Water Supply Activity Management Plan

Westland District Council

2025 - 2034

WESTLAND
District Council | Te Kahui o Poutini

Document Control

The following revisions have been made to this document since its initial publication.

Document Control		Activity Management Plan			
Document ID:		Water Supply Activity Management Plan			
Rev No	**Date**	**Revision Details**	**Author**	**Reviewer**	**Approver**
1.0	19 Mar 2025	Draft for Consultation	WD	AP	AP
1.1	03 Jun 2025	Final for Long-Term Plan Adoption	WD	AP	AP

Cover photo: Blue Spur Water Treatment Plant.

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Figure: Fox Glacier Treatment Plant arrives on site (commissioned November 2023).

Figure: Construction of the Ross Water Supply Intake (March 2022).

1. Kumara Drinking Water Supply

1.1. Overview and History

The Kumara Drinking Water Supply is the northern-most supply in the Westland District, situated south of the Taramakau River. The supply was established in 1976 and supplies approximately 318 people. A map of the scheme is provided below in Figure 1-1.

The Water Supply scheme consists of:

- A spring source,
- A water treatment plant with stand-by generator,
- Treated water storage.

The new treatment plant was commissioned in late 2019 and includes granular media filtration, cartridge filtration and UV disinfection. Chlorination was added to the supply in 2023 to ensure compliance with DW standards.

The operation of the plant can be monitored remotely, and several online instruments are installed to monitor key treatment parameters including pressure, flow, turbidity, pH and UVT. Alarms are sent to the on-call plant operator in the event of a plant fault or parameter out of a set range.

Treated water from the treatment plant is pumped up to the town reservoir and is gravity fed to the reticulation system. Various grab samples are taken from the source, treatment and within the reticulation to meet the DWQARs.

Figure 1-1: Kumara Drinking Water Supply Map.

1.2. Scheme Summary

A summary of the Kumara Drinking Water Supply is provided below in Table 1-1.

Table 1-1: Summary of Kumara Drinking Water Supply.

Description		Quantity
Estimated Population Served		318
Scheme Coverage	Residential Charges	152
	Commercial Charges	8
System Components	Bore/Intakes	1
	Treatment	1 Treatment Plant
	Treated Reservoirs	1 – Total Capacity 247m^3
	Pump Stations	0
	Piped Mains	6.86 km
History – Original Scheme Install Date		1976
Value (2024 Valuation)	Optimised Replacement Cost	$2,909,975
	Depreciated Replacement Cost	$1,805,135
Financial (FY 23/24)	Operator cost per connection	$754.34
Demand	Total Annual Volume	60,266 m^3/year
	Average daily	8.5m^3/hr
	Peak Daily	22.7m^3/hr
	Minimum Daily	0m^3/hr
	Average daily per connection	1,032 L/day
Source Type		Spring
Type of Supply		Medium
Average System Pressure		350 kPa

1.3. Key Issues

The Kumara Supply's key issues have been identified and are detailed below in Table 1-2. A list of the district wide water supply issues is located in Section 3.1 of the Three Waters AMP 2025.

Table 1-2: Kumara Supply Key Issues.

Key Issue	Response
Organics fouling UV unit during periods of heavy rain (approx. twice annually)	Investigate flocculation or increasing storage time and turning the plant off in high rainfall.
Ageing infrastructure	Replacement program as funds allow

1.4. System Capacity

The capacity of the Kumara Supply is detailed below in Table 1-3. The water supply infrastructure provides sufficient capacity for the current level of development. The instantaneous peak demand exceeds the treatment capacity and consented take; however, the reservoir can supplement this demand to ensure consent conditions are not breached.

Table 1-3: Kumara Supply System Capacity.

	Flow Rate (m^3/hr)	Daily Volume (m^3)
Treatment Capacity	11.5	253*
Consented Take	5.4	130
Peak Demand	22.7	204

** Treatment Plant design capacity is based on a 22-hour working day (2hrs for backwash and clean).*

1.5. Resource Consents

The resource consents related to this scheme are detailed below in Table 1-4.

Table 1-4: Kumara Supply Resource Consents.

Consent	Description	Location	Granted Date	Expiry Date	Consented Flow
RC10159/1	To take and use surface water from a spring for community water supply.	Unnamed Spring at Kumara	23/08/2010	23/08/2045	1.5 L/s or 130 m^3/day

1.6. Water Quality

1.6.1. Source

The Kumara water supply source complied with all Rules relating to this supply in 23/24.

1.6.2. Treatment

In the 23/24 year the Kumara water supply was non-compliant with Section 4.7.1, T2.1 of the Drinking Water Quality Assurance Rules due to the UVT sample not being taken within July – September quarter. After this event, measures have been put in place by the Contractor to prevent missing scheduled samples.

This non-compliance had no effect on the quality of the drinking water provided.

The Kumara WTP was non-compliant in the 23/24 year with various rules associated with chlorination of the water treatment plant in the DWQAR's. This was due to the supply not being chlorinated until late 2023. The processes are now in place for full compliance in the following years.

1.6.3. Reticulation

The Kumara water supply was non-compliant in the 23/24 year with various rules associated with chlorination of the water supply in DWQAR's. This was due to the supply not being chlorinated until late 2023. The processes are now in place for full compliance in the following years.

There were no "boil water" notices or "do not use" notices issued for the 23/24 year.

1.7. Scheme Assets

A summary of the material, diameters and ages of mains pipes within the Kumara Supply are shown below in Figure 1-2, Figure 1-3 and Figure 1-4.

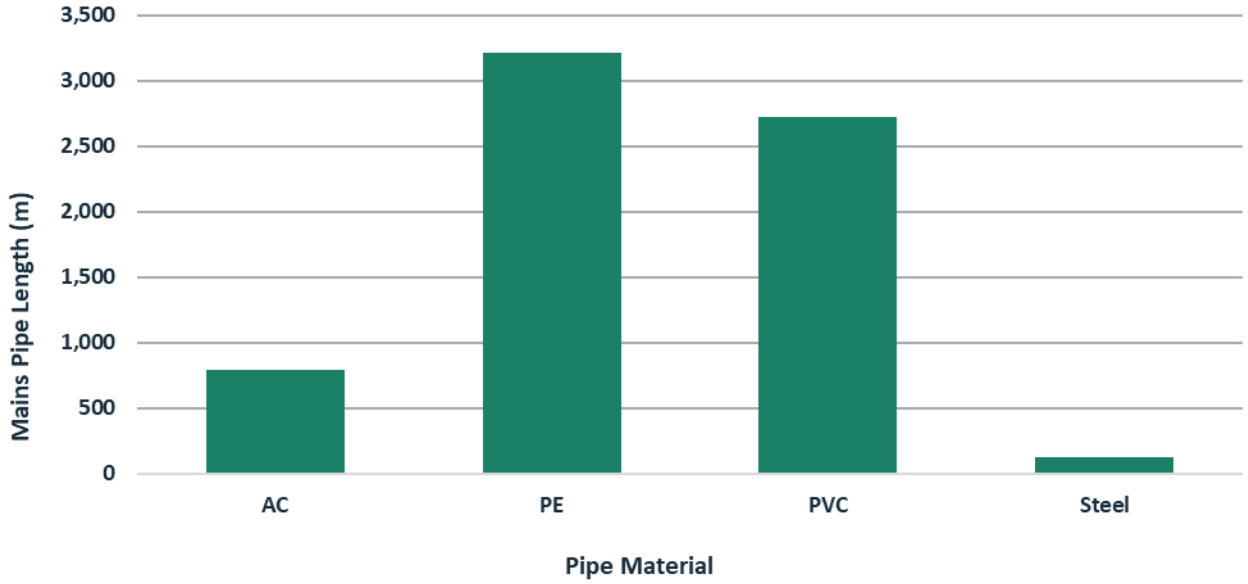

Figure 1-2: Kumara Supply Mains Pipe Material.

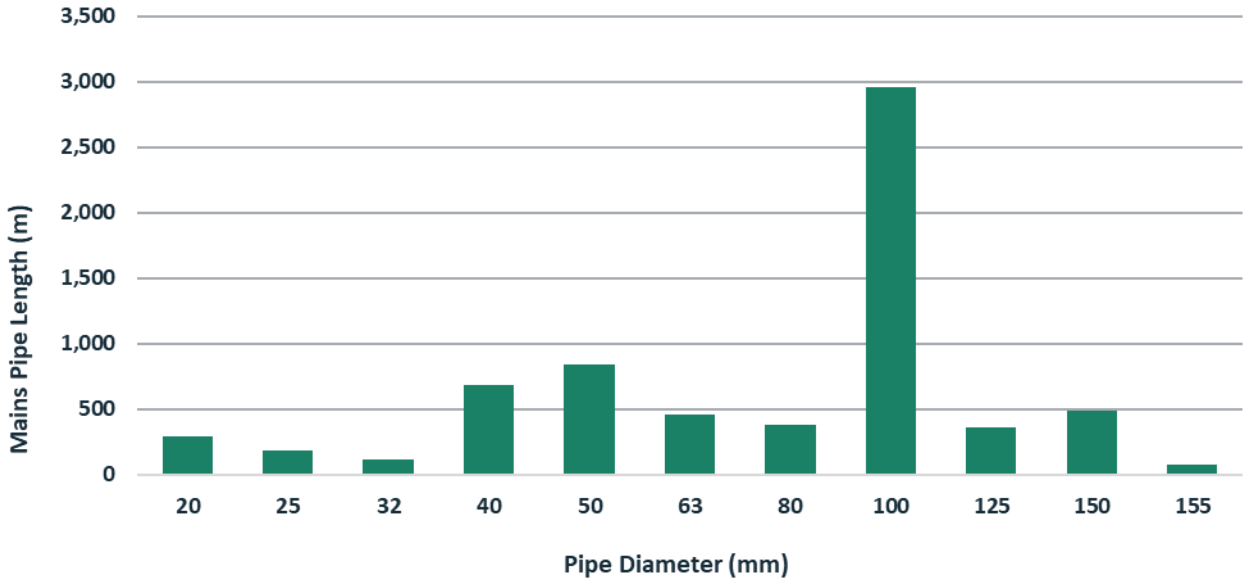

Figure 1-3: Kumara Supply Mains Pipe Diameter.

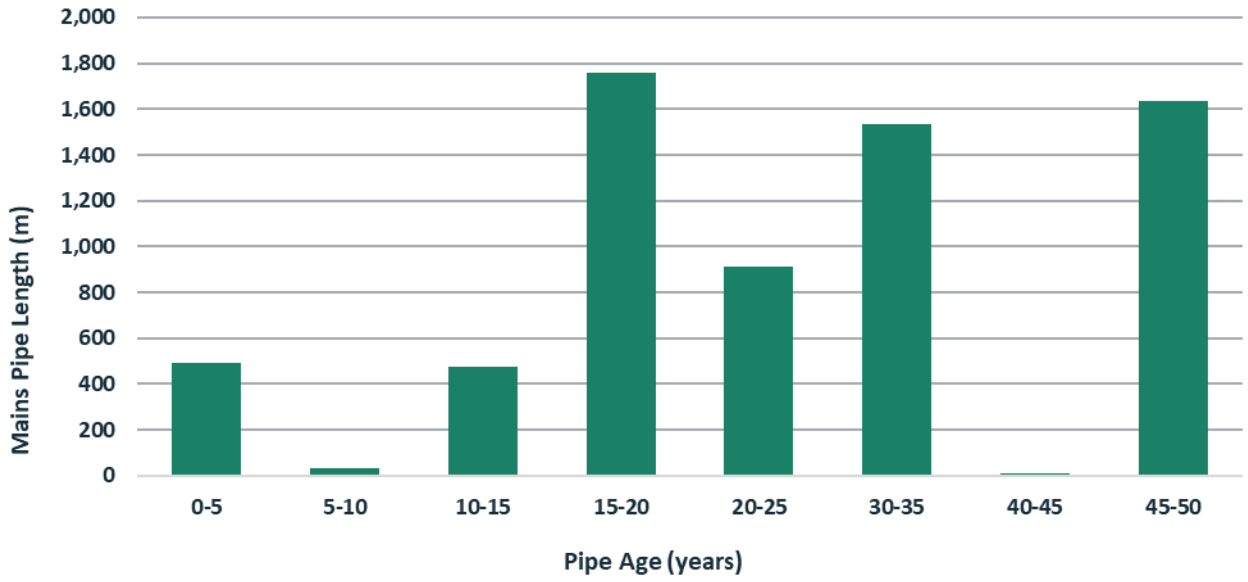

Figure 1-4: Kumara Supply Mains Pipe Age.

1.8. Operational Management

The operation and maintenance of the supply is part of the Westland District Utilities Maintenance Contract (22-23-03). The current contract was awarded to Westroads Ltd in August 2022. The term of the contract is 5 years.

1.9. Photos of Main Assets

Figure 1-5: Intake.

Figure 1-6: Treatment Plant.

1.10. Risk Assessment

A risk assessment has been undertaken for the Kumara Scheme. No unacceptable risks have been identified.

1.11. Asset Valuation Details

The total replacement value of the assets within the Kumara scheme was $2,909,975 as valued at 30 June 2024. A breakdown of the valuation is provided below in Table 1-5.

Table 1-5: Kumara Scheme Valuation Breakdown.

Asset Class	Asset sub-class	Optimised Replacement Value	Depreciated Replacement Value
Mechanical Plant and Equipment		$910,727	$510,934
Reticulation	Mains Pipe	$1,568,856	$1,070,350
	Service Lateral	$229,017	$124,934
	Hydrants & Valves	$201, 374	$98,918
TOTAL		**$2,909,975**	**$1,805,135**

1.12. Critical Assets

The criticality rating of the pipeline assets for the Kumara Supply is provided below in Table 1-6. The treatment plant, reservoir and spring intake are also considered critical assets.

Table 1-6: Mains Pipe Criticality Rating.

Criticality Level		Length (m)	
1	Very High	123	1.8%
2	High	4,099	59.7%
3	Medium	67	1.0%
4	Low	2,320	33.8%
5	Very Low	251	3.66%
	Unknown	-	-

1.13. Asset Condition

The condition rating of the assets is currently age based and not a physical site assessment. These are updated in the asset management system annually. The condition rating of the pipeline assets for the Kumara Supply is provided below in Table 1-7.

Table 1-7: Mains Pipe Condition Rating.

Condition Rating		Length (m)	
1	Excellent	985	14.4%
2	Good	4,932	71.9%
3	Average	-	-
4	Poor	811	11.8%
5	Very Poor	131	1.9%

1.14. Funding Programme

The 9-year financial programme for Kumara Water Supply is divided into the following categories:

- **Operations** – includes operational and maintenance costs,
- **Renewals** – replacement of assets on a 'like for like' basis,
- **Levels of Service (LOS)** – new assets to increase the level of service,
- **Growth** – new assets to meet additional demand.

The financial programme presented should be viewed noting that:

- **Allowance for CPI** – Consumer price index adjustments 'inflation' has not been included; and
- **All data is held in IBIS** – the database which Council conducts the majority of its financial rates storage and reporting.

The funding programme for Kumara Water Supply is provided below in Table 1-8.

Table 1-8: Kumara Water Supply Funding Programme[1].

	Operations	Renewals	LOS	Growth
Year 1	$119,700	$55,000		
Year 2	$119,700			
Year 3	$119,700	$110,000		
Year 4	$119,700	$120,000	$55,000	
Year 5	$119,700			
Year 6	$119,700			
Year 7	$119,700	$35,000		
Year 8	$119,700			
Year 9	$119,700			
TOTAL	**$1,077,300**	**$320,000**	**$55,000**	**$0**

The projects included in the LTP for the Kumara Water Supply are listed below in Table 1-9.

[1] Throughout the document, the classification of renewals, levels of service and growth may differ from the financial model.

Table 1-9: Kumara Water Supply Projects.

Project Name	Project Description	Criticality	Funding	Y1	Y2	Y3	Y4-9	Total
Reticulation Upgrades	Replacement of AC lines, laterals, valves & fire hydrants.	Medium	Renewal			$110,000	$155,000	**$265,000**
WTP and Reservoir Site	Installation of fencing at the site.	Low	LOS				$55,000	**$55,000**
WTP SCADA system Replacement	Current units are being phased out and need to be replaced. Share in one-off costs and implementation.	High	Renewal	$55,000			$0	**$55,000**

2. Arahura Drinking Water Supply

2.1. Overview and History

Arahura is a small settlement on the north bank of the Arahura River. The Drinking Water Supply was established in 2003 and supplies approximately 105 people. A map of the scheme is provided below in Figure 2-1.

The Water Supply scheme consists of:

- A groundwater bore on the Arahura Riverbank,
- A water treatment plant with stand-by generator,
- Treated water storage.

The new bore and treatment plant were installed in 2019 and 2021 respectively. These were commissioned at the end of 2022. The water treatment plant consists of cartridge filtration and UV disinfection, the supply was chlorinated in 2023 to ensure compliance with DW standards.

Treated water from the water treatment plant is pumped up to the treated water reservoirs and is gravity fed to the reticulation system. There is a dedicated treated water reservoir for the Arahura Marae which, when required, water can be pumped from to the Marae's own reservoir via a pumped service lateral.

UV Intensity (UVI), UV Transmittance (UVT), flow, pH, lamp hours, raw turbidity, and filtered turbidity are measured continuously at the water treatment plant. This data is continuously recorded using a SCADA system. Various grab samples are taken from the source, treatment and within the reticulation to meet the DWQARs.

Figure 2-1: Arahura Water Supply Map.

2.2. Scheme Summary

A summary of the Arahura Drinking Water Supply is provided below in Table 2-1.

Table 2-1: Summary of Arahura Drinking Water Supply.

Description		Quantity
Estimated Population Served		105
Scheme Coverage	Residential Charges	24
	Commercial Charges	-
System Components	Bore/Intakes	1
	Treatment	1 Treatment Plant
	Treated Reservoirs	3 – Total Capacity 90 m^3
	Pump Stations	0
	Piped Mains	3.12 km
History – Original Scheme Install Date		2003
Value (2024 Valuation)	Optimised Replacement Cost	$1,642,354
	Depreciated Replacement Cost	$1,392,132
Financial (FY 23/24)	Operator cost per connection	$3,661.66
Demand	Total Annual Volume	7,332 m^3/year
	Average daily	1.13m^3/hr (27.12m^3/day)
	Peak Daily	4.17m^3/hr
	Minimum Daily	0m^3/hr
	Average daily per connection	836 L/day
Source Type		Groundwater Bore
Type of Supply		Medium
Average System Pressure		350 kPa

2.3. Key Issues

The Arahura Supply's key issues have been identified and are detailed below in Table 2-2 . A list of the district wide water supply issues is located in Section 3.1 of the Three Waters AMP 2025.

Table 2-2: Arahura Supply Key Issues.

Key Issue	Response
Formalising Easement	An easement was drafted and agreed to but was never formally signed by the landowners. This needs to be worked through with the landowners.

2.4. System Capacity

The capacity of the Arahura Supply is detailed below in Table 2-3. The water supply infrastructure provides sufficient capacity for the current level of development. The instantaneous peak demand slightly exceeds the treatment capacity and consented take; however, the reservoir is capable of supplementing this demand to ensure consent conditions are not breached.

Table 2-3: Arahura Supply System Capacity.

	Flow Rate (m^3/hr)	Daily Volume (m^3/day)
Treatment Capacity	6	132
Consented Take	10.8	-
Peak Demand	4.2	27

2.5. Resource Consents

The resource consents related to this scheme are detailed below in Table 2-4.

Table 2-4: Arahura Supply Resource Consents.

Consent	Description	Location	Granted Date	Expiry Date	Consented Flow
RC-2019-0046-01	To take and use groundwater for community water supply.	Arahura	02/09/2019	02/09/2054	3 L/s

2.6. Water Quality

2.6.1. Source

The Arahura water supply source complied with all Rules relating to this supply in 23/24.

2.6.2. Treatment

In the 23/24 year the Arahura water supply was non-compliant with Section 4.7.1, T2.1 of the Drinking Water Quality Assurance Rules due to the UVT sample not being taken within July – September quarter. After this event, measures have been put in place by the Contractor to prevent missing scheduled samples.

This non-compliance had no effect on the quality of the drinking water provided.

The Kumara WTP was non-compliant in the 23/24 year with various rules associated with chlorination of the water treatment plant in the DWQAR's. This was due to the supply not being chlorinated until late 2023. The processes are now in place for full compliance in the following years.

2.6.3. Reticulation

The Arahura water supply was non-compliant in the 23/24 year with various rules associated with chlorination of the water supply in DWQAR's. This was due to the supply not being chlorinated until late 2023. The processes are now in place for full compliance in the following years.

