

## Appendix 7: Servicing Report

**JUDITH PASCOE  
193 CREYKE ROAD - DARFIELD  
APPLICATION FOR A PLAN CHANGE**

**REPORT TO THE SELWYN DISTRICT COUNCIL  
ON STORMWATER DRAINAGE  
AND WASTEWATER DISCHARGES**

**March 2016**

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**JUDITH PASCOE  
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ON STORMWATER DRAINAGE AND WASTEWATER DISCHARGES**

## **1. THE PURPOSE OF THIS REPORT**

The purpose of this Report is to provide information to the Selwyn District Council (SDC) regarding the proposed stormwater systems and the proposed wastewater systems for an area of land at 193 Creyke Road, Darfield, which is the subject of a plan change application lodged by Judith Pascoe. The report also discusses compliance with the Canterbury Regional Council (Ecan) Regional Plans.

## **2. STORMWATER PROPOSALS**

Any stormwater physical works will be designed and constructed in accordance with Section 5 of the SDC Engineering Code of Practice.

### **2.1 The sub-surface environment at the site**

A geotechnical investigation was undertaken at the site 2010 by Golder Associates. The key points of their report, relevant to ground soakage are as follows: The soil profile consists of less than 500 mm of topsoil over free-draining sandy gravels, with groundwater level at about 70 m below ground, which is typical for the Darfield area.

Such a subsoil environment is ideal for disposing of both stormwater and wastewater to ground.

### **2.2 Stormwater systems**

Any proposed stormwater systems fall into four categories:

- The stormwater system for a road to vest.
- Any stormwater system for rights of way.
- Any stormwater system for new dwellings, including out-buildings.
- The stormwater system for the three existing dwellings.

#### **2.2.1 The stormwater system for the road to vest.**

The road to vest is shown on the Proposed Outline Development Plan Revision A. The stormwater system will be vested in the SDC and, as such, it needs to be subject to SDC approval in all respects.

It is proposed that the road running surface will be shed stormwater to grassed treatment swales on both sides of the road. The stormwater flow from the treatment swales will be discharged to soak pits, in accordance with specific SDC requirements.

The design of soak pits serving the road will be based upon compliance with the specific requirements on the SDC Engineering Code of Practice regarding the design storm intensity and duration.

#### **2.2.2 The stormwater system for the rights of way**

Stormwater systems to serve any rights of way that may be constructed on the subject land will be based upon the stormwater flow, from the right of way, being discharged to a grass treatment swale. The stormwater flow from the swale will be discharged to a soak pit designed to comply with the SDC Engineering Code of Practice regarding the design storm intensity and duration.

#### **2.2.3 Stormwater system for new dwellings, including out-buildings**

Stormwater from the roofs of any buildings to be constructed on the subject land will be collected in down pipes and piped to soak pit(s). Stormwater from any ground level impervious areas (driveways etc.) will be discharged to adjacent vegetated filter strips, from which it will infiltrate into the ground.

The design of any soak pits to be constructed on the land will be based upon compliance with the specific requirements on the SDC Engineering Code of Practice regarding the intensity and duration of the design storm and will be specifically designed to accept the flow from any impervious areas discharging to the soak pit.

#### **2.2.4 Stormwater system for the three existing dwellings**

It is proposed that the stormwater systems serving the three existing dwellings will remain in operation in the future.

### **3. WASTEWATER PROPOSALS**

Any wastewater physical works will be designed and constructed in accordance with Section 6 of the SDC Engineering Code of Practice.

Any new dwellings to be erected on the subject land will be served by specifically designed on-site wastewater treatment and discharge systems, in accordance with AS/NZS 1547: 2012, sized to handle the flow from each dwelling.

Wastewater systems will comprise the following:

- A sealed pipework system to convey the wastewater flow from the sanitary fittings in any proposed dwelling to a septic tank.
- A multi-chamber septic tank e.g. an Oasis Clearwater Z54 Deluxe, or similar.
- A septic tank filter e.g. a Zabel filter, or similar.
- An outlet chamber with a pump to feed the discharge system.
- A sand trench or sand bed discharge system, in accordance with AS/NS 1547: 2012.

It is proposed that the wastewater systems, serving the three existing dwellings, will remain in operation in the future.

## 4. ECAN CONSENT REQUIREMENTS

NOTE: All compliance issues related to contaminated sites are addressed in the Pattle Delamore Report, which forms part of the application.

