# GreenwoodRoche PROJECT LAWYERS

14 February 2021

Ministry for the Environment Manatū Mō Te Taiao

Fast Track Consenting Team

For Sara Clarke

Contact Lauren Semple Phone 03 353 0574 Email s 9(2)(a) Reference 2208261-1

Christchurch Level 3, 1 Kettlewell Lane, The Crossing, 680-690 Colombo Street PO Box 139, Christchurch 8140

Dear Sara

### Re: COVID-19 Recovery (Fast-track Consenting) Act 2020 - Faringdon South West and South East Development - Additional RFI

- 1 We refer to your letter dated 1 February 2021 requesting further information. That information is included at **Appendix A** to this letter.
- As an additional matter, we wish to advise that our client is no longer proceeding with the acquisition of 545 Maddisons Road (Lot 1, DP 326339). This property was referenced in our email to you dated 9 December 2020. We therefore request that this property is removed from the project area. With that property removed, we confirm that the project area comprises:
  - (a) Faringdon South West, being:
    - (i) all the properties described in the original application;
    - (ii) Lot 3 DP 355996 (being the property described in our RFI response dated 3 December 2020); and
    - (iii) Lot 2 DP 75821 and Lot 2 355996 (being the property described in our email to you dated 18 December 2020).
  - b) Faringdon South East, being all the properties described in the original application.

Within these areas, the project will deliver:

- up to 959 lots, if the superlot in Faringdon South East is developed as a secondary school.
- (b) up to 1,089 lots, if the superlot in Faringdon South East is developed for housing.
- 4 The information provided in Appendix A reflects these updated figures.

5 Please do not hesitate to contact me if you have any questions or if we can be of further assistance.

Yours sincerely

Lauren Semple Partner

# GreenwoodRoche PROJECT LAWYERS

### APPENDIX A

The numbering used in this Appendix A mirrors the numbering in the request for further information.

- 1 **Maximum potential job numbers in Full Time Equivalents (FTEs).** Market Economics has updated its economic assessment of the project based on the revised project area. That assessment is available on request. It estimates that the Proposal (with the school) will generate up to 13,000 FTEs over the entire development period, on an average of 1,300 FTEs per year. Peak employment is estimate to occur in 2023, and will generate up to 2,700 FTEs.
- 2 Information on the scale and/or height of the neighbourhood centres. It is intended that the Neighbourhood Centres will be developed in a manner consistent with the planning framework for the existing Outline Development Plan areas included within the operative Selwyn District Plan. Subject to the timing of development within the Neighbourhood Centres, built form standards within the proposed District Plan will assume greater weight and eventually replace the current standards. A comparison of the current District Plan (DP) and Proposed District Plan (PDP) built form requirements for ODP neighbourhood centres is provided below:
  - (a) The DP has a maximum building height of 10m. The PDP has a maximum height of 8m.
  - (b) There are no site coverage limitations in either Plan.
  - (c) Recession planes apply to all internal boundaries in the PDP, but only to a boundary shared with a residential zone in the DP.
  - (d) Any parking area required is to be provided at the rear of buildings.
  - (e) PDP requires a shared boundary with the residential zone to have a 2m landscape strip, no such requirement in the DP.
    - PDP requires active frontage for a building's primary frontage resulting in 50% glazing of a façade. No such requirement in DP.

**Titles.** As noted in the covering letter, Lot 1 DP 326339 is no longer within the project area. The titles for the other lots referenced are included as **Attachment 1**.

**Roading upgrades and consultation with Selwyn District Council on the same**. As is typical with greenfield subdivision, road upgrade works will be required. These works will consist of minor (localised) road widening, kerb and channel, off-road shared footpaths and landscaped berms. Undergrounding of existing power lines will also form part of this work. These upgrades have been designed in consultation with Selwyn District Council Asset Officers. The localised upgrade designs have been lodged with Council and engineering approval for this work has been received.