There were no "boil water" notices or "do not use" notices issued for the 23/24 year.

2.7. Scheme Assets

A summary of the material, diameters and ages of mains pipes within the Arahura Supply are shown below in Figure 2-2, Figure 2-3 and Figure 2-4.

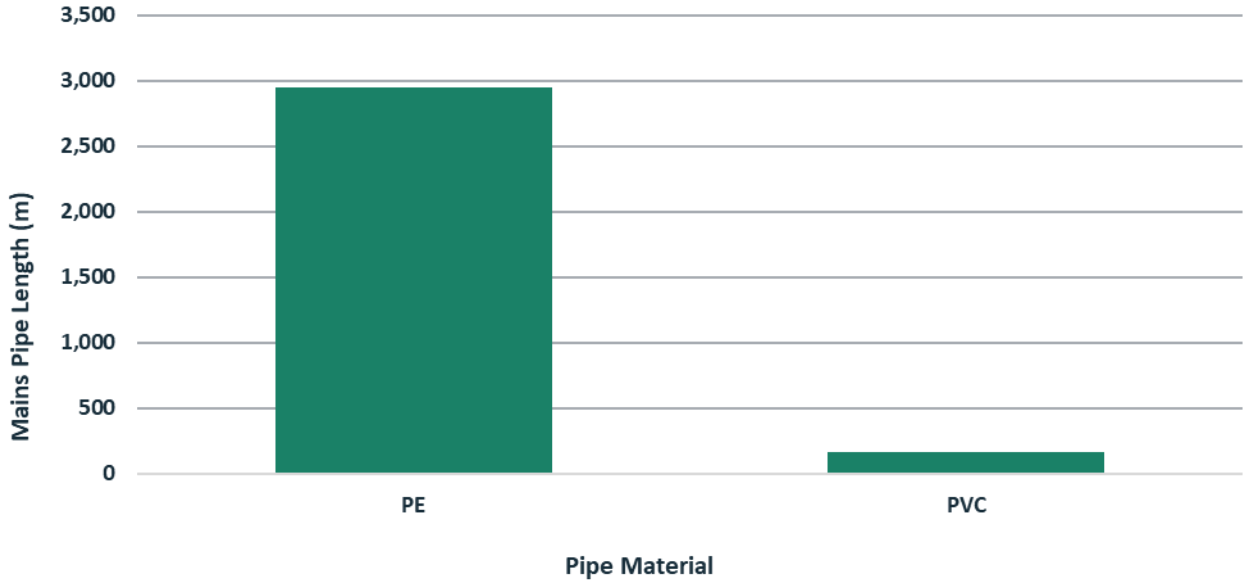

Figure 2-2: Arahura Supply Mains Pipe Material.

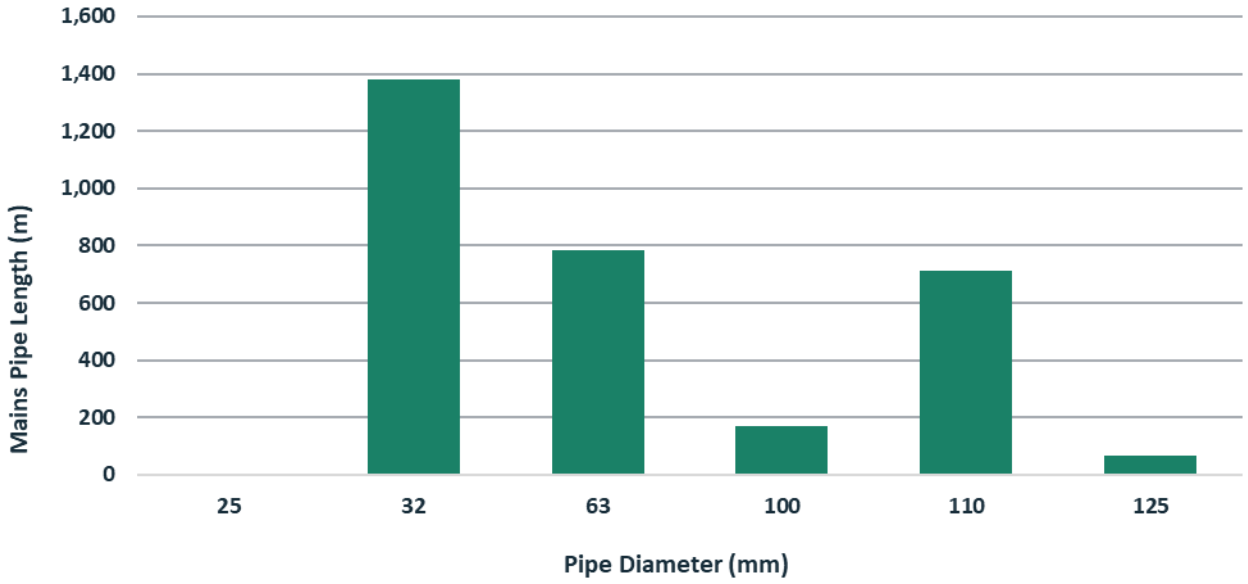

Figure 2-3: Arahura Supply Mains Pipe Diameter.

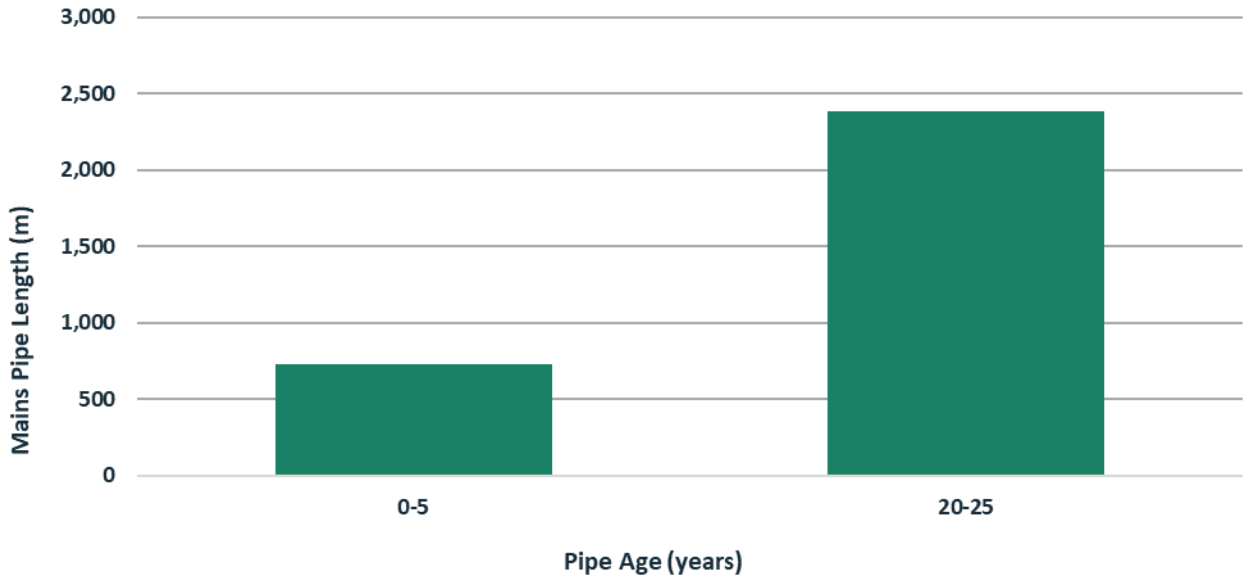

Figure 2-4: Arahura Supply Mains Pipe Age.

2.8. Operational Management

The operation and maintenance of the supply is part of the Westland District Utilities Maintenance Contract (22-23-03). The current contract was awarded to Westroads Ltd in August 2022. The term of the contract is 5 years.

2.9. Photos of Main Assets

Figure 2-5: Treatment Plant.

Figure 2-6: Reservoirs.

2.10. Risk Assessment

A risk assessment has been undertaken for the Arahura Scheme. No unacceptable risks have been identified.

2.11. Asset Valuation Details

The total replacement value of the assets within the Arahura scheme was $1,642,354 as valued at 30 June 2024. A breakdown of the valuation is provided below in Table 2-5.

Table 2-5: Arahura Scheme Valuation Breakdown.

Asset Class	Asset sub-class	Optimised Replacement Value	Depreciated Replacement Value
Mechanical Plant and Equipment		$847,580	$731,810
Reticulation	Mains Pipe	$638,336	$520,002
	Service Lateral	$122,552	$111,656
	Hydrants & Valves	$33,886	$28,663
TOTAL		**$1,642,354**	**$1,392,132**

2.12. Critical Assets

The criticality rating of the pipeline assets for the Arahura Supply is provided below in Table 2-6. The groundwater bore is also considered a critical asset.

Table 2-6: Mains Pipe Criticality.

Criticality Level		Length (m)	
1	Very High	8	0.3%
2	High	2,369	76%
3	Medium	-	-
4	Low	735	24%
5	Very Low	5	0.2%
	Unknown	-	-

2.13. Asset Condition

The condition rating of the assets is currently age based and not a physical site assessment. The condition rating of the pipeline assets for the Arahura Supply is provided below in Table 2-7.

Table 2-7: Mains Pipes Critical Assets.

Condition Rating		Length (m)	
1	Excellent	728	23%
2	Good	2,389	77%
3	Average	-	-
4	Poor	-	-
5	Very Poor	-	-
	Unknown	-	-

2.14. Funding Programme

The 9-year financial programme for Arahura Water Supply is divided into the following categories:

- **Operations** – includes operational and maintenance costs,
- **Renewals** – replacement of assets on a 'like for like' basis,
- **Levels of Service (LOS)** – new assets to increase the level of service,
- **Growth** – new assets to meet additional demand.

The financial programme presented should be viewed noting that:

- **Allowance for CPI** – Consumer price index adjustments 'inflation' has not been included; and
- **All data is held in IBIS** – the database which Council conducts the majority of its financial rates storage and reporting.

The funding programme for Arahura Water Supply is provided below in Table 2-8.

Table 2-8: Arahura Water Supply Funding Programme.

	Operations	Renewals	LOS	Growth
Year 1	$82,400	$55,000		
Year 2	$82,400			
Year 3	$82,400			
Year 4	$82,400			
Year 5	$82,400			
Year 6	$82,400			
Year 7	$82,400			
Year 8	$82,400	$10,000		
Year 9	$82,400			
TOTAL	**$741,600**	**$65,000**	**$0**	**$0**

The projects included in the LTP for the Arahura Water Supply are listed below in Table 2-9.

Table 2-9: Arahura Water Supply Projects.

Project Name	Project Description	Criticality	Funding	Y1	Y2	Y3	Y4-9	Total
Reticulation Upgrades	Two Fire Hydrants to be replaced.	Medium	Renewal				$10,000	**$10,000**
WTP SCADA system Replacement	Current units are being phased out and need to be replaced. Share in one-off costs and implementation.	High	Renewal	$55,000			$0	**$55,000**

3. Hokitika Drinking Water Supply

3.1. Overview and History

The Hokitika Drinking Water Supply is Council's largest water supply scheme, established in 1970. The supply serves an estimated 3,447 people in Hokitika and Kaniere and major commercial operation Westland Milk Products. A map of the scheme is provided below in Figure 3-1.

The supply is sourced from two locations, Lake Kaniere (the primary source) and the Hokitika River (as a supplementary source during times of peak demand). During the Westland Milk Products' processing off-season, only the Lake Kaniere water source is needed as water demand is not high enough to require extracting water from the Hokitika River. The water sourced from the Hokitika River is susceptible to high organic content, therefore, a flocculent (aluminium chlorohydrate) is added at the treatment plant.

Water is treated at the Blue Spur Water Treatment Plant which consists of Membrane Filtration and Chlorine Disinfection alongside Flocculation. Treated water is both gravity and pressure fed to the reticulation supply. Westland Milk Products have a dedicated supply line with their own on-site storage facilities.

Various parameters are measured continuously at the treatment plant via SCADA. Various grab samples are taken from the source, treatment and within the reticulation to meet the DWQARs.

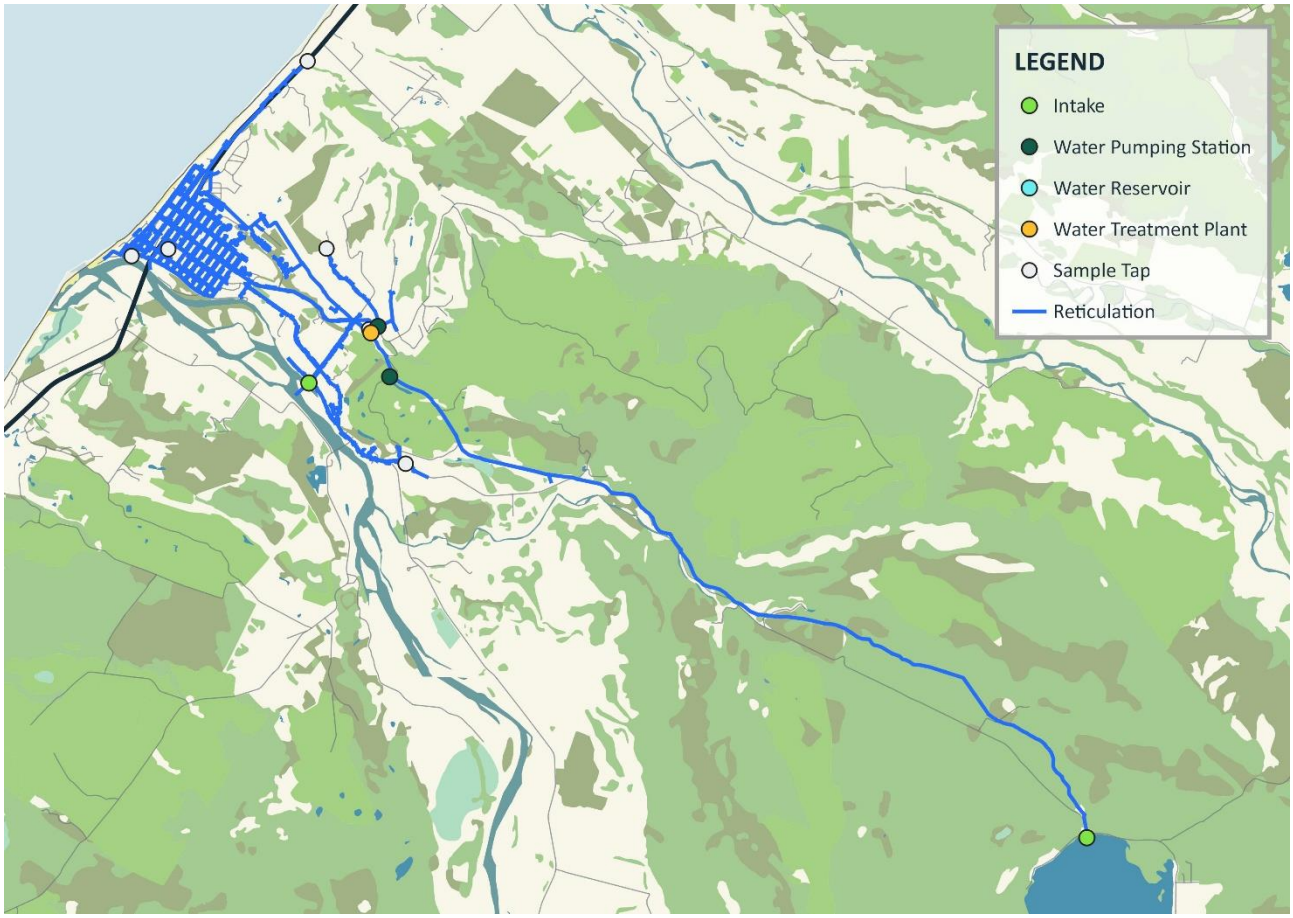

Figure 3-1: Hokitika Drinking Water Supply Map.

3.2. Scheme Summary

A summary of the Hokitika Drinking Water Supply is provided below in Table 3-1.

Table 3-1: Summary of Hokitika Drinking Water Supply.

Description		Quantity
Estimated Population Served		3,447
Scheme Coverage	Residential Charges	1,682
	Commercial Charges	234
System Components	Bore/Intakes	2
	Treatment	1 Treatment Plant
	Treated Reservoirs	12 – Total Capacity 9,464 m^3
	Pump Stations	3
	Piped Mains	71.99 km
History – Original Scheme Install Date		1970
Value (2024 Valuation)	Optimised Replacement Cost	$52,328,002
	Depreciated Replacement Cost	$29,468,127
Financial (FY 23/24)	Operator cost per connection	$443.90
Demand	Total Annual Volume	3,171,388 m^3/year
	Average daily	8713m^3/day
	Peak Daily	157l/s
	Minimum Daily	54l/s
	Average daily per connection	1,675 L/day
Source Type		Lake and River
Type of Supply		Large
Average System Pressure		482 kPa

3.3. Key Issues

The Hokitika Supply's key issues have been identified and are detailed below in Table 3-2. A list of the district wide water supply issues is located in Section 3.1 of the Three Waters AMP 2025.

Table 3-2: Hokitika Supply Key Issues.

Key Issue	Response
Proposed / future developments not being modelled for system capacity	Outsource to a specialist development engineer

3.4. System Capacity

The capacity of the Hokitika Supply is detailed below in Table 3-3. This has been identified as a key issue for this scheme as large proposed / future developments have not been modelled to ensure the system has sufficient capacity.

Table 3-3: Hokitika Supply System Capacity.

	Flow Rate (m^3/hr)	Daily Volume (m^3/day)
Treatment Capacity	504	11,091
Consented Take	504	12,100*
Peak Demand	565	8,713

** Combined total take between the Lake Kaniere Source and the Hokitika River Source.*

3.5. Resource Consents

The resource consents related to this scheme are detailed below in Table 3-4.

Table 3-4: Hokitika Supply Resource Consents.

Consent	Description	Location	Granted Date	Expiry Date	Consented Flow
RC11033	To take water from Lake Kaniere for the purposes of a community water supply for Hokitika.	Lake Kaniere	29/09/2011	29/09/2046	140 L/s or max 12,100 m^3/day
RC11031	To discharge reservoir overflow containing contaminants (residual chlorine) to unnamed creek, Hokitika.	Hokitika	07/04/2011	16/09/2046	-
RC2015-0077-01	To disturb bed of Hokitika River to install intake structure to maintain diversion channel.	Hokitika River	15/07/2015	15/07/2050	-
RC2015-0077-02	To divert water in Hokitika River to undertake construction works and maintain flows over intake structure.				140 L/s or max 12,100 m^3/day when combined with RC11033
RC2015-0077-03	To take surface water from the Hokitika River for community water supply.				
RC03076/1	To discharge water from the town supply piping to land, in circumstances where it may enter water	Lake Kaniere Road	06/05/2003	06/05/2038	-
RC03076/2	To disturb the bed of McKay's Creek for the purpose of water supply upgrade.				-

3.6. Water Quality

3.6.1. Sources

Due to this supply being classed as large, the supply has to comply with L3 rules of the DWQARs. One of these rules is continuous monitoring of conductivity in the source water. The Franz Josef water supply currently does not comply with this rule. A conductivity meter has been installed in December 2024 to meet this part of compliance.

3.6.2. Treatment

No compliance transgressions at the water treatment plant for the 23/24 year.

3.6.3. Reticulation

There were no transgressions within the reticulation or “boil water” notices issued in the 23/24 year.

3.7. Scheme Assets

A summary of the material, diameters and ages of mains pipes within the Hokitika Supply are shown below in Figure 3-2, Figure 3-3 and Figure 3-4.

