



QLDC Infrastructure Assessment

Re-establishment & Extension of the Business Mixed Use (Gorge Road) SHA

Report

Report

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Re-establishment & Extension of the Business Mixed Use (Gorge Road) SHA

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Prepared By:



Sarah Duncan
PROJECT ENGINEER
Holmes Consulting LP

Reviewed By:



Andrea Jarvis
PROJECT DIRECTOR

Report Issue Register

DATE	REV. NO.	REASON FOR ISSUE
6/11/2015	1	Draft for QLDC Comment
9/11/2015	2	QLDC initial comments included
11/12/2015	3	Zone removed at request of QLDC
27/04/2017	4	For extension of SHA

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1 INTRODUCTION

Holmes Consulting Group LP (HCG) have been engaged by the Queenstown Lakes District Council (QLDC) to provide a high level assessment of the existing Three Waters infrastructure within the geographic areas covered by the Proposed Business Mixed Use Zone in the vicinity of Gorge Road. It is proposed that this area is re-established as a Special Housing Area (SHA). It is noted that Warren Park & 133 Hallenstein Street have also been proposed to be included within the SHA. As such, the purpose of this assessment is to investigate the ability of the Three Waters network (water supply, stormwater and wastewater) to be able to support the level of development intensification this new designation would enable and to identify any geographic areas of this zone which should be excluded from the SHA area due to difficulty in servicing efficiently.

2 LIMITATIONS

Findings presented as a part of this project are for the sole use of Queenstown Lakes District Council in its evaluation of the subject properties. The findings are not intended for use by other parties, and may not contain sufficient information for the purposes of other parties or other uses.

Our assessments are based on a desk study only. Condition assessments of existing infrastructure have not been undertaken and it has been assumed that any deficiencies due to damaged or aged infrastructure will be addressed within existing renewals budgets.

Our professional services are performed using a degree of care and skill normally exercised, under similar circumstances, by reputable consultants practicing in this field at this time. No other warranty, expressed or implied, is made as to the professional advice presented in this report.

3 BASIS OF ASSESSMENT

We understand that the proposed changes to the SHA are expected to result in a low yield of additional dwelling units, and underlying conditions such as site coverage rules will not be exceeded. Because site coverage will not increase, and outdoor living areas need to be maintained, the additional stormwater flows are expected to be minor increases over the current design allowances, associated mainly with additional driveway areas. The exception to this is the area currently known as Warren Park, which is currently grassed. QLDC's Land Development and Subdivision Code of Practice requires attenuation of stormwater to meet predevelopment flows, and therefore future development within the area complying with this code will not adversely affect the stormwater network. Water demand associated with smaller lots is expected to result in a higher domestic demand, but arguably a lower irrigation demand. This is also expected to result in minor increases when averaged across the zones. The wastewater demands have the most potential to increase demands, however, advice from Rationale Ltd is that the low expected yield is not expected to significantly impact on existing infrastructure.

The assessment has therefore been carried out by identifying any network constraints/capacity limitations which may limit intensification of a particular location – or require expensive upgrade works. Detailed assessments of the specific areas of the networks involved have not been carried out at the stage, but would be carried out for individual SHA proposals at the time of a consent application.

The areas of the wastewater network associated with the BMU zone have been previously assessed by Rationale as part of a high level test of capacity for a separate project. The results of this testing have shown that there are existing constraint issues within the Queenstown/Wakatipu Basin network that need to be addressed. The majority of these issues have already been programmed in to the LTP and involve trunk main capacity rather than pipe connections. As described above, it is anticipated that the increased wastewater flows that are likely to occur under the proposed SHA will not greatly increase these existing issues; the upgraded trunk mains will have some spare capacity. It is therefore considered that the

wastewater network for the BMU area has sufficient capacity to continue achieving the existing levels of service should the new SHA designation go ahead.

Tonkin & Taylor (T&T) have assessed the water supply infrastructure for the BMU zone.

HCG have assessed stormwater request for service records from the previous 5 years to determine areas within the Wakatipu Basin that experience surface flooding during storm events that have not been attributed to blockages or damage to the network.

As noted above, it is expected that the increase in density in these areas will not significantly increase the stormwater runoff beyond what is currently anticipated set by site coverage rules that are not expected to change.

The resulting comments are provided below.

4 MIXED USE BUSINESS ZONE - GORGE ROAD

The proposed SHA area is situated on both sides of Gorge Road, between Industrial Place and Robins Road. The total area covers approximately 15.5 hectares of land on both sides of the road. The current zoning of the majority of the proposed SHA is Business, but it is proposed under the Proposed District Plan these areas would become Business Mixed Use, which allows for both Residential and Non-Residential activities. The addition of Warren Park, currently designated as a reserve, increases the assessment to 15.5 hectares from the 12.8 hectares previously considered. It is noted that 133 Hallenstein Street is proposed to be located in the High Density Residential zone of the proposed District Plan.

4.1 Wastewater

As noted above, there are some areas within the wastewater network with known constraints. The lowest capacity within the Gorge Road network are a section of sewer across Warren Park, and a section of trunk sewer running within private property on the southern side of Robins Road. These constraints, and others downstream, are known and programmed for upgrade where necessary. It is noted that the planned future upgrades should take into consideration the potential increase in flows as a result of the SHA designation.

4.2 Water Supply

No areas of constraint have been identified by T&T within the proposed Gorge Road SHA areas. The existing infrastructure should therefore be capable of servicing the increased level of development that could be enabled by the proposed change.

4.3 Stormwater

No flooding issues were noted in the request for service records for this area.

The developed area within this catchment is at the bottom of a steep sided valley and includes an open channel drain starting at the natural outlet of the Gorge Road wetland area to the north, becoming Horne Creek, which passes through Queenstown CBD. Sections of this drain are culverted. As no incidences have been reported it is anticipated that these culverts are operating below capacity. This is also true for the lateral network that feeds this drain.

It is noted that Horne Creek has a history of flooding in large rainfall events, and as a result, the Memorial Grounds adjacent to the Queenstown Memorial Hall are a designated overflow area for the stream to alleviate short term peaks. This overflow basin has spare capacity and therefore any issues downstream of this point in large scale flood events are thought to be mitigated.

A more detailed assessment will be required to ensure any significant increase in development density would not overwhelm the culverts. This would include, culvert flow rate analysis and calculating the increased stormwater runoff rates. It is also noted that the QLDC Land Development and Subdivision Code of Practice now requires attenuation of stormwater to meet pre-development flows, and therefore the effects on the stormwater network are considered to be minor.

5 CONCLUSIONS

The wastewater network has a number of known constraints, specifically within the trunk mains. Upgrades to the network have been proposed to deal with these known constraints, and the advice received is that the upgrades will have sufficient spare capacity to handle the potential increase in demand as a result of the SHA proposed. However, it is recommended that the increased demand is taken into account when the design of any upgrade is finalised.

Other than the wastewater upgrades described above, the Gorge Road Business Mixed Use area can be designated as an SHA without requiring significant new upgrades (other than those already proposed for the wastewater network) to the Three Waters network.