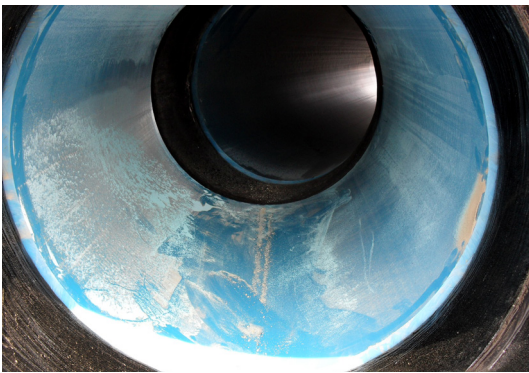


Water Utility Infrastructure Rehabilitation Study



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Water Utility Infrastructure Rehabilitation Study

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March 18, 2014

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Revision Log

Revision #	Revised By	Date	Issue / Revision Description
1	Will Nash	28 th March 2013	Preliminary Draft Report – at completion of Top-down Analysis
2	Will Nash	14 th May 2013	Draft Report
3	David Main	17 th May 2013	Draft Report
4	David Main	17 th June 2013	Final Report
5	Will Nash	14 th August 2013	Incorporation of Non-Linear Assets into report
6	David Main	27 th August 2013	Revised Draft Report: Linear and Non Linear Assets
7	David Main	16 th October 2013	Final Report Incorporating review comments from RMoW
8	Will Nash	13 th February 2014	Final Report Incorporating Capital Planning
9	Will Nash	18 th March 2014	Final Report Incorporating Staff Comments

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Executive Summary

The Resort Municipality of Whistler (RMoW) owns and operates about 128 km of water main, 3,175 service connections and 72 significant non-linear assets such as reservoirs, wells and pump stations. Collectively, these assets are required in order to supply safe drinking water to RMoW customers in a cost effective and reliable manner. The replacement value for the entire water system in 2014 is estimated at approximately \$ 101 million. While most of the system has been installed over the last 30 years and is considered to be in generally good condition, there are portions of the system that are beginning to show the effects of deterioration. RMoW needs to ensure that it is being proactive in addressing infrastructure renewal. This study provides the RMoW with a long range forecast (100 years) of the financial resources required to support the renewal of the RMoW water system and further, it defines a specific short term program (10 years) that identifies individual renewal projects and activities that will be required in order to ensure that adequate levels of service can be maintained within water system.

Figure ES.1 below shows the RMoW water system’s projected renewal requirements over the next 100 years in 2014 dollars as well as a rolling 10 year average annual cost to renew the system as individual assets approach the end of their expected service life.