In addition to localised road upgrades, Selwyn District Council (SDC) has raised the need for a pending upgrade of the Selwyn Road – Springston Rolleston Road

(a)

intersection. Joint funding between Waka Kotahi and SDC is set aside for the intersection upgrade to occur within the period 2024-2027. To ensure this intersection upgrade is adequately provided for, HDL has worked with Council to agree a preliminary design of the upgrade and identify the extent of land required for the upgrade. The preliminary design and land requirement plans have recently been approved by SDC.

- 5 Alignment with Ngāi Tahu subdivision design guidelines and an assessment on te ao Māori cultural wellbeing. A fulsome assessment of the project's alignment with the Ngāi Tahu guidelines for subdivision is included as Attachment 2. This assessment supplements the commentary in the original application relating to cultural wellbeing which draws on feedback received from Mahaanui Kurataiao and representatives from Te Runanga o Ngāi Tuāhuriri. In short, the project represents an extension of the existing Faringdon community. Within that community, there are key urban elements which are central to the development and way of life, and are consistent with the expectations outlined by Mahaanui Kurataiao through consultation. They also align with the Ngāi Tahu guidelines for subdivision and respect the traditional and contemporary values of te ao Maori. These elements will be retained or enhanced as part of the project and include:
  - (a) The boulevard network is being extended and will link the sites to the existing Faringdon area. The network will include even greater landscape areas than previously provided and will also link the off-road pedestrian and cycleway networks.
  - (b) The existing and highly successful community garden will be retained and will be in close proximity to the project area.

One of the key aspects underpinning urban growth and affordability within Rolleston has been the availability of infrastructure capacity and the efficiency at which infrastructure has been able to support growth. Existing ground conditions and infrastructure design initiatives have aligned urban growth with maintaining environmental quality and this will continue with this project.

- 6 **Title restrictions which might prevent, limit or delay delivery of the project.** The existing title restrictions and their functions are described below. None of these restrictions on the titles will prevent, limit or otherwise delay the delivery of the project.
  - **CB43A/595**, Lot 1 DP 74660. This title contains a land covenant 10973163.8. This covenant is appurtenant to this title and is for the benefit of it. It does not restrict the ability to subdivide the land.
  - (b) **667882 Lot 2 DP 479375.** This title contains a consent notice 9862904.9. The consent notice prevents building a dwelling in a location on the site so as to achieve a minimum dwelling density in the rural zone. It is currently being cancelled and will be removed from the title prior to the subdivision proceeding.
  - (c) 667881 Lot 1 DP 479375 and Lot 1 DP 441634. This title is subject to an amalgamation condition holding the two allotments together in one title and a consent notice 9862904.6. The consent notice identifies a zone of influence for effluent disposal. The amalgamation condition is currently being cancelled and will be removed from the title prior to the subdivision proceeding. The consent

notice is currently being cancelled and will be removed from the title prior to the subdivision proceeding.

- (d) 549973 Lot 2 DP 63632 and Lot 3 DP 441634. This title is subject to an amalgamation condition holding the two allotments together in one title. The amalgamation condition is currently being cancelled and will be removed from the title prior to the subdivision proceeding.
- (e) 171912 Lot 2 DP 341771. This title is subject to an encumbrance to Orion New Zealand Limited. It relates to electricity supply to the current dwelling on the property. It will be cancelled as part of the subdivision of the land.
- (f) 228451 Lot 2 DP 75821 and Lot 2 DP 355996. This title contains a consent notice A315347.4. The consent notice identifies an effluent disposal area. It will be cancelled as part of the subdivision of the land.

#### 7 Drinking water and wastewater infrastructure facilities to service the site.

#### (a) Water supply.

SDC has a strategic plan for the delivery of water trunk mains to the south east side of Rolleston. It is contained in the SDC 5 Waters Activity Management Plan and is described as the Rolleston Master Plan 2017-2048. The plan describes and network of pipe sizes and bore upgrades with specific timing. The Master Plan provides a very good framework for the roll out of water supply services but the timing is no longer valid as the development of land in Rolleston has overtaken these predictions. Added to this, the construction of the Faringdon Development has incorporated additional up-sized mains, and the area is now better supplied than what was originally intended. The reason for this added supply is that the original intentions for the development of the town were based on a minimum housing density of 10 households per hectare. In reality the density is closer to 12 households per hectare.

