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Westland District Council **Drinking Water Services Assessment**

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Westland District Council

Drinking Water Services Assessment

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Prepared for

Westland District Council

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Appendix A Private Supplies

A.1 Assumed Private Supplies

Executive summary

This assessment has been completed for Westland District Council (WDC) as a mechanism to meet the requirements of the Local Government (Water Services) Act 2025, in relation to council-owned and private water supplies. Key data was requested and obtained from WDC, West Coast Regional Council (WCRC), Statistics New Zealand (Stats NZ) and Taumata Arowai to assist with this assessment.

Nine Council-supplied communities have been identified for this assessment, using the available 2026 Meshblock data and bore and groundwater consents information. The nine supplies service approximately 7,900 people; approximately 85% of the Westland District. Current population data and growth projections have been determined using Meshblock and Statistical Area 2 (SA2) information from Statistics NZ. The results show that population decline is projected for all areas except Arahura-Kumara and Hokitika. Drinking water services for the district are supplied by a mix of groundwater and surface water supplies for each community. Treatment is provided for all these communities, using methods such as UV treatment, filtration and chlorination (Table 4-2).

The sufficiency of the quantity of water is assessed for all council-owned groundwater and surface water sources identified. Groundwater is found to be provided by two main aquifers: Hokitika and Okarito. These aquifers rely on rainfall recharge, which is largely sufficient in the high precipitation Westland District. Surface water is generally replenished adequately due to the runoff from the Southern Alps that border the district.

All community water supplies have active consent for extracting either ground water or surface water for a drinking water application. It has been found that most communities extract much less than their consented allocation of water. However, two communities – Franz Josef and Kumara – extract more than their consented rate, taking around 93,000 and 21,000 more respectively. In terms of water supply demand, most communities have a surplus of water in relation to their current and predicted consumption rates. With populations in these communities set to decrease on average by 2053, this surplus is set to remain. The exception to this is the communities of Franz Josef and Kumara, which have a net deficit between the supply and their current and predicted consumption rates.

The water quality of the district has been assessed including regional groundwater at source, regional surface water at source, and reticulated water. Both groundwater and surface water have been found to be in generally good condition. There are some appearances of contaminants in groundwater such as nitrates, and E. coli, nitrogen and nitrates in surface water. None of these appear to be present to an unacceptable level but are still present. Treatment of these waters in reticulated supplies is functioning as expected apart from some minor operational issues.

There were several private supplies found on the Taumata Arowai public register and assumed private supplies identified from a general area search. The vast majority of these are unregistered and the supply and treatment methods are unknown. It is recommended that these private supplies are investigated thoroughly in the future, as these supply an estimated 15% of the population.

Loss of supply remains a risk, specifically due to catastrophic natural events, small scheme fragility, ageing infrastructure, and lack of data/systems knowledge.

1. Introduction

This Assessment of Drinking Water Services has been prepared for WDC to meet section 69 of the Local Government (Water Services) Act 2025 (New Zealand Government, 2025). The Act requires all territorial authorities to assess community access to drinking water services across their district by 1 July 2026.

The assessment covers all identified communities in the Westland District, including those supplied by Council-managed reticulated networks and private supplies where possible. It considers the safety, quality, sufficiency, and availability of drinking water services and identifies key risks to safe drinking water access.

1.1 Purpose of assessment

This assessment identifies key risks and vulnerabilities for access to safe and reliable drinking water across the Westland District, with the aim of supporting future planning and prioritisation.

Section 69 of the Local Government Act 2025 states the following requirements for this assessment:

2. *An assessment of drinking water services must—*

- (a) identify each community that receives a drinking water service; and*
- (b) describe the nature of existing drinking water services to the community; and*
- (c) describe the characteristics of the community; and*
- (d) assess the extent to which the community is currently receiving, and will continue to receive, a sufficient quantity of drinking water, including a consideration of—*
 - i. the community’s existing access to drinking water services; and*
 - ii. any reasonably foreseeable risks to the community’s access to drinking water services in the future; and*
 - iii. the current and estimated future demands for drinking water services within the community; and*
- (e) describe the safety and quality of drinking water currently being supplied to the community, using information collected and made available by the Water Services Authority and any other organisations that the territorial authority considers relevant; and*
- (f) identify and assess any other public health risks relating to the drinking water services supplied to the community; and*
- (g) based on the assessment under paragraphs (b) to (f),—*
 - i. assess the consequences if the community loses access to drinking water services in the future, or is provided with drinking water services that are deficient in any way, including the implications for that community’s public health; and*
 - ii. outline a plan to provide for the community’s ongoing access to drinking water services.*

...

5. *For the purposes of this section,—*

- (a) the scope of each assessment must include—*
 - i. communities that receive drinking water services from the territorial authority or another water service provider; and*

- ii. *communities that do not receive drinking water services from the territorial authority or another water service provider; and*
- iii. *all types of water supply arrangements, including communities (and households within those communities) that do not receive water supply services supplied by network reticulation; and*
- (b) *territorial authorities need not assess drinking water services that are owned or operated by a department within the meaning of section 5 of the Water Services Act 2021; and*
- (c) *an assessment may be carried out—*
 - i. *by the territorial authority; or*
 - ii. *on the authority’s behalf by another appropriate organisation in the authority’s district, including another water service provider or an iwi, hapū, or other Māori organisation.*

1.2 Scope

This assessment covers all identified communities within the Westland District. The scope includes:

- **Council supplies:** Areas serviced by WDC’s reticulated drinking water network, which supplies treated drinking water across the district, particularly to areas of higher population density.
- **Private supplies:** Areas serviced by non-council drinking water supplies. These consist of self-supplied marae, community halls, commercial or industrial facilities, and shared private supplies that meet the definition of a drinking water supplier under the Water Services Act 2021.

This assessment encompasses:

- Current and projected water demand, based on population data and growth projections.
- Regional groundwater and surface water availability, allocation status, and water quality.
- High-level assessment of drinking water quality, and public health risks.
- Identification of key risks to, and potential consequences of loss of supplies, including possible mitigation or contingency measures.

The assessment excludes:

- Drinking water supplies that are owned or operated by a department within the meaning of Section 5 of the Water Services Act 2021 (i.e. government departments and agencies e.g., self-supplying public schools).
- Shared domestic supplies (defined within the Act as domestic dwellings with 25 or fewer people). Changes to the Water Services Act 2021 now exclude this from the definition of a drinking water supplier.
- Site-specific or detailed assessments of individual drinking water supplies or properties, including determining the water source for all properties in the district.
- Verification of drinking water quality, treatment, or compliance for individual supplies.
- Community assessments on a more localised scale than Statistical Area 2.
- Detailed health impact or water quality assessments for individual sources or supplies.
- Any plans or recommendations for new or upgraded infrastructure.

2. Methods and Data Sources

The approach for this assessment follows these key stages:

- Identify communities in the Westland District using available population data and describe community characteristics.
- Identify the drinking water supplies, and describe the nature of drinking water services, for each community.
- Assess water quantity and availability across the district, including current allocation status and future demand based on population growth.
- Assess drinking water quality and safety risks using available compliance information, monitoring data, and public health information.
- Assess key drinking water risks, vulnerabilities, and consequences of loss of supply.

2.1 Data Sources

This assessment has been prepared using a range of existing data sources and publicly available information. The key sources are summarised in Table 2-1, followed by a brief description of how each source has been used.

Table 2-1: Summary of key data sources

Source	Data set	Use in Assessment
Westland District Council (WDC)	<ul style="list-style-type: none"> ■ GIS Supply data ■ Annual drinking water compliance monitoring report ■ Treated water supply data 	<ul style="list-style-type: none"> ■ identify communities serviced by WDC’s reticulated network ■ describe community land use and zoning ■ assess compliance and quality of Council-managed supplies ■ project future water demand.
Statistics New Zealand (Stats NZ)	<ul style="list-style-type: none"> ■ Meshblock boundaries ■ Statistical Area 2 (SA2) Population Projection data 	<ul style="list-style-type: none"> ■ define community boundaries ■ describe community characteristics (population and deprivation) ■ estimate current and future water demand.

Source	Data set	Use in Assessment
West Coast Regional Council (WCRC)	<ul style="list-style-type: none"> ▪ Groundwater take consent data ▪ Groundwater allocation status and limits ▪ Selected land use register for hazardous activities and industries list (HAIL) ▪ West Coast Regional Council State of the Environment groundwater monitoring report 2018 ▪ West Coast State of the Environment report: groundwater quality 1998-2024 	<ul style="list-style-type: none"> ▪ describe regional groundwater and surface water quality and quantity ▪ assess availability and allocation status of water sources.
Taumata Arowai	<ul style="list-style-type: none"> ▪ Environmental Network performance data. ▪ Public register of drinking water supplies (registered suppliers under the Water Services Act 2021) 	<ul style="list-style-type: none"> ▪ identify registered and some potential non-registered private drinking water suppliers.
Te Whatu Ora – Health NZ	<ul style="list-style-type: none"> ▪ Water borne disease data 	<ul style="list-style-type: none"> ▪ identify and assess public health risks associated with drinking water services.

2.2 Delineation of communities

For the purposes of this study, communities identified were using 2026 Meshblock areas obtained from Stats NZ. In urban locations where Meshblock areas are smaller, adjacent Meshblock areas were combined to form larger communities which more accurately represent the extent of the supplied network. This approach has been applied across most communities, with more extensive aggregation undertaken for Hokitika.

2.3 Compilation of water supplies and demands

To assess the WDC owned drinking water supplies in Westland District, information regarding supply intakes, bores, aquifers and other sources was provided by WDC and WCRC. Through identification of consented takes in the district, it was then possible to identify the sources that served specific communities. Twelve water sources were identified and are made up of lakes, wells, springs, rivers and creeks (see

Table 4-1).

With this information, the serviced community areas have been identified. While it has not been possible to delineate each household connected to a supply, community boundaries have been determined using available GIS data on serviced areas.

Using current resident population and 2024-2025 treatment plant supply rates provided by WDC, the previous years' demand has been determined for each community. This informs the minimum demand. Future demand and future supply surplus/deficits have been extrapolated from this data (Table 5-3) by applying the population growth statistics (Table 3-1).

The list of private drinking water supplies data was identified using data from the Taumata Arowai register of community drinking water supplies, a GIS and search of hotels, marae and camping grounds. This information provided locations and approximate supply size. However, information on source waters and treatment for each location is not published.

2.4 Water assessment criteria

2.4.1 Water quantity criteria

For the purposes of this assessment, the following criteria has been adopted when assessing the water quantity:

- Supply meets current population demand
- Supply meets future population demand through to 2053.

Demand data has been derived from community delineation and demand generation as per sections 2.2 and 2.3 above, and the timeframe of 2053 is used due to being the population growth data available.

We also consider the following definitions when considering water quantity:

- “Demand” is the m³ per day required per household in a serviced area.
- “Supply” is an identified supply as per Table 4-1.
- “Sufficient” is when supply meets population demand.

2.4.2 Water quality criteria

For the purposes of this assessment, we consider the following criteria when assessing the water quality:

- Compliance with New Zealand Drinking Water Standards Maximum Acceptable Values (MAVS) and Aesthetic Values (AVs).

Quality data for Westland District has been derived from the WDC annual drinking water compliance reports. This outlines the compliance criteria and outcomes for Council-owned and operated drinking water supplies

We also consider the following definitions when assessing the water quality:

- “Safety” refers to the absence of harmful bacteria at water source and throughout reticulated system.



- “Public health risk” refers solely to risk from bacterial intrusion into the water supply or system.