Figure ES.1: 100 Year Renewal Budget Estimates

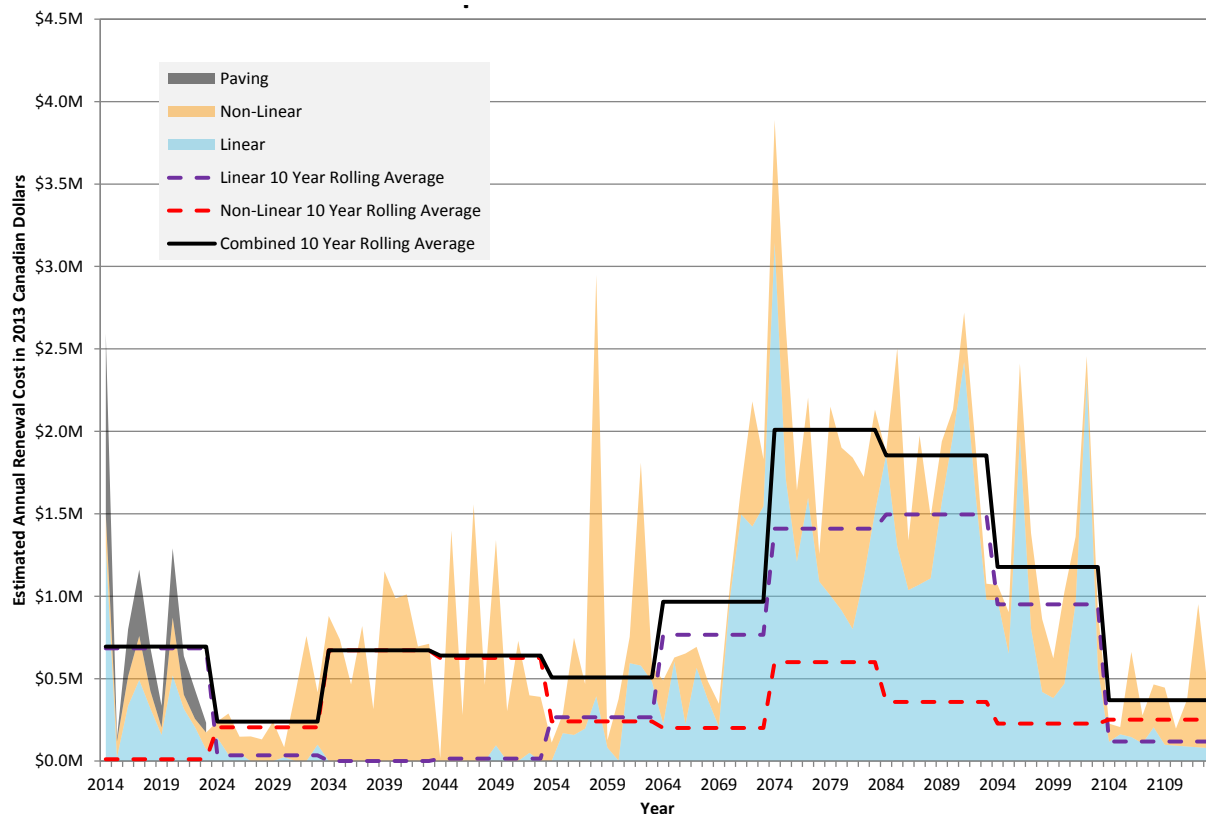
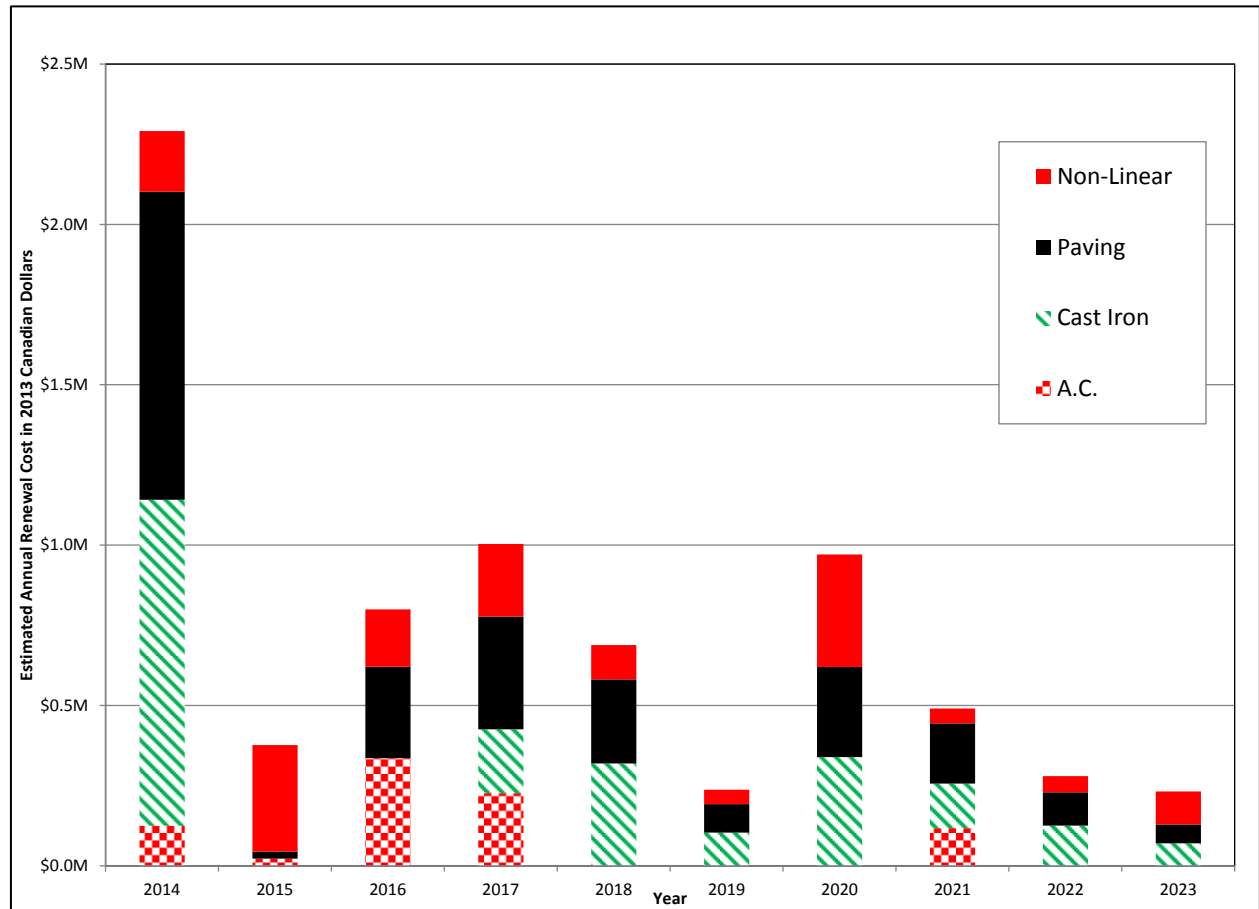