A 200mm water main extends along the East Maddisons Road frontage of the site and was installed as part of the previous stages of the Faringdon development. A 450mm water main currently extends along Springston Road. New trunk (water) mains will be provided along Selwyn Road as part of the subdivision work and additional internal water mains (200mm) will be installed to service the development areas. In addition to the existing and proposed trunk mains, a network of 150mm water mains and 63mm submains will be installed throughout the site to provide potable water supply to each new lot.

#### Wastewater.

(b

As part of the Eastern Selwyn Sewage Scheme, a large pump station was constructed at the corner of Selwyn Road and Springston-Rolleston Road. This pump station is known as the RADAR Pump Station. This pump station was designed to receive the flows from the southern side of Rolleston and also flows from other communities before pumping directly to the Pines Wastewater Treatment Plant west of Rolleston.

10101 10101 As part of the Faringdon development, a large sewer pipe was laid from the RADAR station, south along Selwyn Road and then north into the Faringdon Development Area. This pipe along Selwyn Road is a 525mm dia uPVC pipe and has been laid at a grade of 1 in 430.

A wastewater capacity assessment of the RADAR pump station and Selwyn Road gravity main was undertaken by OPUS in January 2020. This assessment concludes that the Selwyn Road gravity sewer has capacity to service the proposed catchments which includes the Faringdon South East area.

The Faringdon South West area falls within a sewer catchment that is proposed to be served by a new pump station (located on Selwyn Road). Funding for this pump station has been allocated for 2023, although the opportunity to bring this forward has been discussed and remains an option for consideration. Sewer mains will be laid through the Faringdon South-West area at minimum gradient through the development site to Goulds Road to ensure the upstream areas within the catchment beyond the subject site can be serviced.

The pump station will require a detailed design phase followed by a construction phase. If there are delays with the construction and commissioning of the new pump station, or if a portion of the development is completed earlier than the council pump station can be completed, a temporary pumping solution has been explored and is available. This will be designed to service the required catchment until such time as the sewage flow can be diverted to the permanent pump station. The temporary pump station would be located within the development area and would be removed when it is no longer required.

The proposed temporary solution would pump sewage into the existing 225mm gravity main located at the corner of East Maddisons Road and Selwyn Road which discharges to the existing Selwyn Road pump station servicing the southern end of Faringdon South. It has been identified that there is additional capacity in this existing pump station to temporarily accommodate flows from a portion of the Faringdon South-West development. Details around any temporary pumping solution will be confirmed during detailed design and following further consultation with council.

All of the aforementioned water and wastewater proposals have been designed following extensive consultation with Selwyn District Council Asset Officers.



## **RECORD OF TITLE UNDER LAND TRANSFER ACT 2017** FREEHOLD Search Copy





R.W. Mui Registrar-Ge of Land era

Identifier

## 228451

Land Registration District Canterbury **Date Issued** 27 October 2005

**Prior References** CB43C/858

CB43C/859

Fee Simple 6.1080 hectares more or less Legal Description Lot 2 Deposited Plan 75821 and Lot 2 Deposited Plan 355996

### **Registered Owners**

Michael Nicholas Quinn and Suzanne Maree McFerran

### Interests

Estate

Area

Subject to Part IV A Conservation Act 1987

A315347.4 Consent Notice pursuant to Section 221 Resource Management Act 1991 (Affects Lot 2 DP 355996) - 2.9.1997 at 10:15 am

Subject to Section 241(2) and Sections 242(1) and (2) Resource Management Act 1991(affects DP 355996)