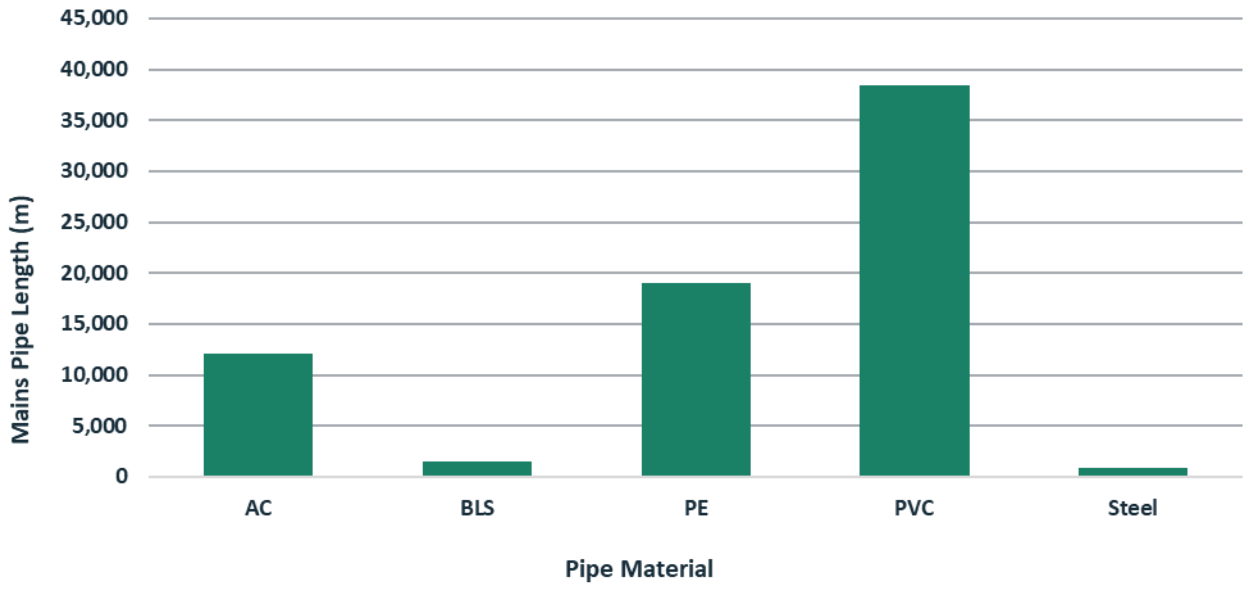

Figure 3-2: Hokitika Supply Mains Pipe Material.

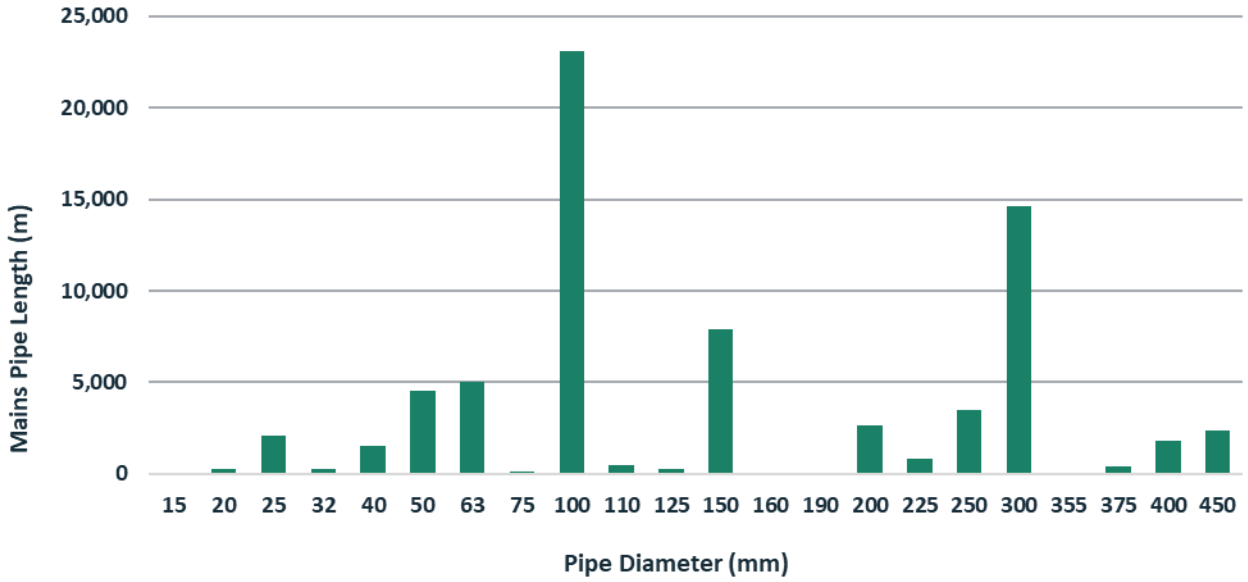

Figure 3-3: Hokitika Supply Mains Pipe Diameter.

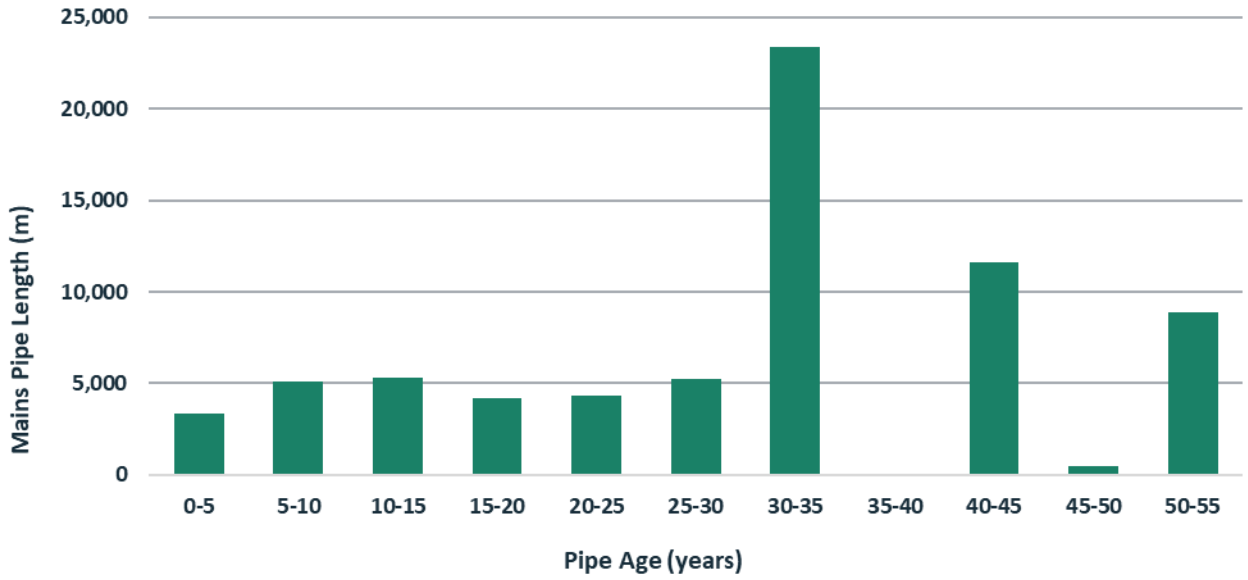

Figure 3-4: Hokitika Supply Mains Pipe Age.

3.8. Operational Management

The operation and maintenance of the supply is part of the Westland District Utilities Maintenance Contract (22-23-03). The current contract was awarded to Westroads Ltd in August 2022. The term of the contract is 5 years.

3.9. Photos of Main Assets

Figure 3-5: River Intake Pumps.

Figure 3-6: Treatment Plant.

Figure 3-7: Membrane Skid.

Figure 3-8: Reservoir at Treatment Plant.

3.10. Risk Assessment

A risk assessment has been undertaken for the Hokitika Scheme. No unacceptable risks have been identified.

3.11. Asset Valuation Details

The total replacement value of the assets within the Hokitika scheme was $52,328,002 as valued at 30 June 2024. A breakdown of the valuation is provided below in Table 3-5.

Table 3-5: Hokitika Scheme Valuation Breakdown.

Asset Class	Asset sub-class	Optimised Replacement Value	Depreciated Replacement Value
Mechanical Plant and Equipment		$15,735,722	$6,728,528
Reticulation	Mains Pipe	$31,781,900	$20,375,151
	Service Lateral	$2,782,869	$1,647,100
	Hydrants & Valves	$2,027,511	$717,348
TOTAL		**$52,328,002**	**$29,468,127**

3.12. Critical Assets

The criticality rating of the pipeline assets for the Hokitika Supply is provided below in Table 3-6. The intake pipelines and pipes over ø300mm in diameter.

Table 3-6: Mains Pipelines Critical Assets.

Criticality Level		Length (m)	
1	Very High	19,190	26.7%
2	High	37,137	51.6%
3	Medium	1,362	1.9%
4	Low	12,588	17.5%
5	Very Low	6,14	0.9%
	Unknown	1,093	1.5%

It is noted that most frequent unplanned pipe repairs are generally on aged AC pipes (e.g. rider mains and service laterals). Where major critical AC pipes have been identified, these have been prioritised for renewal.

3.13. Asset Condition

The condition rating of the assets is currently age based and not a physical site assessment. The condition rating of the pipeline assets for the Hokitika Supply is provided below in Table 3-7.

Table 3-7: Mains Pipes Condition Rating.

Condition Rating		Length (m)	
1	Excellent	11,241	16.6%
2	Good	44,915	62.4%
3	Average	5,745	8%
4	Poor	7,003	9.7%
5	Very Poor	3,082	4.3%

While there is a high proportion of good condition pipework in Hokitika, there is also a significant proportion of pipework that is aged. Some of these require urgent renewal. The varying pressure zones in the network place greater risk where high pressures exist.

3.14. Funding Programme

The 9-year financial programme for Hokitika Water Supply is divided into the following categories:

- **Operations** – includes operational and maintenance costs,
- **Renewals** – replacement of assets on a 'like for like' basis,
- **Levels of Service (LOS)** – new assets to increase the level of service,
- **Growth** – new assets to meet additional demand.

The financial programme presented should be viewed noting that:

- **Allowance for CPI** – Consumer price index adjustments 'inflation' has not been included; and
- **All data is held in IBIS** – the database which Council conducts the majority of its financial rates storage and reporting.

The funding programme for Hokitika Water Supply is provided below in Table 3-8.

Table 3-8: Hokitika Water Supply Funding Programme.

	Operations	Renewals	LOS	Growth
Year 1	$799,300	$610,000		
Year 2	$834,900	$1,400,000		
Year 3	$845,500	$1,080,000		
Year 4	$845,500	$1,150,100	$60,000	
Year 5	$895,500	$1,280,100	$30,000	
Year 6	$895,500	$250,000		
Year 7	$895,500	$1,200,000		
Year 8	$895,500	$250,000	$200,000	
Year 9	$895,500		$150,000	
TOTAL	**$7,802,700**	**$7,220,200**	**$440,000**	**$0**

The projects included in the LTP for the Hokitika Water Supply are listed below in Table 3-9.

Table 3-9: Hokitika Water Supply Projects.

Project Name	Project Description	Criticality	Funding	Y1	Y2	Y3	Y4-9	Total
Blue Spur Chlorination Building Upgrade	Renewal of Cl2 gas storage area to meet regulations and compliance	High	Renewal	$500,000			$0	**$500,000**
Reconfigure to stop Cl2 short cutting	Options report.	Low	LOS				$180,000	**$180,000**
SCADA System Replacement	Current units are being phased out and need to be replaced. Share in one-off costs and implementation.	High	Renewal	$55,000			$0	**$55,000**
Hokitika Main Feed Line Replacement	Replacement of water pipeline from Blue Spur Reservoirs to Town Belt East.	High	Renewal				$2,220,200	**$2,220,200**
Reticulation Upgrades	Replacement of AC lines, old laterals, valves & fire hydrants.	Medium	Renewal				$500,000	**$500,000**
Kaniere Booster Pump for FH's	Options report for low pressure issues.	Low	LOS				$130,000	**$130,000**
Options Report and Investigations for Reservoirs	Options report for replacement of reservoirs (Res 1, 2, 3 & 4).	Medium	Renewal				$40,000	**$40,000**
Replacement of Membranes	Replacement of membrane units (Skid A & B).	High	Renewal		$1,400,000		$0	**$1,400,000**
	Replacement of membrane units (Skid C & D).	High	Renewal			$1,080,000	$0	**$1,080,000**
Treated Water Reservoirs	Replacement of four concrete reservoirs at Blue Spur.	Medium	Renewal				$1,200,000	**$1,200,000**
Replacement WTP Components	Replacement of chlorination and UV units (Depolox Units -5C & pH).	High	Renewal	$55,000			$0	**$55,000**
Water Meter Replacement	Replacement of 94 meters.	Medium	Renewal				$170,000	**$170,000**
Whitcombe Terrace Booster	Options report for low pressure issues.	Low	LOS				$130,000	**$130,000**

4. Ross Drinking Water Supply

4.1. Overview and History

The Ross water supply scheme services the Ross township located approximately 25km south of Hokitika. The supply was established in 1984 and supplies approximately 291 people.

The supply is sourced from Jones Creek via an upgraded weir structure which was constructed in 2022 after the Minehans Creek intake was damaged in 2017. Prior to this, the treatment plant was supplied from Minehans and Jones Creek, with Minehans being the primary source.

Water is treated at the plant through membrane filtration, UV disinfection and chlorination. Treated water is then gravity fed to the township of Ross. The plant can be managed remotely to enable the plant operators and Council's 3 Waters Team to view the current operation of the plant. The telemetry function also sends alarms to the on-call plant operator in the event of a fault within the plant.

Various grab samples are taken from the source, treatment and within the reticulation to meet the DWQARs.

Figure 4-1: Ross Drinking Water Supply Map.

4.2. Scheme Summary

A summary of the Ross Drinking Water Supply is provided below in Table 4-1.

Table 4-1: Summary of Ross Drinking Water Supply.

Description		Quantity
Estimated Population Served		291
Scheme Coverage	Residential Charges	136
	Commercial Charges	13
System Components	Bore/Intakes	1
	Treatment	1 Treatment Plant
	Treated Reservoirs	1 – Total Capacity 270 m^3
	Pump Stations	0
	Piped Mains	9.11 km
History – Original Scheme Install Date		1984
Value (2024 Valuation)	Optimised Replacement Cost	$4,344,754
	Depreciated Replacement Cost	$2,596,933
Financial (FY 23/24)	Operator cost per connection	$1,133.60
Demand	Total Annual Volume	65,112 m^3/year
	Average daily	179m^3/day
	Peak Daily	24m^3/hr
	Minimum Daily	0m^3/hr
	Average daily per connection	1,197 L/day
Source Type		Creek
Type of Supply		Medium
Average System Pressure		350 kPa

4.3. Key Issues

The Ross Supply's key issues have been identified and are detailed below in Table 4-2. A list of the district wide water supply issues is located in Section 3.1 of the Three Waters AMP 2025.

Table 4-2: Ross Supply Key Issues.

Key Issue	Response
Plant efficiency in high rain events	Update SOP's and operator training to turn off plant in such events if reservoir levels allow.

4.4. System Capacity

The capacity of the Arahura Supply is detailed below in Table 4-3. The water supply infrastructure provides sufficient capacity for the current level of development.

Table 4-3: Ross Supply System Capacity.

	Flow Rate (m^3/hr)	Daily Volume (m^3/day)
Treatment Capacity	15.3	367
Consented Take	21.6	-
Peak Demand	24	179

4.5. Resource Consents

The resource consents related to this scheme are detailed below in Table 4-4.

Table 4-4: Ross Supply Resource Consents.

Consent	Description	Location	Granted Date	Expiry Date	Consented Flow
RC00359/1	Water permit to take surface water from Jones Creek for the Ross township water supply.	Jones Creek, Ross	30/01/2001	30/01/2036	6 L/s
RC00359/2	Land use consent to install a V-notch weir in the bed of Jones Creek.				-

4.6. Water Quality

4.6.1. Source

The Ross water supply source complied with all Rules relating to this supply in 23/24.

4.6.2. Treatment

The Ross WTP was non-complaint with section 4.7.3, Rules T2.10 to T2.17 for the 23/24 year. These rules relate to UV disinfection compliance in the DWQARs. The plant didn't comply due to the UV disinfection not being installed until March 2024. All the processes are in place for full compliance next financial year.

4.6.3. Reticulation

There was some minor non-compliance within the reticulation during the 23/24 year. They related to the Free Available Chlorine (FAC) readings being below the threshold for compliance against 4.8, Rule D2.5.

4.7. Scheme Assets

A summary of the material, diameters and ages of mains pipes within the Ross Supply are shown below in Figure 4-2, Figure 4-3 and Figure 4-4.

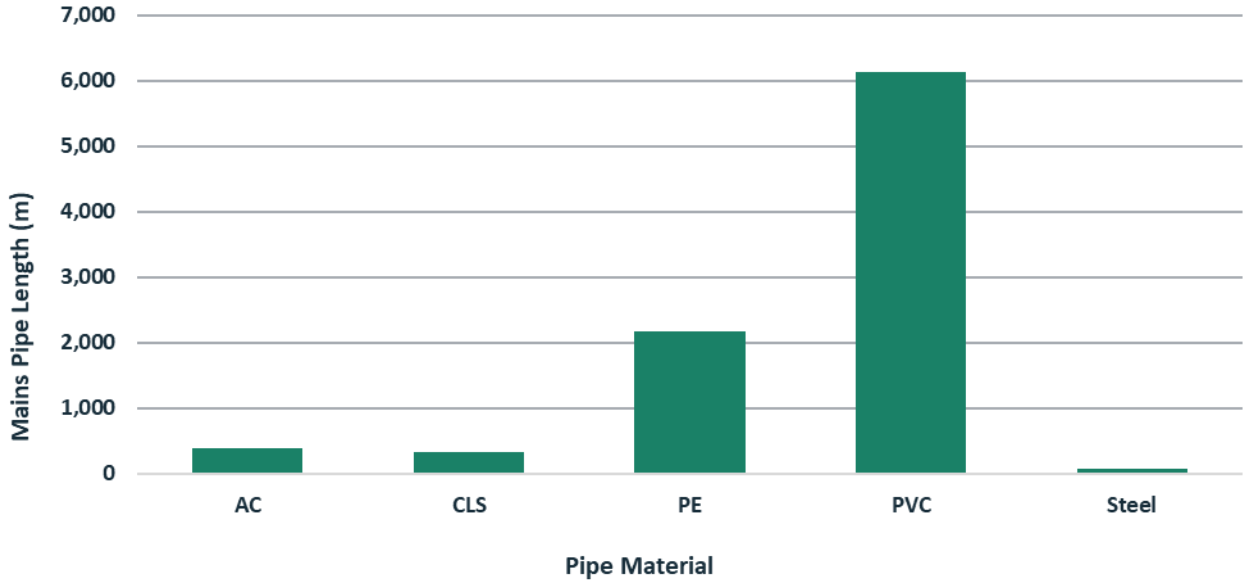

Figure 4-2: Ross Supply Mains Pipe Material.

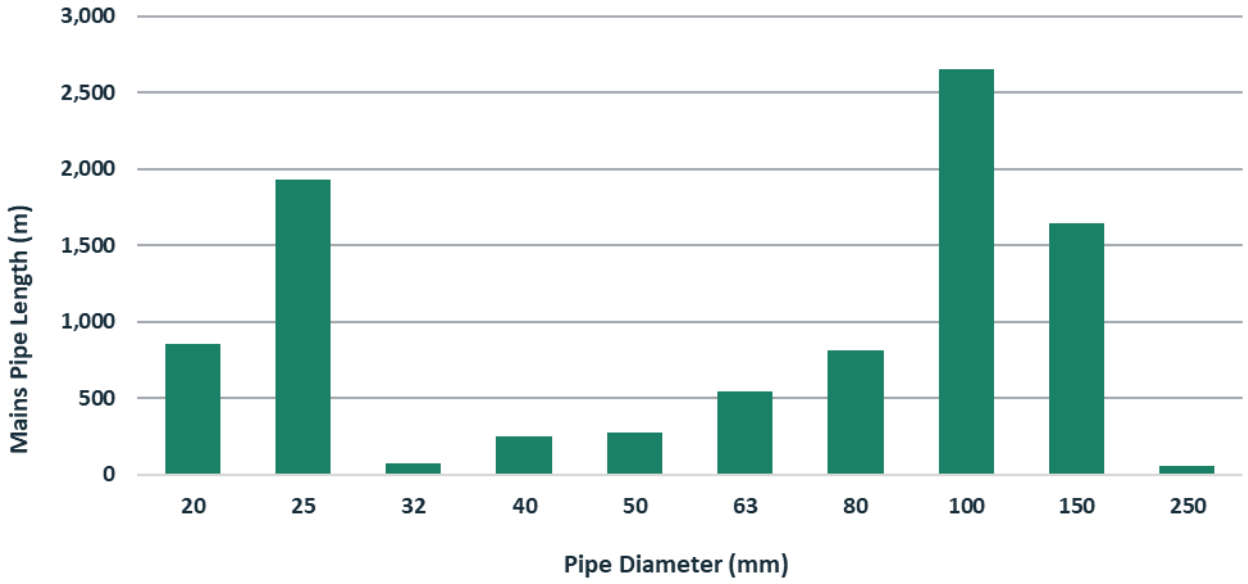

Figure 4-3: Ross Supply Mains Pipe Diameter.