Figure ES.2 shows the estimated capital replacement program for the next 10 years where the immediate emphasis is directed at replacing the older asbestos cement and cast iron water mains. These water main inventories are now showing evidence of deterioration. A proactive replacement program will ensure that adequate water utility levels of service can be effectively delivered to these service areas.

Figure ES.2: 10 Year Renewal Budget Estimates

Short Term Renewal Program Recommendations

In order to proactively address infrastructure renewal requirements within the water system, this study has recommended the following seven projects to be implemented over the next ten years:

1. Asbestos Cement (AC) Pipe Replacement: to reduce the risk of failure of the AC water pipes that are reported to have lost wall strength and will allow the White Gold area to be returned to full operating pressure, thus allowing increased fire flow at hydrants and a higher level of service to residents.
2. Cast Iron Pipe Replacement: to reduce the risk of failure of the Cast Iron pipes that are exhibiting tuberculation and are the source of turbid water requiring weekly flushing, the risk of constriction of the pipe and consequential flow restriction will also be reduced.
3. Non-linear works that include:
 - Shut down of a PRV and full decommissioning to make the site safe, remove the risk of collapse and return the site to “native” condition.
 - Renewal of process equipment to ensure continued levels of service.
 - Removal and full decommissioning at those reservoirs and intakes that have been taken out of service and return the site to “native” condition.
4. Corrosive Soils Investigation: to target condition assessment and renewal works of buried metallic assets that are identified as being at elevated risk of corrosive soils and to review the current specifications for

buried assets for suitability to meet service life expectations. This benefit extends beyond just water assets, but all buried metallic assets including sewer and drainage pipes.

5. Ductile Iron Pipe Condition Assessment: to plan rehabilitation of the ductile iron pipe in the network.
6. Utility-wide asset management program and associated databases and systems to assist in coordinating renewal works for all of water, sewer, storm, and roads.
7. Leak Detection: to prioritize works for pipes that are the source of leaks, to act to prevent catastrophic failures, and to conserve water.

The cost estimates for the works over the next ten years is presented in [Table ES.1](#).

