsewhere should be removed from the district plan.

Therefore, we **do not support** GRUZ- O2 as currently worded.

We note that the s42A Report is seeking to strengthen recognition of reverse sensitivity, which is **supported**. But you cannot do that with one hand and then provide higher amenity for sensitive activities from production activities with the other.

We also made a further submission opposing changes that ECAN has sought to RLZ-O2 regarding water and wastewater infrastructure. This matter was canvassed at the Strategic Directions hearing – and will also occur in other hearings.

In particular, we want to ensure that the requirements for water and wastewater infrastructure in the rural lifestyle zone are pragmatic and enable the most efficient and effective form of infrastructure for the site. We **do not support** the changes sought by ECAN and the evidence of Lynette Wharfe addresses this in more detail.

As explained in my presentation at Hearing A, Mum and Dad have owned Peelview Orchard for nearly 30 years, but due to significant land use change around them it is no longer viable, nor would it be sensible to make further significant investment in pip-fruit production to respond to structural changes in the industry such as high-density plantings, wind turbines for frost protection or hail nets for example. Also though, having purchased the business as a going concern there is no longer any value in the business that they could sell.

When Mum and Dad purchased Peelview back in 1995, Geraldine Orchard was also growing on this Main North Road, Templer Street, Bennett Road block with a similar area in apples and stone-fruit. They are no longer growing, and the land their orchard was on is now all in rural lifestyle use.

Mum and Dad have responded to the pressures of now having 9 immediate neighbours on their boundaries by down-sizing the operation to the "shell" of 1.5 ha in apples and pears that remains. At its peak in 2006, production was over approximately 9ha of what was then a 10ha property.

This encroachment of "sensitive activities" allowed by council is inconsistent with the type of practice that is required for growing pip-fruit, including, but not limited to, the use of air-blast chemical sprays, mitigation of frost events with the use of a helicopter or wind turbine, the use of bird-scaring canons and the control of hares and rabbits which cause considerable damage to our fruit trees.

Unfortunately, the residents who surround us have very limited understanding of, or sympathy for these orchard activities which can occur at any time, on any day, over the course of a season.

We noted in our earlier presentation that scoping by Council had identified that weaknesses in the operative and previously operative plans had allowed inappropriate rural lifestyle development to occur.

We quoted from the document: *Topic 13 Rural Residential Areas Discussion Document, December 2016. 2.0 Issue Identification.*

"Such [lifestyle] development has historically occurred on an ad-hoc basis, resulting in 'poppy seed' development throughout the District's Rural Zones".

The author of the Section 42A Report – Rural Zones Mr MacLennan has also discussed the *"emergence of 'poppy seed' developments across the rural landscape, fostering expectations among landowners that the Council should extend public infrastructure services like water, sewerage and sealed roads".* (Para 2.2.5 - Page 13)

In Para 10.18.11 (Page 101) Mr MacLennan notes that Section F:7 Rural of the Timaru District 2045 Growth Management Strategy *"describes the operative plan provisions which enables the establishment of relatively small rural allotments, referred to as the 'allowance approach'.*

It noted, *"however the 'allowance approach' has been providing for a dispersal approach to rural residential development".*

Mr MacLennan has addressed this issue from the perspective of its impact on Council.

We wish to reiterate our comments from our earlier presentation and make the point again today, that the consequences of this *"allowance approach"* and the intensification of Rural Lifestyle and Residential users in our area has had a profound impact on my parents' business.

It is the clear intention with this District Plan to not allow this *"dispersal approach"* to continue but my parents' business has been a casualty of this policy framework in previous plans. Despite this, there is no special consideration being given to cases such as ours in the proposed plan.

Throughout the plan review process, (a period which has now extended to 10 years) right up until the proposed plan was notified, there were clear signals that at least some of the area would be re-zoned RLZ.

This was further supported by Planz Consultants, responding to community feedback (including ours) on the draft plan, who considered that the entire area *"is a logical addition to the RLZ"*. (Planz - April, 2022)

We are therefore at a loss to understand how TDC arrived at its decision, when the DP was notified, to retain this area as GRUZ with the additional restriction of FDA 11 (beyond 10 years) across the area. These matters will be addressed further in Hearing E in February and we look forward to understanding how this decision was arrived at, as at this stage, we have been unable to find any reports or reasoning to support this.

We hoped that the Notified District Plan would provide **"relief"** for us but at this stage it does not.

We note the s42A Report writer's recommendations to amend **GRUZ-03 Protecting Primary Production** and **GRUZ-P5 Protecting Primary Production** to include specific reference to reverse sensitivity.

GRUZ-03: *"The land resource in the General Rural Zone is not diminished by activities with no functional or operational need to locate in the General rural zone, and primary production is protected from reverse sensitivity effects".*

GRUZ – P5 Protecting Primary Production

"Manage sensitive activities in the zone to ensure

- 1) they are located to avoid reverse sensitivity effects on primary production and rural industry activities".*
- 2) If avoidance is not possible, the sensitive activity includes mitigation measures so that there is minimal potential for adverse effects on the sensitive activity from primary production activity.*

We **support** these recommended changes.

Had these Objectives and Policies been in place with previous operative plans, we would have been protected from the reverse sensitivity impacts that the encroachment of rural residential development surrounding us has caused. The detrimental effects on our business as outlined would have been avoided.

We have taken every available opportunity during the development of the District Plan to consistently make it clear that although the District Plan may say that rural activities **should be** expected in **rural** areas, where residential and rural lifestyle properties are enabled within rural areas, residents expect their amenity to be maintained. For us and our particular "primary production activity" this means we are unfortunately no longer compatible.

Rural Lifestyle Zones are, and should be, limited to avoid the fragmentation and loss of productive land. In general, they are not economic units.

