

TO: City Planning

FROM: Sub Division Support Officer, 3 Waters

DATE: 21 August 2020

LUC-2019-679 CONSTRUCT A THREE-STORY BUILDING

43 CARGILL STREET, DUNEDIN

SUBJECT: REVISED 3 WATERS COMMENTS – 21 AUGUST 2020

1. **The proposed activity**

Landuse consent is sought from DCC to construct a three-story building containing four 8-bedroom residential units and basement garaging for 9 vehicles at 43 Cargill Street, Dunedin. The site is within the Residential 4 zone in the current District Plan and the Inner City Residential zone in the Second Generation District Plan (2GP).

Existing services

The DCC's GIS records a 100mm diameter water pipe, 150mm diameter wastewater pipe and a 600mm diameter stormwater pipe in Cargill Street.

2. **Density assessment**

Operative District Plan

Residential 4 rules in the Dunedin District Plan set density rules of one unit per 200m² of site size. The overall site is 934m² which allows for the 4 proposed units.

Second Generation District Plan (2GP)

The permitted density is 1 habitable room per 45m² of site area, which would permit 20 habitable rooms. This application proposes to have 32 habitable rooms.

3 Waters do not therefore support this application.

3. **Assessment of effects on 3 waters infrastructure**

The DCC has hydraulic models for many of the City's water, wastewater and stormwater networks. The effect of new development on those networks can be evaluated against current performance, and against foreseeable future demand. District Plan zoning indicates where development is anticipated, and the density of development.

Development beyond that anticipated by the District Plan may:

- Be accommodated by existing infrastructure, both now and in the foreseeable future;
- Be accommodated by existing infrastructure only because anticipated permitted development in other areas has not yet occurred; or
- Not be able to be accommodated without upgrade or expansion of existing infrastructure.

Where there are capacity issues in the water network, water may not be able to be physically supplied, and the proposed development could cause pressure losses to existing customers.

Where there are capacity issues in the drainage network, downstream wastewater and/or stormwater surcharge and flooding will be exacerbated. The 3 Waters Hydraulic Modeller has assessed this application as described below.

Water

No issues have been identified with supplying water to this development.

Wastewater

Dunedin City Councils wastewater model predicts surcharging in the downstream wastewater system in a 10yr ARI design storm event. To reduce water consumption and therefore the volume of wastewater generated, the consent holder must install water saving devices, including but not limited to, low-flow shower heads, 6/3 dual flush toilets and aerated sink mixers, should the consent be issued.

Breaching the 2GP density rule by similar developments would result in cumulative and more than minor negative effect on the WW infrastructure.

Stormwater

Dunedin City Councils stormwater model predicts manholes surcharging directly downstream at the intersection of Scotland and Cargill Street as well as the intersection of Cargill and Filleul Street in a 10yr ARI design storm event.

4. Infrastructure requirements

Code of Subdivision & Development 2010

All aspects of this development shall be undertaken in accordance with the requirements of the Dunedin Code of Subdivision and Development 2010.

Water services

The Dunedin City Council Water Bylaw 2008 (revised 2011) sets out the requirements for connections to the water supply network.

Each unit must be serviced from an individual Point of Supply. There is an existing water connection to the property which can be retained for one of the units. New water connections are required for the remaining units. For a new water connection or any change to an existing water connection, an "Application for Water Supply" is required. 2GP rule 9.3.7 requires that all services are laid at least 600mm into resultant sites. Therefore, when the connections are established, the water supply pipe must be laid at least 600mm into the property.

Firefighting requirements

All aspects relating to the availability of water for firefighting should be in accordance with SNZ PAS 4509:2008, being the Fire Service Code of Practice for Fire Fighting Water Supplies.

There is a Fire Hydrant (WFH02526) 10 m from the development entrance. Based on SNZ PAS 4509:2008 a FW2 (25l/s) zone requires a Fire Hydrant within 135 m and a second within 270 m. These Fire Hydrants requirements are compliant for the development.