3. Communities

3.1 Community characteristics

The Westland District is divided into nine communities based on Meshblock data (Figure 3-1). Zoomed views of these communities and private water supplies can be found in Figure 3-2, Figure 3-3, and Figure 3-4. The identified council-serviced communities consist of:

Kumara	Arahura	Hokitika
Ross Township	Hari Hari	Whataroa
Franz Josef	Fox Glacier	Haast

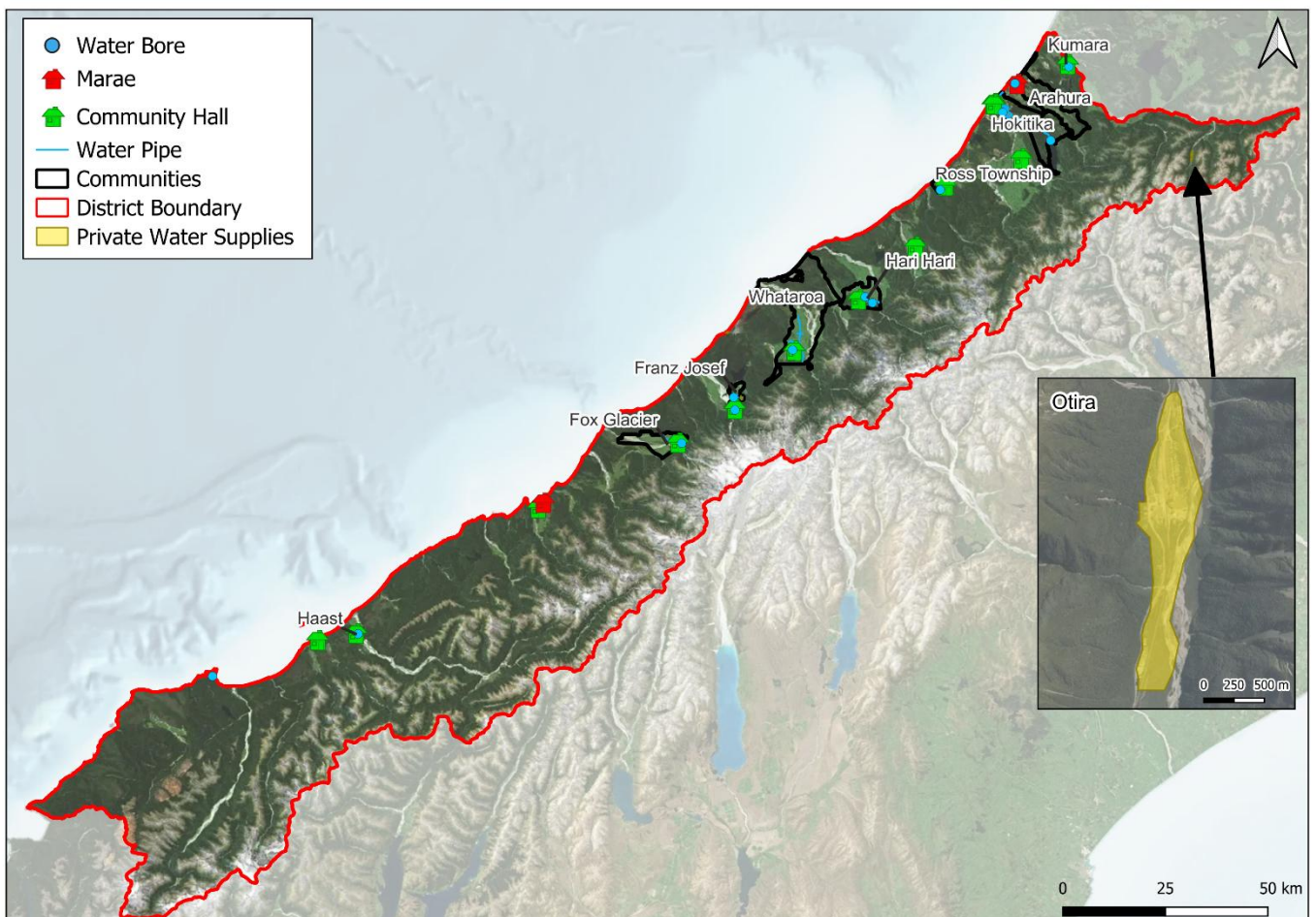


Figure 3-1: Overall view of council-serviced communities, with a zoomed view of two private water supplies.

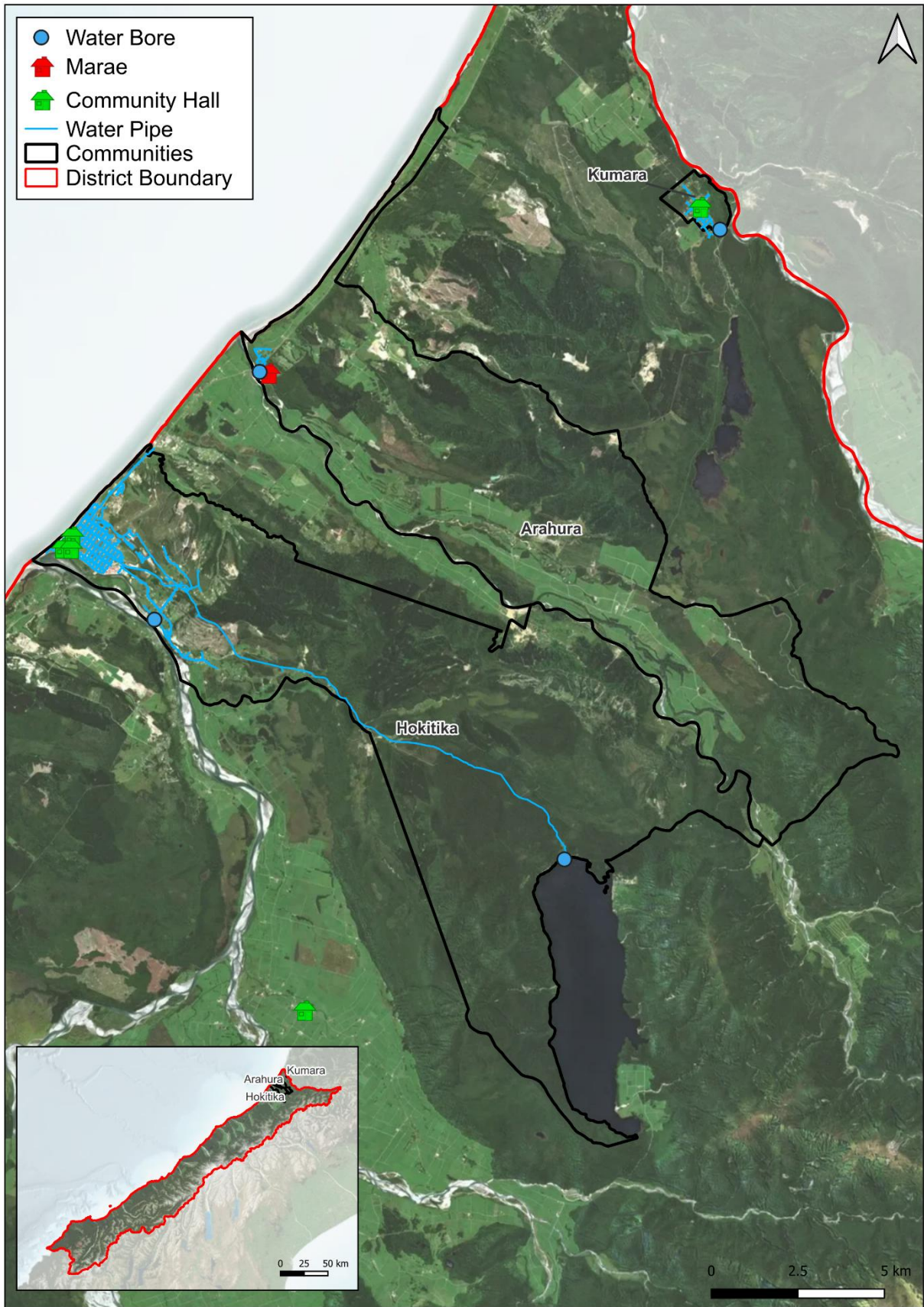


Figure 3-2: Northern WDC-serviced drinking water supply communities

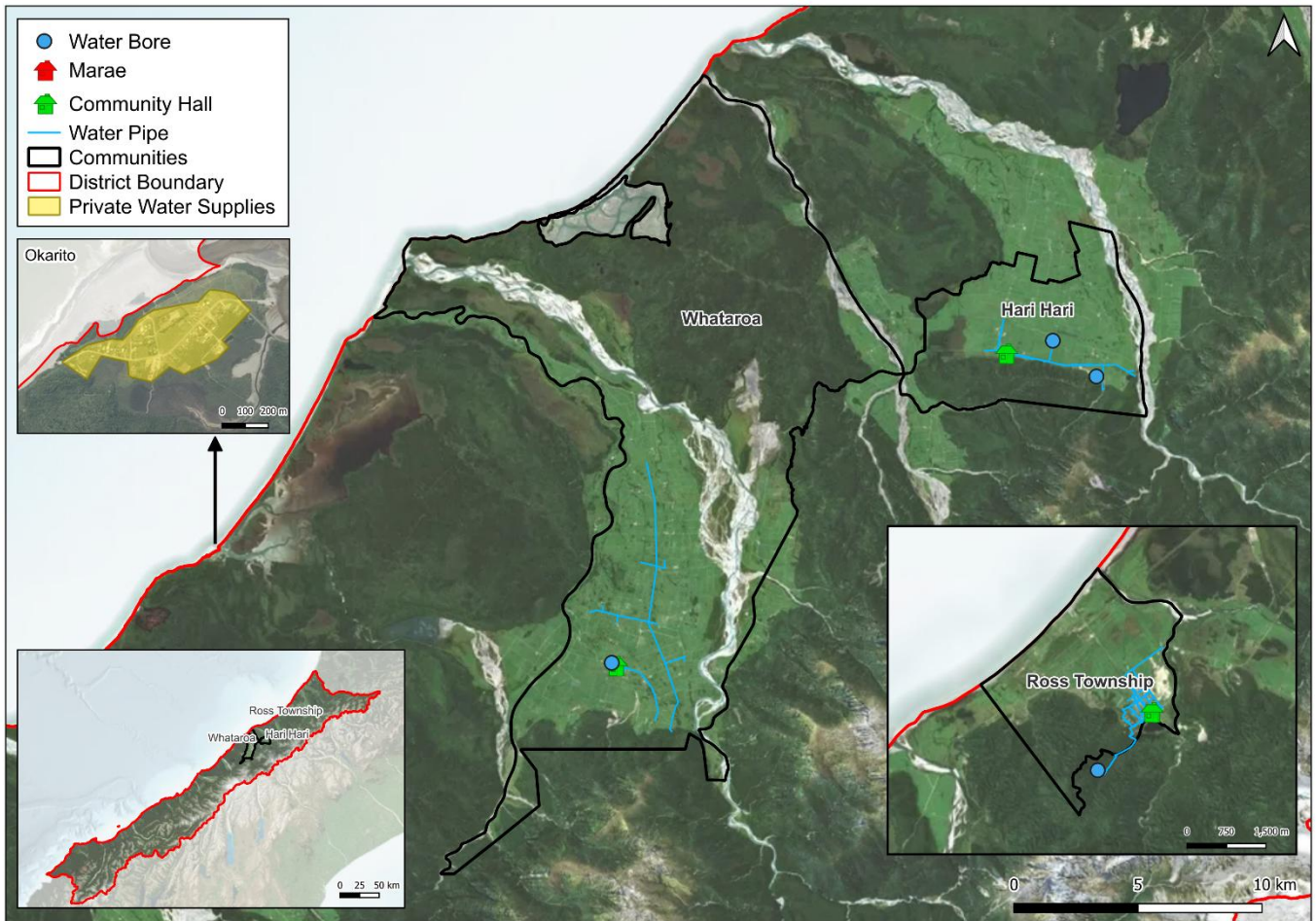


Figure 3-3: Central Westland council-owned drinking water supplies, with a zoomed view to one private water supply