### 4.1 Stormwater discharges

For the installation of stormwater systems to be permitted activities, compliance with the Land & Water Regional Plan (P&WRP) Rule 5.96 must be achieved.

The proposed installation of any new stormwater systems will be undertaken in accordance with Rule 5.96. Thus, a consent from Ecan will not be required.

Regarding the three existing dwellings, the operation and maintenance of the existing stormwater systems will be the responsibility of the owners.

### 4.2 Wastewater discharges

For the installation of the wastewater systems to be permitted activities, compliance with the Land & Water Regional Plan (P&WRP) Rule 5.7 must be achieved to continue using the existing wastewater systems and compliance with Rule 5.8 is required to provide wastewater systems for the new dwellings.

Rule 5.7 applies to the systems serving the three existing dwellings. Compliance with Rule 5.7 is a matter to be addressed by the owners and operators of the existing systems.

Rule 5.8 applies to the wastewater systems serving any new dwellings. The discharges from these systems are subject to compliance with the conditions attached to Rule 5.8. The proposed discharges comply with all the conditions of Rule 8 except Condition 2, which reads as follows:

***The discharge is onto or into a site that is equal to or greater than 4 hectares in area.***

Clearly, this will not be the case when the subject land is zoned Living 2, where the minimum average section area is not less than 5000 m<sup>2</sup>. Thus, a resource consent is required from Ecan.

The key issues to be addressed in any future resource consent application are the adverse environmental effects that could potentially result from discharging wastewater onto an area of land of less than 4 ha. It should be noted that wastewater discharges in and around Darfield are universally via on-site systems.

The mitigation of potential adverse environmental effects is achieved as follows:

- The Darfield subsoil environment (described in the geotechnical report and briefly summarised in Section 2.1 above) comprises sandy gravels below the site topsoil, which have the ability to provide very free-draining conditions. This is combined with very deep groundwater. Thus, the reliable soakage of treated wastewater into the ground is ensured.
- Although any sections to be created on the land are less than 4 ha in area, at not less than 5000 m<sup>2</sup>, they are large enough to provide adequate separation distances between wastewater discharges and stormwater discharges and between wastewater discharges and

property boundaries. 10 m separation distances have been acceptable to Ecan in the past in Darfield and any resource consent application to Ecan will be based upon providing not less than 10 m separation distances between wastewater discharges and stormwater discharges and not less than 10 m between wastewater discharges and property boundaries.

## **5. CONCLUSION**

If the subject land is rezoned to Living 2, it is feasible to provide stormwater and wastewater systems consistent with the land's development potential i.e. the land has all the necessary attributes to support such services.