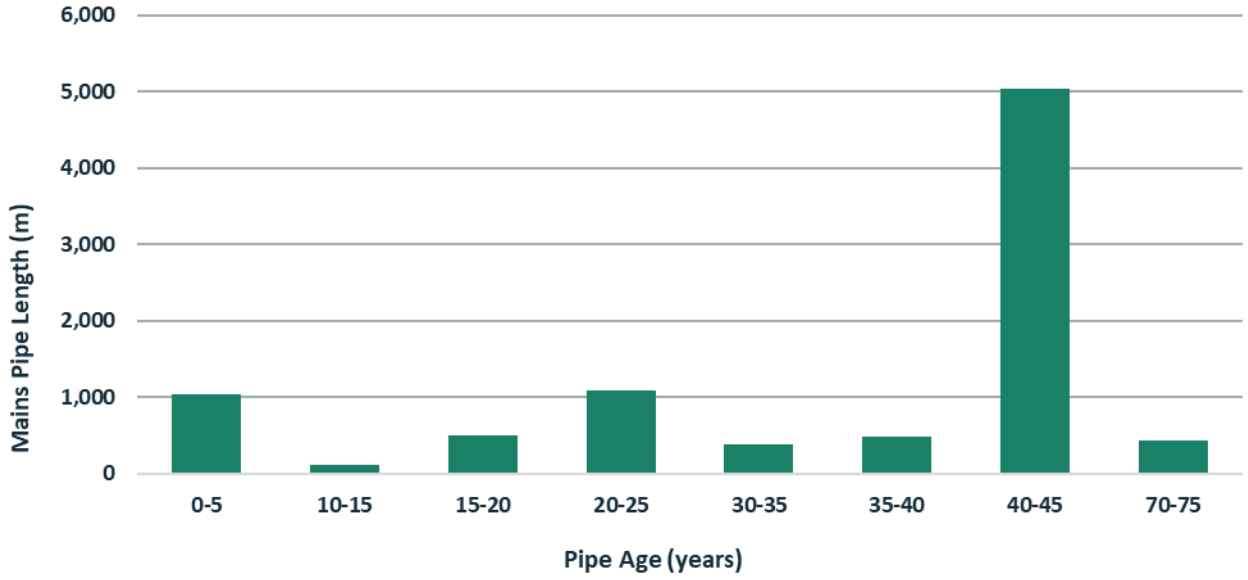

Figure 4-4: Ross Supply Mains Pipe Age.

4.8. Operational Management

The operation and maintenance of the supply is part of the Westland District Utilities Maintenance Contract (22-23-03). The current contract was awarded to Westroads Ltd in August 2022. The term of the contract is 5 years.

4.9. Photos of Main Assets

Figure 4-5: Intake Weir.

Figure 4-6: Treatment Plant.

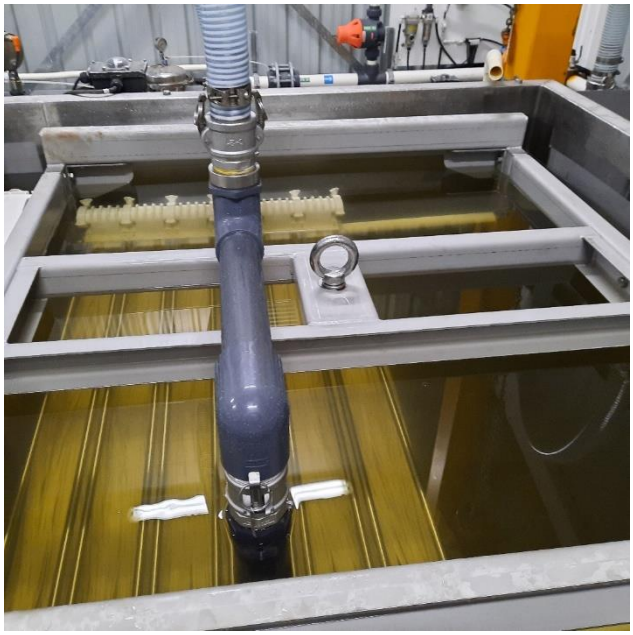

Figure 4-7: Membrane Tank.

4.10. Risk Assessment

A risk assessment has been undertaken for the Ross Scheme. No unacceptable risks have been identified.

4.11. Asset Valuation Details

The total replacement value of the assets within the Ross scheme was $4,344,754 as valued at 30 June 2024. A breakdown of the valuation is provided below in Table 4-5.

Table 4-5: Ross Scheme Valuation Breakdown.

Asset Class	Asset sub-class	Optimised Replacement Value	Depreciated Replacement Value
Mechanical Plant and Equipment		$1,748,915	$998,980
Reticulation	Mains Pipe	$2,107,248	$1,340,749
	Service Lateral	$217, 232	$121,929
	Hydrants & Valves	$271,358	$135,275
TOTAL		**$4,344,754**	**$2,596,933**

4.12. Critical Assets

The criticality rating of the pipeline assets for the Ross Supply is provided below in Table 4-6.

Table 4-6: Mains Pipe Critical Assets.

Criticality Level		Length	
1	Very High	1,059.62	11.6%
2	High	4,071	44.7%
3	Medium	345.54	3.8%
4	Low	3,621.46	39.8%
5	Very Low	10.65	0.1%
	Unknown	-	-

4.13. Asset Condition

The condition rating of the assets is currently age based and not a physical site assessment. The condition rating of the pipeline assets for the Ross Supply is provided below in Table 4-7.

Table 4-7: Mains Pipe Condition Rating.

Condition Rating		Length (m)	
1	Excellent	1,042.25	11.4%
2	Good	7,252.84	79.2%
3	Average	318.46	3.5%
4	Poor	67.84	0.7%
5	Very Poor	426.88	4.7%

4.14. Funding Programme

The 9-year financial programme for Ross Water Supply is divided into the following categories:

- **Operations** – includes operational and maintenance costs,
- **Renewals** – replacement of assets on a 'like for like' basis,
- **Levels of Service (LOS)** – new assets to increase the level of service,
- **Growth** – new assets to meet additional demand.

The financial programme presented should be viewed noting that:

- **Allowance for CPI** – Consumer price index adjustments 'inflation' has not been included; and
- **All data is held in IBIS** – the database which Council conducts the majority of its financial rates storage and reporting.

The funding programme for Ross Water Supply is provided below in Table 4-8.

Table 4-8: Ross Water Supply Funding Programme.

	Operations	Renewals	LOS	Growth
Year 1	$110,250	$115,000		
Year 2	$110,250			
Year 3	$110,250			
Year 4	$110,250	$10,000	$30,000	
Year 5	$110,250			
Year 6	$110,250			
Year 7	$110,250			
Year 8	$110,250	$600,000		
Year 9	$110,250	$315,000		
TOTAL	**$992,250**	**$1,040,000**	**$30,000**	**$0**

The projects included in the LTP for the Ross Water Supply are listed below in Table 4-9.

Table 4-9: Ross Water Supply Projects.

Project Name	Project Description	Criticality	Funding	Y1	Y2	Y3	Y4-9	Total
Options Report and Investigation for Reservoirs	Options report for replacement of the treated water reservoir.	Medium	Renewal				$10,000	**$10,000**
Replacement of Membranes	Replacement of membrane units, last replaced in 2022.	High	Renewal				$600,000	**$600,000**
Replacement of WTP components	Replacement of chlorination and UV units (Depolox Units -5C & pH).	High	Renewal	$60,000			$0	**$60,000**
Reticulation Upgrades	Replacement of mains, values and fire hydrants.	Medium	Renewal				$315,000	**$315,000**
WTP SCADA system Replacement	Current units are being phased out and need to be replaced. Share in one-off costs and implementation.	High	Renewal	$55,000			$0	**$55,000**
WTP Site	Installation of fencing at the site.	Low	LOS				$30,000	**$30,000**

5. Harihari Drinking Water Supply

5.1. Overview and History

The Harihari water supply services the township of Harihari approximately 70km south of Hokitika. The supply was established in 1979 with an estimated population of 348 people.

The water supply is drawn from a 27m deep bore on Robertson Road. The existing water treatment plant was commissioned in 2009. Water is treated through cartridge filtration, UV disinfection and pH correction (using caustic soda). Chlorination was added to the supply in 2023 to ensure compliance with DWQARs. Treated water is stored in a 400m^3 reservoir located adjacent to the treatment plant and is distributed to the community via pump.

The plant can be managed remotely to enable the plant operators and Council's 3 Waters Team to view the current operation of the plant. The telemetry function also sends alarms to the on-call plant operator in the event of a fault within the plant. Various grab samples are taken from the source, treatment and within the reticulation to meet the DWQARs.

A number of properties in Harihari are not connected to the treated township water supply but receive a raw water supply from the Harold Creek water source. There are discussions underway to divest Harold Creek raw water supply scheme with the concerned property owners.

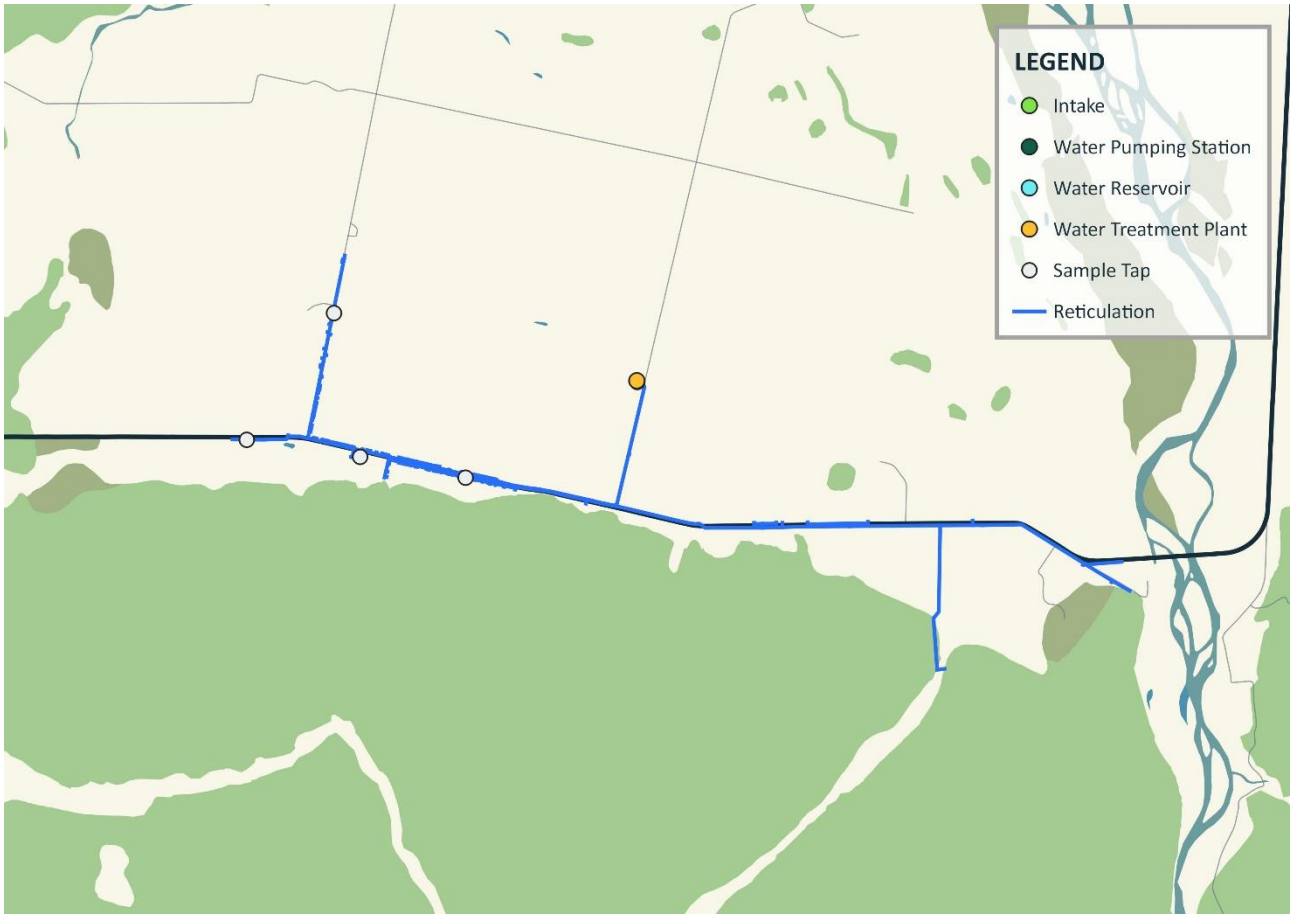

Figure 5-1: Harihari Drinking Water Supply Map.

5.2. Scheme Summary

A summary of the Harihari Drinking Water Supply is provided below in Table 5-1.

Table 5-1: Summary of Harihari Drinking Water Supply.

Description		Quantity
Estimated Population Served		348
Scheme Coverage	Residential Charges	103
	Commercial Charges	17
System Components	Bore/Intakes	1
	Treatment	1 Treatment Plant
	Treated Reservoirs	1 – Total Capacity 400 m^3
	Pump Stations	0
	Piped Mains	8.52 km
History – Original Scheme Install Date		1979
Value (2024 Valuation)	Optimised Replacement Cost	$4,798,083
	Depreciated Replacement Cost	$3,119,774
Financial (FY 23/24)	Operator cost per connection	$1,478.64
Demand	Total Annual Volume	94,904 m^3/year
	Average daily	261m^3/day
	Peak Daily	-
	Minimum Daily	-
	Average daily per connection	1,166 L/day
Source Type		Groundwater Bore
Type of Supply		Medium
Average System Pressure		415 kPa

5.3. Key Issues

The Harihari Supply's key issues have been identified and are detailed below in Table 5-2. A list of the district wide water supply issues is located in Section 3.1 of the Three Waters AMP 2025.

Table 5-2: Harihari Supply Key Issues.

Key Issue	Response
Reticulation outside of township area	Possible unknown connections within reticulation which require investigation.
Harold Creek	Untreated supply with discussions underway to divest the asset.

5.4. System Capacity

The capacity of the Arahura Supply is detailed below in Table 5-3. The water supply infrastructure provides sufficient capacity for the current level of development.

Table 5-3: Harihari Supply System Capacity.

	Flow Rate (m^3/hr)	Daily Volume (m^3/day)
Treatment Capacity	-	660
Consented Take	90	-
Peak Demand	-	261

5.5. Resource Consents

The resource consents related to this scheme are detailed below in Table 5-4.

Table 5-4: Harihari Supply Resource Consents.

Consent	Description	Location	Granted Date	Expiry Date	Consented Flow
RC06273/1	To take groundwater for the purposes of a community water supply for Harihari.	Harihari	22/03/2007	22/03/2042	25 L/s
RC01167/1	To take surface water from an un-named creek for the purpose of household supply (raw untreated Harold Creek scheme)	Harihari	21/08/2001	21/08/2036	2.5 L/s

5.6. Water Quality

5.6.1. Source

The Harihari water supply source complied with all Rules relating to this supply in 23/24.

5.6.2. Treatment

The Harihari WTP was non-compliant in the 23/24 year with various rules associated with chlorination of the water treatment plant in the DWQAR's. This was due to the supply not being chlorinated until late 2023. The processes are now in place for full compliance in the following years.

Under the DWQARs relating to this supply, a 5micron filter must be installed pre-UV. Currently Harihar does not comply with this requirement. Filters have been purchased in the 24/25year with a proposed budget in the 25/26 year to complete installation.

Due to a UV failure in September 2023, a precautionary boil water notice was issued until the UV disinfection system was operational again. No E-coli transgressions were reported within this period.

5.6.3. Reticulation

The Harihari water supply was non-compliant in the 23/24 year with various rules associated with chlorination of the water supply in DWQAR's. This was due to the supply not being chlorinated until late 2023. The processes are now in place for full compliance in the following years.

5.7. Scheme Assets

A summary of the material, diameters and ages of mains pipes within the Harihari Supply are shown below in Figure 5-2, Figure 5-3 and Figure 5-4.

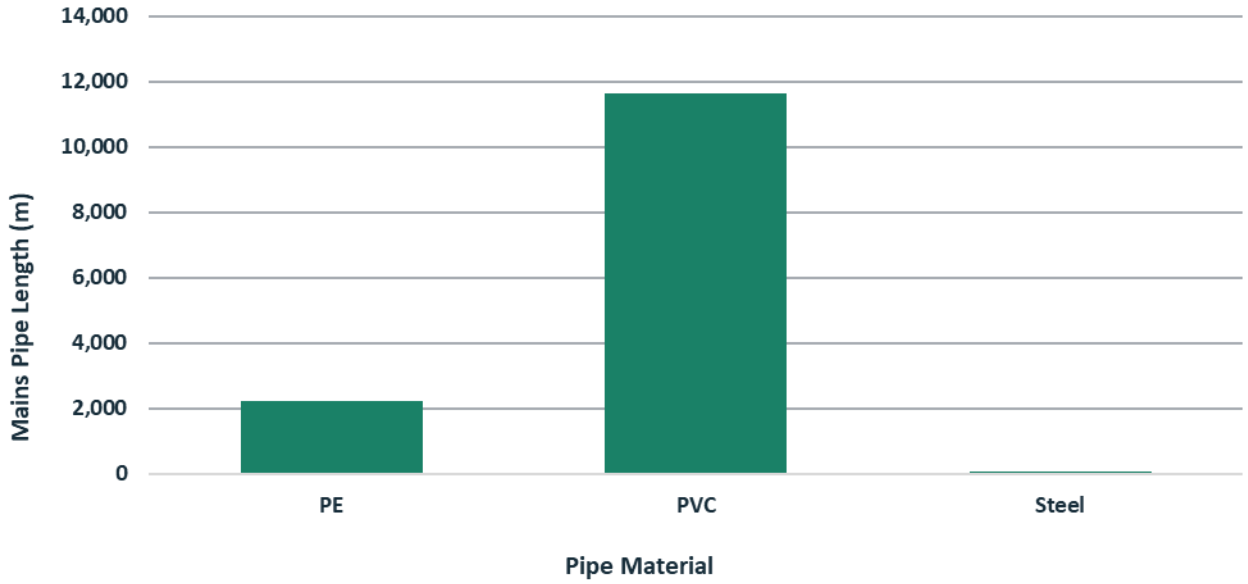

Figure 5-2: Harihari Supply Mains Pipe Material.

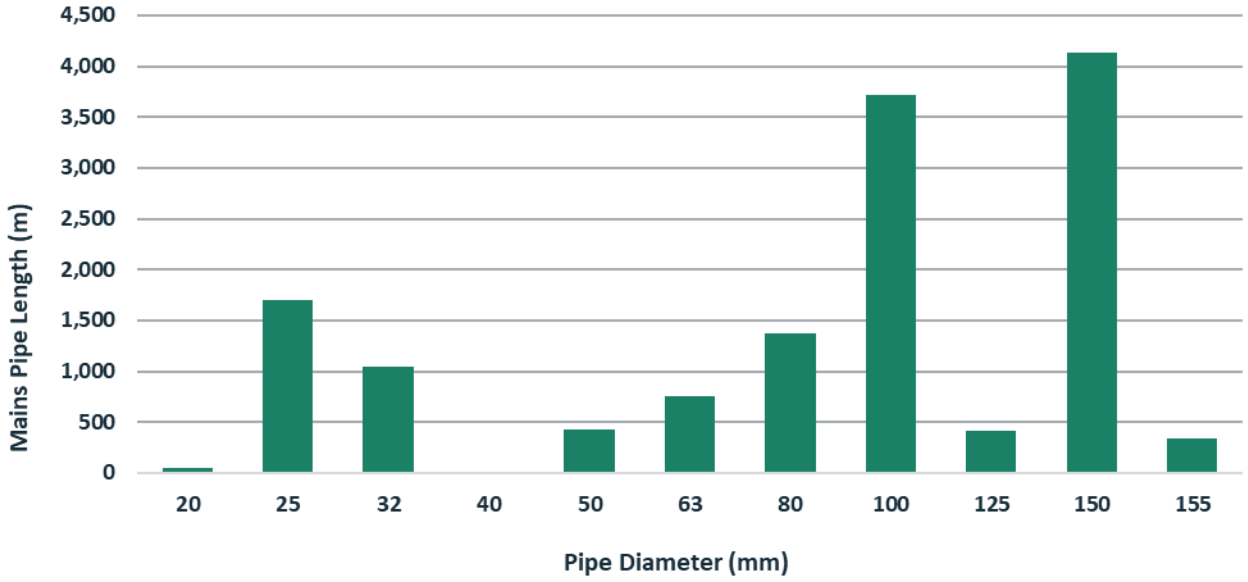

Figure 5-3: Harihari Supply Mains Pipe Diameter.