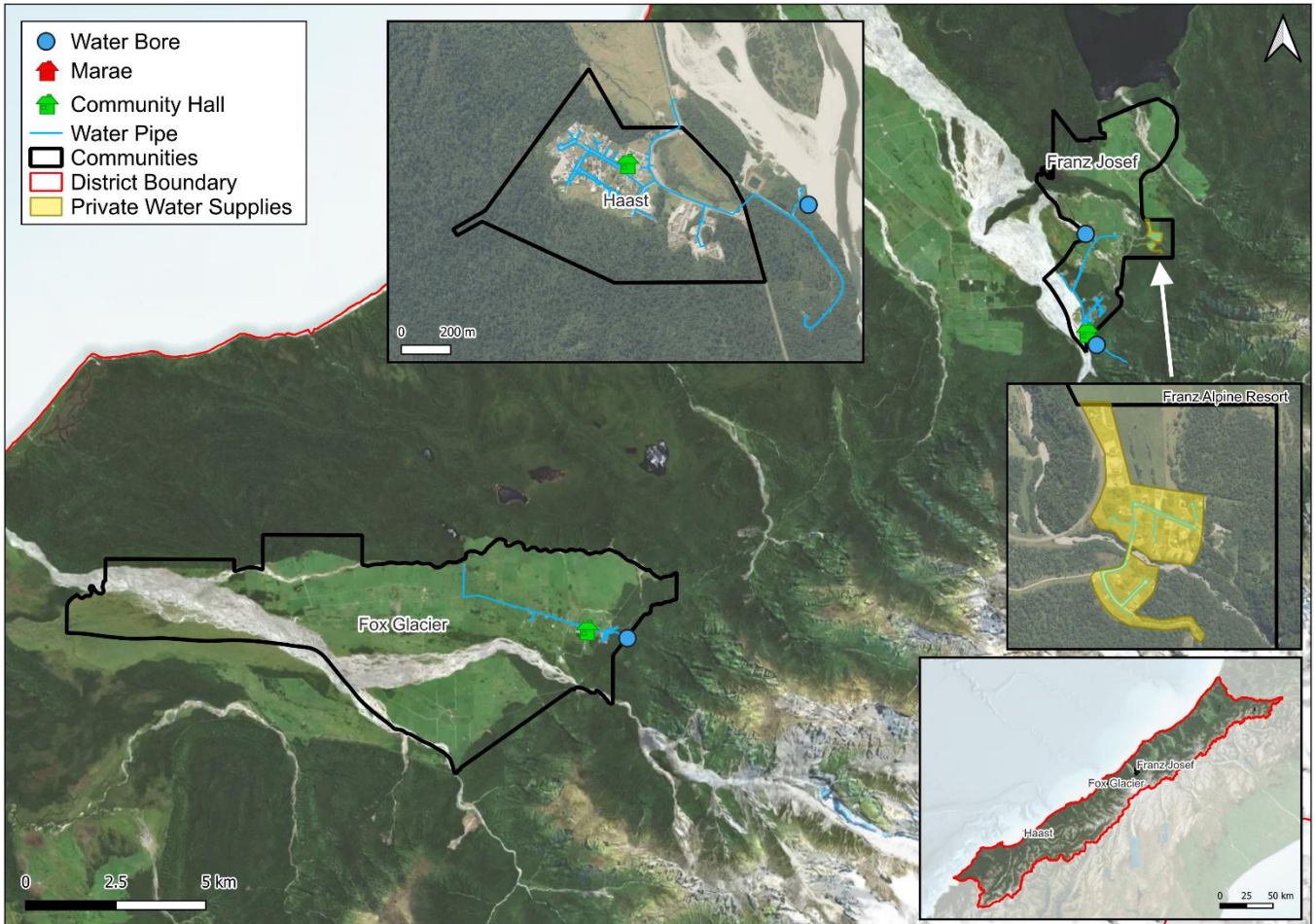


Figure 3-4: Southern Westland council-serviced communities, with a zoomed view of one private water supply.

3.2 Private Supplies

There are twenty assumed private supplies in Westland that are not registered with Taumata Arowai. The private supplies in northern Westland are shown in Figure 3-5 and the private supplies in southern Westland are shown in Figure 3-6. A record of which private supply corresponds to each number can be found in Appendix A

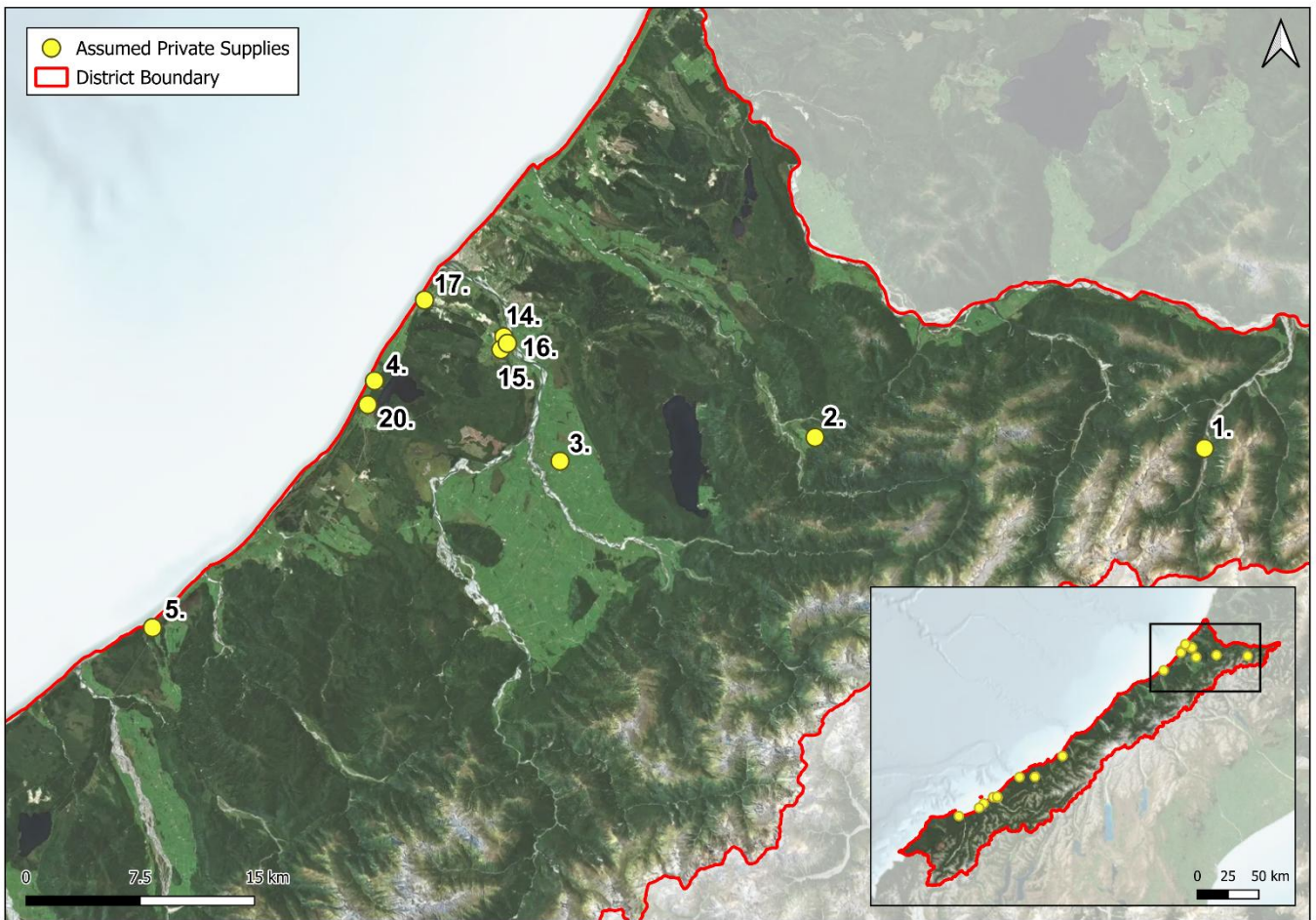


Figure 3-5: Assumed private supplies in the northern Westland District

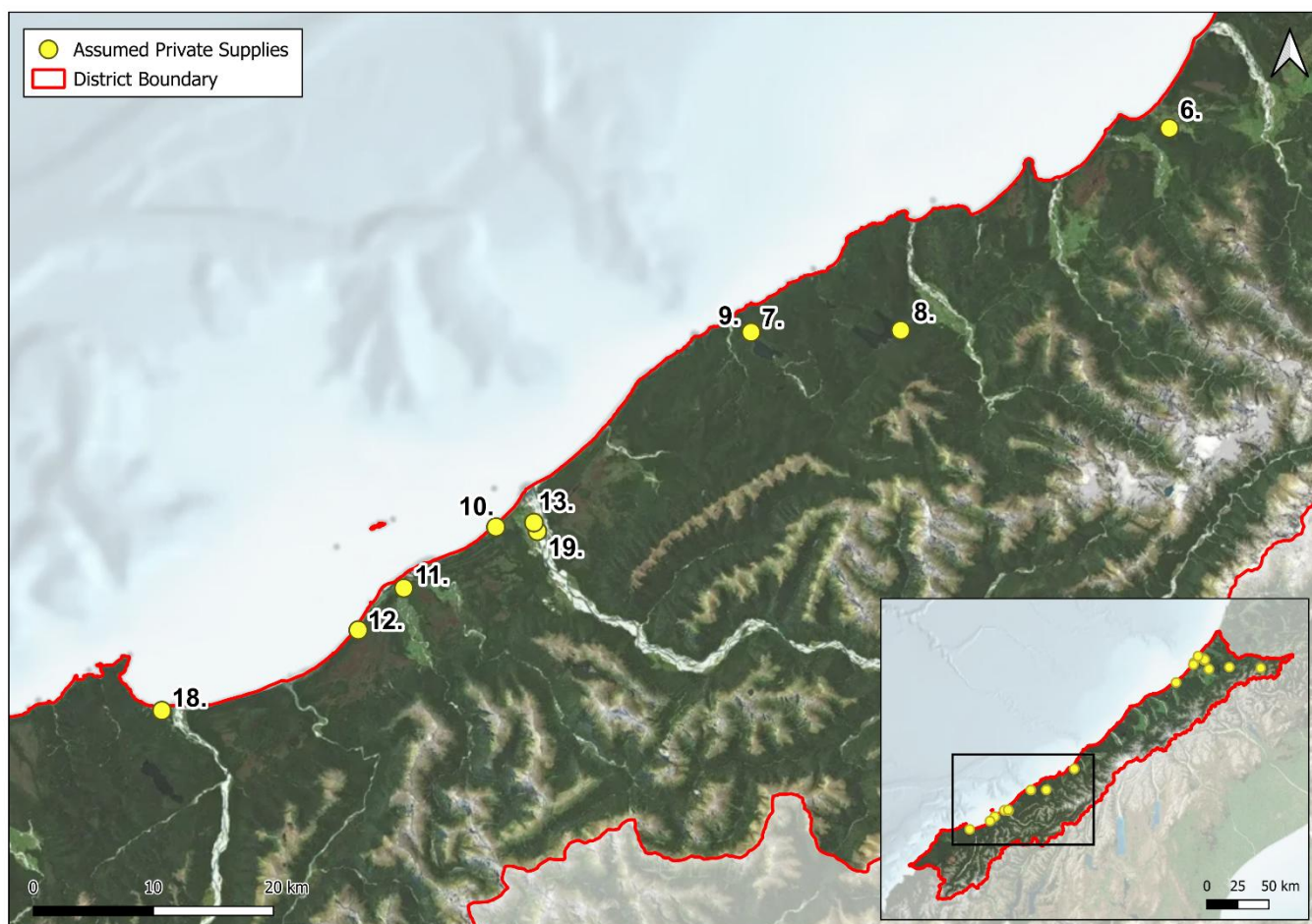


Figure 3-6: Private supplies in the southern Westland District

3.3 District planning zones

The most prevalent zones in the Westland District are Rural Zones and Open Space Zones which are found in and around all the communities.