9815555.4 Mortgage to ASB Bank Limited - 15.12.2014 at 3:34 pm

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# **RECORD OF TITLE UNDER LAND TRANSFER ACT 2017 FREEHOLD**

Search Copy



R.W. Mui Registrar-General of Land

Identifier

Land Registration District Canterbury **Date Issued** 

27 October 2005

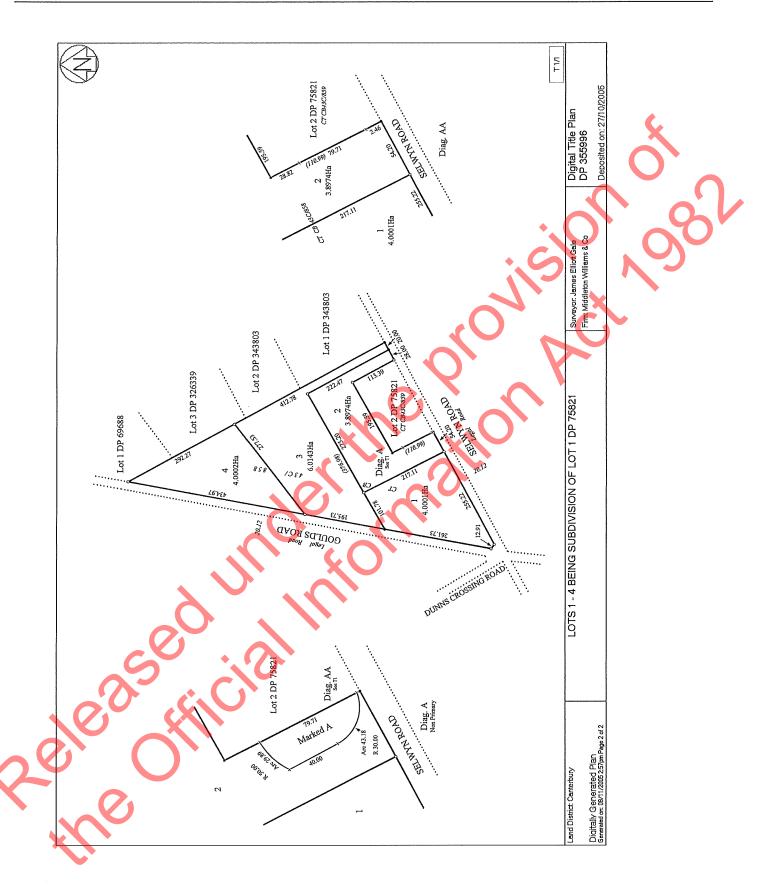
228452

**Prior References** CB43C/858

Fee Simple Estate Area 6.0143 hectares more or less Legal Description Lot 3 Deposited Plan 355996 **Registered Owners** 858 Selwyn Road Farm Limited

### Interests

Subject to Part IV A Conservation Act 1987 10211139.1 Mortgage to Bank of New Zealand - 8.10,2015 at 3:43 pm 11855947.1 CAVEAT BY HUGHES DEVELOPMENTS LIMITED - 10.9.2020 at 4:51 pm





Davie, Lovell-Smith Ltd 116 Wrights Road, Addington PO Box 679, Christchurch 8140 New Zealand Telephone (03) 379-0793, E-mail: office@dls.co.nz

12 February 2021

Hughes Developments Limited

Attention: Jake Hughes

Sent via email: s 9(2)(a)

Faringdon South East and West developments: Ngai Tahu Subdivision and Development Guidelines Assessment

Dear Jake,

I have prepared an assessment of the Ngai Tahu Subdivision and Development Guidelines in response to the Mahaanui Kurataiao Limited submission for the Faringdon South East and South West developments.

If you have any questions regarding the contents of this letter, please do not hesitate to contact me on (03) 379 0793 or via email: s 9(2)(a)

Kind Regards, **DAVIE LOVELL-SMITH LTD** 

Mirokin

Alice Burnett Planner

Appendices: A – Assessment of Ngai Tahu Subdivision and Development Guidelines B – Proposed Stormwater Discharges