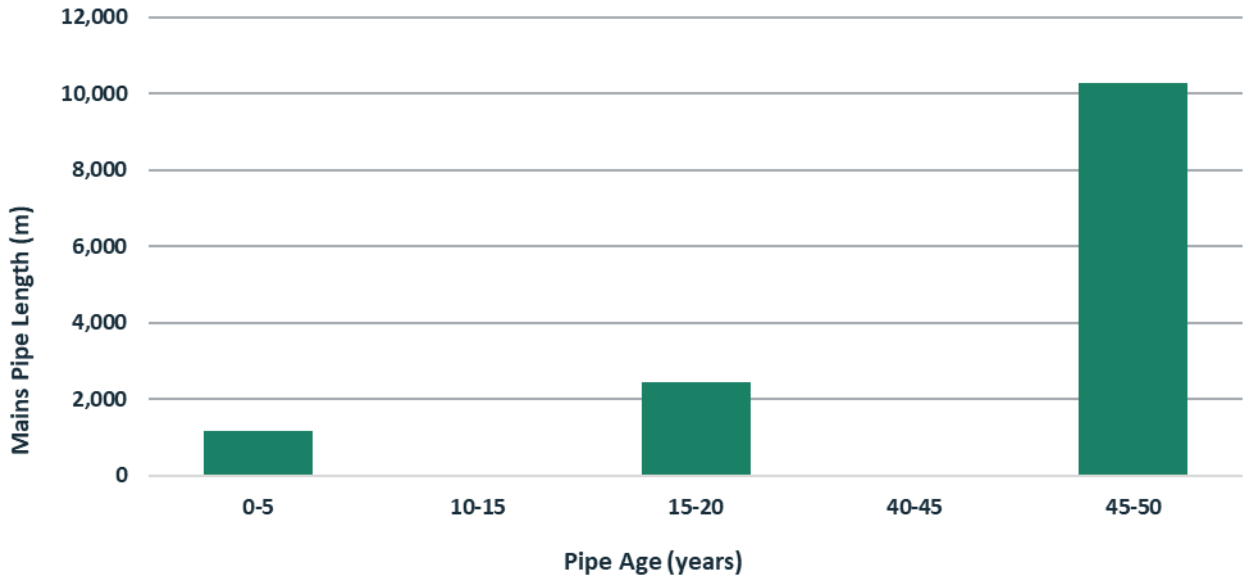

Figure 5-4: Harihari Supply Mains Pipe Age.

5.8. Operational Management

The operation and maintenance of the supply is part of the Westland District Utilities Maintenance Contract (22-23-03). The current contract was awarded to Westroads Ltd in August 2022. The term of the contract is 5 years.

5.9. Photos of Main Assets

Figure 5-5: Treatment Plant.

Figure 5-6: Reservoir.

5.10. Risk Assessment

A risk assessment has been undertaken for the Harihari Scheme. No unacceptable risks have been identified.

5.11. Asset Valuation Details

The total replacement value of the assets within the Harihari scheme was $4,798,083 as valued at 30 June 2024. A breakdown of the valuation is provided below in Table 5-5.

Table 5-5: Harihari Scheme Valuation Breakdown.

Asset Class	Asset sub-class	Optimised Replacement Value	Depreciated Replacement Value
Mechanical Plant and Equipment		$845,978	$580,966
Reticulation	Mains Pipe	$3,629,388	$2,372,543
	Service Lateral	$139,178	$85,107
	Hydrants & Valves etc.	$183,539	$81,158
TOTAL		**$4,798,083**	**$3,119,774**

5.12. Critical Assets

The criticality rating of the pipeline assets for the Harihari Supply is provided below in Table 5-6.

Table 5-6: Mains Pipe Criticality Rating.

Criticality Level		Length (m)	
1	Very High	-	-
2	High	6,214	44.3%
3	Medium	-	-
4	Low	2,298	16.4%
5	Very Low	5,497	39.2%
	Unknown	-	-

5.13. Asset Condition

The condition rating of the assets is currently age based and not a physical site assessment. The condition rating of the pipeline assets for the Harihari Supply is provided below in Table 5-7.

Table 5-7: Mains Pipe Condition Rating.

Condition Rating		Length (m)	
1	Excellent	1,177	6.9%
2	Good	7,312	42.8%
3	Average	4,141	24.2%
4	Poor	1,380	8.1%
5	Very Poor	3,082	18.0%

5.14. Funding Programme

The 9-year financial programme for Harihari Water Supply is divided into the following categories:

- **Operations** – includes operational and maintenance costs,
- **Renewals** – replacement of assets on a 'like for like' basis,
- **Levels of Service (LOS)** – new assets to increase the level of service,
- **Growth** – new assets to meet additional demand.

The financial programme presented should be viewed noting that:

- **Allowance for CPI** – Consumer price index adjustments 'inflation' has not been included; and
- **All data is held in IBIS** – the database which Council conducts the majority of its financial rates storage and reporting.

The funding programme for Harihari Water Supply is provided below in Table 5-8.

Table 5-8: Harihari Water Supply Funding Programme.

	Operations	Renewals	LOS	Growth
Year 1	$120,100	$10,000		
Year 2	$127,100	$45,000		
Year 3	$127,100	$220,000		
Year 4	$127,100			
Year 5	$127,100		$20,000	
Year 6	$127,100			
Year 7	$127,100			
Year 8	$127,100			
Year 9	$127,100			
TOTAL	**$1,136,900**	**$275,000**	**$20,000**	**$0**

The projects included in the LTP for the Harihari Water Supply are listed below in Table 5-9.

Table 5-9: Harihari Water Supply Projects.

Project Name	Project Description	Criticality	Funding	Y1	Y2	Y3	Y4-9	Total
Reticulation Upgrades	Replace remainder of rider mains, small PVC lines, laterals, fire hydrants & valves.	Medium	Renewal			$220,000	$0	**$220,000**
WTP SCADA system Replacement	Current units are being phased out and need to be replaced. Share in one off costs and implementation.	High	Renewal	$10,000	$45,000		$0	**$55,000**
WTP Site	Installation of fencing at the site.	Low	LOS				$20,000	**$20,000**

6. Whataroa Drinking Water Supply

6.1. Overview and History

The Whataroa water supply services the Whataroa township and was established in 2004 with an estimated population of 405 people. In 2022 the bore source was capped off and a new bore supply (approximately 20m from the old supply) was commissioned.

The water treatment plant was commissioned in 2019 and was developed under the same contract as the Kumara Water Treatment Plant. Water is treated through granular media filtration, cartridge filtration and UV disinfection. Chlorination was added to the supply in 2023 to ensure compliance with DW standards.

The operation of the plant can be monitored remotely, and several online instruments are installed to monitor key treatment parameters including pressure, flow, turbidity, pH and UVT. Alarms are sent to the on-call plant operator in the event of a plant fault or parameter out of a set range.

Treated water is stored in six 30m³ plastic storage tanks located at the treatment plant site. These tanks were newly installed in 2019 and the pipework connecting the tanks has been configured to promote the circulation of water through the tanks and minimise potential stagnation. Water is then pumped into the reticulation network. Various grab samples are taken from the source, treatment and within the reticulation to meet the DWQARs.

Figure 6-1: Whataroa Drinking Water Supply Map.

6.2. Scheme Summary

A summary of the Whataroa Drinking Water Supply is provided below in Table 6-1.

Table 6-1: Summary of Whataroa Drinking Water Supply.

Description		Quantity
Estimated Population Served		405
Scheme Coverage	Residential Charges	48
	Commercial Charges	14
System Components	Bore/Intakes	1
	Treatment	1 Treatment Plant
	Treated Reservoirs	6 – Total Capacity 180 m^3
	Pump Stations	0
	Piped Mains	5.53 km
History – Original Scheme Install Date		2004
Value (2024 Valuation)	Optimised Replacement Cost	$2,118,946
	Depreciated Replacement Cost	$1,509,366
Financial (FY 23/24)	Operator cost per connection	$3,209.45
Demand	Total Annual Volume	32,513 m^3/year
	Average daily	89m^3/day
	Peak Daily	41.2m^3/hr
	Minimum Daily	0m^3/hr
	Average daily per connection	1,436 L/day
Source Type		Groundwater Bore
Type of Supply		Medium
Average System Pressure		415 kPa

6.3. Key Issues

The Whataroa Supply's key issues have been identified and are detailed below in Table 6-2. A list of the district wide water supply issues is located in Section 3.1 of the Three Waters AMP 2025.

Table 6-2: Whataroa Supply Key Issues.

Key Issue	Response
Reticulation outside of township area	Possible unknown connections within reticulation which require investigation.

6.4. System Capacity

The capacity of the Whataroa Supply is detailed below in Table 6-3. The water supply infrastructure provides sufficient capacity for the current level of development.

Table 6-3: Whataroa Supply System Capacity.

	Flow Rate (m^3/hr)	Daily Volume (m^3/day)
Treatment Capacity	11.5	-
Consented Take	54	-
Peak Demand	41.2*	89

**This reading may have been an anomaly, normally sits around 7.2 m^3/hr*

6.5. Resource Consents

The resource consents related to this scheme are detailed below in Table 6-4.

Table 6-4: Whataroa Supply Resource Consents.

Consent	Description	Location	Granted Date	Expiry Date	Consented Flow
RC03068/1	To take groundwater from a bore, Whataroa.	Whataroa	22/08/2003	22/08/2038	15 L/s

6.6. Water Quality

6.6.1. Source

The Whataroa water supply source complied with all Rules relating to this supply in 23/24.

6.6.2. Treatment

The Whataroa WTP was non-compliant in the 23/24 year with various rules associated with chlorination of the water treatment plant in the DWQAR's. This was due to the supply not being chlorinated until late 2023. The processes are now in place for full compliance in the following years.

6.6.3. Reticulation

The Whataroa water supply was non-compliant in the 23/24 year with various rules associated with chlorination of the water supply in DWQAR's. This was due to the supply not being chlorinated until late 2023. The processes are now in place for full compliance in the following years.

There were no "boil water" notices or "do not use" notices issued for the 23/24 year.

6.7. Scheme Assets

A summary of the material, diameters and ages of mains pipes within the Whataroa Supply are shown below in Figure 6-2, Figure 6-3 and Figure 6-4.

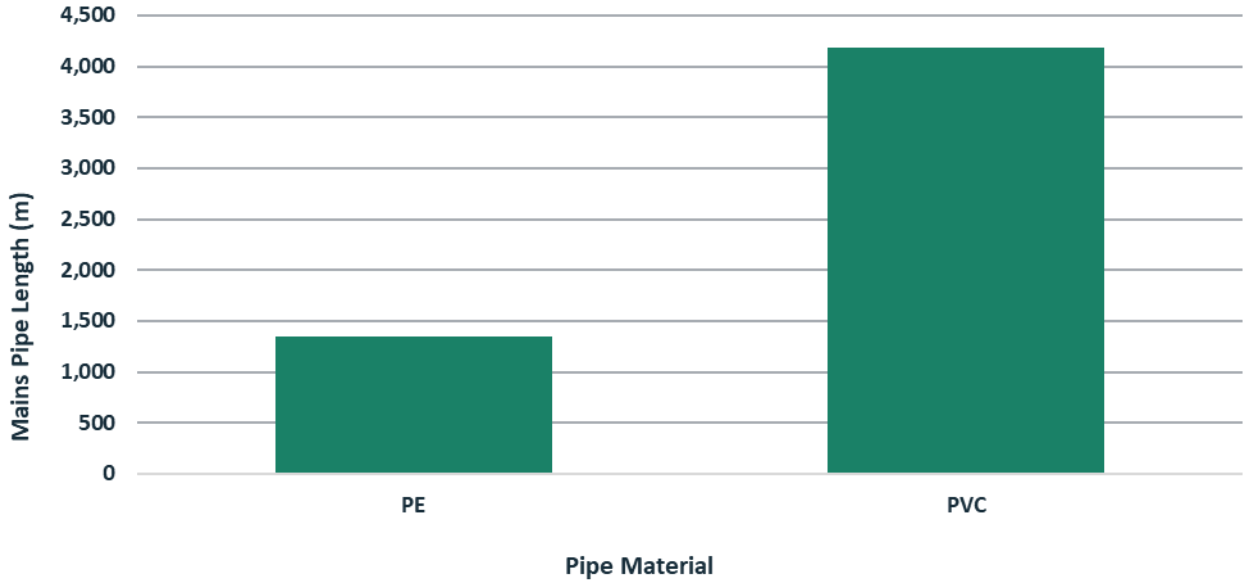

Figure 6-2: Whataroa Supply Mains Pipe Material.

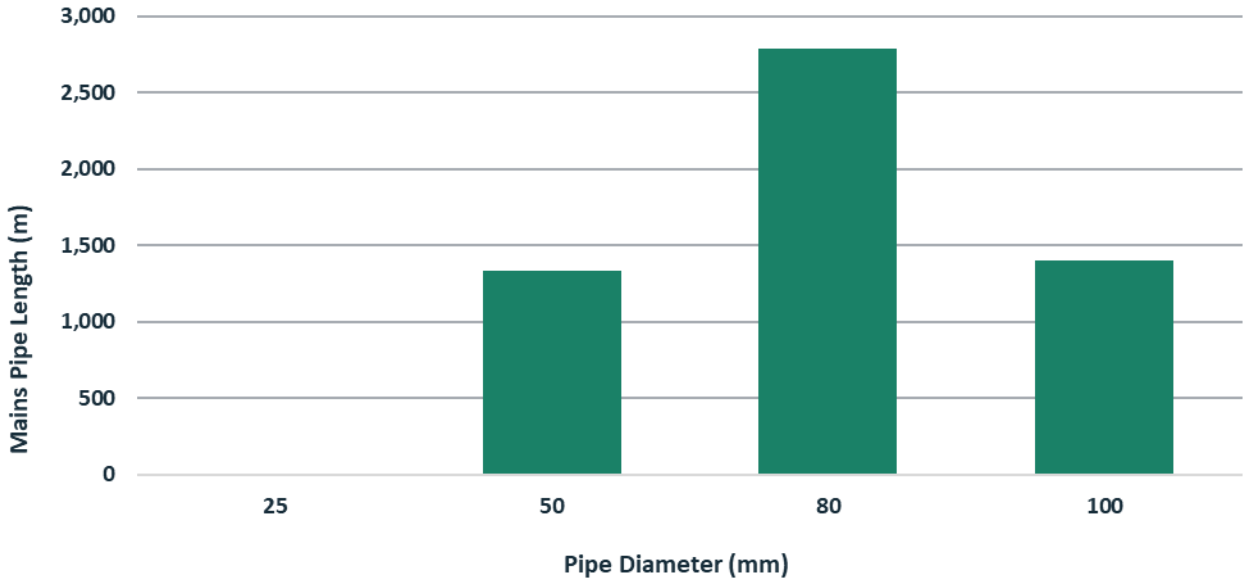

Figure 6-3: Whataroa Supply Mains Pipe Diameter.

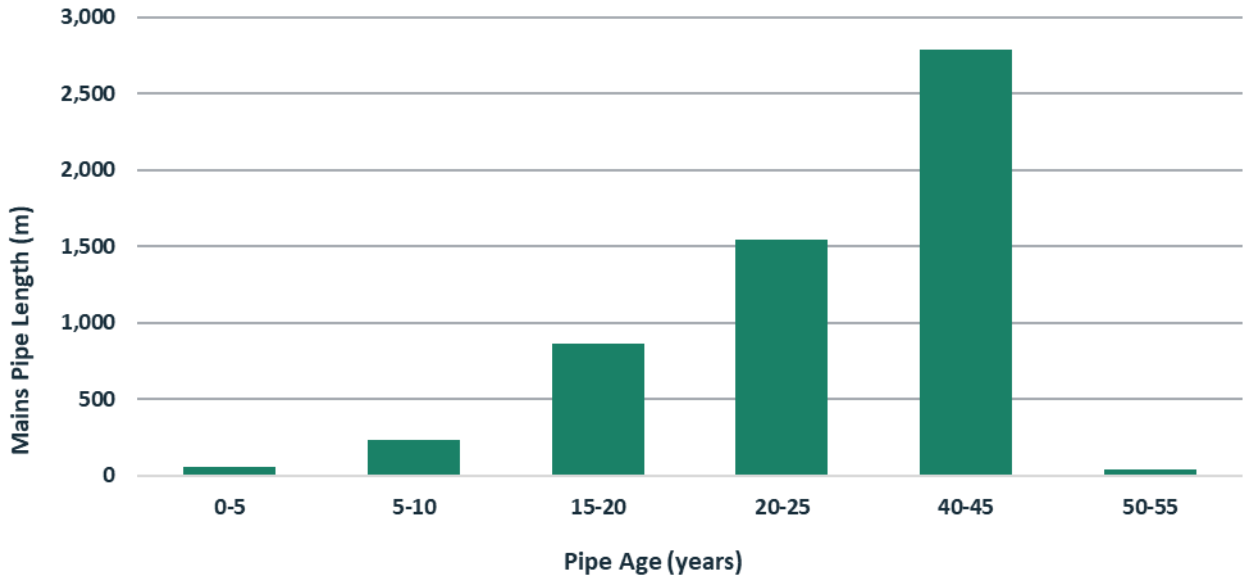

Figure 6-4: Whataroa Supply Mains Pipe Age.

6.8. Operational Management

The operation and maintenance of the supply is part of the Westland District Utilities Maintenance Contract (22-23-03). The current contract was awarded to Westroads Ltd in August 2022. The term of the contract is 5 years.

6.9. Photos of Main Assets

Figure 6-5: Treatment Plant.

Figure 6-6: Reticulation Pumps.

Figure 6-7: Reservoirs.

6.10. Risk Assessment

A risk assessment has been undertaken for the Whataroa Scheme. No unacceptable risks have been identified.

6.11. Asset Valuation Details

The total replacement value of the assets within the Whataroa scheme was $2,118,946 as valued at 30 June 2024. A breakdown of the valuation is provided below in Table 6-5.

Table 6-5: Whataroa Scheme Valuation Breakdown.

Asset Class	Asset sub-class	Optimised Replacement Value	Depreciated Replacement Value
Mechanical Plant and Equipment		$777,674	$604,572
Reticulation	Mains Pipe	$1,206,287	$817,312
	Service Lateral	$63,684	$47,805
	Hydrants & Valves	$71,301	$39,678
TOTAL		**$2,118,946**	**$1,509,366**

6.12. Critical Assets

The criticality rating of the pipeline assets for the Whataroa Supply is provided below in Table 6-6.

Table 6-6: Mains Pipe Criticality Rating.

Criticality Level		Length (m)	
1	Very High	-	-
2	High	1,405	25.4%
3	Medium	-	-
4	Low	4,119	74.5%
5	Very Low	2	0%
	Unknown	-	-

6.13. Asset Condition

The condition rating of the assets is currently age based and not a physical site assessment. The condition rating of the pipeline assets for the Whataroa Supply is provided below in Table 6-7.

Table 6-7: Mains Pipe Condition Rating.

Condition Rating		Length (m)	
1	Excellent	11	0.2%
2	Good	5,515	99.8%
3	Average	-	-
4	Poor	-	-
5	Very Poor	-	-

6.14. Funding Programme

The 9-year financial programme for Whataroa Water Supply is divided into the following categories:

- **Operations** – includes operational and maintenance costs,
- **Renewals** – replacement of assets on a 'like for like' basis,
- **Levels of Service (LOS)** – new assets to increase the level of service,
- **Growth** – new assets to meet additional demand.

The financial programme presented should be viewed noting that:

- **Allowance for CPI** – Consumer price index adjustments 'inflation' has not been included; and
- **All data is held in IBIS** – the database which Council conducts the majority of its financial rates storage and reporting.

The funding programme for Whataroa Water Supply is provided below in Table 6-8.

Table 6-8: Whataroa Water Supply Funding Programme.

	Operations	Renewals	LOS	Growth
Year 1	$122,800	$10,000		
Year 2	$122,800	$45,000		
Year 3	$122,800			
Year 4	$122,800			
Year 5	$122,800			
Year 6	$122,800			
Year 7	$122,800			
Year 8	$122,800			
Year 9	$122,800	$50,000		
TOTAL	**$1,105,200**	**$105,000**	**$0**	**$0**

The projects included in the LTP for the Whataroa Water Supply are listed below in Table 6-9.

Table 6-9: Whataroa Water Supply Projects.