Table ES.1: Recommended 10 Year Water System Renewal Projects

Year	Renewal/Replacement*			Investigation		Condition Assessment		Yearly Total
	A.C. Pipe	Cast Iron Pipe	Non-Linear Works	Asset Mgmt	Corrosive Soils	Ductile Iron Pipe CCTV/RFEC	Leak Detection	
2014	\$ 248,000	\$ 1,856,000	\$ 189,000		\$ 10,000			\$ 2,303,000
2015	\$ 44,000		\$ 332,000	\$ 60,000	\$ 10,000	\$ 50,000		\$ 496,000
2016	\$ 621,000		\$ 179,000					\$ 800,000
2017	\$ 418,000	\$ 358,000	\$ 227,000	\$ 40,000	\$ 10,000		\$ 60,000	\$ 1,113,000
2018		\$ 581,000	\$ 107,000		\$ 10,000	\$ 50,000		\$ 748,000
2019		\$ 192,000	\$ 45,000	\$ 40,000			\$ 20,000	\$ 297,000
2020		\$ 620,000	\$ 351,000		\$ 10,000			\$ 981,000
2021	\$ 186,000	\$ 258,000	\$ 46,000		\$ 10,000	\$ 50,000		\$ 550,000
2022		\$ 229,000	\$ 50,000				\$ 20,000	\$ 299,000
2023		\$ 129,000	\$ 103,000		\$ 10,000			\$ 242,000
Program Total	\$ 1,517,000	\$ 4,223,000	\$ 1,629,000	\$ 140,000	\$ 70,000	\$ 150,000	\$ 100,000	<u>\$ 7,829,000</u>

*Note that the pipe renewal/replacement programs included in the ten-year plan include associated paving costs, assuming a full 8 m repaving is required at \$ 36/m², this is estimated at \$ 288 per linear meter of pipe replaced.

RMoW is recommended to fund the water system renewal program listed above through a debt free funding strategy using existing rates and reserves. Currently budgeted contributions to reserves are sufficient to fully fund the renewal program and there does not appear to be any short or medium term need to adjust water rates due to issues identified in this study.

However, it is recommended that the funding needs of the renewal requirements are assessed and a reserve fund is established to pay for the extensive renewals forecast beyond 2053.

Recommendations Regarding Asset Management

In addition to the project specific recommendations noted above, the RMoW is further recommended to continue to take an asset management approach with regard to the water distribution system and extend this type of analysis to other utility infrastructure. The following is recommended to continually manage and refine the water distribution system renewal plan:

1. Considerable effort was directed at preparing a detailed and current water distribution asset inventory along with important asset condition and criticality information. The RMoW is recommended to consider and subsequently develop an information management strategy that will ensure that this type of data remains current, secure, and available in a flexible format to easily allow other types of engineering analysis in the future. In addition to water main data, this strategy should include similar data from all RMoW infrastructure.
2. Continue to update and use the CAP renewal model for the purpose of long range water system renewal planning. The contents of this report reflect the conditions at the present time. Going forward, the water system will continue to deteriorate, new infrastructure will be added to the system, and maintenance will be applied to portions of the system as required. Even though change of this type tends to be gradual and slow, the RMoW should ensure that the models used in this study are updated on a regular basis.
3. Develop a utility information management strategy. Asset management plans such as this rely on accurate and current information from a broad cross section of RMoW functions including fixed asset data, financial data, maintenance and work program data, and long range planning data. While there is no single computerized information management system that can fulfill all of the requirements for asset management planning, RMoW will need to design an information management strategy that balances the need for information with a justifiable cost. We also recommend that this strategy be considered with all RMoW infrastructures in mind (and not just the water distribution system).
4. Conduct a similar renewal plan for the wastewater utility. To ensure that RMoW costs as a result of pipe replacements and excavations can be minimized over the long term, a wastewater system renewal plan should be conducted. This will provide opportunities where both water and sewer pipes might be replaced at the same time to reduce overall construction costs. The same renewal plan methodology used for the water system can be employed. The resulting combined linear system renewal plan (including water mains, sewer mains, and roads) can be designed to ensure that excavations can be minimized and that all pipe replacements are conducted in the most efficient manner possible.
5. Ensure that utility construction is adequately supervised so that poor quality construction doesn't compromise the condition and service life of the RMoW's water mains.
6. Water main repairs provide an ideal opportunity to collect information on the condition of the pipe. RMoW should review with its O&M staff a standard procedure to collect information such as pipe thickness or quality of bedding as regular O&M work is conducted.