RESOURCE MANAGEMENT, ENVIRONMENTAL PLANNING, LAND SURVEYING AND DEVELOPMENT, CIVIL AND ENVIRONMENTAL ENGINEERING



## Appendix A: Assessment of Ngai Tahu Subdivision and Development Guidelines

Appendix A: Assessment of Ngai Tahu Subdivision and Development Guidelines		
Ngai Tahu Subdivision and Development Guidelines	Compliance Comments	
	Landscapes	
1.1 A cultural landscape approach is the most appropriate	Consultation to date has not identified any cultural values or sites	
means to identify, assess and manage the potential effects of	of significance. It is intended any future applications will include a	
subdivision and development on cultural values and	cultural impact assessment.	
significant sites [refer Section 5.8 Issue CL1].	Annual track 2. A. Frank Confeder Machanauth of Manager A. Dhar	
1.2 Subdivision and development that may impact on sites of	Appendices 2, 4, 5 and 6 of the Mahaanui Iwi Management Plan	
significance is subject Ngāi Tahu policy on Wāhi tapu me wāhi taonga and Silent Files (Section 5.8, Issues CL3 and CL4).	illustrate the sites of significance to Ngai Tahu. There are no identified sites in relation to the development site.	
1.3 Subdivision and development can provide opportunities to		
recognise Ngãi Tahu culture, history and identity associated	Ngai Tahu culture can be appropriately recognised within the development.	
with specific places, and affirm connections between tangata		
whenua and place, including but not limited to:		
(i) Protecting and enhancing sites of cultural value, including		
waterways;		
(ii) Using traditional Ngāi Tahu names for street and		
neighborhood names, or name for developments;		
(iii) Use of indigenous species as street trees, in open space		
and reserves;		
(iv) Landscaping design that reflects cultural perspectives,		
ideas and materials;		
(v) Inclusion of interpretation materials, communicating the		
history and significance of places, resources and names to		
tāngata whenua; and		
(vi) Use of tangata whenua inspired and designed artwork and		
structures.		
	mwater	
2.1 All new developments must have on-site solutions to stormwater management (i.e. zero stormwater discharge off	Roof stormwater is to be disposed of directly to ground via soak pits on individual sites in accordance with the Building Act. All	
site), based on a multi-tiered approach to stormwater	other stormwater emanating from roads, berms and lot frontages	
management that utilises the natural ability of Papatūānuku	will be collected by sumps and pipes and directed to boulder	
to filter and cleanse stormwater and avoids the discharge of	backfilled rapid soakage trenches. These rapid soakage trenches	
contaminated stormwater to water [refer to Section 5.4,	will be located in the road berms and will provide treatment of	
Policy P6.1].	the stormwater. Please see further assessment in Appendix B.	
2.2 Stormwater swales, wetlands and retention basins are		
appropriate land based stormwater management options.		
These must be planted with native species (not left as grass)		
that are appropriate to the specific use, recognising the ability		
of particular species to absorb water and filter waste.		
2.3 Stormwater management systems can be designed to		
provide for multiple uses. For example, stormwater		
management infrastructure as part of an open space network		
can provide amenity values, recreation, habitat for species		
that were once present on the site, and customary use.	Annual and a Prove of the Prove of the Prove	
2.4 Appropriate and effective measures must be identified	Appropriate erosion and sediment control methods will be in	
and implemented to manage stormwater run off during the	place during construction to reduce erosion and sedimentation off the site.	
construction phase, given the high sediment loads that	on the site.	
stormwater may carry as a result of vegetation clearance and bare land.		
2.5 Councils should require the upgrade and integration of	Stormwater will be discharged to Councils reticulated system	
existing stormwater discharges as part of stormwater	which is managed in an integrated manner.	
management on land rezoned for development.		
2.6 Developers should strive to enhance existing water quality	Stormwater discharged from the site is in accordance with	
standards in the catchment downstream of developments,	current practices within Rolleston. Treatment of the stormwater	