Project Name	Project Description	Criticality	Funding	Y1	Y2	Y3	Y4-9	Total
Reticulation Upgrades	Replacement of fire hydrants, valves, and remaining steel laterals.	Medium	Renewal				$50,000	**$50,000**
WTP SCADA system Replacement	Current units are being phased out and need to be replaced. Share in one-off costs and implementation.	High	Renewal	$10,000	$45,000		$0	**$55,000**

7. Franz Josef Drinking Water Supply

7.1. Overview and History

The Franz Josef water supply services the Franz Josef township and was established in 1970 and serves an estimated 2,611 people. It is the second largest Council supply. The Franz Josef township experiences high visitor numbers which result in seasonal demand fluctuations.

Raw Water is sourced from an unnamed creek in the hills above the water treatment plant and township. A new water intake was installed and commissioned in 2018 to improve the capture of creek flow. The raw water is treated through granular media filtration, UV disinfection and Chlorination. Treated water is stored in three onsite reservoirs before it is gravity fed to the township.

An emergency supply system exists where water storage tanks in Cron Street can be filled with an alternative supply. Council holds a resource consent which allows for water to be drawn from the Tatare River for up to six weeks during instances of summer drought or periods of low flow in the creek. Water is pumped from the Cron Street storage tanks up to the raw water storage tanks at the plant site and then treated and distributed to connected properties in the same manner as usual. Various grab samples are taken from the source, treatment and within the reticulation to meet the DWQARs.

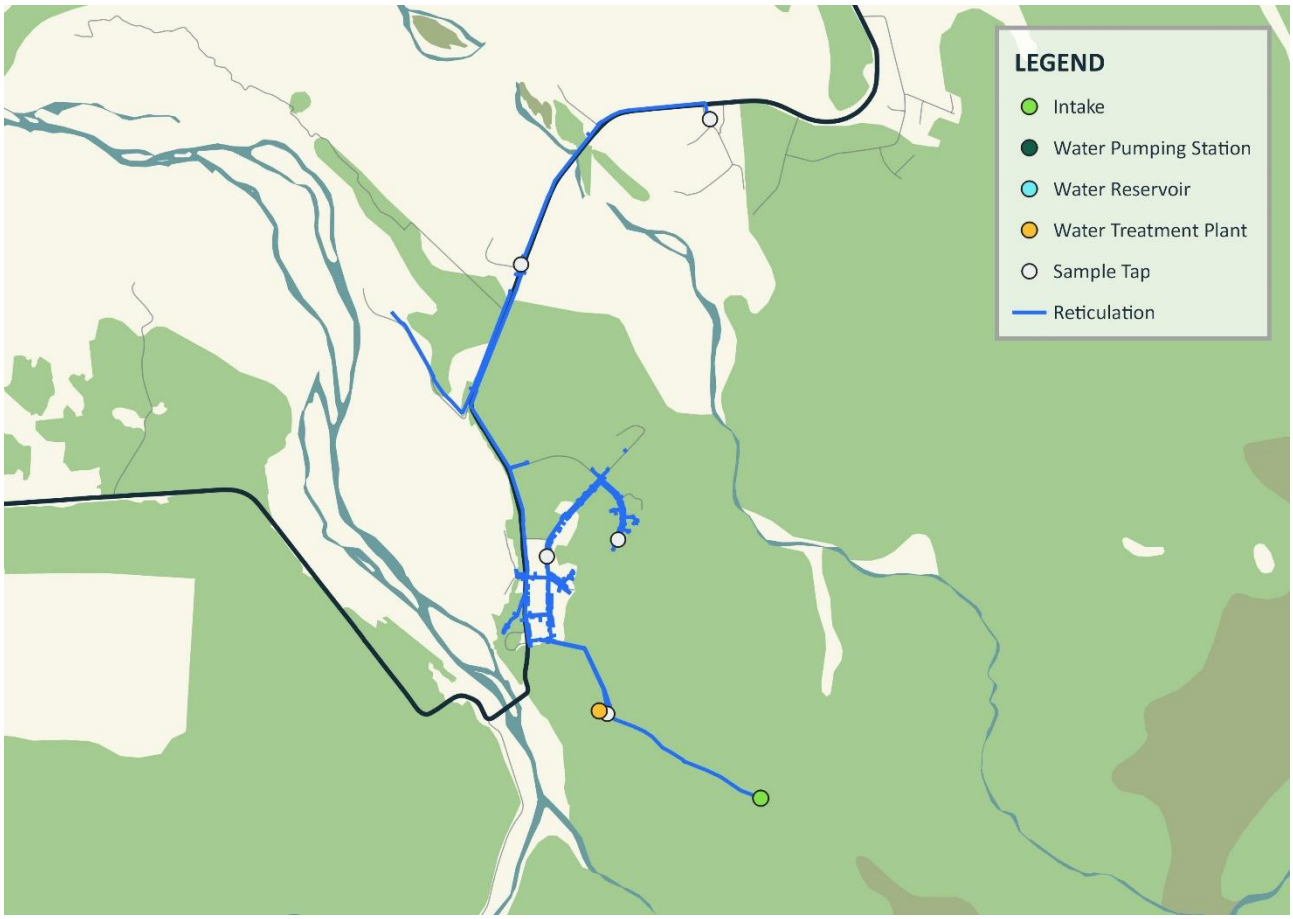

Figure 7-1: Franz Josef Drinking Water Supply Map.

7.2. Scheme Summary

A summary of the Franz Josef Drinking Water Supply is provided below in Table 7-1.

Table 7-1: Summary of Franz Josef Supply.

Description		Quantity
Estimated Population Served		2,611
Scheme Coverage	Residential Charges	48
	Commercial Charges	62
System Components	Bore/Intakes	1
	Treatment	1 Treatment Plant
	Treated Reservoirs	3 – Total Capacity 1,800 m^3
	Pump Stations	0
	Piped Mains	11.04 km
History – Original Scheme Install Date		1970
Value (2024 Valuation)	Optimised Replacement Cost	$6,709,806
	Depreciated Replacement Cost	$4,398,732
Financial (FY 23/24)	Operator cost per connection	$2,569.47
Demand	Total Annual Volume	196,239 m^3/year
	Average daily	540m^3/day
	Peak Daily	1350m^3/day
	Minimum Daily	-
	Average daily per connection	1,263 L/day
Source Type		Creek
Type of Supply		Large
Average System Pressure		516 kPa

7.3. Key Issues

The Franz Josef Supply's key issues have been identified and are detailed below in Table 7-2. A list of the district wide water supply issues is located in Section 3.1 of the Three Waters AMP 2025.

Table 7-2: Franz Josef Supply Key Issues.

Key Issue	Response
Ageing Infrastructure	Prioritise replacements when funding available.
Plant efficiency in high rain events	Update SOP's and operator training to turn off plant in such events if reservoir levels allow.

7.4. System Capacity

The capacity of the Franz Josef Supply is detailed below in Table 7-3. The water supply infrastructure provides sufficient capacity for the current level of development.

Table 7-3: System Capacity of Supply.

	Flow Rate (m^3/hr)	Daily Volume (m^3/day)
Treatment Capacity	-	1,237
Consented Take	7.2	200
Peak Demand	1,350	540

7.5. Resource Consents

The resource consents related to this scheme are detailed below in Table 7-4.

Table 7-4: Franz Josef Supply Resource Consents.

Consent	Description	Location	Granted Date	Expiry Date	Consented Flow
RC00390/1	To take surface water from an unnamed tributary of the Waiho River for the Franz Josef township water supply.	Franz Josef	21/09/2001	21/09/2036	2 L/s or 200 m^3/day
RC2015-0055-01	To take and use surface water from the Tatare River for an emergency town water supply, Franz Josef.	Tatare River, Franz Josef	24/04/2015	24/04/2050	9.3 L/s

7.6. Water Quality

7.6.1. Source

Due to this supply being classed as large, the supply must comply with L3 rules of the DWQARs. One of these rules is continuous monitoring of conductivity in the source water. The Franz Josef water supply currently does not comply with this rule. A conductivity meter has been installed in December 2024 to meet this part of compliance.

7.6.2. Treatment

During the 23/24-year two precautionary boil water notices were issued due to UV unit failure. The supply was non-complaint with DWQARs section 4.10.2.13 during these times. No E-Coli was reported in the supply during this period or throughout the year.

7.6.3. Reticulation

Similarly to the treatment quality stated above, two precautionary boil water notices were issued during the 23/24 year.

7.7. Scheme Assets

A summary of the material, diameters and ages of mains pipes within the Franz Josef Supply are shown below in Figure 7-2, Figure 7-3 and Figure 7-4.

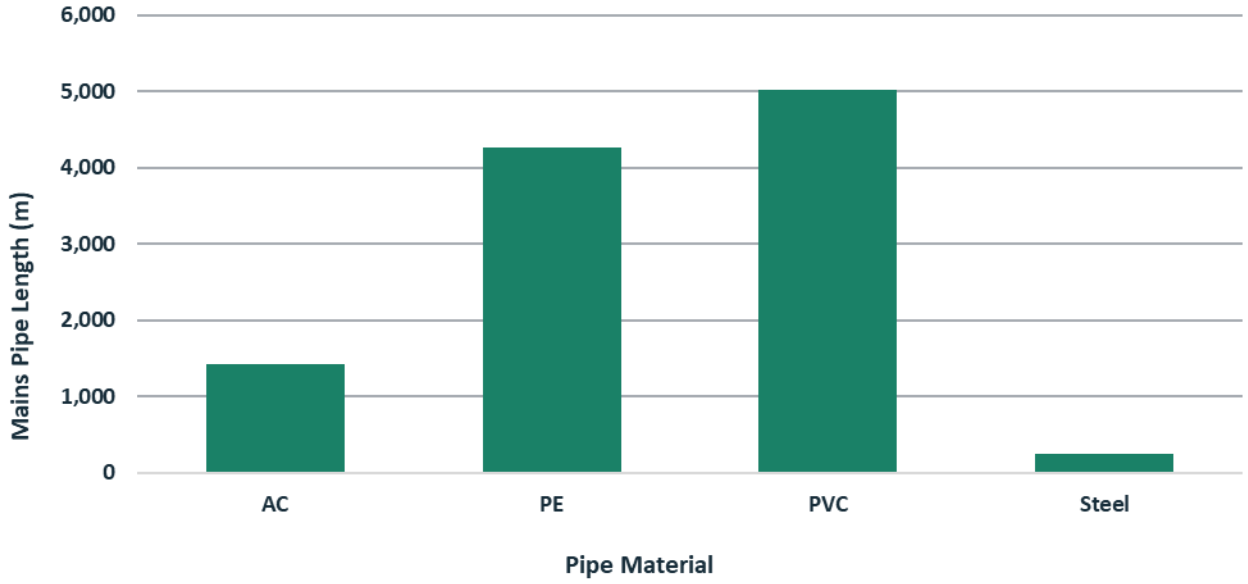

Figure 7-2: Franz Josef Supply Mains Pipe Material.

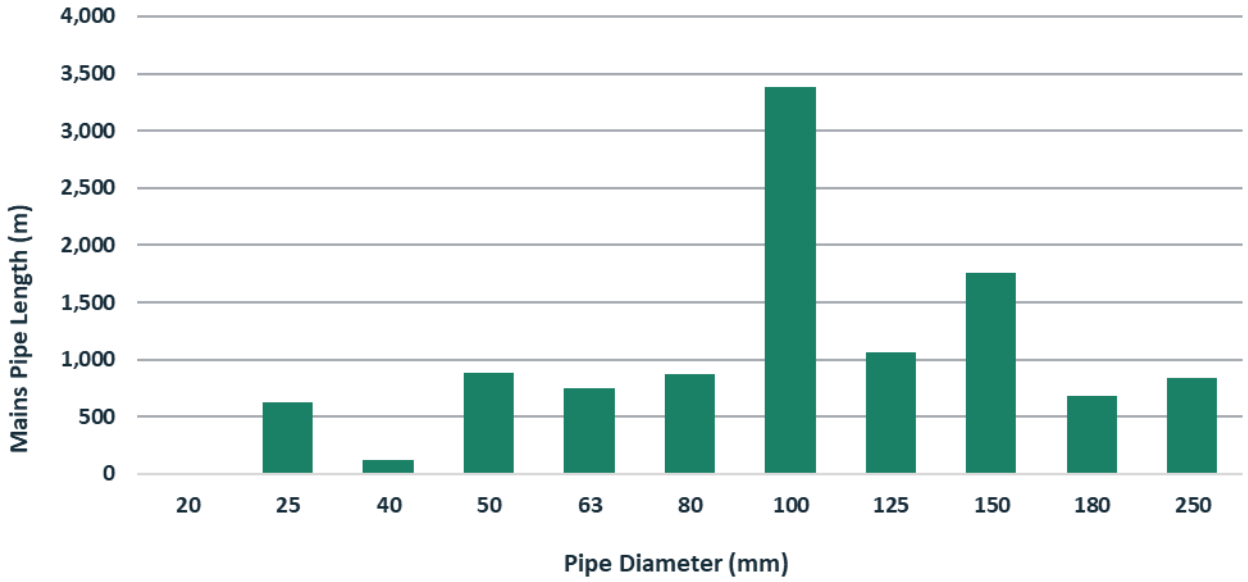

Figure 7-3: Franz Josef Supply Mains Pipe Diameter.

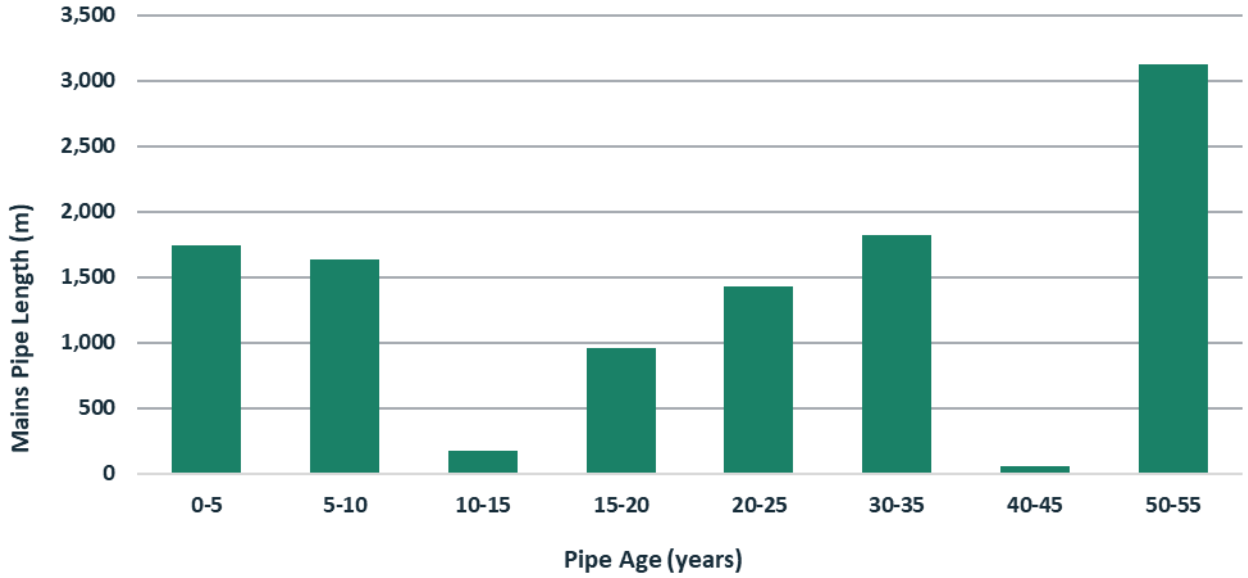

Figure 7-4: Franz Josef Supply Mains Pipe Age.

7.8. Operational Management

The operation and maintenance of the supply is part of the Westland District Utilities Maintenance Contract (22-23-03). The current contract was awarded to Westroads Ltd in August 2022. The term of the contract is 5 years.

7.9. Photos of Main Assets

Figure 7-5: Intake.

Figure 7-6: Treatment Plant.

Figure 7-7: Reservoirs.

7.10. Risk Assessment

A risk assessment has been undertaken for the Franz Josef Scheme. No unacceptable risks have been identified.

7.11. Asset Valuation Details

The total replacement value of the assets within the Franz Josef scheme was $6,709,806 as valued at 30 June 2024. A breakdown of the valuation is provided below in Table 7-5.

Table 7-5: Franz Josef Scheme Valuation Breakdown.

Asset Class	Asset sub-class	Optimised Replacement Value	Depreciated Replacement Value
Mechanical Plant and Equipment		$2,708,790	$1,662,013
Reticulation	Mains Pipe	$3,236,320	$2,293,876
	Service Lateral	$308,204	$218,136
	Hydrants & Valves	$456,493	$224,708
TOTAL		**$6,709,806**	**$4,398,732**

7.12. Critical Assets

The criticality rating of the pipeline assets for the Franz Josef Supply is provided below in Table 7-6.

Table 7-6: Pipe Mains Criticality Rating.

Criticality Level		Length (m)	
1	Very High	1,495	13.5%
2	High	6,396	57.9%
3	Medium	60	0.5%
4	Low	3,085	27.9%
5	Very Low	6	0%
	Unknown	-	-

7.13. Asset Condition

The condition rating of the assets is currently age based and not a physical site assessment. The condition rating of the pipeline assets for the Franz Josef Supply is provided below in Table 7-7.

Table 7-7: Pipe Mains Condition Rating.

Condition Rating		Length (m)	
1	Excellent	3,384	30.6%
2	Good	5,547	50.2%
3	Average	1,038	9.4%
4	Poor	828	7.5%
5	Very Poor	245	2.2%

7.14. Funding Programme

The 9-year financial programme for Franz Josef Water Supply is divided into the following categories:

- **Operations** – includes operational and maintenance costs,
- **Renewals** – replacement of assets on a 'like for like' basis,
- **Levels of Service (LOS)** – new assets to increase the level of service,
- **Growth** – new assets to meet additional demand.

The financial programme presented should be viewed noting that:

- **Allowance for CPI** – Consumer price index adjustments 'inflation' has not been included; and
- **All data is held in IBIS** – the database which Council conducts the majority of its financial rates storage and reporting.

The funding programme for Franz Josef Water Supply is provided below in Table 7-8.

Table 7-8: Franz Josef Water Supply Funding Programme.

	Operations	Renewals	LOS	Growth
Year 1	$171,800	$135,000		
Year 2	$171,800	$60,000		
Year 3	$171,800			
Year 4	$171,800	$135,000		
Year 5	$171,800			
Year 6	$171,800	$360,000	$35,000	
Year 7	$171,800			
Year 8	$171,800			
Year 9	$171,800			
TOTAL	**$1,546,200**	**$690,000**	**$35,000**	**$0**

The projects included in the LTP for the Franz Josef Water Supply are listed below in Table 7-9.

Table 7-9: Franz Josef Water Supply Projects.

Project Name	Project Description	Criticality	Funding	Y1	Y2	Y3	Y4-9	Total
Reticulation Upgrades	Replacement of mains, valves and fire hydrants.	Medium	Renewal				$495,000	**$495,000**
WTP SCADA system Replacement	Current units are being phased out and need to be replaced. Share in one off costs and implementation.	High	Renewal	$55,000			$0	**$55,000**
WTP Site	Installation of fencing at the site.	Low	LOS				$35,000	**$35,000**
PRV Replacement	Replacement of pressure reducing valve.	High	Renewal	$20,000			$0	**$20,000**
Replacement of WTP Components	Replacement of chlorination and UV units (Depolox Units -5C & pH, UV).	High	Renewal	$60,000	$60,000		$0	**$120,000**

8. Fox Glacier Drinking Water Supply

8.1. Overview and History

The Fox Glacier water supply scheme services the township in South Westland, approximately 160km south of Hokitika. The supply was established in 1972 and supplies approximately 252 people.

Raw water for the supply is drawn from Carters Creek which has been dammed by a man-made structure which acts as a settling basin. The new water treatment plant was constructed and commissioned in 2023. Water is treated through Flocculation, Membrane Filtration and Chlorination. The treated water is then stored in two treated water reservoir and is gravity fed to the reticulation.

Various grab samples are taken from the source, treatment and within the reticulation to meet the DWQARs.