Stormwater services

Due to the existing downstream stormwater system being under capacity for a 10yr event and the proposed development increasing the impervious area on the site a Stormwater Management Plan (SWMP) is required.

A Stormwater Management Plan (SWMP) prepared by a suitably qualified person must be submitted to Dunedin City Council including the following:

- Stormwater calculations which state the difference between the pre-development flows and post-development flows and how to manage any difference in flow; and
- An assessment of the current and proposed imperviousness of the site; and
- Secondary flow paths; and
- Any watercourses located within the property; and
- Detail of proposed stormwater management systems for the development to accommodate for any excess runoff from extra impervious surfaces; and
- An assessment of the current network and its ability to accept any additional flow from the proposed development.

The SWMP must be submitted and accepted by 3 Waters prior to any construction commencing.

To allow adequate pervious area for natural stormwater drainage, the maximum site coverage specified in the District Plan must be complied with. Please note that there are new site coverage rules in the 2GP for both building coverage and maximum site imperviousness.

Wastewater services

To reduce water consumption and therefore the volume of wastewater generated, the consent holder must install water saving devices, including but not limited to, low-flow shower heads, 6/3 dual flush toilets and aerated sink mixers.

Erosion and sediment control

It is important that erosion and sediment control measures are utilised to control and contain sediment-laden stormwater run-off into neighbouring properties and the Council stormwater network from the site during any stages of site disturbance associated with this development. This could include diversion drains, sediment fencing, erosion control blankets etc. This is provided for as a condition of consent.

5. Consent conditions

Should this resource consent be granted then the following conditions should be imposed:

Water Services

- a. Each lot shall have a separate service connection installed. An "Application for Water Supply" shall be submitted to the Dunedin City Council for approval to establish a water connection to each unit. Details of how each unit is to be serviced for water shall accompany the "Application for Water Supply". The water supply pipe from the newly installed water connections shall be laid at least 600mm into the property.

Stormwater services

- b. A Stormwater Management Plan for the subdivision shall be provided to Dunedin City Council for approval prior to construction commencing. The Stormwater Management Plan (SWMP) must outline how stormwater from each unit will be managed to ensure post-development flows do not exceed pre-development flows and identify and address any downstream effects of the stormwater generated by the development, including any mitigation required. The SWMP must be submitted and accepted by 3 Waters prior to any construction commencing.

Wastewater services

- c. The consent holder must implement water saving devices, including but not limited to, low-flow shower heads, 6/3 dual flush toilets and aerated sink mixers.

Erosion and sediment control

- d. The consent holder shall adopt all practicable measures to mitigate erosion and to control and contain sediment-laden stormwater run-off to prevent it entering the Council stormwater network, neighbouring properties during any stages of site disturbance associated with this development.

6. Advice notes

The following advice notes may be helpful for any resource consent granted:

Code of Subdivision & Development

- All aspects of this development shall be compliant with Parts 4, 5 and 6 of the Dunedin Code of Subdivision and Development 2010.

Water services

- Detail of the water supply application process can be found at <http://www.dunedin.govt.nz/services/water-supply/new-water-connections>.
- All aspects relating to the availability of water for fire-fighting should be in accordance with SNZ PAS 4509:2008, being the Fire Service Code of Practice for Fire Fighting Water Supplies, unless otherwise approved by the New Zealand Fire Service.

Low flow devices

- The consent holder must install water saving devices, including but not limited to, low-flow shower heads, 6/3 dual flush toilets and aerated sink mixers, to reduce water consumption and therefore the volume of wastewater generated.

Erosion and sediment control

- The following documents are recommended as best practice guidelines for managing erosion and sediment-laden run-off:
 - Environment Canterbury, 2007 "Erosion and Sediment Control Guideline 2007" Report No. R06/23.
 - Dunedin City Council "Silt and Sediment Control for Smaller Sites" (information brochure).

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3 Waters

CC: Development Engineer

Hydraulic Modeller