As Mr MacLennan has noted in the Section 42A Report *"the Rural Lifestyle Zone provides a lifestyle choice and meets the demand for rural living."* Page 217

In our view, Council needs to be cautious with its Objectives, Policies and Rules for RLZ so they do not limit flexibility and discretion for providing the best development solutions for specific sites. This flexibility is necessary to avoid the wasteful use of a limited resource.

This is relevant in terms of setting restrictive minimum allotment sizes and prescriptive infrastructure requirements.

RLZ lot size should relate to the anticipated amenity from the zone and should not be dictated by wastewater management requirements. ECAN manage this with their rules, and innovative solutions are being developed all the time for wastewater disposal.

As one example, information about systems developed by Innoflow Technologies is included in the Appendices.

Council will always have the Assessment of Environmental Effects (AEE) mechanism available to it to carefully consider any development proposal for RLZ.

For this reason:

We **do not support** Mr MacLennan's suggested amendment to add:

RLZ – 02 Character and qualities of the Rural Lifestyle Zone

5) a coordinated pattern of development at a density that is capable of efficiently connecting to sewer and water infrastructure.

In our view, this amendment to **RLZ-02** is not in keeping with the Objective which is to **define** the Character and qualities of the Rural Lifestyle Zone. Infrastructure matters would be better addressed in other parts of the District Plan.

Appendices:

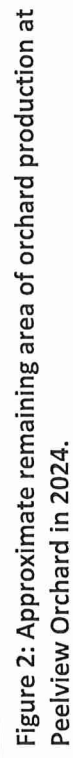
- Appendix A: Professional Statement: Dr Benjamin Alexander Payne
- Appendix B: Figures 1 and 2: Orchard Areas circa 2006 and Orchard Area 2024
- Appendix C: Figure 3: RLZ extension proposed within the Draft Plan (2020)
- Appendix D: Figure 4: PLANZ recommended expansion of RLZ to include the area bounded by Templer Street and Bennett Road to reflect public feedback on the Draft Plan (April 2022).
- Appendix E: Figure 5: Notified Plan
- Appendix Fa: Figure 6: LINZ Context Plan with Property Numbers (38)
 - Fb: Table 1: Relevant property details as per Figure 6 (LINZ Context Plan)
- Appendix G: Pamphlet: Innoflow Waste Water Systems

Appendix A:

Professional Statement: Dr Benjamin Alexander Payne

- I hold a BSc in physical geography and ecology, and a Postgraduate Diploma in human geography from the University of Otago. I also hold a PhD from the University of Otago, which focused on strategic land use management within the South Island's High Country.
- I began my professional career as a Resource Management Consultant with Mitchell Partnerships (now Mitchell Daysh). I worked across a range of complex project Assessment of Environmental Effects (AEE) and in particular supported the provision of advice to Auckland Council during the process of amalgamation under the Auckland Unitary Plan.
- Since then, I have worked in a range of roles in areas of land use planning, complex risk, sustainability, and climate change mitigation at global, national and local scales.
- I am self-employed as a consultant and currently work remotely from my parents' home in Geraldine. One of my primary clients is currently Auckland Council.
- I therefore have a relatively good understanding of the RMA and council processes. I certainly appreciate the challenges of achieving balance across complex interests at a regional and district level.
- This is not always an easy balance to strike, but it is critical that all councils, whether they are large like Auckland or mid-sized like Timaru, show vision for all of their communities.
- This is especially important during a District Plan development process. A lack of vision and poor strategy can effectively stall a small community like Geraldine and undermine its future prosperity.

Figures 1 and 2: Orchard Areas circa 2006 and 2024



Appendix C:

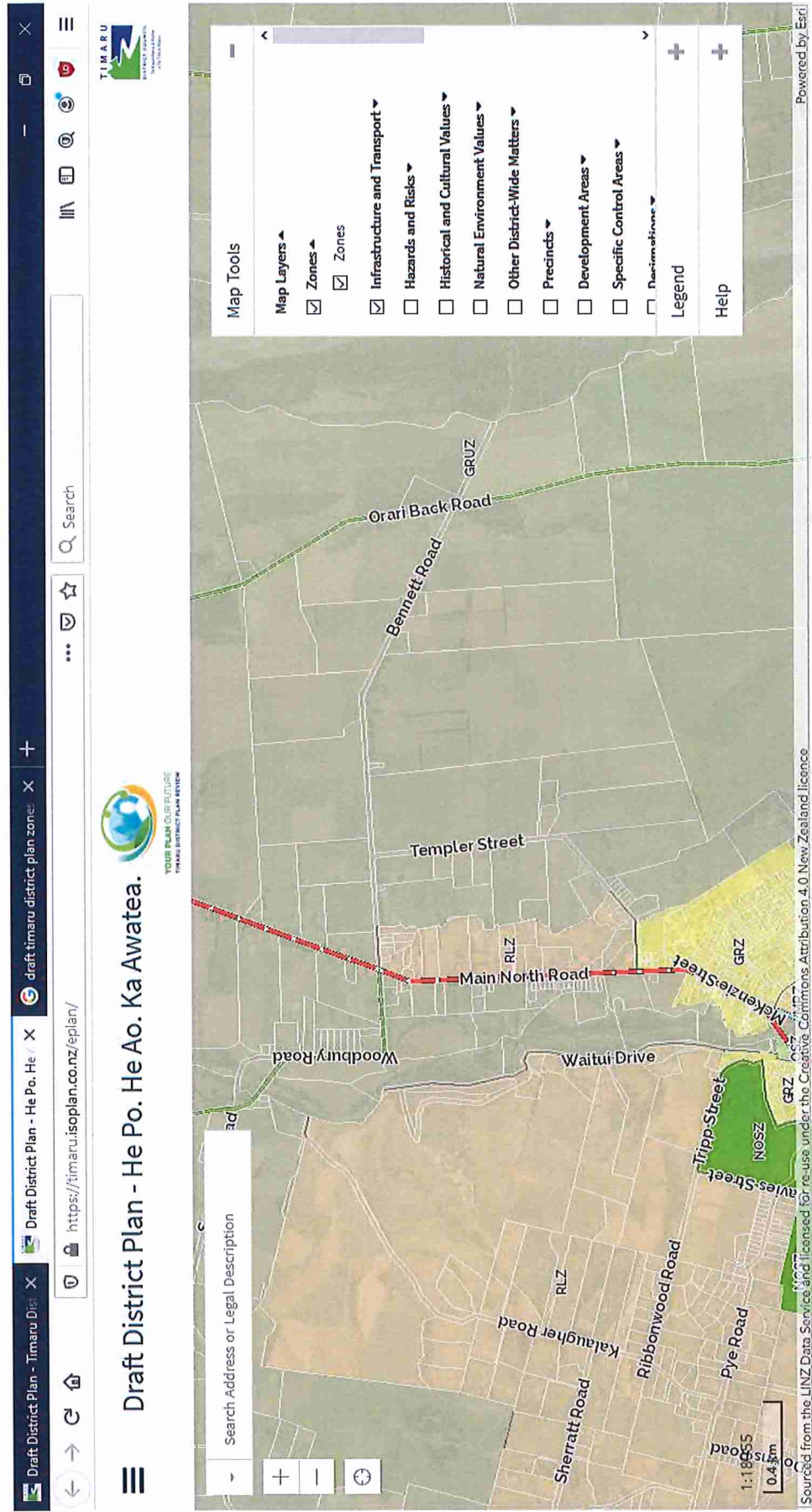


Figure 3: Outline of recommended extension of Rural Lifestyle Zoning across some of the precinct within the TDC's Draft Plan (2020).

Appendix D



Figure 4: PLANZ recommended expansion of RLZ to include the area bounded by Templer Street and Bennett Road to reflect public feedback on the draft plan.

Appendix E



Proposed Timaru District Plan - He Po. He Ao. Ka Awatea.



YOUR PLAN OUR FUTURE
TIMARU DISTRICT PLAN REVIEW

**20 Bennett Road, RD 22,
Geraldine**
ID: 13134
Area 8.794 Ha
Legal Description: LOT 2 DP
356462



- Property Specific Proposed District Plan Chapters
- View Full Proposed District Plan
- View Property Report (PDF)
- Zoom to selected property
- Clear selected property

Proposed: 22 Sep 2022
Revision: 21 Sep 2022

The following information applies to this

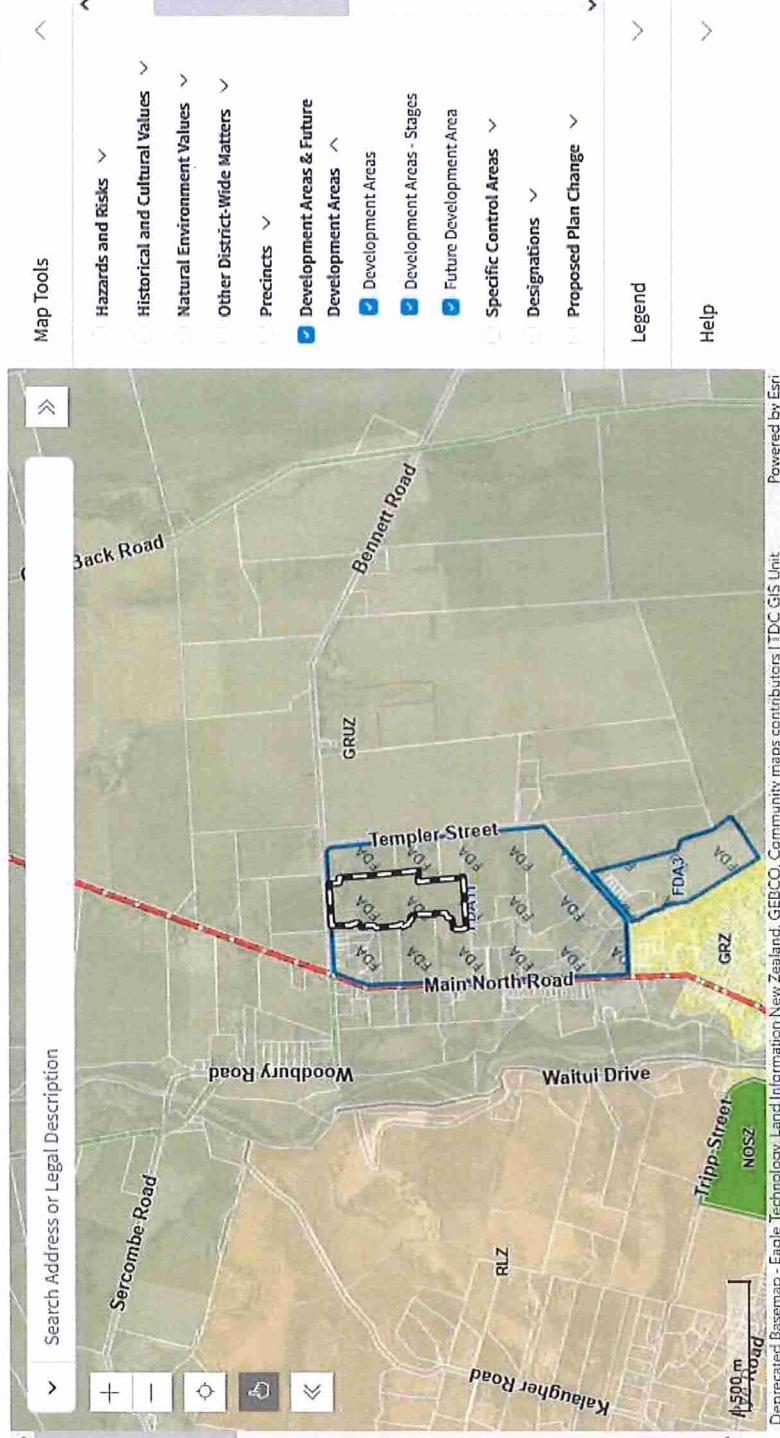


Figure 5: Notified Plan (September 2022) retaining all of the area as GRUZ with the FDA 11 (+ 10 years) overlay.