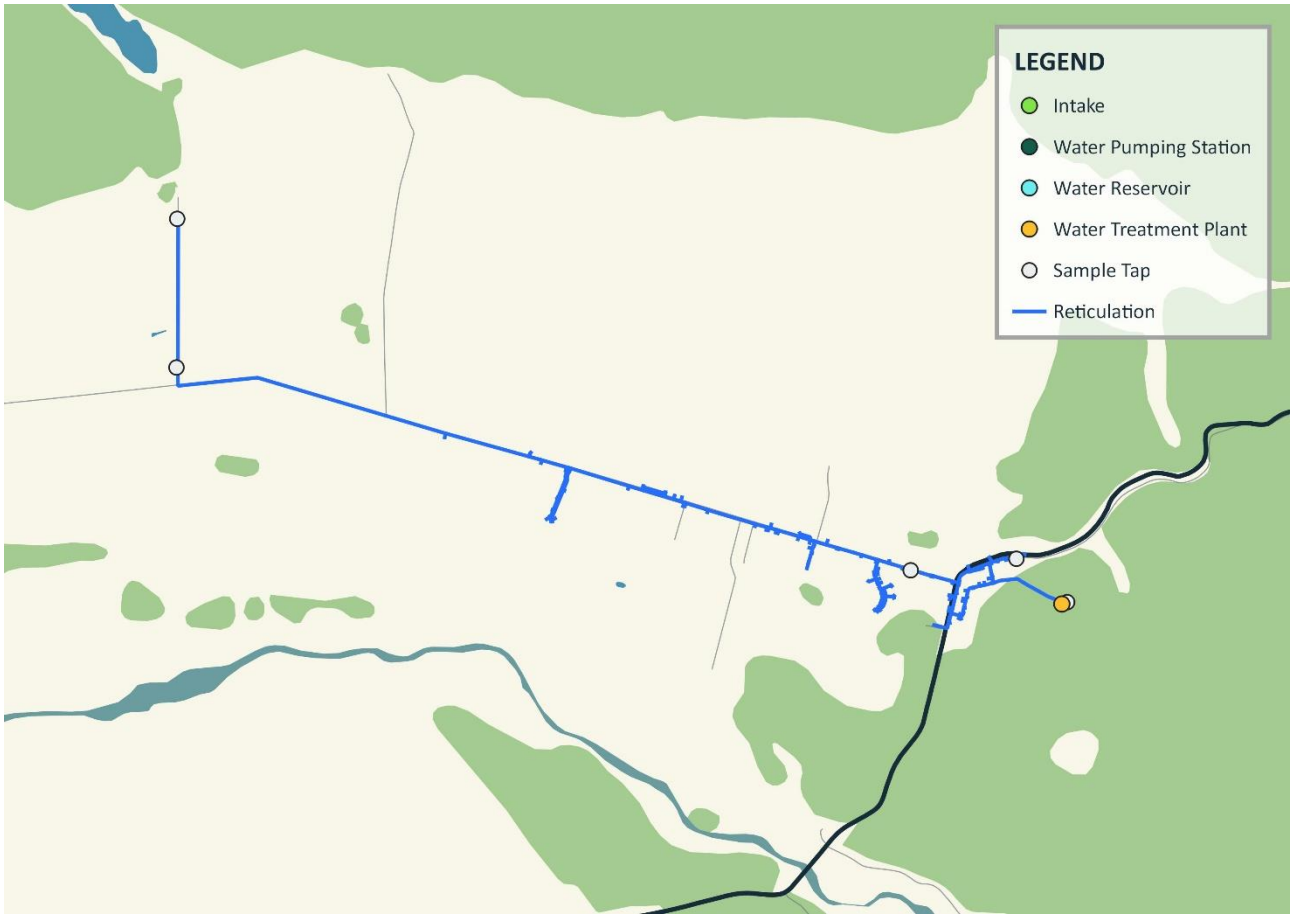

Figure 8-1: Fox Glacier Drinking Water Supply Map.

8.2. Scheme Summary

A summary of the Fox Glacier Drinking Water Supply is provided below in Table 8-1.

Table 8-1: Summary of Fox Glacier Water Supply.

Description		Quantity
Estimated Population Served		252
Scheme Coverage	Residential Charges	65
	Commercial Charges	53
System Components	Bore/Intakes	1
	Treatment	1 Treatment Plant
	Treated Reservoirs	2 – Total Capacity 900 m^3
	Pump Stations	0
	Piped Mains	7.87 km
History – Original Scheme Install Date		1972
Value (2024 Valuation)	Optimised Replacement Cost	$3,708,009
	Depreciated Replacement Cost	$2,745,031
Financial (FY 23/24)	Operator cost per connection	$1,675.28
Demand	Total Annual Volume	81,627 m^3/year
	Average daily	
	Peak Daily	
	Minimum Daily	
	Average daily per connection	1,695 L/day
Source Type		Creek
Type of Supply		Large
Average System Pressure		500 kPa

8.3. Key Issues

The Fox Glacier Supply's key issues have been identified and are detailed below in Table 8-2. A list of the district wide water supply issues is located in Section 3.1 of the Three Waters AMP 2025.

Table 8-2: Key Issues of Fox Glacier Supply.

Key Issue	Response
Ageing Infrastructure	Prioritise replacements when funding available.
Plant efficiency in high rain events	Update SOP's and operator training to turn off plant in such events if reservoir levels allow.

8.4. System Capacity

The capacity of the Fox Glacier Supply is detailed below in Table 8-3. The water supply infrastructure provides sufficient capacity for the current level of development.

Table 8-3: System Capacity of Supply.

	Flow Rate (m^3/hr)	Daily Volume (m^3/day)
Treatment Capacity	56	445
Consented Take	9	750
Peak Demand	-	-

8.5. Resource Consents

The resource consents related to this scheme are detailed below in Table 8-4.

Table 8-4: Fox Glacier Supply Resource Consents.

Consent	Description	Location	Granted Date	Expiry Date	Consented Flow
RC-2019-0045-01	To take and use surface water from Carters Creek for the purpose of a community water supply, Fox Glacier.	Carters Creek, Fox Glacier	01/11/2019	01/11/2054	9 L/s or max 750 m^3/day

8.6. Water Quality

8.6.1. Source

The source water for Fox Glacier was non-complaint in the 23/24 year due to the new plant not being operational until December 2023.

8.6.2. Treatment

The Fox Glacier WTP was non-complaint in the 23/24 year due to the new plant not being operational until December 2023.

8.6.3. Reticulation

The permanent boil water notice that had been in place was lifted in December 2023 in line with the commissioning of the new treatment plant.

There were some minor non-compliance within the reticulation during the 23/24 year. They related to the Free Available Chlorine (FAC) readings being below the threshold for compliance against 4.8, Rule D2.5.

8.7. Scheme Assets

A summary of the material, diameters and ages of mains pipes within the Fox Glacier Supply are shown below in Figure 8-2, Figure 8-3 and Figure 8-4.

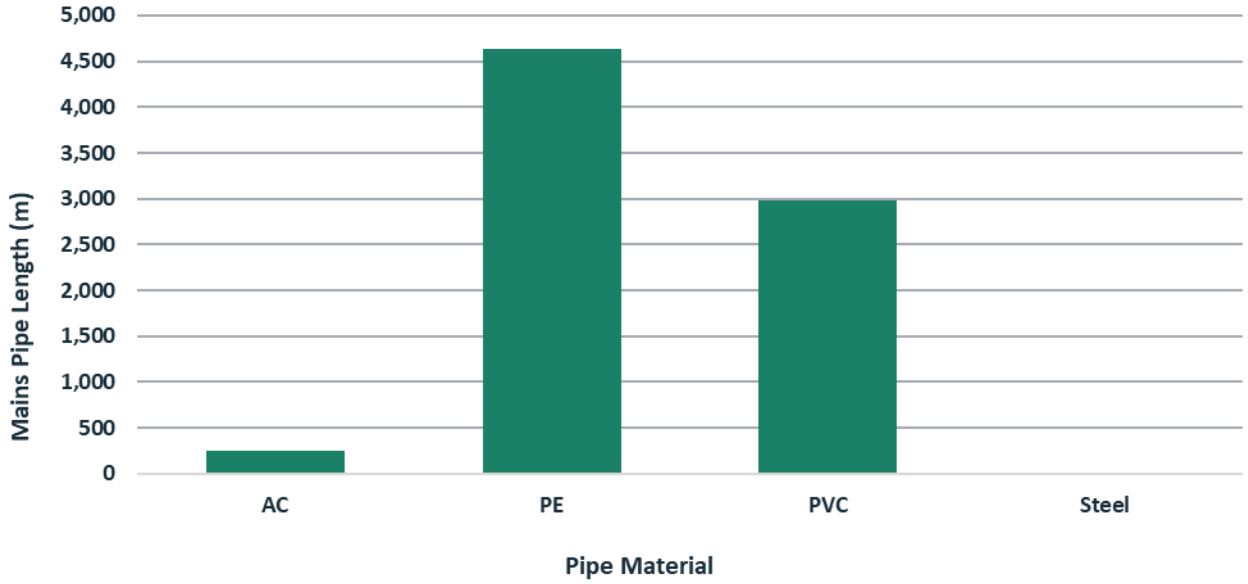

Figure 8-2: Fox Glacier Supply Mains Pipe Material.

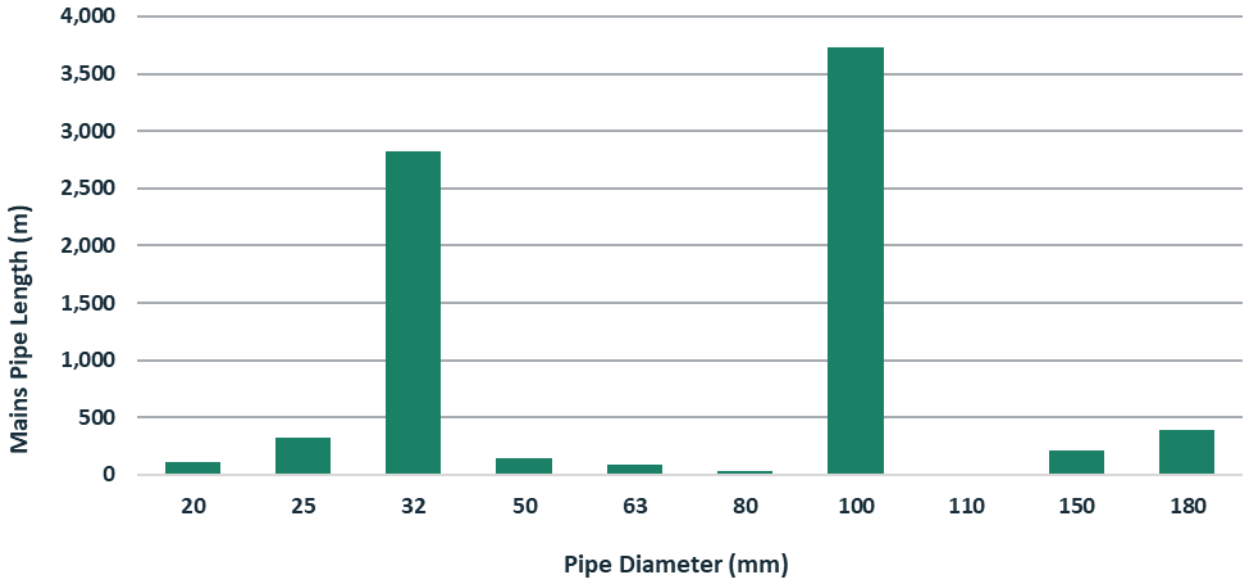

Figure 8-3: Fox Glacier Supply Mains Pipe Diameter.

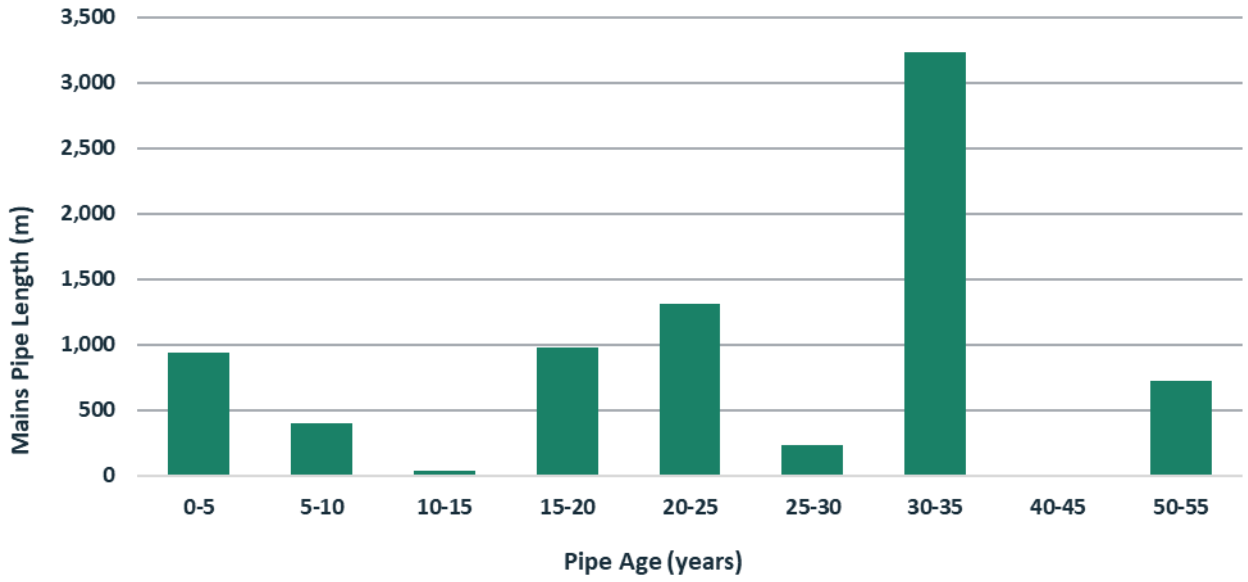

Figure 8-4: Fox Glacier Supply Mains Pipe Age.

8.8. Operational Management

The operation and maintenance of the supply is part of the Westland District Utilities Maintenance Contract (22-23-03). The current contract was awarded to Westroads Ltd in August 2022. The term of the contract is 5 years.

8.9. Photos of Main Assets

Figure 8-5: Intake.

Figure 8-6: Treatment Plant.

Figure 8-7: Treatment Plant.

8.10. Risk Assessment

A risk assessment has been undertaken for the Fox Glacier Scheme. No unacceptable risks have been identified.

8.11. Asset Valuation Details

The total replacement value of the assets within the Fox Glacier scheme was $3,708,009 as valued at 30 June 2024. A breakdown of the valuation is provided below in Table 8-5.

Table 8-5: Fox Glacier Scheme Valuation Breakdown.

Asset Class	Asset sub-class	Optimised Replacement Value	Depreciated Replacement Value
Mechanical Plant and Equipment		$1,545,317	$1,208,846
Reticulation	Mains Pipe	$1,707,718	$1,275,280
	Service Lateral	$181,315	$120,177
	Hydrants & Valves	$273,659	$140,728
TOTAL		**$3,708,009**	**$2,745,031**

8.12. Critical Assets

The criticality rating of the pipeline assets for the Fox Glacier Supply is provided below in Table 8-6.

Table 8-6: Pipe Mains Criticality Rating.

Criticality Level		Length (m)	
1	Very High	-	-
2	High	4,302	54.7%
3	Medium	53	0.7%
4	Low	3,376	42.9%
5	Very Low	137	1.7%
	Unknown	-	-

8.13. Asset Condition

The condition rating of the assets is currently age based and not a physical site assessment. The condition rating of the pipeline assets for the Fox Glacier Supply is provided below in Table 8-7.

Table 8-7: Pipe Mains Condition Ratings.

Condition Rating		Length (m)	
1	Excellent	1,360	17.3%
2	Good	6,410	81.5%
3	Average	53	0.7%
4	Poor	45	0.6%
5	Very Poor	-	-

8.14. Funding Programme

The 9-year financial programme for Fox Glacier Water Supply is divided into the following categories:

- **Operations** – includes operational and maintenance costs,
- **Renewals** – replacement of assets on a 'like for like' basis,
- **Levels of Service (LOS)** – new assets to increase the level of service,
- **Growth** – new assets to meet additional demand.

The financial programme presented should be viewed noting that:

- **Allowance for CPI** – Consumer price index adjustments 'inflation' has not been included; and
- **All data is held in IBIS** – the database which Council conducts the majority of its financial rates storage and reporting.

The funding programme for Fox Glacier Water Supply is provided below in Table 8-8.

Table 8-8: Fox Glacier Water Supply Funding Programme.

	Operations	Renewals	LOS	Growth
Year 1	$179,750	$10,000		
Year 2	$179,750	$147,000		
Year 3	$179,750			
Year 4	$179,750			
Year 5	$179,750	$150,000		
Year 6	$179,750			
Year 7	$179,750		$35,000	
Year 8	$179,750			
Year 9	$179,750	$200,000		
TOTAL	**$1,617,750**	**$507,000**	**$35,000**	**$0**

The projects included in the LTP for the Fox Glacier Water Supply are listed below in Table 8-9.

Table 8-9: Fox Glacier Water Supply Projects.

Project Name	Project Description	Criticality	Funding	Y1	Y2	Y3	Y4-9	Total
Reticulation Upgrades	Replacement of mains, valves and fire hydrants.	Medium	Renewal		$31,000		$100,000	**$131,000**
WTP SCADA system Replacement	Current units are being phased out and need to be replaced. Share in one off costs and implementation.	High	Renewal	$10,000	$45,000		$0	**$55,000**
WTP Site	Installation of fencing at the site.	Low	LOS				$35,000	**$35,000**
Replacement of Membranes	Replacement of membrane units, installation of new plant was in 2023.	High	Renewal				$150,000	**$150,000**
Replacement of Raw Water Reservoir	Replacement of the raw water reservoir.	High	Renewal				$50,000	**$50,000**
Replacement of WTP Components	Replacement of chlorination and UV units (Depolox Units - 5 & pH).	High	Renewal				$50,000	**$50,000**
Water Meters Replacement	Replacement of all water meters.	Medium	Renewal		$71,000		$0	**$71,000**

9. Haast Drinking Water Supply

9.1. Overview and History

The Haast Drinking Water Supply is Council's southernmost treated water supply. The supply was established in 1983 and serves approximately 110 people.

Raw water is drawn from a bore on the western bank of the Haast River. Water is pumped from the bore to the adjacent water treatment plant and is treated through multimedia filtration and UV disinfection. Chlorination was added to the supply in 2023 to ensure compliance with DW standards. Treated water is pumped up to a 400m^3 reservoir and then gravity fed to the reticulation network.

Various grab samples are taken from the source, treatment and within the reticulation to meet the DWQARs.

Figure 9-1: Haast Drinking Water Supply Map.

9.2. Scheme Summary

A summary of the Haast Drinking Water Supply is provided below in Table 9-1.

Table 9-1: Summary of Haast Drinking Water Supply.

Description		Quantity
Estimated Population Served		110
Scheme Coverage	Residential Charges	59
	Commercial Charges	17
System Components	Bore/Intakes	1
	Treatment	1 Treatment Plant
	Treated Reservoirs	1 – Total Capacity 400 m^3
	Pump Stations	0
	Piped Mains	4.26 km
History – Original Scheme Install Date		1983
Value (2024 Valuation)	Optimised Replacement Cost	$2,722,649
	Depreciated Replacement Cost	$1,746,559
Financial (FY 23/24)	Operator cost per connection	$2,395.61
Demand	Total Annual Volume	44,897 m^3/year
	Average daily	123m^3/day
	Peak Daily	
	Minimum Daily	
	Average daily per connection	1,618 L/day
Source Type		Bore
Type of Supply		Medium
Average System Pressure		350 kPa

9.3. Key Issues

The Fox Glacier Supply's key issues have been identified and are detailed below in Table 9-2. A list of the district wide water supply issues is located in Section 3.1 of the Three Waters AMP 2025.

Table 9-2: Key Issues of the Haast Supply.

Key Issue	Response
Small PVC reticulation (unable to repair easily if needed)	Prioritise replacements when funding available.

9.4. System Capacity

The capacity of the Haast Supply is detailed below in Table 9-3. The water supply infrastructure provides sufficient capacity for the current level of development.

Table 9-3: System Capacity of Haast Supply.

	Flow Rate (m^3/day)	Daily Volume (m^3/day)
Treatment Capacity	6	-
Consented Take	2.5	-
Peak Demand	-	123

9.5. Resource Consents

The resource consents related to this scheme are detailed below in Table 9-4.

Table 9-4: Haast Supply Resource Consents.

Consent	Description	Location	Granted Date	Expiry Date	Consented Flow
RC01164/1	Water permit to take groundwater via bore for the purposes of town supply, Haast.	Haast	21/08/2001	21/08/2036	2.5 L/s
RC01164/2	Land use consent for earthworks to deepen existing bore used to provide water for the purposes of town supply.				-

9.6. Water Quality

9.6.1. Source

The Haast water supply source complied with all Rules relating to this supply in 23/24.