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1. Introduction

Most of the Resort Municipality of Whistler's water utility infrastructure is less than 40 years old, but due to a range of factors such as outdated water main materials, quality of original installation, and local corrosive soils, some of this infrastructure is reaching the end of its useful life and is in need of replacement. The symptoms of infrastructure deterioration in the water system include increasing network maintenance costs (for example, responding to more and more main breaks), deteriorating water quality, increasing volumes of water loss, and a gradual erosion of overall levels of service. As the network continues to age, it is only a matter of time before the water system will experience more significant asset failures, which will result in a further drop in water utility levels of service. It is becoming economically inefficient to continue to repair assets that are fully deteriorated.

Presently, Whistler repairs water infrastructure when a break or other problem occurs. Repairs are conducted and O&M activities are adjusted to ensure that water quality and a reasonable level of service is assured. These activities have been funded through existing annual O&M budgets. However, the risk is that many of these repairs are only delaying the need to prepare a utility wide infrastructure renewal strategy. Whistler needs a long-term system rehabilitation work plan and an associated financial plan for the water utility to allow for reliable ongoing budgeting and effective annual infrastructure renewals.

The Resort Municipality of Whistler (RMoW) retained AECOM to develop a capital asset rehabilitation plan for the both the water production and distribution network (referred to in this report as the RMoW water utility). The results of this study have estimated the approximate infrastructure renewal funding requirements of the water utility over a range of planning horizons.

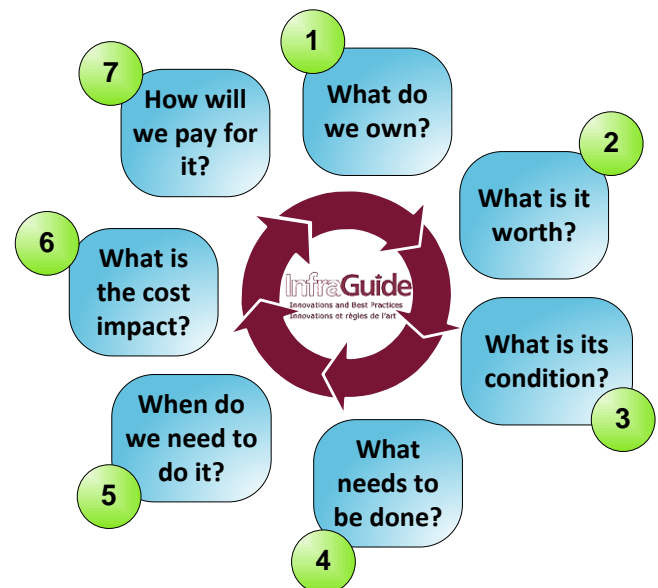
1.1 Study Methodology is Based on Best Practices

AECOM applied the methodology that was published in 2007 by the National Guide for Sustainable Municipal Infrastructure's (InfraGuide) "Best Practice for Developing a Water Distribution System Renewal Plan" as a basis for conducting this study. This methodology can be generally described by answering the "7 Questions of Asset Management" in an organized and sequenced manner (as shown in [Figure 1-1](#)). The questions are addressed through two complementary assessments: top-down and bottom-up. These two assessments differ in the detail needed for preparation and how the results can be applied.

The top-down approach uses more readily available system data and is useful for strategic long term planning of budgets and programs, whereas the bottom-up approach looks at individual assets and is used for short term capital and project planning. Given the relatively long expected life of water mains, short term planning is usually considered to be 10 years and long term planning is typically up to 100 years.

The renewal forecast for this study was completed using an MS-Excel based Capital Asset Planning (CAP) model. An electronic version of this model, with instructions for updating it, will be provided to the RMoW. A print out of the water system inventory from the model is provided in [Appendix A](#). This model and the findings from this report provide a current "snapshot" of RMoW's water utility. If the system changes, such as installation of new pipes, or replacement of water mains, then the model needs to be updated accordingly.

Figure 1-1: The InfraGuide "7 Questions"



All cost estimates have been prepared using current (2014) dollars in order to facilitate year to year comparisons and to avoid the uncertainty of projecting inflation and discount rates far into the future.