The predominant land use zones in the Westland District are Rural Zone and Open Space Zone, which cover most of the district and surround all communities. This reflects a largely undeveloped landscape, with settlements occurring as small, discrete nodes within a wider rural and conservation environment. As a result, most drinking water supplies sit within or adjacent to rural or open space areas, where they are more exposed to natural processes such as flooding, river movement and land instability.

The distribution of planning zones also aligns with community scale. Hokitika, and to a lesser extent Franz Josef, include a broader mix of residential, commercial and special purpose zones, reflecting their role as the main service centres. These two communities together supply approximately 77% of the total served population, with water infrastructure operating within or close to these more developed areas. In contrast, smaller communities such as Arahura, Kumara, Ross Township, Whataroa, Hari Hari, Fox Glacier and Haast are defined by limited settlement zoning within predominantly rural land, with infrastructure operating in a more dispersed and less intensive land use setting.



This pattern highlights a relationship between land use and drinking water. In the larger centres, risks are more closely linked to urban activity and infrastructure within the supply area. In smaller and more isolated communities, risks are more strongly influenced by surrounding land use and natural catchment conditions. Overall, the district operates within a mixed land use environment. The Westland District Plan zones are shown in Figure 3-7, with a zoomed view of the different communities shown in Figure 3-8, Figure 3-9, and Figure 3-10.

