

11 November 2024

Sent via email to [REDACTED]

LG24-0246 – Sewerage Pumping Capacity for Albert Town

Dear [REDACTED],

REQUEST FOR OFFICIAL INFORMATION – RELEASE OF INFORMATION

Thank you for your request for information held by the Queenstown Lakes District Council (QLDC). On 13 October 2024 you requested the following information under the Local Government Official Information and Meetings Act 1987 (LGOIMA):

- a. The total daily pumping capacity (in litres per day or equivalent) of the sewerage system serving Albert Town.**
- b. The number and location of pumping stations within Albert Town.**
- c. The frequency and duration of pumping cycles throughout the day.**
- d. Any planned or scheduled maintenance or upgrades to the pumping infrastructure.**
- e. How many homes the current system supports at capacity. This information is necessary to understand the capacity and operation of the sewerage system in Albert Town, which is essential for ensuring public health and environmental protection.**

QLDC RESPONSE

Decision to release information

To address your information request we have consulted the QLDC Property and Infrastructure Team who assisted in providing the following response:

- a. The total daily pumping capacity (in litres per day or equivalent) of the sewerage system serving Albert Town.**
- b. The number and location of pumping stations within Albert Town**

Within the catchment area, there are a total of seven public pump stations.

The following information is collected from various pump station asset management documents:

- pump_operating_flow: manufacturers design flow
- pump_point_head_m: head to which the pump can raise the water level
- pump_total_capacity: maximum pump rate the station can deliver (dependant on pump operation)
- wet_well_vol_m3: wet well volume
- wet_well_emergency_m3: emergency storage volume

The final two columns' data has been collected from simulation results for a typical dry weather flow day:

- op_cycles_day: number of on/off cycles during a typical day
- op_typical_duration_hrs: duration of cycles during a typical day

Pump station	operation	Install year	Pump manufacturer	Pump model	pump_operating_flow	pump_point_head_m	pump_total_capacity	wet_well_vol_m3	wet_well_emergency_m3	op_cycles_day ¹	op_typical_duration_hrs ²
Kingston Street	duty standby	1998	FLYGT	CP3127.180	8.3	28.9	8.3	16.1	42.3	12	0.2
Hikuwai Drive	duty standby	2005	ABS	piranha-s26/2	4.5	5.0	4.5	10.7	24.9	5	0.4
Alison Avenue No.2	duty standby	2000	FLYGT	CP3127.180	9.0	16.1	9	16.1	126.8	26	0.3
Alison Avenue No.1	duty standby	1999	FLYGT	C3057.180.0248	5.8	11.6	5.8	5.9	16.1	NA	NA
Albert Town Lake No.1	duty assist	2008	FLYGT	NP3171.181	14.0	31.0	21	11.5	200.0	60	0.2
Albert Town Lake No.2	duty standby	2008	FLYGT	CP3240-450	83.0	41.0	83	121.5		55	0.2
Aubrey Road	duty standby	2009	ABS	piranha-s26/2	18.9	22.0	2	16.5		7	0.5

Table 1: Preliminary assessment of design flow capacity, based on a fully developed catchment to the extent that is currently defined in the current district plan.

The fully developed state is concluded in the following way:

- Remaining greenfield lots in Northlake sourced from the latest in-house Geographic Information System (GIS) layer for developer intentions (occupancy numbers assumed to be three people per property. Total remaining lot estimates are labelled in the picture below).
- The sticky forest area is not included in this assessment as it has been considered to be outside the catchment area. This may need to be flagged in the future.
- Large lot residential A and B properties occupancy are increased from three people to six to take into account infill.

¹ Based on simulation results for a typical dry weather flow day

² Based on model simulation results for a typical dry weather flow day

- No infill has been considered elsewhere.

Section 5.3.5 of QLDC LDSC 2024 Code of Practice is used to assess design flow criteria and below are immediate observations:

- For the purposes of assessing wastewater capacity, only gravity pipes upstream of Albert Town No.2 wastewater pump station are assessed.
- Potential capacity impacts at Albert Town No.2 pump station are considered out of scope because the effects of further intensification in Wanaka and Hawea would need a more comprehensive study. This might then be used to assess the accumulated effects/timing of development/upgrades on this pump station and its downstream flows.

To be able to estimate the number of upstream properties connected to the sewer network:

- Residential units are identified from the latest LINZ building outlines layer. Commercial properties are not identified.
- The GIS spatial overlay then is supplemented with the identification of recently developed/built properties from the 2023 aerial survey (it is recommended that a slightly more refined process is developed to keep track of newly developed properties/buildings).

c. Any planned or scheduled maintenance or upgrades to the pumping infrastructure.