This report follows an outline as follows:

- Section 2** Presents the results of the top-down assessment. This assessment uses a large range of asset data to forecast the total renewal requirements over a 100 year horizon. This serves to illustrate the overall magnitude of the cumulated water distribution renewal program over its full life cycle.
- Section 3** Presents the results of the bottom-up assessment. This assessment refines the top-down approach and focuses specifically on the upcoming 10 year horizon to plan and prioritize short term renewal needs. As well as making budget estimates, the bottom up assessment focuses on individual assets incorporating consideration of risk, local conditions, construction practices, and rehabilitation techniques.
- Section 4** Details the proposed 10 year asset management activity plan that is recommended to respond to the needs of the water utility.
- Section 5** Presents funding strategies based on the outcome of the top-down and bottom up assessment. The funding requirements for renewal are assessed and recommendations made regarding funding and financing options.
- Section 6** Presents a summary of recommendations. A schedule of works for the next ten years is provided for condition assessment, rehabilitation, and complementary studies.


1.2 Whistler2020 Objectives and Rehabilitation of the Water Piping Distribution Network

Whistler has established ambitious sustainability goals through its Whistler2020 vision. The key objectives of the Whistler2020 vision are to reduce and eventually eliminate Whistler's contribution to:

- Systematic increases in concentrations of substances taken from the earth's crust.
- Systematic increases in concentrations of substances produced by society.
- Ongoing degradation of nature by physical means.
- Systematically undermining the ability of others to meet their basic needs.


Fundamentally the aims of asset management practices are aligned with sustainability goals. Good asset management essentially aims to maintain assets and levels of service through the most cost effective methods available. By incorporating consideration of the tangible and intangible costs associated with the Whistler2020 goals into the project methodology, the intent is to provide the RMoW with a robust, transparent and demonstrable method of achieving their goals. Some specific examples of how the study methodology and the Whistler2020 goals align are presented below.

Whistler2020 Sustainability Objective #1
 Whistler will reduce and eventually eliminate its contribution to the systematic increases in concentrations of **substances taken from the earth's crust.**




- Incorporating consideration of taking substances from the Earth's crust into the Risk Assessment the impact is formally identified and can then be systematically minimized.
- Coordinating renewal works will reduce the amount of associated fill, materials and energy use.
- Implementing industry best practice for asset renewal will extend asset lives using optimized renewal timing, reducing the overall energy and material use.
- Reduction in material and energy use is a key factor considered for renewal techniques.

Whistler2020 Sustainability Objective #2
 Whistler will reduce and eventually eliminate its contribution to systematic increases in concentrations of **substances produced by society.**




- By incorporating consideration of contributing to substances produced by society into the risk assessment, the impact is formally identified, and can then be systematically minimized.
- Coordinating renewal works will reduce waste refuse fill and pollution associated with energy use.
- Reducing water loss will lead to a reduction in the amount of chlorination required.
- Using industry best practice and an understanding of material degradation to schedule renewal will reduce the amount of water pipe that is disposed prematurely.
- Reduction in pollution is a key factor considered during the Technology and Best Practice Review.

Whistler2020 Sustainability Objective #3
 Whistler will reduce and eventually eliminate its contribution to **ongoing degradation of nature by physical means.**



- By incorporating consideration of the ongoing degradation of nature by physical means into the risk assessment, the impact is formally identified, and can then be systematically minimized.
- Coordinating renewal works will reduce the amount of excavation and associated detriments.
- The renewal plan aims to prevent water main leaks and bursts and the consequential impacts on the environment.
- Reduction in physical damage to nature is a key factor considered during the Technology and Best Practice Review.

Whistler2020 Sustainability Objective #4
 Whistler will reduce and eventually eliminate its contribution to systematically **undermining the ability of others to meet their basic needs.**



- Incorporating consideration of undermining the ability of others to meet their basic needs into Risk Assessment, the impact is formally identified and can then be systematically minimized.
- Coordinating renewal works will reduce the interruption to the water delivery system, as well as other asset levels of service such as roads, sewer, parks, etc.
- The recommendations for renewal and reserve contributions will allow RMoW to plan to meet their future needs.
- Reduction in interruptions to residents is a key factor considered during the Technology and Best Practice Review.