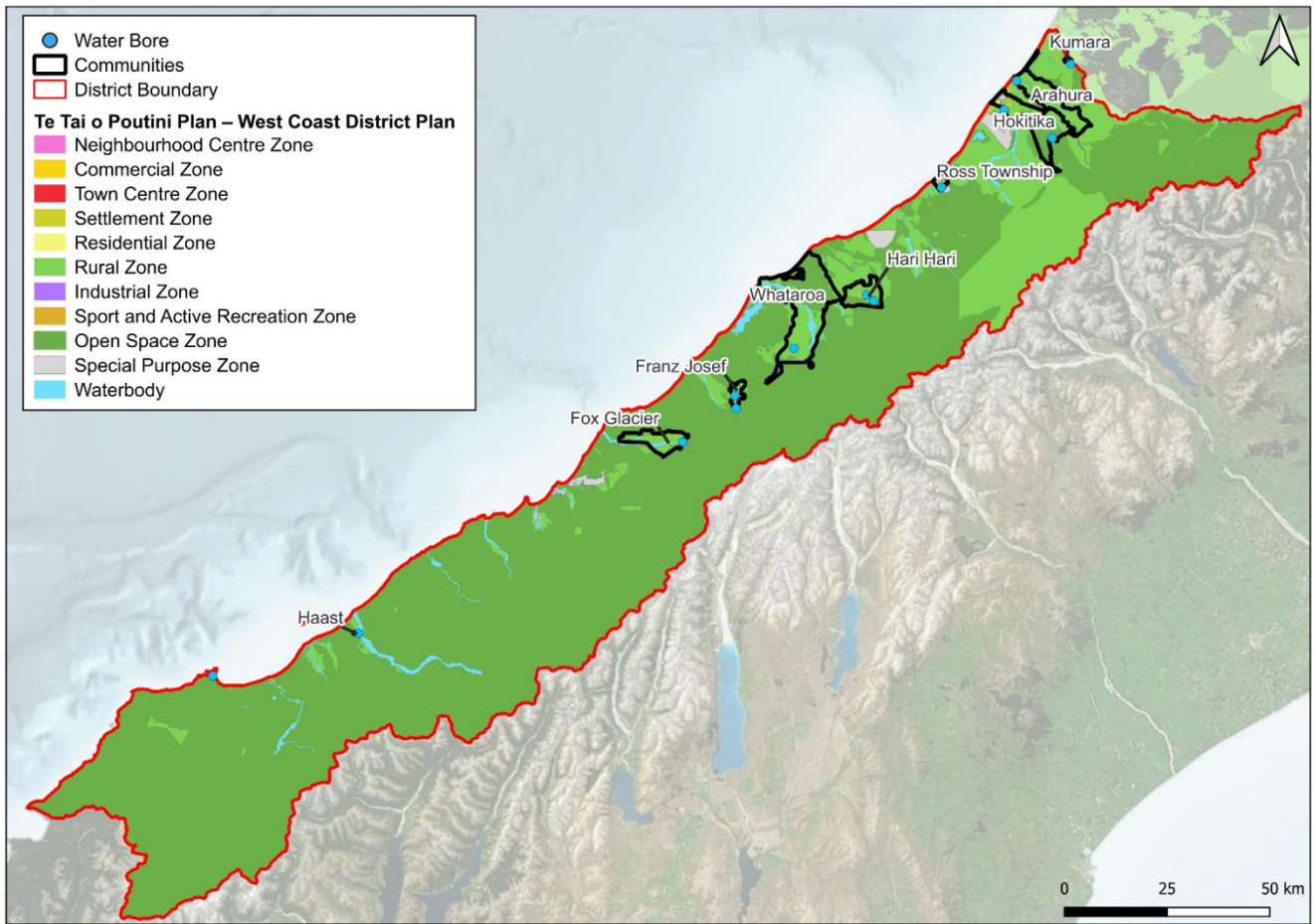


Figure 3-7: Overall District Plan Zones in the Westland District

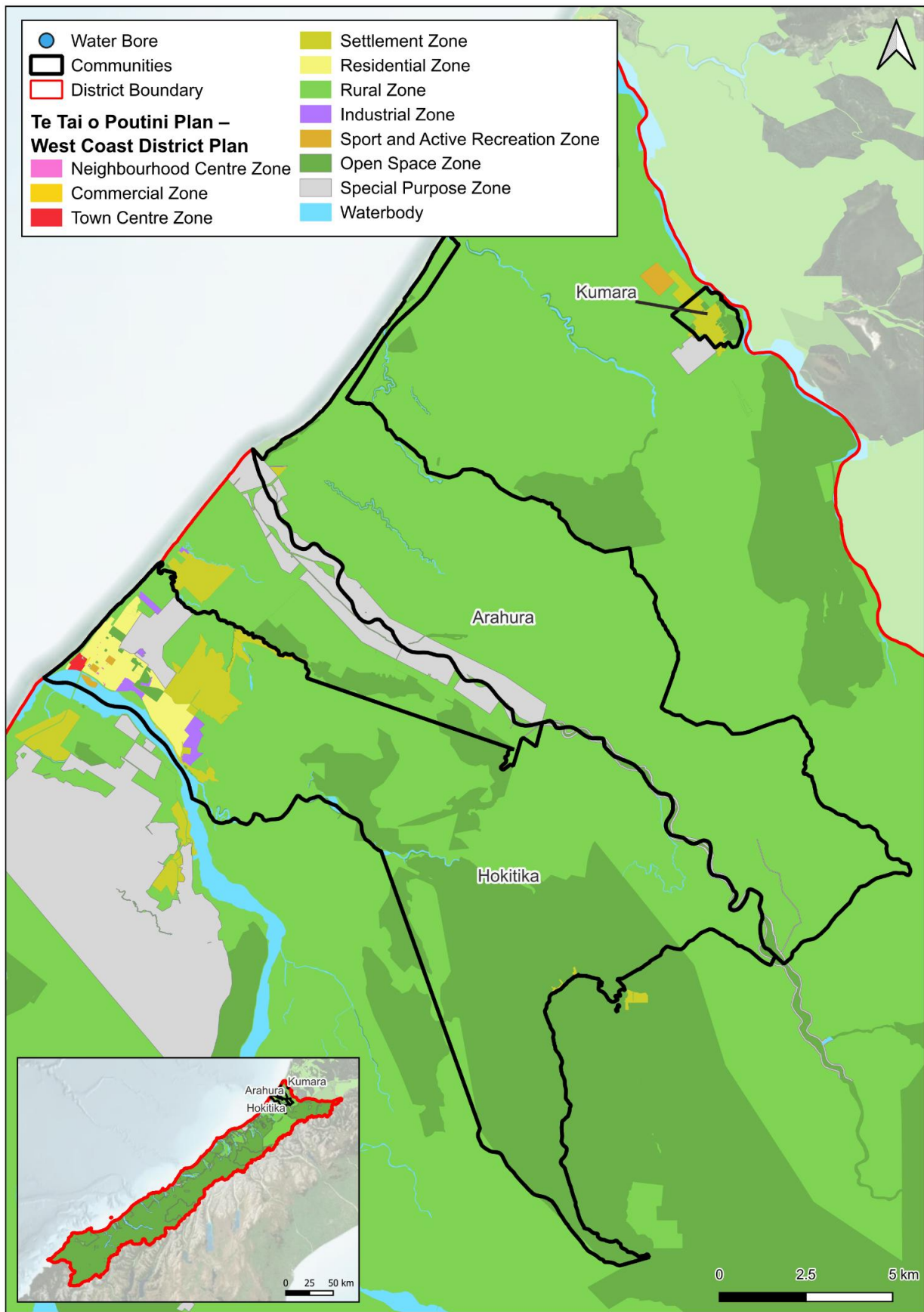


Figure 3-8: District plan zones in the northern Westland District

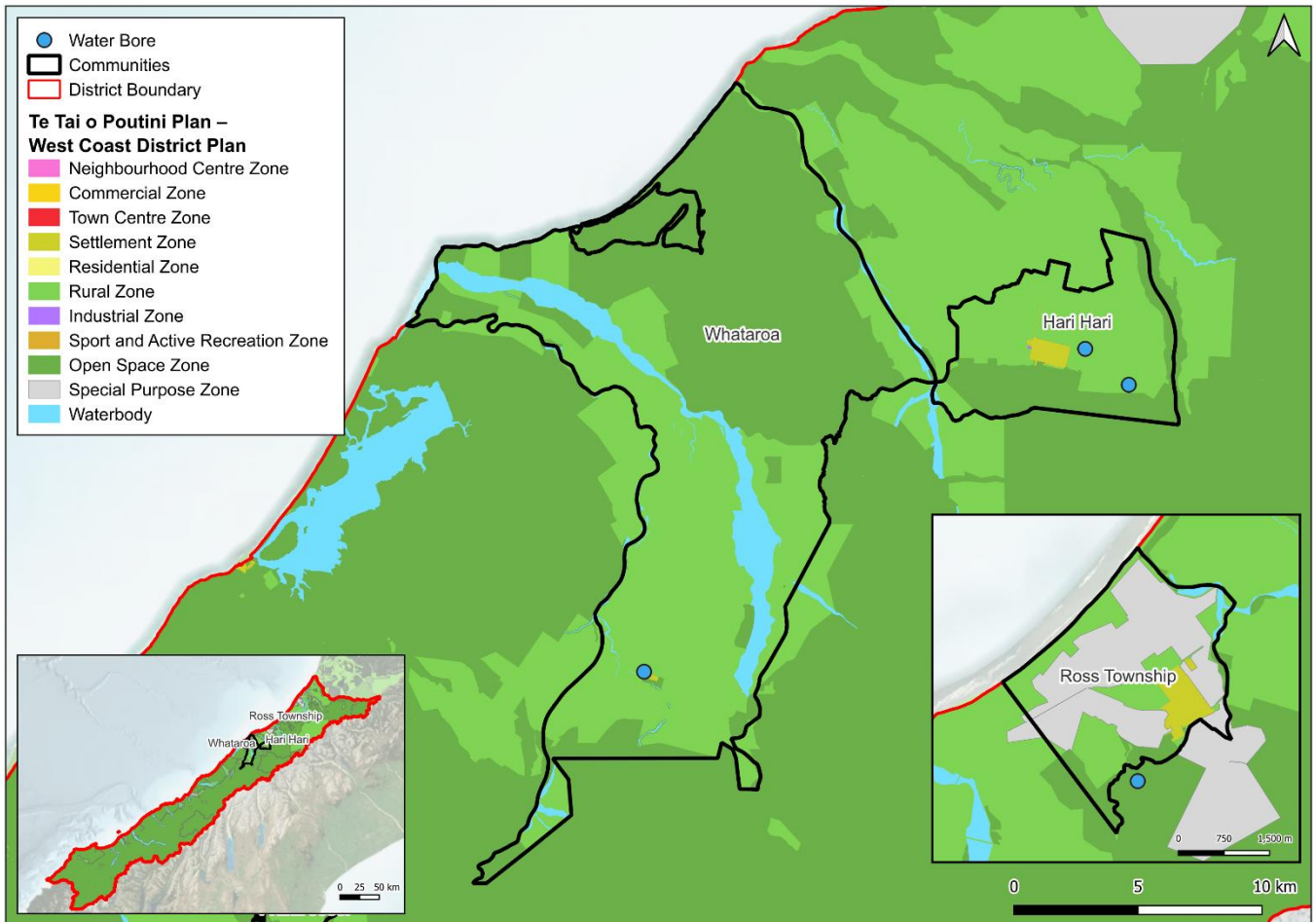


Figure 3-9: District plan zones in the central Westland District

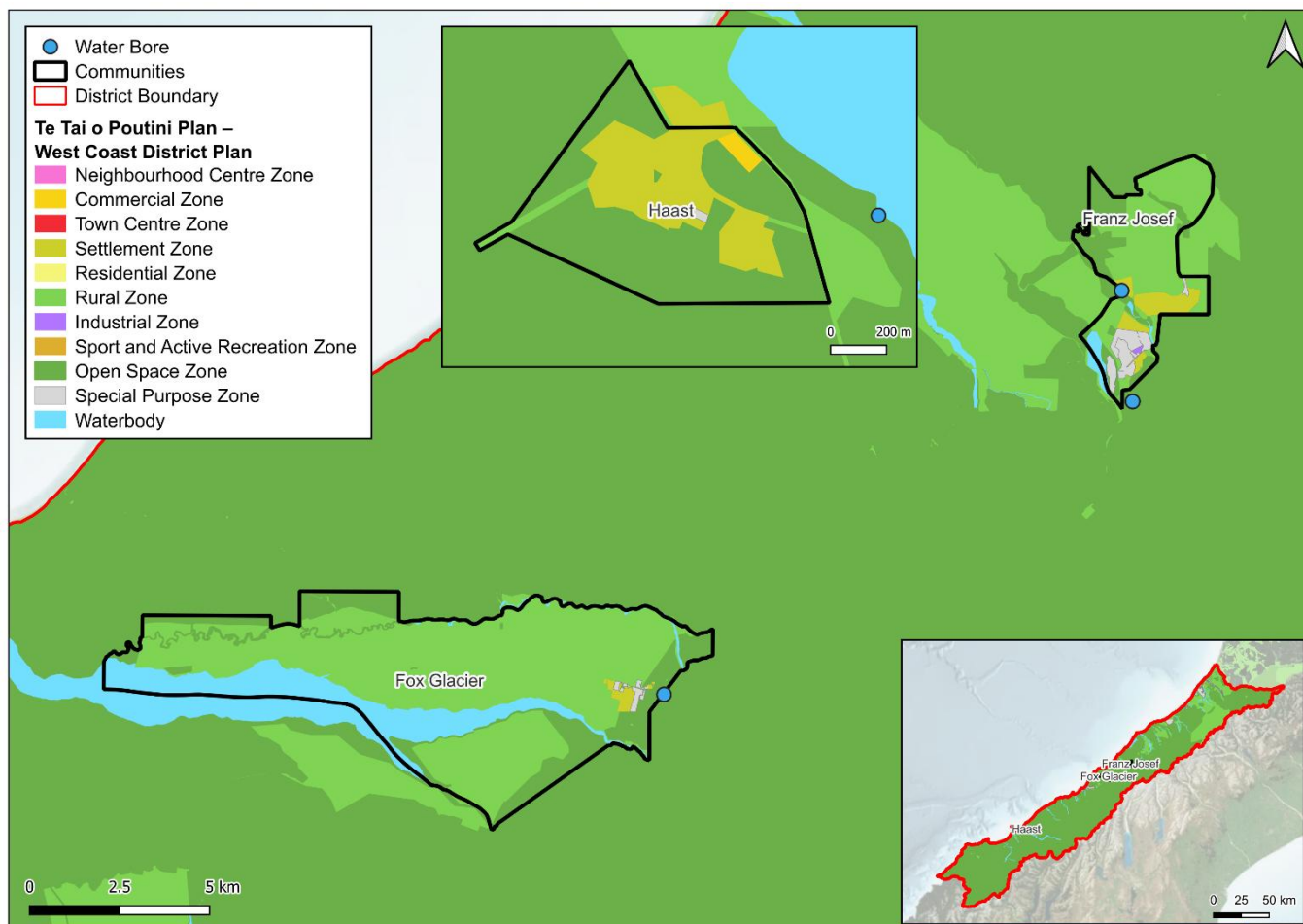


Figure 3-10: District plan zones for the southern Westland District

3.4 Future population projections

Population growth data was obtained at a SA2 level (Stats NZ), but not at the specific community level due to availability of data. The population growth rate for each community has been assumed as the growth rate of the wider SA2 unit within which that community sits. Population growth data from 2023 – 2053 for the following relevant SA2 units is shown in Table 3-1.

Table 3-1: Projected Population Growth for Westland SA2 Communities

Community	Projected Population Growth 2023-2053
Arahura-Kumara	+ 2.8%
Hokitika	- 1.2%
Hokitika Rural	- 0.2%
Hokitika Valley-Otira	+ 1.3%



Community	Projected Population Growth 2023-2053
Haast	- 5.9%
Westland Glaciers-Bruce Bay	- 9.5%
Waitaha	- 1.8%
Whataroa-Hari Hari	- 5.9%

4. Existing water supplies and demands

4.1 Description of drinking water services

4.1.1 WDC Communities

The WDC community water sources include:

- one lake,
- four streams,
- one spring,
- four groundwater sources which abstract from aquifers through wells.

Together these sources supply clean, safe drinking water to approximately 7,900 people across nine communities. The abstracted groundwater is treated at one of the nine treatment plants in the district (one of which is under construction) before being delivered to the residents through a network of 134 km of pipes. The communities supplied by abstracted groundwater through wells are Arahura, Hari Hari, Whataroa, and Haast.

Although groundwater is the primary source of drinking water in the district, the significant regional surface water bodies, such as lakes, rivers and streams both contribute to, and depend on, the aquifer system. There are several major rivers and dozens of lakes in the district that potentially interact with groundwater sources.

There are currently twelve consented water take sources regularly supplying the communities in the district (not counting emergency sources). These takes are divided between two significant aquifer systems and several surface water bodies. The surface and groundwater takes that supply each community are presented in Table 4-1 along with the populated serviced. Current rates of abstraction are shown in Table 5-1.

Table 4-1: Current WDC Water Service Sources

Water take location	Serviced community	Current Serviced Population
Well	Arahura	105
Carters Creek	Fox Glacier	252
Waiho River tributary	Franz Josef	2611
Tatare River	Franz Josef (emergency supply)	NA
Well	Haast	110

Water take location	Serviced community	Current Serviced Population
Well	Hari Hari	348
Harold Creek tributary		
Lake Kaniere	Hokitika	3,447
Hokitika River		
Spring	Kumara	318
Jones Creek	Ross Township	291
Well	Whataroa	405

4.1.2 Private Supplies

It is assumed that the remaining 15% of the Westland population is supplied privately. These supplies are sourced from groundwater, surface water, and rainwater. However, the exact source for most of these supplies cannot be confirmed due to lack of information. Five of these are supplies are likely to be sourced from a consented groundwater bore with unknown rates of abstraction, and two of these are consented surface water takes. The full extent of these can be found in Appendix A

For unknown sources, where a private supply is located close to a surface water body the supply is assumed to be from surface water. Where a private supply is not located near a surface water body or groundwater bore, the supply is assumed to be from rainwater.

4.2 Existing Water treatment and coverage

4.2.1 WDC Communities

The drinking water supplies of all serviced communities in the Westland District are treated. The methods of treatment have been derived from the WDC Drinking Water Safety Plan for each community and are described in Table 4-2.

Table 4-2: Drinking water treatment method for each serviced community

Serviced Community	Treatment method
Arahura	Cartridge filtration, UV disinfection, and chlorination with sodium hypochlorite.
Fox Glacier	Coagulation, membrane filtration and chlorination with sodium hypochlorite.
Franz Josef	Multimedia filtration, UV disinfection, and chlorination with sodium hypochlorite.

Serviced Community	Treatment method
Franz Josef (emergency supply)	Same as Franz Josef supply
Haast	Multimedia filtration, UV disinfection, and chlorination with sodium hypochlorite.
Hari Hari	(5um) Cartridge filtration, UV disinfection and chlorination with sodium hypochlorite.
Hokitika	Coagulation & Flocculation, membrane Filtration and chlorination with chlorine gas.
Kumara	Media filtration, cartridge filtration, UV disinfection and chlorination with sodium hypochlorite.
Ross Township	Membrane filtration, UV disinfection, and chlorination with sodium hypochlorite.
Whataroa	Media filtration, cartridge filtration, UV disinfection, and chlorination with sodium hypochlorite.

4.2.2 Private Supplies

There is insufficient information on treatment of private supplies in Westland. Private supplies registered with Taumata Arowai are marked as achieving or not achieving an acceptable treatment/supply solution, but this exact method is not disclosed. Table 6-3 and Table 6-4 provide further detail of this.

5. Water Quantity Assessment

5.1 Water Source quantity and availability

5.1.1 Groundwater

Groundwater is an important water source of supply in the West Coast region. A reliable supply of good quality groundwater is essential to support irrigation, industry, and domestic demand.

5.1.1.1 Aquifer sources

West Coast aquifers are generally contained within Holocene fan deposits which are found between the coast and foothills of the Southern Alps adjacent to streams and rivers. Throughout the region, ten hydraulic systems are classified as coastal basins. The vast majority of Westland District groundwater, and all its consented water takes, is derived from the Hokitika and Okarito basins.

The groundwater systems are dependent on rainfall recharge to the wider region, and water levels within the aquifers fluctuate with climatic conditions and demand. While rainfall varies over the year with low rainfalls in late summer and winter, the Westland District still has high annual precipitation. Hokitika has received an average annual precipitation of 2870 mm from 1960-2022, and an increased average annual precipitation of 3120 mm for the last 10 years from 2013 to 2022 (Ministry for the Environment, 2026). Hokitika receives less rainfall than rainfall measurement sites further inland, with other sites such as the Waiho river at SH6 Franz Josef and Ivory Lake receiving storms with over 300 mm of precipitation per day (West Coast Regional Council, 2026). This provides rainfall recharge which allows for supply of groundwater to Westland drinking water supplies.

5.1.2 Surface water

Surface water is a very important water source in Westland, with six of the nine identified communities relying wholly or partly on surface water for their drinking water supply. These surface water supplies include lakes, rivers/streams and springs. Like groundwater, surface water is reliant on weather conditions to provide adequate supply to the Westland communities.