Appendix Fa & Fb

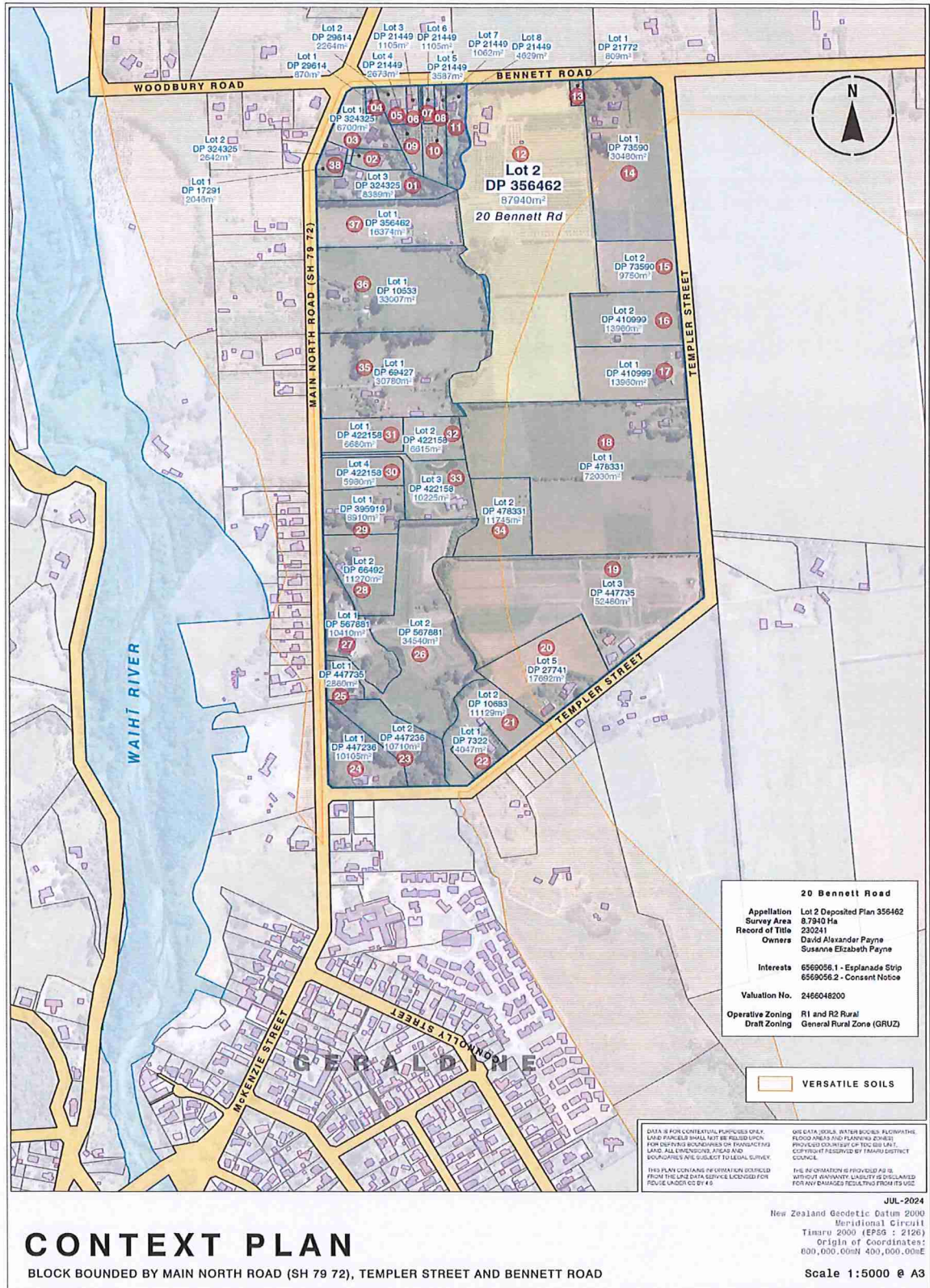


Figure 6: LINZ Context Plan with property numbers across relevant precinct (38 lots over ~56 ha).

Table 1: Relevant property details as per Figure 6 (LINZ Context Plan)