Albert Town No.1 is the main pump station within the Albert Town catchment and collects from four other pump stations. The capacity and wet well storage volume is low and it is possible that at some point in time the capacity will be increased.

Maintenance is planned for the temporary repair done on Albert Town Hawea No.2 WWPS (Wanaka's main pump station to Project pure).

d. How many homes the current system supports at capacity. This information is necessary to understand the capacity and operation of the sewerage system in Albert Town, which is essential for ensuring public health and environmental protection

The results below show available pipe capacity for the fully developed catchment.

The results estimate the ratio of design flow to pipe capacity:

- < 0.85: less than 85% (design flows are lower than 85% of pipe full capacity and are suitably sized to allow an air gap above top water level)
- >= 0.85: greater than 85%
- >= 1.00: greater than 100% (design flows using full pipe capacity)
- >= 1.25: greater than 125%
- >= 1.50: greater than 150% (pipe is surcharged – according to design flows)

Northlake: Based on the development loads adopted design flow estimates along Aubrey Road (between Outlet Road and Gunn Road) are in excess of pipe capacity. Further to this design flows are above 85 percent of pipe capacity along the bottom end of Outlet Road (it is usually good practice to allow an air gap of about 10 to 15 percent).

Albert Town: Based on current development loads in Albert Town, design flow estimates along Alison Avenue (between Dale Street and the State Highway) are in excess of pipe capacity.

Pump station capacities upstream have however been throttled and have larger than usual storage volumes. These stations appear to have been designed to attenuate pass forward flows, thereby reducing the need to upsize the existing undersized pipework.

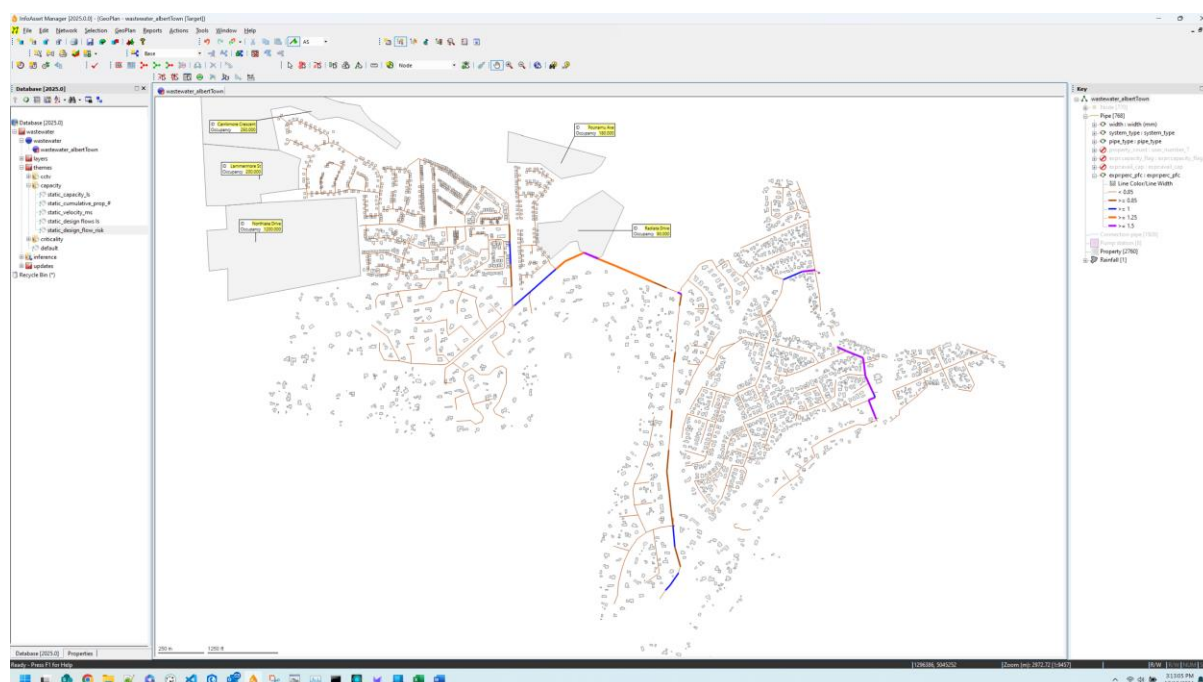


Figure 1: Geoplan – Albert Town wastewater

Kind regards,

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