5.1.2.1 Lakes

Lakes in the Westland District are typically located near areas of native forest. Inflows to these lakes come from high altitude areas with native vegetation. Lake Kaniere is the only publicly identified water supply lake in the Westland District, servicing the Hokitika community. This 1465-hectare lake has a maximum depth of 197 metres, with contributing flows coming from a catchment of size 5450 hectares (LAWA, 2026). The volume of this lake produces a plentiful supply of water, with WCRC river flow/level data at the lake outlet showing river depths of 0.5 metres on average throughout the year (West Coast Regional Council, 2026). There are periods of low flow, typically from around February to April, then

higher flows in the colder months leading to peaks of 1.7 metre depths in November. There have been cases of very low river flow in the past, but in scenarios where the lake is not able to be used as a water supply, Hokitika can be supplied by the Hokitika river instead.

5.1.2.2 Surface Water

All surface water supplied communities in Westland are wholly or partly supplied by rivers and streams. Westland rivers strongly reflect the behaviour of the proximal Southern Alps rivers, with lower winter flows and higher spring and early summer flows due to snow and glacier melt.

Climate change is a key factor in the volume of water in rivers. Wet and dry seasonality is becoming more exaggerated. For example, the WCRC State of the Environment report shows spring and summer 2023/24 river flows were found to be average to above average in volume, however 2023/24 provided the driest overall year on record, with flows in Westland rivers being around 10-30% below normal. Summer flows in 2022/23 dropped as much as 50% below average in key supply rivers (West Coast Regional Council, 2024). River supplies should be monitored in warmer months going forward as the effects of climate change are set to intensify.

5.1.2.3 Rain water

Rainwater collection is common on the West Coast of New Zealand due to the region's consistently high rainfall and low population density, particularly in rural and non-reticulated areas. In terms of quantity, supply is generally reliable, with rainfall typically sufficient to meet demand when storage is appropriately sized. Water quality is usually good at source, but it is highly dependent on roof and gutter condition, storage maintenance, and basic treatment such as first-flush diversion and disinfection. Without these controls, rainwater supplies can be vulnerable to contamination from debris, animal faecal matter, and biofilm buildup. Overall, rainwater provides a practical and widely used supply option, but requires ongoing management so that it remains safe and reliable.

No council owned drinking water supplies source water collected from roof water catchments. It is plausible that several privately owned water supplies gather water collected from roof catchments and stored on site.

5.1.3 Allocation Status

5.1.3.1 WDC Communities

The WCRC has issued the WDC several consents to take up to 2.15 million m³ of water per year for the district's community drinking water supplies. 23% of the permitted abstraction is for groundwater takes. There are no allocation limits established by the regional council for surface or groundwater sources. It is understood that consented rates are determined on a case-by-case basis. WDC's annual water allocation for consumptive use is currently 2.15 million m³/year. Although WCRC maintains a Groundwater Bore inventory, a resource consent was not required to drill a bore until 2009, limiting available data.

There are currently twelve water take consents for regular (non-emergency) services to the district communities. These consents permit the abstraction of water from surface water bodies, springs, and wells. (Table 5-1).

In Table 5-1. Actual Take is derived from the WDC Treatment Plant data provided.

Table 5-1: Current Water Take Consents

Community	Source Type	Consent number	Consented Take (m ³ /yr)	Actual Take (m ³ /yr)	Difference (m ³ /yr)
Arahura	Groundwater	AUTH-RC-2019-0046-01	94,500	12,227	82,273
Fox Glacier	Surface	AUTH-RC-2019-0045-01	273,800	95,410	178,390
Franz Josef	Surface	AUTH-RC00390-1	63,000	156,800	-93,000
Haast	Groundwater	AUTH-RC01164-1	78,800	47,945	30,855
Hari Hari	Groundwater	AUTH-RC06273-1	787,500	93,735	756,765
	Surface	AUTH-RC11029-1	63,000		
Hokitika*	Surface	AUTH-RC11033-1	4,416,500	1,021,362	3,395,138
	Surface	AUTH-RC-2015-0077-03			
Jackson Bay	Surface	AUTH-RC01165-1	78,800	-	-
Kumara	Spring	AUTH-RC10159-1	47,500	68,476	-20,976
Ross Township	Surface	AUTH-RC00359-1	189,000	56,323	132,677
Whataroa	Groundwater	AUTH-RC03068-1	472,500	25,758	446,742
Total			6,564,900	1,578,063	4,908,864

Notes: * Joint maximum for both takes supplying Hokitika.

Most takes are abstracting significantly less than their consented allocation. The related communities would be able to legally increase their abstraction rates as populations and demand increases, if needed. However, Kumara and Franz Josef are exceeding their consented allocations. The causes of over-abstraction and water demand in these communities should be investigated.

Jackson Bay has been identified as holding a water take consent, however no other information about this water take is available therefore this water take and any corresponding water source or community has not been included in this assessment.

5.1.4 Current and Future Surplus/Deficit

5.1.4.1 WDC Communities

Drinking water demand has been estimated using the 2024-2025 metred supply rates provided by WDC Treatment Plant data, to give current demand in thousand cubic metres per year for WDC-supplied communities.

The demand amount has then been subtracted off the consented take for each community, to determine the current overall surplus or deficit in water supply. See Table 5-2.

Table 5-3 provides the predicted future demand for each community. The projected population growth percentages from Table 3-1 have been applied to the metred supply rate metric, to provide a predicted future demand. The Consented Take metric has not been adjusted for the future, as there is no information to support this changing over time.

The serviced populations mentioned in these calculations does not fully account for the entire region of Westland, only those in the WDC-serviced communities. It should also be noted that in Hokitika, Westland Milk Products consumes an estimated 80% of the demand rate.

Table 5-2: Current surplus/deficit for WDC-supplied communities

Serviced community	Current serviced population	Consented Take (thousand m ³ /yr)	Current Demand Rate (thousand m ³ /yr)	Surplus/Deficit (thousand m ³ /yr)
Arahura	105	94.5	12.2	82.3
Fox Glacier	252	273.8	95.4	178.4
Franz Josef	2611	63	156.8	-93.8
Haast	110	78.8	47.9	30.9
Hari Hari	348	850.5	93.7	756.8
Hokitika	3,447	4,416.5	3,176.7	1,239.8
Kumara	318	47.5	68.5	-21.0
Ross Township	291	189	56.3	132.7
Whataroa	405	472.5	25.8	446.7
Total	7887	6,486.1	3,733.4	2752.7

Table 5-3: Predicted surplus/deficit for WDC-supplied communities

Serviced community	Predicted 2053 Serviced Population	Consented Take (thousand m ³ /yr)	Future Demand rate (thousand m ³ /yr)*	Surplus/Deficit (thousand m ³ /yr)
Arahura	108	94.5	12.6	81.9
Fox Glacier	228	273.8	86.3	187.5
Franz Josef	2363	63.0	141.9	-78.9
Haast	104	78.8	45.1	33.7

Hari Hari	327	850.5	88.2	762.3
Hokitika	3406	4,416.5	3,138.6	1,277.9
Kumara	327	47.5	70.3	-22.9
Ross Township	290	189.0	56.2	132.8
Whataroa	381	472.5	24.2	448.3
Total	7534	6,486.1	3,663.6	2,822.5

*current demand adjusted for population growth as per Table 3-1

The current total drinking water supply rate across Westland is estimated to be 6.49 million m³ per year, with an estimated 3.73 million m³ of consumption. This currently leaves the district with a net surplus of 2.75 million m³ per year. The population changes from 2023-2053 (SA2 units) show a net decrease in the total serviced Westland population, down to 7534 serviced residents from 7887. Assuming the same consented take rate and estimated future demand, this results in a decreased demand and increased net supply surplus. The predicted demand decreases to 3.66 million m³ per year, and the net surplus increases to 2.82 million m³ per year. However, the two communities of Franz Josef and Kumara have a net deficit of supply for both the current and predicted demand.

5.1.4.2 Private Supplies

There is insufficient information on the quantity of water in private supplies in Westland. The two consented surface water private supplies have maximum consented water takes (Table 5-4), but no information on the rest of the private supplies. There is no data of measured usage for these consented water takes. However, quantity of water is assessed when a building permit is issued and based on the buildings use. Therefore, it is plausible that private supplies will have adequate supply volume during normal operation which would exclude periods of drought.

Table 5-4: Current surface water private supply consents

Name	Consent Number	Consented Take (m ³ /year)
Lake Paringa	AUTH-RC06095-1	3,504
Otira	AUTH-RC01231-1	No more than 25% of the instantaneous flow from Goat Creek.

5.1.5 Water network assessment

Using the Network Environmental Performance Report 2023/24 (NEPM), a high-level network assessment of the Westland District’s water network has been undertaken here.

Westland District’s water network appears to be performing reasonably well overall, but the results need to be considered with caution. The NEPM does not provide a highly detailed or fully verified dataset

specific to Westland. It compares all councils and highlights that smaller rural councils like Westland often do not have complete or highly reliable information about how their networks are performing. This means the results give a useful indication, but they are not a precise picture of performance.

One recurring issue that stands out is leakage, which is the amount of water lost from the network before it reaches customers. For Westland, the reported rate of leakage is lower than most councils. The data suggests that around 48 litres per connection per day is being lost, while the national median is around 185 litres. On the surface this looks like a very good result, however the report also makes it clear that water loss data across the country has a high level of uncertainty. Not all councils can measure it accurately, and many rely on estimates where they do not have detailed monitoring in place. Due to these possible sources of error, the low leakage figure for Westland should be considered carefully as it may not accurately indicate system performance. Regarding this, WDC intends to upgrade their Supervisory Control and Data Acquisition (SCADA) system in the near future to record the outflow from the treatment plants more accurately, and intend to engage a suitably qualified person to undertake a water loss exercise for Hokitika, Franz Josef and Fox Glacier.

Another important statistic is the rate of water per connection being supplied across the district. Westland's rate is higher than many other councils. This does not automatically mean there is a problem, but it can be a sign that the network is not operating as efficiently as it could. Higher rates can be influenced by things like rural or commercial water use, but they can also point to leaks or a lack of detailed information about where water is going.

The condition of the network is also something to consider. Across New Zealand, about 16% of pipes that have been checked are in poor or very poor condition. However, the NEPM report also notes that many councils, especially smaller ones, do not yet have a complete understanding of the condition of their pipes. This is because inspecting underground pipes is difficult and expensive, and some councils rely on estimates rather than detailed inspections. For Westland, this means the true condition of the network and the risk of leaks or failures may not be fully understood.

Looking ahead, managing water demand and supply is likely to become more challenging. Across the country, more than half of councils reported the need to increase the amount of water supplied to their communities in the past year. At the same time, pressures from climate change, ageing infrastructure, and population changes are expected to impact the ability to meet these increasing demands. Additionally, many water take consents are due to expire over the next decade, which may place tighter limits on supply. For a district like Westland, the security of the water supply cannot be assumed and will need careful sustainability planning.

WDC is likely to face two main challenges:

- The first is having a clear picture of how the network is performing. Currently, there is uncertainty around key measures like leakage and water use. Without accurate information, it is harder to identify problems early or make confident decisions about where to invest.
- The second is understanding and managing ageing infrastructure. Even though there is no clear evidence that Westland's network is in poor condition, the national data shows that many networks have ageing pipes, and smaller councils often have limited information about where the weakest assets are. This creates a risk of increasing leaks or unexpected failures.

Westland's network does not appear to be under immediate stress, but there is uncertainty in the data and some signs that efficiency could be improved. The key opportunity for the council is to strengthen its

understanding of the network through better monitoring, measurement, and planning so that it can manage risks and make informed decisions about the future.

5.1.6 Foreseeable risks to the communities' access to drinking water services

The loss-of-supply summaries within each drinking water safety plan identify a consistent set of reasonably foreseeable risks across all nine Council-operated supplies (communities). When these risks are considered alongside the population served by each scheme, it is possible to understand both the nature of the risks and their potential consequences.