Map Ref.	Street/Road #	Street / Road	Lot #	DP Reference	Size (sq/m)	Size (ha)
1	2a	Bennett Rd	Lot 3	DP 324325	8389	0.8389
2	2B	Bennett Rd	Lot 2	DP 324325	2642	0.2642
3	2	Bennett Rd	Lot 1	DP 324325	6700 (includes road splay)	0.6700
4	4	Bennett Rd	Lot 1	DP 29614	870	0.0870
5	6	Bennett Rd	Lot 2	DP 29614	2264	0.2264
6	10	Bennett Rd	Lot 3	DP 21449	1105	0.1105
7	12	Bennett Rd	Lot 6	DP 21449	1105	0.1105
8		Bennett Rd	Lot 7	DP 21449	1062	0.1062
9	18	Bennett Rd	Lot 4	DP 21449	2673	0.2673
10		Bennett Rd	lot 5	DP 21449	3587	0.3687
11		Bennett Rd	Lot 8	DP 21449	4629	0.4628
12	20	Bennett Rd	Lot 2	DP 356462	87940	8.7940
13	36	Bennett Rd	Lot 1	DP 21772	809	0.0809
14	40	Bennett Rd	Lot 1	DP 73590	30480	3.0480
15		Bennett Rd	Lot 2	DP 73590	9750	0.9750
16	111	Templer St	Lot 2	DP 410999	13960	1.3960
17	107	Templer St	Lot 1	DP 410999	13960	1.3960
18	99	Templer St	Lot 1	DP 478331	73030	7.3030
19	53	Templer St	Lot 3	DP 447735	52480	5.2480
20	45	Templer St	Lot 5	DP 27741	17692	1.7692
21	25	Templer St	Lot 2	DP 10683	11129	1.1129
22		Templer St	Lot 1	DP 7322	4047	0.4047
23	26	Main North Rd	Lot 2	DP 447236	10710	1.0710
24			Lot 1	DP 447236	10105	1.0105
25	42	Main North Rd	Lot 1	DP 447735	2860	0.2860
26	54	Main North Rd	Lot 2	DP 567881	34540	3.4540
27	56	Main North Rd	Lot 1	DP 567881	10410	1.0410
28	64	Main North Rd	Lot 2	DP 66492	11270	1.1270
29	70	Main North Rd	Lot 1	DP 395919	8910	0.8910
30	80	Main North Rd	Lot 4	DP 422158	5980	0.5980
31		Main North Rd	Lot 1	DP 422158	6680	0.6680
32		Main North Rd	Lot 2	DP 422158	6615	0.6615
33		Main North Rd	Lot 3	DP 422158	10225	1.0225
34		Main North Rd	Lot 2	DP 478331	11745	1.1745
35	90	Main North Rd	Lot 1	DP 69427	30780	3.0780
36	102	Main North Rd	Lot 1	DP 10533	33007	3.3007
37	112	Main North Rd	Lot 1	DP 356462	16374	1.6374
38	126	Main North Rd	Lot 1	DP172991	2046	0.2046
Total sq/m					561340 sq/m	56.134 h/a

Appendix G

Innoflow Technologies provides one example of innovative and effective waste water solutions.

These solutions have been applied at Jack's Point and Lakeside Estate near Queenstown, Mahia Beach, Pio Pio, Matauri Bay, Lake Rotoma and other communities to achieve effective waste water treatment and remove the need for individual septic systems in locations without access to centralised reticulation systems.

<https://www.innoflow.co.nz/>

No council sewer?

**inno
flow**

wastewater specialists

Contact **Innoflow Technologies** for
Decentralised Wastewater System Solutions
+64 9 426 1027 or **info@innoflow.co.nz**

Pressurised Liquid Only Sewers (Prelos): The Subdivision Solution

New Zealand Examples

Serving both Councils and private developers, InnoFlow Technologies NZ Ltd brings over 30 years in design, build and operation expertise in decentralised wastewater schemes for rural and unsewered communities around New Zealand.

The use of pressurised liquid only sewers (Prelos™) which convey primary treated liquid from on-lot Prelos processor tanks to either communal AdvanTex wastewater treatment plants or council sewers provide a number of many benefits to land developers and homeowners, including;

- ✓ Allowing more sections to be developed compared to going to individual on-site systems
- ✓ Maximises value of sections by installing wastewater systems and fields away from individual sections



- Developer only pays for half of the scheme, by having primary treatment tanks on-lot which is paid by homeowner as part of their house build



- System is scalable, meaning it can be installed in stages according to actual growth, thereby reducing upfront costs



- Scheme is simple in design and resilient to fluctuating usage



- Easy retrofit options for sites with existing septic tanks or infrastructure



- Low ongoing operating costs and high quality components with long warranties (e.g. 10-year warranty on Prelos pumps)



- Minimal visual impact and no noise



- Looks favourably on during consenting



There are over 60 of these Prelos schemes (formerly known as STEP (septic tank effluent pump) systems) operating around New Zealand, with hundreds more around the world, including Australia and United States of America. This document presents several New Zealand case studies with a summary of design information and scheme components

Lakeside Estate Subdivision

(Queenstown, New Zealand)

36 Lots



Figure 1- AdvanTex wastewater treatment plant that services the existing Lakeside Estate subdivision

Existing community

Installation date: 201

Client: Homeowner association

Number of lots and design volume:

36 lots, 1,000 L/day/lot, 36,000 L/day

Scheme summary:

Existing gravity sewer network and pump station

AX400 AdvanTex wastewater treatment plant

5,150 square meters of pressure compensating dripline

Design effluent quality

BOD⁵ <20 mg/L

TSS <30 mg/L

TN <20 mg/L

E.coli <1000 cfu/100 mLHartwell



Figure 2-Aerial shot of lakeside community (credit: ACH Consulting)

Our Office

311a Postman Road Dairy Flat,
Auckland 0794, New Zealand

Phone

09 426 1027

0800 466 635 (0800innoflow)

Hartwell Lifestyle Subdivision

(Palmerston North, New Zealand)

49 Lots



Figure 4-Photo from developed site at Hartwell Subdivision
(credit: waterfordpress.co.nz)



Figure 3-Aerial shot of subdivision (credit: central district surveys)

Greenfield development

Installation date: 2016 (staged development)

Client: Private developer

Number of lots and design volume:

21 lots, 900 L/day/lot, 18,900 L/day

Scheme summary:

21 Prelos tanks (installed by homeowner as part of house build) Liquid only pressure sewer

AX200 AdvanTex wastewater treatment plant

6500 square meters of pressure compensating dripline

Design effluent quality

BOD⁵ <15 mg/L

TSS <15 mg/L

TN <30 mg/L

Our Office

311a Postman Road Dairy Flat,
Auckland 0794, New Zealand

Phone

09 426 1027

0800 466 635 (0800innoFlow)

Peak Road Subdivision

(Auckland, New Zealand)