2. Top-down Approach to Infrastructure Renewal Forecasting

The top-down approach uses readily available infrastructure data to prepare a long-term network-wide renewal cost estimate. Using the top-down approach, the projected renewal costs for the water assets can be estimated using replacement cost and assumed life expectancy. The top-down approach is consistent with the accrual accounting method common in the business world and regulated utilities, in which capital cost expenses include depreciating the value of an asset over its theoretical useful life.

2.1 Asset Inventory: “What do we own?”

All infrastructure assets have a finite life, and it is only a matter of time before each asset must be replaced. The asset inventory forms the basis of what needs to be maintained or replaced. The total cumulative magnitude of all future renewal requirements is driven by the extent of the infrastructure inventory. The first step therefore is to document the complete asset inventory. The RMoW water utility infrastructure considered in this study is composed of linear and non-linear assets as follows:

Linear assets

- Water mains; and
- Service connections

Non-linear assets

- Reservoirs
- Intakes
- Wells
- Pressure Reducing Valves (PRVs)
- Altitude Valves
- Booster Pumping Stations
- Water Meters and
- the UV Facility

The renewal of linear assets differs from that of non-linear assets, as the linear assets are continuous and failure may occur at any point along the length, while the non-linear assets are relatively discrete and failures occur at a known location.

In order to undertake the top-down analysis for linear assets, the following attributes are required:

- Material
- Diameter
- Length
- Year of installation

The top-down analysis of non-linear assets uses expected useful lives based on local area experience of similar assets, as such the following attributes are required:

- Asset type
- Construction method
- Material
- Year of installation

The following RMoW data sources were used in this assessment:

- GIS shape files
- Financial information system
- AutoCad Records
- The Accommodation Land Use Inventory

2.1.1 Exclusions

Pipes that are not the responsibility of the RMoW are not included in this analysis: mains and services listed as private were excluded. It is also assumed that abandoned mains are not required to be maintained or replaced and are excluded; furthermore it is assumed that decommissioning of existing abandoned mains has been undertaken sufficiently to mitigate the risk of collapse.

Fire hydrants have been treated as linear assets rather than non-linear, as they are maintained in conjunction with the linear assets and are typically replaced with the mains.

Zone 775 rationalization, and the replacement of the Olympic Reservoir and associated altitude valve were not reviewed in detail in this report. These major works are already scheduled and budgeted in RMoW's five year capital plan.

2.1.2 Data Gaps

Through the analysis, some gaps in the data detailed in [Section 2.1](#) above were identified, as well as inconsistency between the RMoW data sources. Recognizing that data gaps and inconsistencies would result in incomplete or erroneous asset related conclusions, AECOM conducted a network knowledge overlay workshop on February 15th, 2013 to collect and verify information from RMoW Operations and Maintenance staff. Information that was collected includes: missing water main material and age data, identification of private water mains, water main break history, identification of critical mains, poorly installed water mains, water quality issues, tuberculation, corrosive soils and factors that would increase the cost to reconstruct mains. [Appendix B](#) presents a summary of the information collected in the minutes of this workshop. The RMoW staff that took part in the workshop were the Utilities Group Manager, the Project Manager, the Utilities Supervisor, the Chief Utility Operator and the Lead hand. Following the Knowledge Overlay Workshop, all updated and verified data was entered into the asset inventory and the data gaps were successfully removed.

2.1.3 Asset Inventory Summary

Following data gap checking process, the summary of the length and material of water mains that are owned by the RMoW is presented in **Table 2-1** below:

Table 2-1: Summary of Pipe Main Length by Material

Material	Nominal Diameter (mm)											Total
	50	65	75	100	150	200	250	300	350	400	600	
	Length (m)											
AC	-	-	-	417	2,449	-	-	308	-	-	-	3,174
Cast Iron	-	-	-	63	4,172	2,404	-	-	-	-	-	6,639
Ductile Iron	-	-	8	432	9,692	8,872	11,769	15,735	4,522	4,647	1,832	57,509
Polyethylene	656	-	-	-	-	-	-	-	-	-	-	656
PVC	811	67	126	1,758	13,393	16,411	12,625	13,149	2,140	105	-	60,585
Steel	-	-	-	14	11	-	26	17	80	-	-	148
TOTAL	1,467	67	134	2,684	29,718	27,688	24,420	29,209	6,742	4,752	1,832	128,713

The percentage breakdown of the inventory detailed in **Table 2-1** is graphically represented in **Figure 2-1**.