Barry Fairburn MIPENZ CPEng  
22 March 2016

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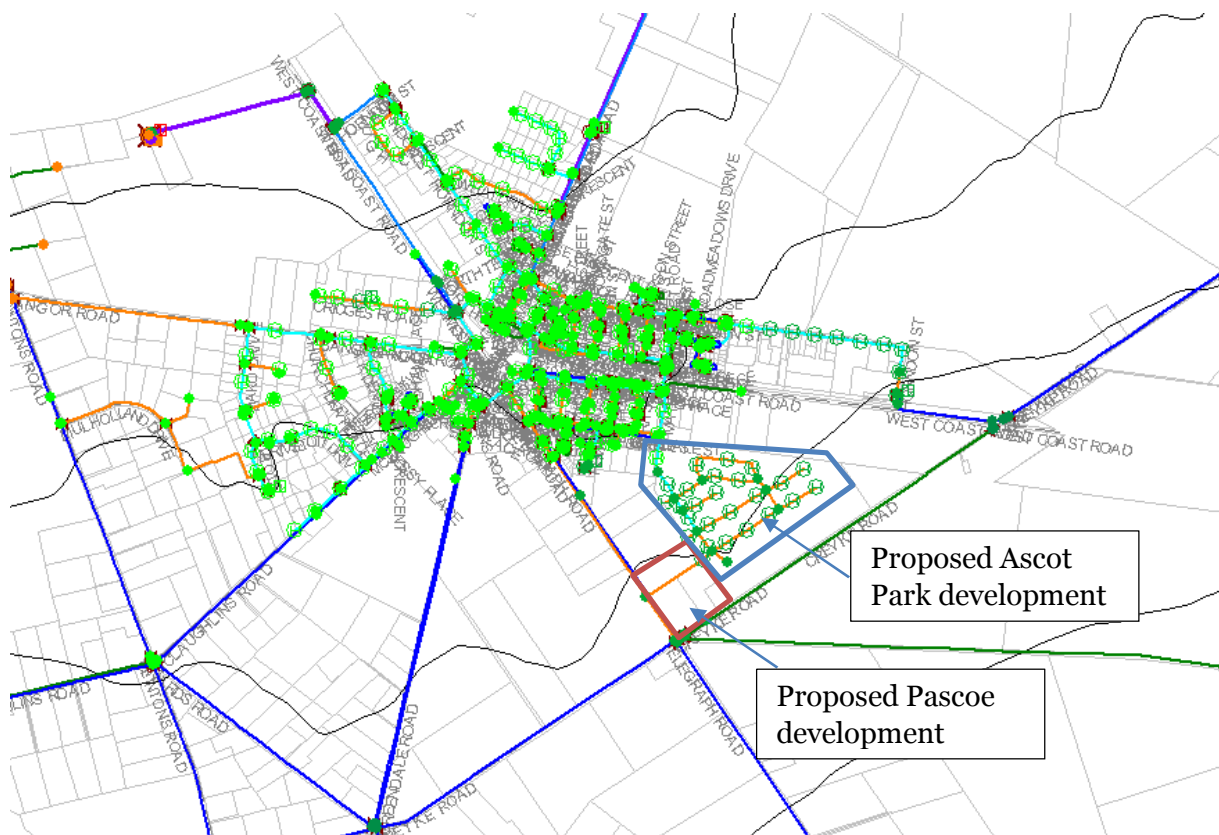
To Judith Pascoe / Jim Cowan  
 REVIEW Dan Johnson  
 FROM Jeff McLean  
 DATE 5 May 2016  
 FILE 3-C1435.00  
 SUBJECT Pascoe Plan Change Water Supply Modelling

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Opus has been engaged to carry out a water model analysis to assess the impacts of a plan change in the south of Darfield. The proposed plan change would allow a 20 lot subdivision to be developed. The analysis identifies any impacts on the water supply that might impact approval of the proposed plan change.

The proposed plan change is located to the south of the urban area of Darfield, at the corner of Telegraph Road and Creyke Road, and is adjacent to the proposed Ascot Park subdivision. The location of the proposed plan change is shown in Figure 1.



**Figure 1 - Location of Proposed Plan Change**

The proposed plan change would allow a 20 lot subdivision to be developed. The proposed subdivision area retains three existing houses, so 17 new connections would result if the subdivision is approved. Due to the size of the lots it is likely that Selwyn District Council will require restricted connections to the development. The proposed layout of the subdivision is shown in Figure 2.



**Figure 2 - Proposed Subdivision Layout (Credit: Survus Consultants)**

The proposed subdivision includes a road to vest in Council, which connects to the end of a proposed road from the Ascot Park subdivision. A DN100 pipe connecting to the existing DN100 pipe in Telegraph Road, and ultimately to the Ascot Park reticulation is recommended.

The proposed development has been modelled in the current peak day Darfield model, including the approved subdivisions Ascot Park and Homebush Road.

Demand from the water supply has been modelled as matching existing users in the urban area of Darfield (3,500 L/d on the peak day, with a diurnal demand pattern). It is likely restricted connections will be provided to the subdivision and the demand assumption will be conservative.

The properties within the proposed development exceed the minimum pressure requirements of 200 kPa, if supplied on-demand. The pressure would clearly exceed the required 150 kPa if restricted connections are provided.



The additional demand from the Pascoe plan change would cause six properties to the west of Darfield in the Bangor Road and Clintons Road area to drop marginally below the 150 kPa minimum pressure during peak hour demand.

The low pressures to the west of Darfield are caused by the pipe supplying Darfield from the West Coast Road source being undersized. The high losses on West Coast Road will be resolved with planned future upgrades linking the source to Bangor Road.

The low pressure issues do not occur with the current demand on the network, excluding Ascot Park, and it should be practical to install upgrades prior to both the Ascot Park and Pascoe developments being completed.

There is adequate capacity from the wells and reservoir to meet the proposed demand.