51 Lots

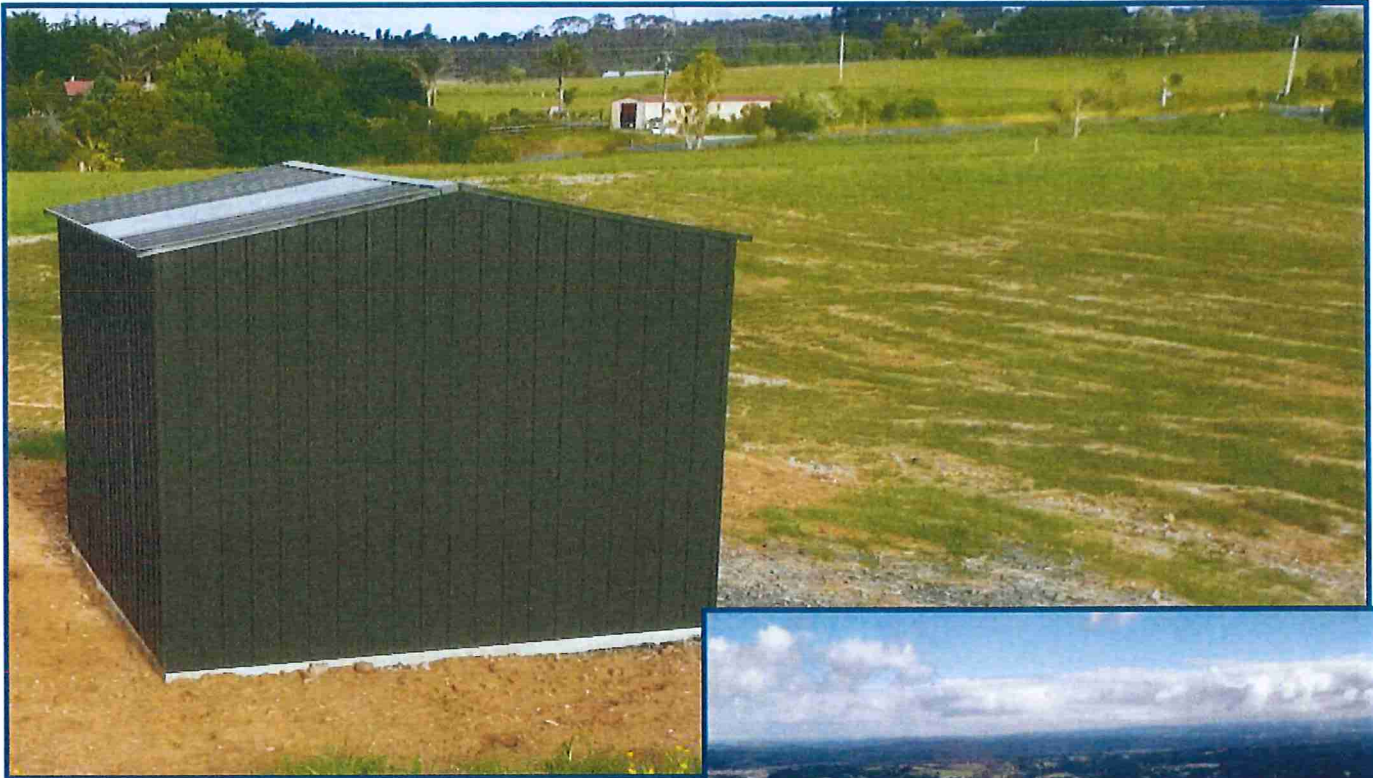


Figure 6-Photo of land application area which is irrigated by treated effluent from the Peak Road subdivision

Greenfield development
Installation date: 2014
Client: Private developer

Number of lots and design volume:

51 lots, 1,080 L/day/lot, 55,080 L/day

1 community church, 250 L/day

Farm Barn, 1,080 L/day



Figure 5-Aerial shot of the Peak Road subdivision

Scheme summary:

51 Prelos tanks (installed by homeowners as part of house builds)

Liquid only pressure sewer

AX600 AdvanTex wastewater treatment plant

18,805 square meters of pressure compensating dripline

Design effluent quality

BOD5 <15 mg/

TSS <15 mg/L

TN <30 mg/L (12 month average)

Faecal Coliforms <200 cfu/100 mL

Ongare Point Coastal Community

(Bay of Plenty, New Zealand)

58 Lots



Figure 7-Photo of AdvanTex wastewater treatment plant installed to service the Ongare Point community

Established community

Installation date:

Client: Western Bay of Plenty District Council

Number of lots and design volume:

58 lots, 690 L/lot, 40,000 L/day



Figure 8-Aerial photo of the existing Ongare Point community-

Scheme summary:

58 STEP tanks (installed at each house, including retrofits)

Pressurised liquid only sewer

AdvanTex® AX400 Wastewater Treatment Plant

55,400 square meters of pressure compensating dripline laid through bush

Design effluent quality

BOD: <20 mg/L

TSS: <20 mg/L

E.coli: <500 mpn/100mL

Our Office

311a Postman Road Dairy Flat,
Auckland 0794, New Zealand

Phone

09 426 1027

0800 466 635 (0800innoflow)

Sylvan Estate Subdivision

(Auckland, New Zealand)

65 Lots



Figure 7-Photo of AdvanTex wastewater treatment plant installed to service the Ongare Point community

Greenfield development
Installation date: 2019
Client: Private developer

Number of lots and design volume:
65 lots, 900 L/day/lot, 58,500 L/day

Scheme summary:
65 Prelos tanks (installed as part of house builds)
Liquid only pressure sewer
AX500 AdvanTex wastewater treatment plant
14,625 square meters of pressure compensating dripline

Design effluent quality
BOD5 <20 mg/L
TSS <20 mg/L
TN <30 mg/L
NH3-N <10 mg/L
TP <15 mg/L
Faecal Coliforms <200 cfu/100 mL