Ngai Tahu Subdivision and Development Guidelines	Compliance Comments
through improved stormwater management.	is provided prior to entering ground water and therefore water
through improved stornwater management.	quality will be retained.
Fari	thworks
3.1 Earthworks associated with subdivision and development	Accidental discovery protocol will be in place throughout the
are subject to the general policy on Earthworks (Section 5.4	construction of the residential development. Appropriate erosion
Issue P11) and Wāhi tapu me wāhi taonga (Section 5.8, Issue	and sediment control methods will be in place during
CL3), including the specific methods used in high and low risk	construction to reduce erosion and sedimentation off the site.
scenarios for accidental finds and damage to sites of	construction to reduce erosion and sedimentation on the site.
significance.	
3.2 The area of land cleared and left bare at any time during	Appropriate erosion and sediment control methods will be in
development should be kept to a minimum to reduce erosion,	place during construction to reduce erosion and sedimentation
minimise stormwater run-off and protect waterways from	off the site.
sedimentation.	
3.3 Earthworks should not modify or damage beds and	No works will occur within the bed or margins of waterbodies.
margins of waterways, except where such activity is for the	to works will occur within the sect of margins of watchbodies.
purpose of naturalisation or enhancement.	
3.4 Excess soil from sites should be used as much as possible	There will be no fill brought into or be taken off the site.
on site, as opposed to moving it off site. Excess soil can be	
used to create relief in reserves or buffer zones.	
	ipply and use
4.1 New developments should incorporate measures to	The development will be connected to the Councils reticulated
minimise pressure on existing water resources, community	water supply with each dwelling having its own water meter.
water supplies and infrastructure, including incentives of	Based on the infrastructure report there is no pressure on
requirements for:	existing water resources.
(i) low water use appliances and low flush toilets;	
(ii) grey water recycling; and	
(iii) rainwater collection.	
4.2 Where residential land development is proposed for an	
area with existing community water supply or infrastructure,	
the existing supply or infrastructure must be proven to be	
able to accommodate the increased population prior to the	
granting of subdivision consent.	
4.3 Developments must recognise, and work to, existing limits	
on water supply. For example, where water supply is an issue,	
all new dwellings should be required to install rainwater	
collection systems.	
Waste treatn	nent and disposal
5.1 Developments should implement measures to reduce the	The development will be connected to Councils reticulated
volume of waste created within the development, including	wastewater system. Based on the infrastructure report there is
but not limited incentives or requirements for:	no pressure on the existing wastewater system.
(i) Low water use appliances and low flush toilets;	
(i) Grey water recycling; and	
(ii) Recycling and composting opportunities (e.g. supporting	
zero waste principles).	
5.2 Where a development is proposed for an area with	
existing wastewater infrastructure, the infrastructure must be	
proven to be able to accommodate the increased population	
prior to the granting of the subdivision consent.	
5.3 New rural residential or lifestyle block developments	N/A
should connect to a reticulated sewage network if available.	
5.4 Where new wastewater infrastructure is required for a	The development will be connected to Councils reticulated
development:	wastewater system.
(i) The preference is for community reticulated systems with	
local treatment and land based discharge rather than	
individual septic tanks; and	



Ngai Tahu Subdivision and Development Guidelines	Compliance Comments
(ii) Where individual septic tanks are used, the preference is a	
wastewater treatment system rather than septic tanks.	
	guidelines
6.1 New developments should incorporate low impact urban	The development has been carefully designed to enable dwellings
design and sustainability options to reduce the development	to be positioned on site to provide passive solar gain, particularly
footprint on existing infrastructure and the environment,	for outdoor and indoor living areas.
including sustainable housing design and low impact and self	
sufficient solutions for water, waste, energy such as:	
(i) Position of houses to maximise passive solar gain;	
(ii) Rainwater collection and greywater recycling;	
(iii) Low energy and water use appliances;	
(iv) Insulation and double glazing; and	
(v) Use of solar energy generation for hot water.	
6.2 Developers should provide incentives for homeowners to	
adopt sustainability and self sufficient solutions as per 6.1	
above.	
6.3 Urban and landscape design should encourage and	The development includes an extensive open space network
support a sense of community within developments, including	including reserves along the boulevard.
the position of houses, appropriately designed fencing,	The development will include a number of covenants relating to
sufficient open spaces, and provisions for community gardens.	fencing and gardens. Faringdon has a large social media presence
	with a community Facebook page for owners within the
	development. Faringdon has an existing community garden.
6.4 Show homes within residential land developments can be	The development has been carefully designed to enable dwellings
used to showcase solar hot water, greywater recycling and	to be positioned on site to provide passive solar gain, particularly
other sustainability options, and raise the profile of low	for outdoor and indoor living areas.
impact urban design options.	
	and open space
7.1 Sufficient open space is essential to community and	Sites within the development meet the relevant site areas to
cultural well being, and the realization of indigenous	enable open space around dwellings as well as providing for
biodiversity objectives, and effective stormwater	public open spaces.
management. 7.2 Indigenous biodiversity objectives should be incorporated	Landscaping of reserves will include native vegetation that aligns
into development plans, consistent with the restoration and	with Selwyn District Council requests.
enhancement of indigenous biodiversity on the landscape.	with Selwyn District Council requests.
7.3 Indigenous biodiversity objectives to include provisions to	
use indigenous species for:	
(i) street trees;	
(ii) open space and reserves;	
(iii) native ground cover species for swales;	
(iv) stormwater management network; and	
(v) home gardens.	
7.4 Indigenous species used in planting and landscaping	
should be appropriate to the local environment, and where	
possible from locally sourced seed supplies.	
7.5 Options and opportunities to incorporate cultural and/or	
mahinga kai themed gardens in open and reserve space can	
be considered in development planning (e.g. pā harakeke as	
a source of weaving materials; reserves planted with tree	
species such as mātai, kahikatea and tōtara could be	
established with the long term view of having mature trees	
available for customary use).	
7.6 Developers should offer incentives for homeowners to use	
native species in gardens, including the provision of lists of	
recommended plants to avoid, discounts at local nursery, and	
landscaping ideas using native species.	