## **Conclusion**

There is adequate capacity in the water supply network to supply the proposed development.

24<sup>th</sup> March 2016

**ES288100**

RE: 193 Creyke Road, Darfield

Mr James Leonard Cowan  
Survus Consultants  
4 Meadow St  
Christchurch  
8052

jim.cowan@survus.co.nz

Dear Sir,

**Proposed sub-division connection to the Orion network**  
**Lots 1 & 2 DP391851 and Lots 1 & 2 DP 56120 193 Creyke Road, Darfield.**

I refer to your letter and the above named property(s). I have investigated your request and comment as follows;

1. There is no specific connections available for this sub division; however,
2. A connection could be available with alteration to the Orion network.
3. There will be costs associated in providing the connection(s). These costs will be the responsibility of the property owner, not Orion.
4. To comply with Orion's network security conditions an alternative feed from adjoining developments may also be required.
5. This type of work would be a typical design build project. If you decide to proceed; have your designer forward their proposal to Orion for approval. Orion will forward Terms and Conditions for acceptance.
6. The terms and conditions presented to the applicant will encompass Orion's policies and practices current at the time.

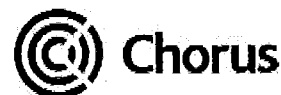
Please don't hesitate to contact me on (03) 363 9722 if you have any questions, or email me at [craig.marshall@oriongroup.co.nz](mailto:craig.marshall@oriongroup.co.nz).

Yours faithfully



Craig Marshall

**Chorus Network Services**  
PO Box 9405  
Waikato Mail Centre  
Hamilton 3200  
Telephone: 0800 782 386  
Email: [tsg@chorus.co.nz](mailto:tsg@chorus.co.nz)



27 April 2016

Sub Div Ref: DRF32088

Your Ref:

Judith Pascoe  
40 Stott Drive  
RD1  
Darfield

Attention: Jim Cowan

Dear Sir / Madam

**Copper Reticulation**

**SUBDIVISION RETICULATION - DRF 193 Creyke Road, Darfield, 20 lots (3 existing)**

**193 Creyke Road Darfield**

Thank you for your enquiry regarding the above subdivision.

Chorus is pleased to advise that, as at the date of this letter, we will be able to provide telephone reticulation for this subdivision. In order to complete this reticulation, we require a contribution from you to Chorus' total costs of reticulating the subdivision. Chorus' costs include the cost of network design, supply of telecommunications specific materials and supervising installation. In this instance, the Developer Contribution (as defined in the Subdivision Contract) is \$52,266.35 (including GST).

A copy of the Contract for the Supply and Installation of Telecommunications Infrastructure for the subdivision ("Subdivision Contract") is attached to this letter. If you decide to accept Chorus' offer and to proceed with reticulation of this subdivision, you will need to sign the Subdivision Contract and return it to us at: Chorus Network Services, PO Box 9405, Waikato Mail Centre, Hamilton 3200. The Subdivision Contract will govern our relationship with you in relation to reticulation of this subdivision.

You are also required to pay the Developer Contribution (see above) at the same time as you return the signed version of the Subdivision Contract to us. Clause 2.2 of the Special Terms of the Subdivision Contract explains your payment obligations in more detail.

If you do not sign the Subdivision Contract and return it to us within 90 days from the date of this letter, the offer made by Chorus to you under the Subdivision Contract is no longer valid and is automatically withdrawn. If you wish to proceed with reticulation of this subdivision in the future, we will need to issue a new agreement for you to sign at that time. We note that, if this occurs, the amount of the contribution required from you and other terms of the Subdivision Contract may change.

We draw your attention to the additional documentation included with this letter. It is very important that you read and understand this information as it relates to your obligations regarding reticulation of the subdivision.

If you have any queries, please do not hesitate to contact us.

Yours faithfully

A handwritten signature in black ink, appearing to be 'Alex Vatavu', written over a horizontal line.

Alex Vatavu

**Network Services Coordinator**

End:  
(i) Contract for the Supply and Installation of Telecommunications Infrastructure,  
(ii) Process for Connection of a Subdivision to the Chorus Network,  
(iii) Important Information for Developers,  
(iv) Chorus' Standard Subdivision Lay Specifications,  
(v) Standard Form Chorus Easement, and  
(vi) Private Corporate Client Authority and Instruction for an Electronic Transaction