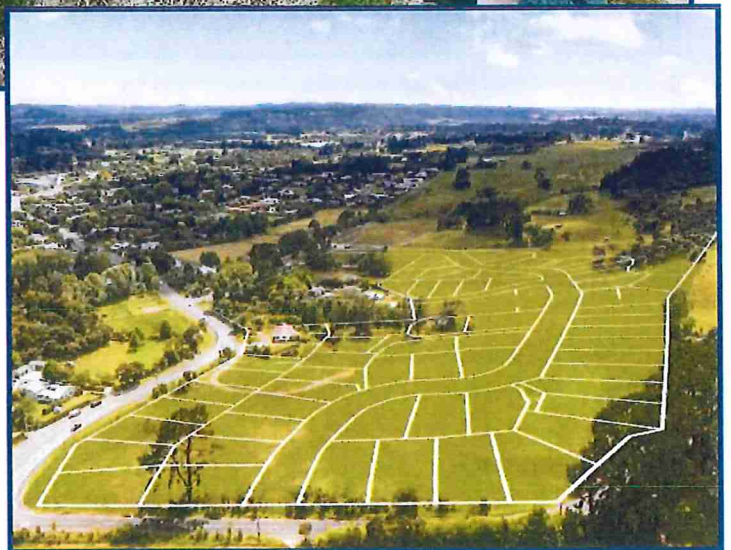


Figure 8-Aerial photo of the existing Ongare Point community

Opito Bay Community (Coromandel, New Zealand)

76 Lots



Figure 12-Photo of AdvanTex wastewater treatment plant at Opito Bay

Greenfield development

Installation date: 2019

**Client: Private developer,
then Thames Coromandel District Council**

Number of lots and design volume:

76 lots, 1,560 L/day/lot, 119,000 L/day

Scheme summary:

76 Prelos tanks (installed as part of house builds)

Liquid only pressure sewer

AX900 AdvanTex wastewater treatment plant

14,108 square meters of pressure compensating dripline



Figure 11-Aerial photo of Opito Bay and location of planned subdivision

Design effluent quality

BOD5 <20 mg/L

TSS <20 mg/L

TN <30 mg/L

NH3-N <10 mg/L

TP <15 mg/L

Faecal Coliforms <200 cfu/100 mL

Our Office

311a Postman Road Dairy Flat,
Auckland 0794, New Zealand

Phone

09 426 1027

0800 466 635 (0800innoflow)

Matauri Bay Subdivision

(Far North, New Zealand)

154 Lots



Figure 13-Photo of AdvanTex wastewater treatment plant at Matauri Bay

Greenfield development
Installation date: 2007
Client: Private developer

Number of lots and design volume:
154 lots, 1,075 L/lot, 166,000 L/day



Figure 14-Photo of communal land application area at Matauri Bay

Scheme summary:

154 STEP tanks (to be installed by homeowner as part of build)
Pressurised liquid only sewer
AdvanTex® AX1600 Wastewater Treatment Plant
55,400 square meters of pressure compensating dripline laid through bush