9.6.2. Treatment

The Haast WTP was non-compliant in the 23/24 year with various rules associated with chlorination of the water treatment plant in the DWQAR's. This was due to the supply not being chlorinated until late 2023. The processes are now in place for full compliance in the following years.

9.6.3. Reticulation

The Haast water supply was non-compliant in the 23/24 year with various rules associated with chlorination of the water supply in DWQAR's. This was due to the supply not being chlorinated until late 2023. The processes are now in place for full compliance in the following years.

There were no "boil water" notices or "do not use" notices issued for the 23/24 year.

9.7. Scheme Assets

A summary of the material, diameters and ages of mains pipes within the Haast Supply are shown below in Figure 9-2, Figure 9-3 and Figure 9-4.

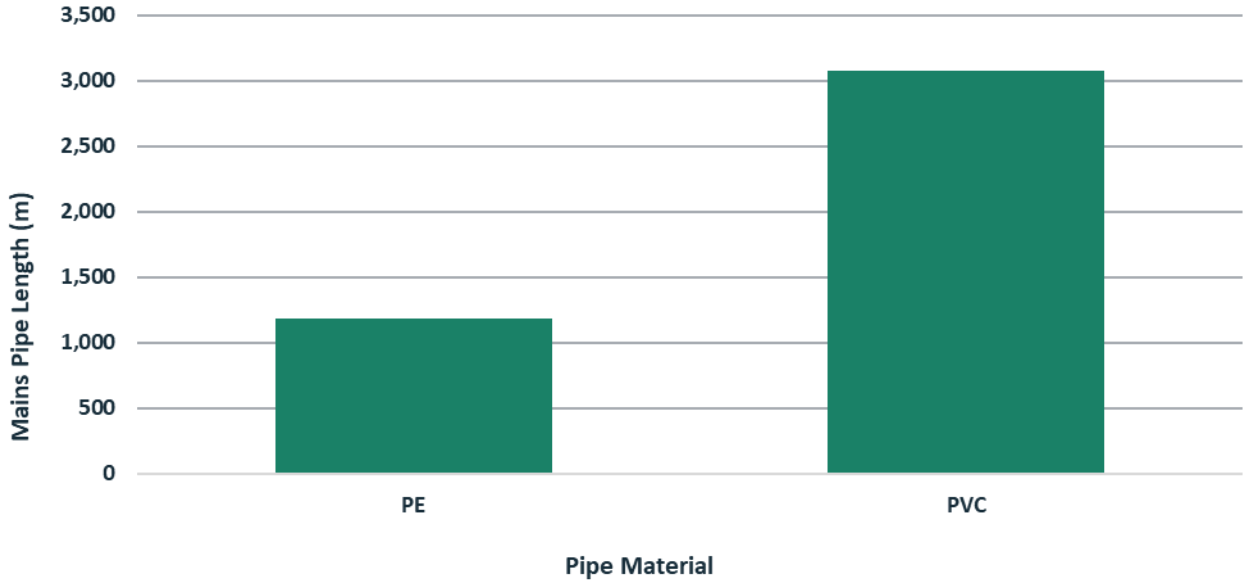

Figure 9-2: Haast Supply Mains Pipe Material.

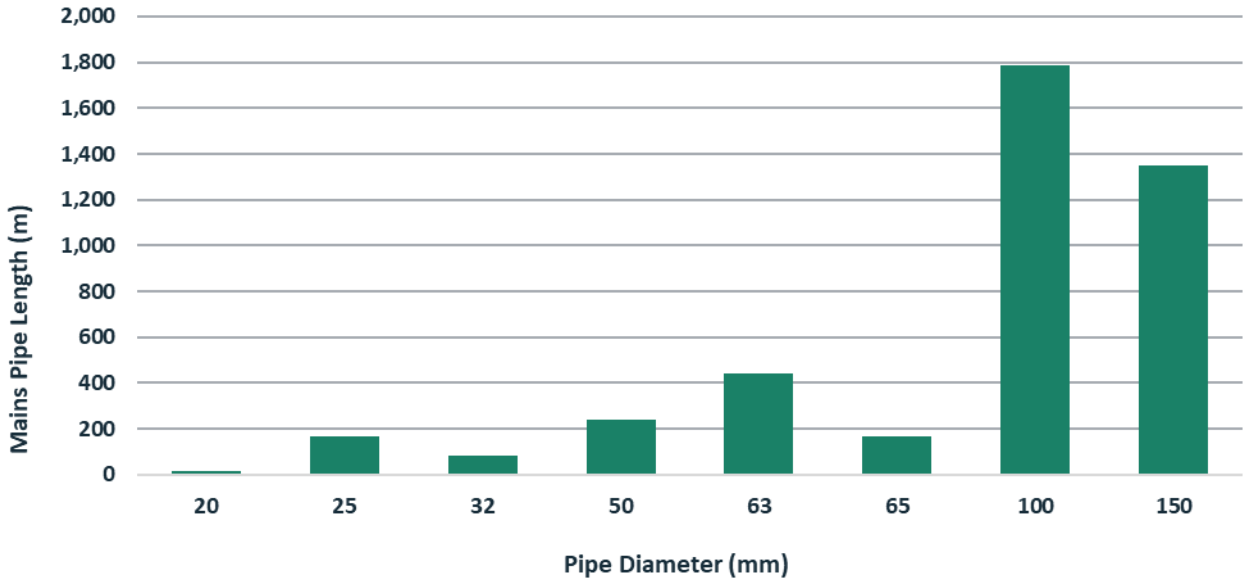

Figure 9-3: Haast Supply Mains Pipe Diameter.

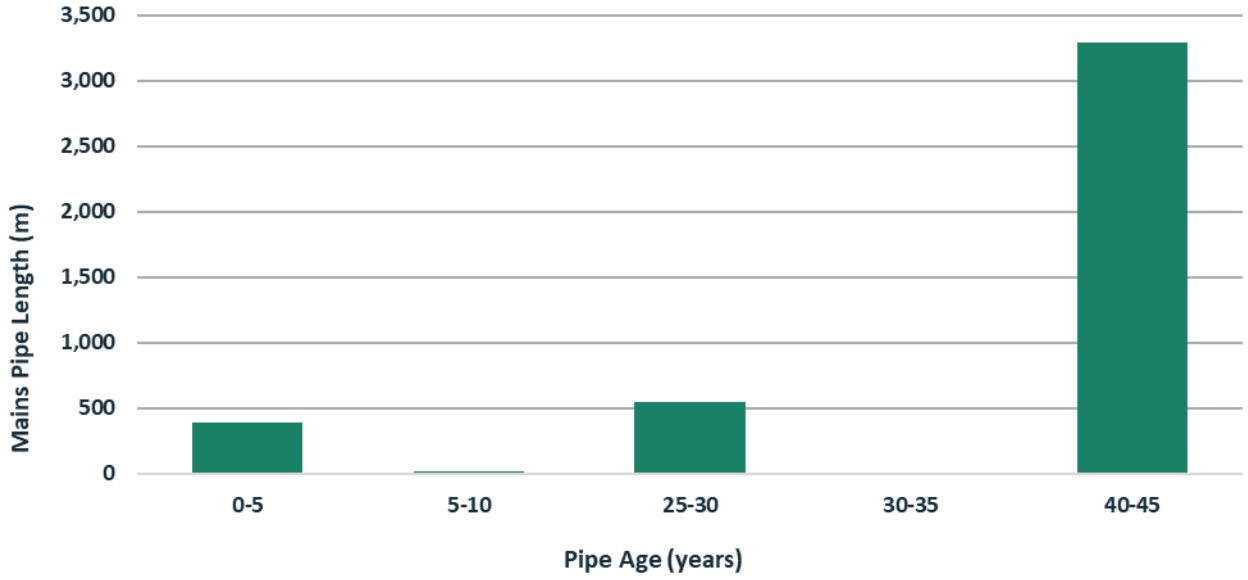

Figure 9-4: Haast Supply Mains Pipe Age.

9.8. Operational Management

The operation and maintenance of the supply is part of the Westland District Utilities Maintenance Contract (22-23-03). The current contract was awarded to Westroads Ltd in August 2022. The term of the contract is 5 years.

9.9. Photos of Main Assets

Figure 9-5: Location of Treatment Plant.

Figure 9-6: Treatment Plant.

Figure 9-7: Reservoir.

9.10. Risk Assessment

A risk assessment has been undertaken for the Haast Scheme. No unacceptable risks have been identified.

9.11. Asset Valuation Details

The total replacement value of the assets within the Haast scheme was $2,722,649 as valued at 30 June 2024. A breakdown of the valuation is provided below in Table 9-5.

Table 9-5: Haast Scheme Valuation Breakdown.

Asset Class	Asset sub-class	Optimised Replacement Value	Depreciated Replacement Value
Mechanical Plant and Equipment		$1,325,469	$887,406
Reticulation	Mains Pipe	$1,129,571	$717,133
	Service Lateral	$127,881	$90,131
	Hydrants & Valves	$139,728	$51,889
TOTAL		**$2,722,649**	**$1,746,559**

9.12. Critical Assets

The criticality rating of the pipeline assets for the Haast Supply is provided below in Table 9-6.

Table 9-6: Pipe Mains Criticality Rating.

Criticality Level		Length (m)	
1	Very High	21	0.5%
2	High	3,138	73.6%
3	Medium	-	-
4	Low	1,081	25.4%
5	Very Low	23	0.5%
	Unknown	-	-

9.13. Asset Condition

The condition rating of the assets is currently age based and not a physical site assessment. The condition rating of the pipeline assets for the Haast Supply is provided below in Table 9-7.

Table 9-7: Pipe Mains Condition Rating.

Condition Rating		Length (m)	
1	Excellent	410	9.6%
2	Good	3,801	89%
3	Average	52	1.2%
4	Poor	-	-
5	Very Poor	-	-

9.14. Funding Programme

The 9-year financial programme for Haast Water Supply is divided into the following categories:

- **Operations** – includes operational and maintenance costs,
- **Renewals** – replacement of assets on a 'like for like' basis,
- **Levels of Service (LOS)** – new assets to increase the level of service,
- **Growth** – new assets to meet additional demand.

The financial programme presented should be viewed noting that:

- **Allowance for CPI** – Consumer price index adjustments 'inflation' has not been included; and
- **All data is held in IBIS** – the database which Council conducts the majority of its financial rates storage and reporting.

The funding programme for Haast Water Supply is provided below in Table 9-8.

Table 9-8: Haast Water Supply Funding Programme.

	Operations	Renewals	LOS	Growth
Year 1	$107,200	$230,000		
Year 2	$107,700	$45,000		
Year 3	$107,700			
Year 4	$107,700			
Year 5	$107,700			
Year 6	$107,700			
Year 7	$107,700	$15,000		
Year 8	$107,700		$20,000	
Year 9	$107,700			
TOTAL	**$968,800**	**$290,000**	**$20,000**	**$0**

The projects included in the LTP for the Haast Water Supply are listed below in Table 9-9.

Table 9-9: Haast Water Supply Projects.

Project Name	Project Description	Criticality	Funding	Y1	Y2	Y3	Y4-9	Total
Reticulation Upgrades	Replacement of mains, valves and fire hydrants.	Medium	Renewal	$220,000			$15,000	**$235,000**
WTP SCADA system Replacement	Current units are being phased out and need to be replaced.	High	Renewal	$10,000	$45,000		$0	**$55,000**
WTP Site	Installation of fencing at the site.	Low	LOS				$20,000	**$20,000**

10. Financial Summary

This section summaries the financial projections and funding requirements for the Water Supply Activity the total expenditure for the Water Supply Activity is shown below in Figure 10-1.

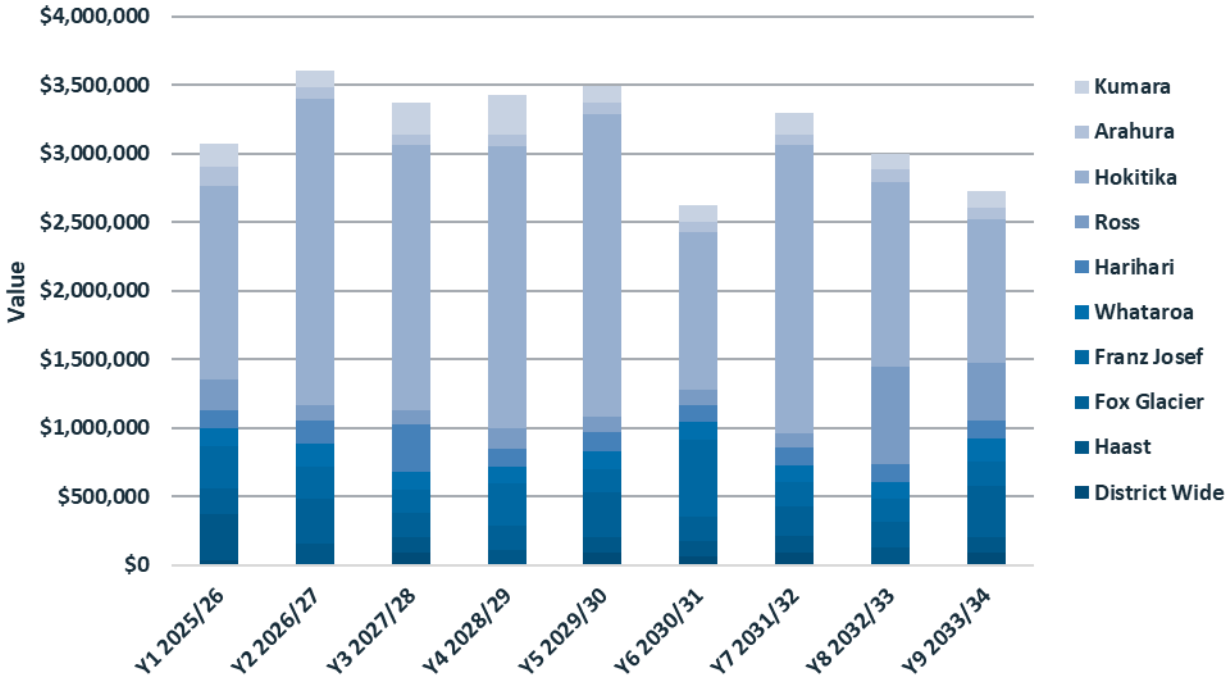

Figure 10-1: Water Supply Activity Expenditure Forecast.

10.1. Summary of Operations and Maintenance

A summary of the forecast Operations and Maintenance expenditure for the Water Supply activity is provided below in Figure 10-2.

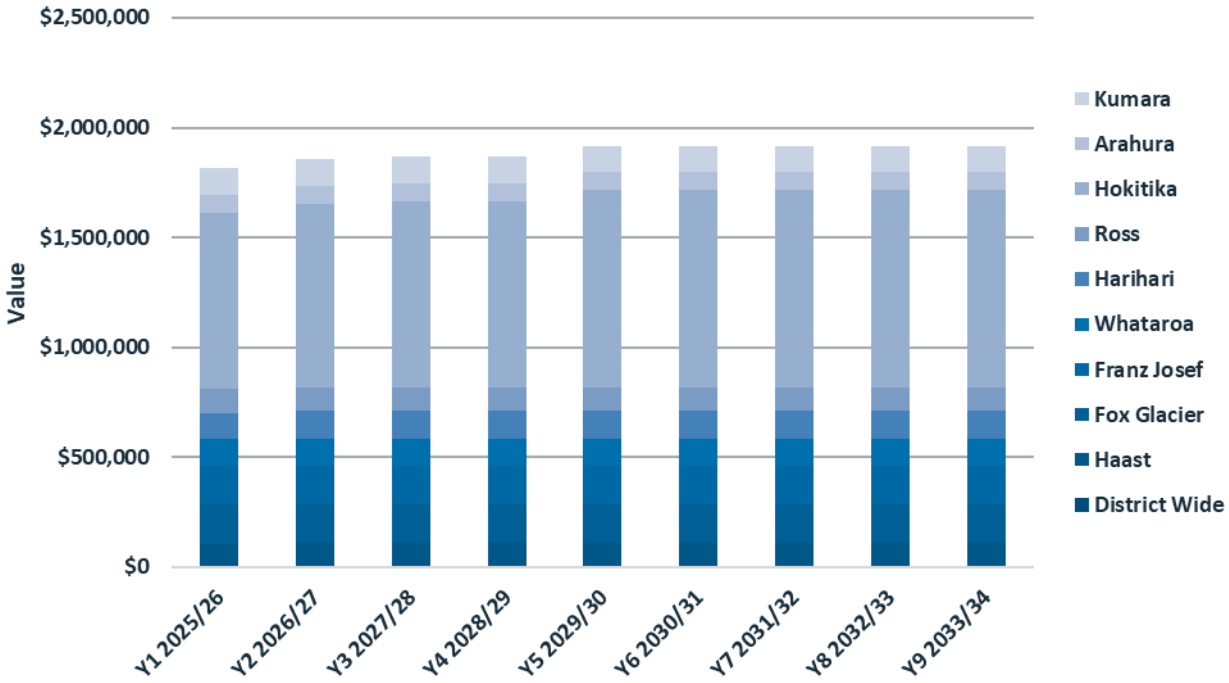

Figure 10-2: Water Supply Activity Operations and Maintenance Forecast.

10.2. Summary of Capital Expenditure

A summary of capital expenditure for the Water Supply Activity is shown below in Figure 10-3. The capital expenditure consists of 94% renewal projects and 5.5% level of service projects. Growth consists of 0.4% of capital projects and is a general budget for the activity which includes new service connection at request of the ratepayer.

Other district-wide projects include replacement of components at water treatment plants on an as required basis.

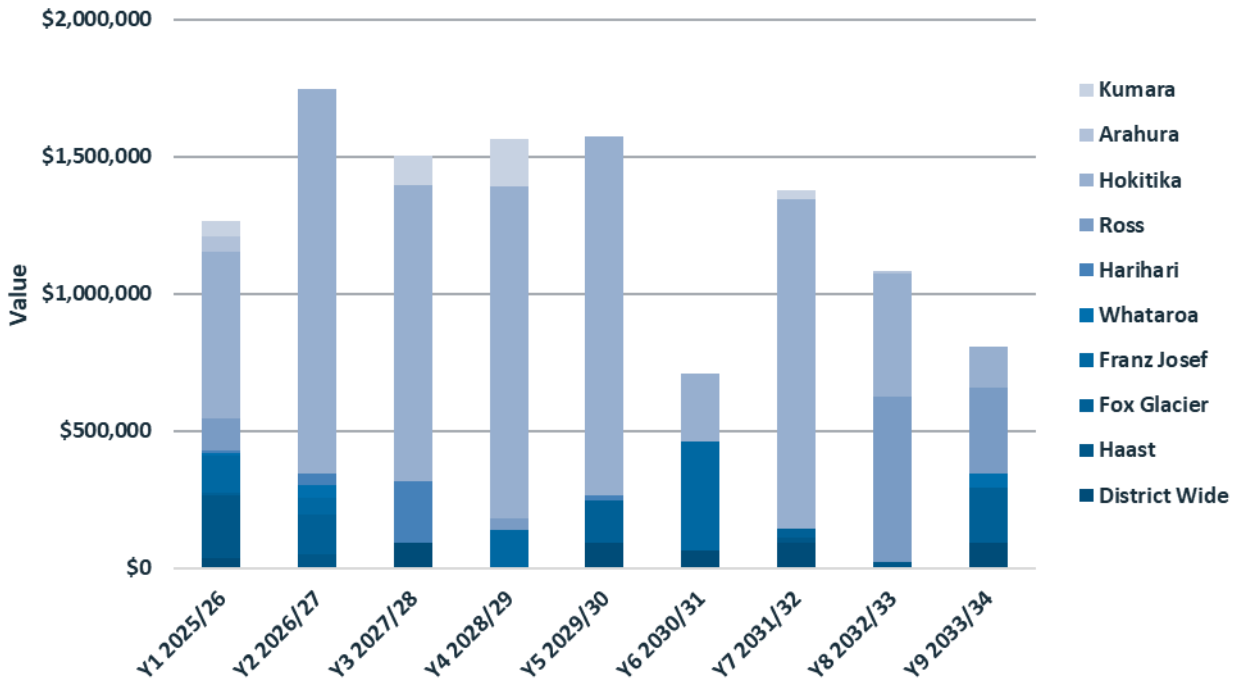

Figure 10-3: Water Supply Activity Capital Expenditure Forecast.