## **Appendix B: Proposed Stormwater Discharges**

Roof stormwater is to be disposed of directly to ground via soak pits on individual sites in accordance with the Building Act. All other stormwater emanating from roads, berms and lot frontages will be collected by sumps and pipes and directed to boulder backfilled rapid soakage trenches. Pre-treatment will occur prior to discharge through the use of trapped sumps. These will add an additional factor of safety for both hydrocarbon and heavy metal contamination. This is a result of the low solubility of heavy metals and their tendency to leach to solid particles. A large proportion of metallic contamination will be removed with suspended solids as the stormwater moves through the sump system and travels through at least 3m of undisturbed material (based on the depth to groundwater and depth of soakpits) before dispersion into the water table.

First flush stormwater discharges, which are considered to have the highest concentration of contaminants, have been researched and analysed within Rolleston. This research has determined that contaminants within first flush stormwater discharges were below the Maximum Acceptable Value (MAV guidelines) with the exception of E.coli. Given this, it can be considered that the proposed stormwater discharge methods will also be below MAV guidelines as there is a pre treatment proposed prior to discharging to ground.

E-Coli contamination is not unusual in stormwater runoff. However due to the nature of the contaminant it is difficult to quantify and the level of contamination follows no observable trend. It has been shown that E-Coli levels in stormwater can exceed MAV guideline values at the point of discharge, but due to the rapid rate of decay of E-Coli (T90 of 2 - 6 days) and the dilution of the contaminant as it is added to groundwater it is very unlikely these levels will remain above guideline concentration of <1cfu/100ml by the time the discharge reaches a point of water take for human consumption. The bores closest to the site are primarily used for stockwater or irrigation purposes. However there a couple used for domestic drinking water, these tend to be between 12.8m and 65.8m below ground level. Assuming the closest domestic drinking water bore is 250m downgradient of the stormwater discharge location the following has been determined. Assuming a typical groundwater velocity of <5m/day it will take >46 days to potentially reach this point of water take. Conservatively using T90 of 6 days, the amount of E-Coli will have decayed by an order of magnitude of 7.6 (46 days / 6 days). If the initial concentration of E-Coli is 240 cfu / 100ml (data from PDP Briefing Paper, 2011), using the worst case T90 decay factor of 6 days, the concentration will be at the allowable level of <1 cfu / 100ml in 18 days after discharge. This calculation does not take into account dilution.

The soil profile from the site is silts and sandy gravels several meters deep which will filter out typical stormwater contaminants.

From the information presented above the conclusion can be drawn that there will be no cumulative effects on groundwater quality (overall water quality being the top priority under the NPS -F), and downstream water users (second priority under the NPS -F). from the discharge proposed in the application for stormwater discharge.