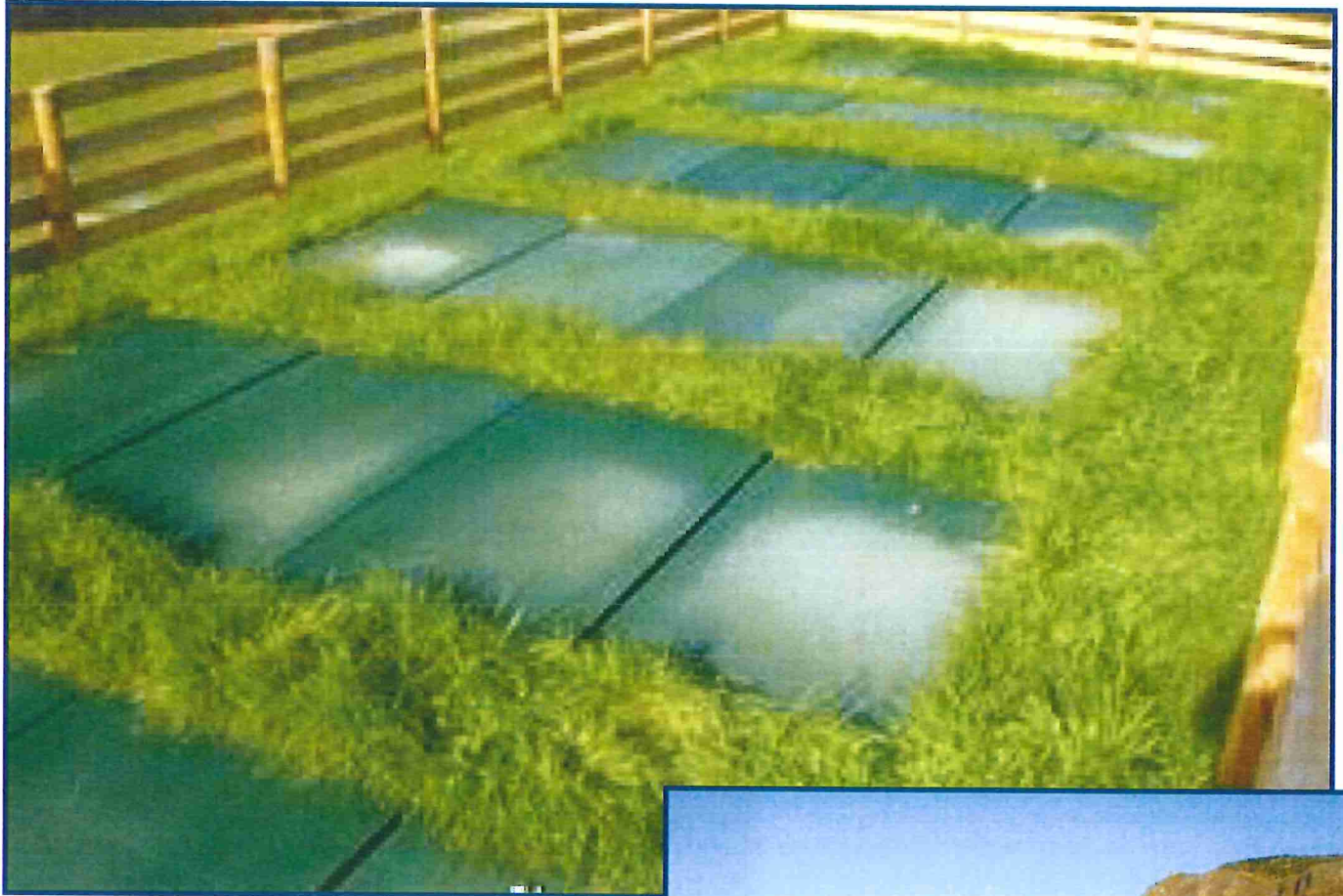
Design effluent quality

BOD: <20 mg/L
TSS: <30 mg/L

Waipataki Beach Community

(Hawkes, New Zealand)

76 Lots



Greenfield development
Installation date: 2006
Client: Hastings District Council

Number of lots and design volume:
76 lots, 1,000 L/day/lot, 76,000 L/day

Scheme summary:
76 Prelos tanks (installed as part of house builds)
Liquid only pressure sewer
AX600 AdvanTex wastewater treatment plant
15,200 square meters of pressure compensating dripline

Design effluent quality

BOD5 <20 mg/L
TSS <30 mg/L



Figure 15- Photo of Waipataki Beach and wastewater treatment plant to service the community

Piopio Community

(Waikato, New Zealand)

198 Lots



Figure 16-Photo of AdvanTex wastewater treatment plant at Piopio Community

Established community
Installation date: 2007
Client: Waitomo District Council

Number of lots and design volume:
198 lots, 1,145 L/lot, 227,000 L/day (including school)

Scheme summary:
198 STEP tanks (installed at each house)
Pressurised liquid only sewer
AdvanTex® AX1200 Wastewater Treatment Plant
Rock outfall
Discharge into Mokau River

Design effluent quality
BOD5 <20 mg/L
TSS <30 mg/L
TKN <30 mg/L
NH3-N <10 mg/L
TP <15 mg/L

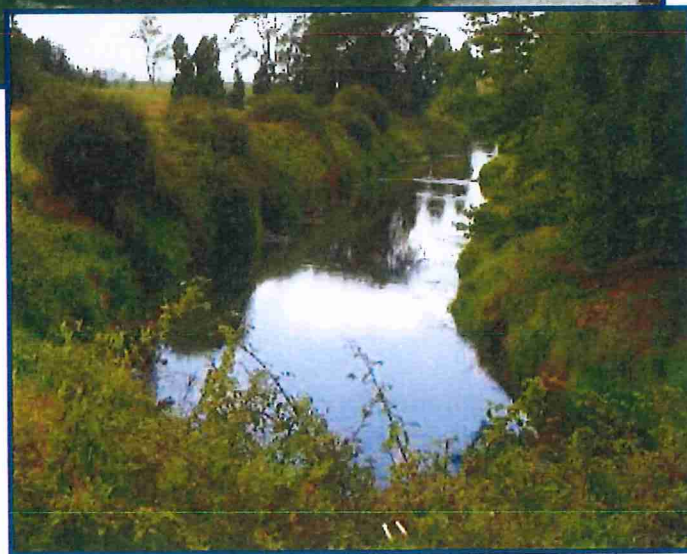


Figure 17-Photo of Mokau River where highly treated effluent is discharged to

Lake Rotoma Lakeside Community

(Rotorua, New Zealand)

234 Lots



Figure 19-Photo of on-lot tank being installed

Established community

Installation date: 2018

Client: Rotorua Lakes Council

Number of lots and design volume:

234 lots, 1,000 L/day/lot, 234,000 L/day

Scheme summary:

234 STEP tanks (installed at each house)
connected to council mains
and council wastewater treatment system

Design effluent quality

Primary treated wastewater



Figure 18-Aerial photo of Lake Rotoma and surrounding area

Mahia Beach Township

(Hawkes Bay, New Zealand)

375 Lots



Figure 21-Photo of on-lot tanks



Figure 20-Aerial photo of Mahia Beach township

Established community
Installation date: 2015
Client: Wairoa District Council

Number of lots and design volume:
375 lots, 1,000 L/day/lot, 375,000 L/day

Scheme summary:
375 concrete STEP tanks (installed at each house) connected to council mains

Design effluent quality
Primary treated wastewater

Jacks Point

(Otago, New Zealand)

750 Lots



Figure 22-Photo of 1 of 3 decentralised wastewater treatment plants at Jacks Point (N567 plant)

Greenfield, expanding development
Installation date: 2006-current
(wastewater scheme continues to be upgraded as the development grows)
Client: Private developer



Figure 23-Picture of an installed on-lot tank at Jacks Point

Number of lots and design volume:

Planned 750 lots, of which 484 homes are built and connected to scheme across 7 neighbourhoods (N1 to N7). Also includes connection from golf club, restaurant and offices.

Scheme summary:

484 (out of planned 750) STEP tanks (installed at each house)
Pressurised liquid only sewer
3 wastewater treatment plants and 3 land application areas servicing 3 clusters of neighbourhoods;
N1-N4 plant: 412 lots connected
N2-N3 plant: 164 lots connected
N5, 6, 7 plant: 182 lots connected
76,000 square meters of pressure compensating dripline

Design effluent quality

BOD: <15 mg/L
TSS: <20 mg/L
TN: <20 mg/L
TP: <12 mg/L E.coli: <10,000 mpu/100mL



wastewater specialists

Contact **Innoflow** for Design and Pricing Information

+64 9 426 1027 or **info@innoflow.co.nz**

should you require a design and cost for a wastewater system for your site.