Hokitika and Franz Josef together account for approximately 75% of the population connected to Council supplies, while the remaining population is spread across smaller rural and township schemes. This has a direct bearing on risk i.e. failures at the larger schemes affect more people, while failures at smaller schemes are more localised but still significant for those communities.

5.1.6.1 Natural Hazards

The most significant and consistent risk across all supplies is catastrophic loss of supply associated with natural hazard events, including flood and earthquake impacts on intakes, bores, pipelines, and related infrastructure. This risk is identified for every supply and is assessed as a Very High residual risk in each case. This reflects the geographic and environmental context of the district rather than any one particular asset or location.

From a population perspective, this represents a district-wide risk, as all communities supplied by Council systems rely on infrastructure that is vulnerable to large-scale natural hazard events that could simultaneously affect the entire region.

5.1.6.2 Operational and Asset-related

In addition to these system-level hazards, the safety plans identify a range of operational and asset-related risks. These include:

- treatment plant failure,
- pump failure,
- power outages,
- membrane or process failure,
- raw water supply main failure,
- reservoir leakage,
- control valve malfunction,
- reticulation network failure.

These risks are generally assessed as Moderate, but their implications vary depending on the population served and the characteristics of each scheme.

For the larger supplies, particularly Hokitika and Franz Josef, these risks translate into higher consequence in the event of failure, simply because more people are affected. Hokitika has a High residual risk associated with plant failure linked to asset management and maintenance, which elevates its importance as a critical asset within the district network. Franz Josef, while not assigned the same High rating, represents a high-demand supply with a relatively large serviced population, meaning that operational failure would still have a significant impact at a district level.

5.1.6.3 Lack of Redundancy

For smaller schemes, the risk profile is different. While fewer people are affected by any individual event, these systems are typically more dependent on a limited number of assets, which may have less redundancy. This increases their vulnerability to single-point failures such as pump breakdown or localised pipe failure. Ross is a clear example of this, with a High residual risk associated with slope instability that might affect treatment plant and reservoir infrastructure. Although the population served is relatively small, the potential for complete loss of supply at this location is proportionally higher than other communities.

5.1.6.4 Source Water Availability

Source-water availability is also identified as a risk for all nine supplies, with residual risk ratings ranging from Low to Moderate. This indicates that variability in source yield is a distributed risk across the district, rather than a risk for a particular scheme. While the relative importance of this risk varies, its presence across all supplies indicates that source reliability cannot be assumed under all conditions. The potential impact of this risk is greatest where larger populations are served, but it remains relevant for all communities.

5.1.6.5 System Knowledge and Data

A further layer of risk arises from the level of knowledge and data available on the system. The Environmental Network Performance Report 2023/2024 identifies gaps in information relating to asset condition, network performance, and water losses. This does not represent a physical failure risk, but it introduces uncertainty in how risks are assessed and managed. This uncertainty applies across the entire network and affects all users, as it limits the ability to detect emerging issues, prioritise investment, and confidently predict system performance under operational conditions.

5.1.6.6 Risk Profile Limitations

It is important to recognise that this assessment is constrained by the available data. Population figures are derived from supplier datasets and have not been independently validated against network connections or serviced-area mapping. Risk ratings are based on supply-level registers, and no standardised methodology for comparing residual risk across all supplies is presented in the source material. The analysis does not include quantified outage scenarios, alternative supply arrangements, or recovery times. As a result, while the risks themselves are clearly identified, the magnitude of their impact remains indicative rather than fully quantified.

6. Water Quality

6.1 Quality of Regional Groundwater at source

The Hokitika and Okarito aquifer systems are the most important groundwater resources in Westland. The Hokitika aquifer spans approximately 1,292 km² and the Okarito spans approximately 1,129 km².

Geological and Nuclear Science New Zealand (GNS) monitors sites throughout the West Coast region. There are five hydrogeological system sites within the Hokitika coastal basin, but none in the Okarito. In contrast, there are several State of the Environment (SoE) groundwater quality monitoring sites (seven in Hokitika and nine in Okarito). Elevated nitrate concentrations were detected in the Hokitika aquifer (Moreau, June 2025). A trend of increasing bicarbonate, fluoride, and silica concentrations were also noted in the shallow, unconfined sites in the Hokitika aquifer. The SoE report (Moreau, June 2025) states that the Okarito aquifer system exhibits the widest range of chemical composition, consistent with thick gravels in an active erosional environment. Specific instances of exceedances in the Hokitika and Okarito aquifer systems were not noted in the SoE report.

Overall, regional groundwater is in generally good condition. There are some appearances of contaminants mentioned in this section in groundwater, but these appear to be present to an acceptable level. Treatment of these waters in reticulated supplies is functioning as expected apart from some minor operational issues.

6.2 Quality of Regional Surface Water at source

Surface water in Westland is subject to variation in quality, particularly following rainfall events in river systems where sediments are uplifted causing increased turbidity. Surface water at the source is generally of good quality, due to the areas of intact native vegetation at the source and high-altitude headwaters. The glacial-fed catchments of Fox Glacier and Franz Josef have a high baseline water quality, apart from minor natural organic matter contamination. This can include increased tannins from rainfall in bushed parts of the catchment, impacting treatment requirements using these sources. The high-quality water in the catchment provides a buffer to the contaminants entering downstream, with several monitoring sites showing decreases in concentrations of sediments, nitrogen and E. coli (West Coast Regional Council, 2025). Despite this, rivers and lakes are still vulnerable to rainfall-driven turbidity and land-use impacts.

Several surface water quality monitoring sites in Westland are located near some significant agricultural or human activity, including most communities apart from Haast. Agricultural activity, especially dairy farming, produces some E. coli, nitrogen and nitrate runoff contamination to surface water. Despite this there is adequate treatment of surface water in place to leave a low residual risk to communities (Westland District Council, 2025). Other significant land-use that impacts the quality of surface water include grazed grasslands, contaminated land sites, mining, and urban development.

Table 6-1 highlights the communities which are supplied by a surface water source, along with key land uses, hazards and the residual risk of contamination of the surface water supply (Westland District Council, 2025).

Table 6-1: Land use impacts and risks of surface water supplied communities

Community	Main Land Uses in Catchment	Key Hazards	Surface Water Contamination Residual Risk
Fox Glacier	<ul style="list-style-type: none"> Natural Forest 	<ul style="list-style-type: none"> Increased sediment from flood loads Increased tannins from high rainfall. 	Low - Moderate
Franz Josef	<ul style="list-style-type: none"> Natural Forest 	<ul style="list-style-type: none"> Increased sediment from flood loads Increased tannins from high rainfall. 	Low - Moderate
Hari Hari	<ul style="list-style-type: none"> Grassland – 72% Natural forest- 25% Settlements- 1% 	<ul style="list-style-type: none"> Contamination from livestock and agriculture. 	Low
Hokitika	<ul style="list-style-type: none"> Natural Forest - 42% Grassland - 40% Industrial use - 10% 	<ul style="list-style-type: none"> Contamination from livestock and agriculture. Cyanobacteria growth in Lake Kaniere or the Hokitika River. 	Low
Kumara	<ul style="list-style-type: none"> Natural forest - 40% Grassland – 37% Planted forest – 10% 	<ul style="list-style-type: none"> Elevated turbidity levels in source water Contamination from livestock and agriculture 	Low - Moderate
Ross	<ul style="list-style-type: none"> Natural Forest 	<ul style="list-style-type: none"> Elevated turbidity levels in source water. Contamination from mining or mineral deposits. 	Moderate - High

The agricultural runoff has resulted in increasing trends for sediment, nitrogen and E. coli for the region. Several surface water bodies have had increases in nitrates (13%), but others have had decreases (17%). Despite this, several nitrates were found to be below toxicity threshold for people and aquatic life



in Westland. This is reflected in the conditions of lakes in the region, with no lakes being in either “poor” or “excellent” condition.

Nitrogen levels in rivers are sometimes high enough to support prolific algal growth, but this is not common due to the colder climate of Westland. When left unchecked these conditions can degrade water quality, increase treatment requirements, and reduce the reliability of surface water as a drinking water source.

The overall quality of surface water in the West Coast is good, with 76% of rivers, 91% of coastal sites, and 99% of lakes being classified as very low risk. (West Coast Regional Council 2024)

6.3 Quality of Reticulated Water

6.3.1 Council Owned Supplies

Overall, the information available for 2024¹ suggests that drinking water supplies in the Westland District are generally working as expected, with only a small number of issues identified. These issues were limited to specific locations rather than affecting the whole district.

One of the main things reported was at the Franz Josef supply, where two tests found the presence of E. coli. E. coli is used as an indicator that water may have been contaminated, so any detection is taken seriously. However, the report does not show repeated or ongoing problems at this supply, which suggests these events were short-term and were dealt with at the time.

At Fox Glacier, reported issues were related to water treatment rather than contamination from the source. The information states one case where aluminium levels were higher than expected, and four cases where disinfection by-products exceeded guideline limits.

These types of results are usually linked to how the treatment process is running, such as how chemicals are dosed, rather than a problem with the raw water itself.

The information does not identify Westland as having long-standing issues such as extended boil water notices or major gaps in treatment. It also does not highlight the district as an area of concern compared to the rest of the country.

For 2024, Westland’s drinking water quality can be described as generally stable, with a few isolated issues (Table 6-2). These issues appear to be related to day-to-day operation of treatment systems rather than bigger infrastructure or source water problems.

Table 6-2: Summary of Issues by Supply (2024)

Supply Name	What was found	What it means in simple terms
Franz Josef	E. coli detected (2 tests)	Possible short-term contamination event
Fox Glacier	Aluminium above guideline	Treatment process needed adjustment
Fox Glacier	Disinfection by-products (4 results)	Linked to how chlorine is used

¹ Drinking Water Regulation Report 2024; June 2025; ISSN: 2815-8857 (online)

Supply Name	What was found	What it means in simple terms
Fox Glacier	Residual disinfection in place	Ongoing protection in the pipe network

6.3.2 Private Supplies

There are several private drinking water supplies within the Westland District, but limited information and data is available for these systems. Information was provided by Taumata Arowai to support this assessment about the district’s publicly registered drinking water supplies. Most information was sourced from the Taumata Arowai Public Register of Drinking Water Supplies. The only treatment information available for these water supplies is whether an acceptable treatment solution is present.

There are three known private drinking water supplies that were able to be mapped. One supply is publicly registered (Table 6-3) and two supplies have a registration that has lapsed (Table 6-4). Supplies with a lapsed registration have not completed their duties under the Water Services Act 2021 to periodically confirm or update their registration details (Taumata Arowai, 2026). An additional registered water supply was identified but is registered as a water carrier service, so this was not mapped.

Several additional assumed private supplies were found that are not registered (see Appendix A mostly consisting of hotels, motels and campgrounds. There is limited information available regarding water treatment or water quality for these supplies. As a result, it is likely that most private supplies, both registered and assumed, do not have adequate treatment in place.

Table 6-3: Private community water supplies that are publicly registered

Name	Type	Population	Acceptable Solution
Okarito	Networked supply	Small (26 to 100)	Groundwater (Well or Bore) Water Supply
Service Cartage Ltd	Water Carrier Service	N/A	None

Table 6-4: Private community drinking water supplies with lapsed registration

Name	Type	Population	Acceptable Solution
Franz Alpine Resort	Networked supply	Small (26 to 100)	None
Te Tauraka Waka a Maui Marae	Self-supplied building	Very Small (25 or less)	Rainwater (Roof Collected)



6.4 Public Health Risks

Information was requested from the National Public Health Service, Te Whatu Ora, about any cases of notifiable public health risks linked to a water supply in the Westland District. No information has been received. Further investigation into the public health risks linked to community water supplies should be completed in the future.

7. Consequences of loss of supply

The consequences of loss of access to drinking water services in Westland District are best understood by considering both the nature of the risks identified and the population served by each supply. The loss-of-supply summaries and drinking water safety plans demonstrate that while risks are present across all schemes, the scale of consequence varies depending on the number of people affected and the resilience of each supply.

At a district level, approximately 7,900 people are supplied by WDC-operated drinking water systems, with a total district population of approximately 9,100 to 9,400 people. This means that most residents rely directly on these supplies for access to treated potable water. The remaining population is dependent on private or self-supplied sources, which are not characterised in detail in the available material.

The most significant consequence arises from complete loss of supply. The foreseeable reasons that loss of supply may occur have been identified, and the risks assessed, in section 5.1.6 above.

7.1 Consequences due to scale of population

From a population perspective, the consequence of such events is not uniform. Hokitika and Franz Josef together supply approximately 75% of the Council-served population. An outage at either of these supplies would therefore have district-level consequences, affect a large proportion of residents, and place immediate pressure on response and recovery arrangements. In contrast, outages at smaller supplies such as Haast, Arahura, or Fox Glacier would affect smaller populations but the consequence at a community level remains significant due to the limited availability of alternative supply options and the potential for a complete loss of service.

A second category of consequence relates to partial or localised failures, typically associated with operational or asset-related risks. These include treatment plant failure, pump outages, raw water supply interruption, or localised reticulation failure. These events are generally assessed as Moderate risk in the safety plans. While they may not result in district-wide disruption, they can lead to loss of supply within individual communities or parts of networks, requiring localised response and restoration. In smaller schemes, where redundancy is limited, these types of failures have a higher likelihood of resulting in a complete supply interruption for that community.

7.2 Consequences due to water quality deficiency

In addition to a complete loss of supply, there are also consequences associated with deficient drinking water services; where water continues to be supplied but does not meet expected quality or treatment standards. The NEPM records specific examples of this, including detection of E. coli at Franz Josef and treatment-related exceedances at Fox Glacier. These events demonstrate that system performance issues can result in reduced confidence in water safety and potential public health implications, even where supply continuity is maintained.

From a public health perspective, the consequence of deficient service is fundamentally different from loss of supply, but no less important. Loss of supply creates an immediate need for alternative potable water arrangements, while deficient supply introduces risks associated with consumption of unsafe or inadequately treated water. The available material does not provide a quantified assessment of health outcomes, but the incidents of microbiological contamination and treatment exceedances demonstrates that these risks are real and require active management.

7.3 Consequences due to lack of recovery plan

A further consideration is the availability of alternative supplies and recovery capacity. There is no consolidated assessment of outage duration, backup supply arrangements, or interconnection between schemes. As a result, while the immediate consequence of failure can be identified (loss or degradation of supply), the duration and extent of impact cannot be reliably quantified. This limits the ability to fully assess the severity of consequences beyond the initial service disruption.

7.4 Consequences due to lack of information

The consequences are also shaped by how well the network is understood. The NEPM notes gaps in asset condition, performance monitoring, and demand data, which increases uncertainty and reduces the ability to anticipate failures, respond early, and manage emerging risks. In practice, this means the actual consequences of an event may be greater than anticipated.

7.5 Overall consequence profile and management

7.5.1 Consequence Profile

The consequence profile for Westland is summarised as:

- The district has system-wide exposures to high-consequence natural hazard events
- The largest populations that may be impacted by an event are Hokitika and Franz Josef
- The smaller schemes are more vulnerable to failure, even if they affect fewer people
- Deficient service can create a real risk, even without a complete loss of supply

7.5.2 Management Approach

The available information indicates that WDC is already undertaking a range of actions consistent with wider sector practice, particularly in critical asset identification, maintenance activity, and gradual improvement in asset knowledge. The focus is therefore on how those actions contribute to managing consequences, and where further targeted improvements would reduce risk (Table 7-1).

Table 7-1: Overview of management approach

Consequence pathway	What is already being done (Westland context)	What can be strengthened
Catastrophic loss of supply	Critical assets identified and managed through safety plans; emergency response capability in place	Targeted resilience upgrades and backup supply options
High population exposure (Hokitika, Franz Josef)	Ongoing maintenance and operation of key treatment and supply infrastructure	Increased redundancy and operational flexibility
Small scheme fragility	Routine operation and maintenance of small schemes	Improved redundancy (pumps, storage, power) and targeted renewals
Network performance and water loss	Increasing asset knowledge and condition understanding; reactive maintenance	Active leakage management, pressure control, and prioritised renewals
Deficient supply (quality)	Treatment systems in place and compliance monitoring undertaken	Strengthened treatment reliability and distribution integrity
Data and system knowledge	Improvements in reporting and asset understanding	Expanded monitoring and more robust asset and network data

The most significant consequence pathway for Westland is loss of supply following natural hazard events. While this risk cannot be removed, it can be managed through system resilience and recovery capability. Council is already addressing this through drinking water safety plans and identification of key risks. The focus now is on progressively improving recovery arrangements including protection of high-risk infrastructure, provision of alternative supply where feasible, and maintaining effective emergency response capability. These actions reduce the duration and extent of outages.

Hokitika and Franz Josef supply most of the district population and therefore would experience the highest consequences if disrupted. Council is already managing these as priority schemes. Further improvements are focused on maintaining the reliability of treatment and pumping systems, increasing redundancy in critical components, and improving operability during non-optimal conditions. These improvements reduce the likelihood that failures result in widespread disruption.

The smaller supplies, including Haast, Arahura, Fox Glacier, Ross, Kumara, Hari Hari, and Whataroa are more vulnerable to single-point failures. Council manages these through routine operation and maintenance, but resilience can be improved by maintaining sufficient water storage, and prioritising renewal of higher-risk components and assets. These measures reduce the likelihood of a complete loss of supply at a community level.

Reticulation performance remains an important contributor to consequence, particularly where leakage, pressure, or asset condition affect water delivery. Council is improving its understanding of network conditions, but further improvements can be made through monitoring flows and pressures, targeting renewals, and addressing leakage where it has the greatest impact. This would support more reliable delivery of treated water.



A complete loss of supply is not the only cause of unfavourable consequences for the communities of Westland District. If performance is not maintained, degradation of water quality can occur within the network. Although council is already operating treatment systems and undertaking compliance monitoring, maintaining treatment performance and distribution system integrity remains critical to ensuring safe drinking water.

8. Conclusions & recommendations

8.1 Water Supply Quantity

Drinking water supplies in the Westland District generally supply sufficient or excess volume to meet demand, with a surplus of supplied ground water or surface water. However, the exception to this are the communities of Franz Josef and Kumara with their current and predicted demand being more than the amount of water being extracted (Table 5-2 and Table 5-3). Most communities are extracting water within their consented amounts, so can legally increase their abstraction as population and demand increase if required (Table 5-1). The exception to this is the communities of Franz Josef and Kumara which are currently extracting above their consented allocation. The Hokitika-Otira valley and Arahura-Kumara SA2 areas are set to increase in population, however the rest of the communities are projected to decrease over the next 30 years (Table 3-1). This means most communities meet current and projected demands in the Westland District.

A more detailed investigation into the demand of communities is recommended, as an assumption of an average consumption of 250 L/person/day was made during this investigation. Although the current quantity and demands of drinking water in Westland are stable, the effects of climate change-induced weather changes to the quantity of surface water in the region should also be considered in the future.

8.2 Water Supply Quality

This high-level assessment indicates the groundwater and surface water quality is good but still has potential for contamination from key contaminants such as E. coli, nitrogen and nitrates. Elevated concentrations of nitrate have been found in groundwater near Hokitika and have also been found in Westland surface water. E. Coli and nitrogen contamination from agricultural activity and other land use presents a low risk to surface water and ground water. To reduce the risks of these contaminants, there is an adequate level of treatment in place to ensure that these contaminants produce minimal damage to community water supplies. To ensure that quality of supplied drinking water in the district remains at a high level, continued investment in the operation, maintenance and monitoring of council water supply systems is essential.

Good water quality should be prioritised to ensure the safety of drinking water supplies. Council reticulated supplies are working as expected, aside from minor operational issues in Franz Josef and Fox Glacier (Table 6-2). A targeted investigation into the public health risks associated with Westland community drinking water supplies should be completed, as there was no information on this available for this assessment. There is a large gap in the treatment and supply methods of the numerous private supplies in the district, with very few of these being registered or having previously been registered (Table 6-3 and Table 6-3). Registration with Taumata Arowai should be encouraged for these supplies. This will help to ensure a more thorough understanding of private treatment and allow safer supply to the 15% of the Westland population not covered by a community water supply.

8.3 Water Supply Loss

Overall, Westland District's drinking water supplies face a consistent and clearly defined set of risks, with natural hazards representing the most significant and unavoidable threat across all schemes. While these risks are shared district-wide, their consequences are uneven, driven primarily by population distribution and the resilience of individual systems. Hokitika and Franz Josef carry the greatest potential for widespread impact due to the large proportion of the population they serve, whereas smaller schemes face heightened vulnerability to single-point failures despite affecting fewer people.

In addition to the risk of complete loss of supply, operational failures, reduced water quality, and limitations in system knowledge contribute to a broader consequence profile that affects both service continuity and public health outcomes. Importantly, uncertainty in asset condition and system performance may amplify these consequences beyond what is currently understood.

WDC is actively managing these risks through existing safety planning, asset management, and operational practices. However, further improvements in resilience, redundancy, monitoring, and recovery planning will be critical to reducing both the likelihood and impact of future events. Strengthening these areas will not eliminate risk, but it will significantly improve the district's ability to maintain safe, reliable drinking water services and to respond effectively when disruptions occur.

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Appendix A

Private Supplies



Appendix A Private Supplies

A.1 Assumed Private Supplies

Number	Name	Type	Location	Probable Source
1	Otira	Private	Otira, State Highway 73	Surface Water - Goat Creek
2	Cowboy Paradise	Hotel/Motel	1140 Milltown Road Arawhataraki Turiwhate	Rainwater
3	Kokatahi Hotel	Hotel/Motel	Kokatahi	Rainwater
4	Lake Mahinapua Hotel	Hotel/Motel	SH6 Lake Mahinapua	Groundwater Bore
5	Paramata Lodge	Hotel/Motel	554 Bold Head Road, West Coast, South Island, Ross Kakapotahi	Rainwater
6	Pine Grove Motel	Hotel/Motel	Haast	Rainwater
7	Mahitahi Lodge	Hotel/Motel	Moeraki River - same as Lake Moeraki Wilderness lodge	Rainwater
8	Lake Paringa Village	Hotel/Motel	Lake Paringa	Surface Water - Lake Paringa
9	Wilderness Lodge Lake Moeraki	Hotel/Motel	See Mahitahi Lodge	Rainwater
10	Haast Beach Motel	Hotel/Motel	Haast Beach	Groundwater Bore - Haast Beach water supply
11	Bay Road Motels	Hotel/Motel	Okuru River, Haast	Rainwater
12	Hannah's Homestead	Hotel/Motel	Haast	Groundwater Bore – Haast Beach community supply
13	Heartland Hotel Haast	Hotel/Motel	Haast	Groundwater Bore
14	Woodstock Hotel	Hotel/Motel	Woodstock, Hokitika	Rainwater
15	Rimu Lodge	Hotel/Motel	Rimu, Hokitika	Rainwater
16	Woodstock Domain	Campground	Woodstock, Hokitika	Rainwater

Number	Name	Type	Location	Probable Source
17	Links View Holiday Park	Campground	340 Ruatapu Road, Ruatapu	Rainwater
18	Jimbos Backpackers and Cabins	Campground/Backpackers	1 Neils Beach Road, Jackson Bay	Rainwater
19	Haast River Hotels and Holiday Park	Campground	52 State Highway 6, Haast	Groundwater Bore
20	Ruatapu	Sawmill	Ruatapu, State Highway 6	Surface Water

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