Figure 2-1: Breakdown of Water Main Inventory Length by Material

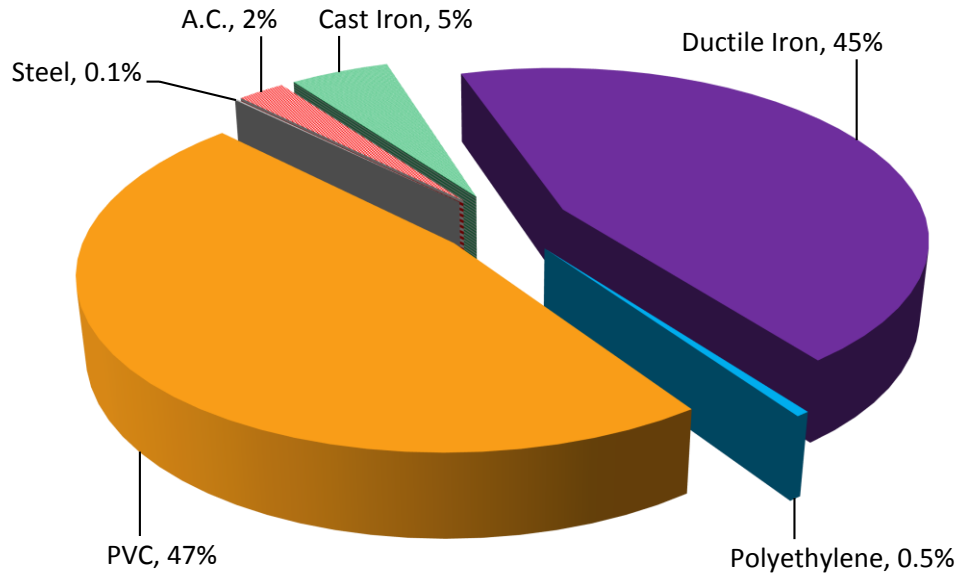


Table 2-2 summarises the water service connections owned by the RMoW by count, length and material. We included the count for the service connections as they are often replaced on a per service basis instead of by length.

Table 2-2: Water Service Connections by Material and Diameter

Material	Diameter (mm)	20	25	50	75	100	150	200	250	300	Total
Copper / Polyethylene*	Count	2,878	-	-	-	-	-	-	-	-	2,878
	Length (m)	28,780	-	-	-	-	-	-	-	-	28,780
Polyethylene	Count	-	1	2	-	-	-	-	-	-	3
	Length (m)	-	33	112	-	-	-	-	-	-	145
Ductile Iron	Count	-	-	-	-	8	67	24	3	3	105
	Length (m)	-	-	-	-	95	771	282	30	30	1,209
PVC	Count	-	1	8	1	23	82	71	11	-	197
	Length (m)	-	17	95	28	258	1,154	792	109	-	2,453
TOTAL	Count	2,878	2	10	1	31	149	95	14	3	3,183
	Length (m)	28,780	50	207	28	353	1,925	1,074	139	30	32,585

*The Copper/Polyethylene 20 mm (3/4") service connections are estimated based on the number of residential houses, duplexes, and pensions serviced by the RMoW water distribution system; it is assumed that services are 10 m in length on average.

The non-linear assets that are owned and operated by the RMoW are presented in [Table 2-3](#), [Table 2-4](#), [Table 2-5](#), and [Table 2-6](#).

Table 2-3: Valves

Asset ID	Location	Valve Type & Comment
P241	7146 Nester's Road (PRV)	PRV
P242	6550 Balsam Way (PRV-no power)	PRV - No power
P243	Lake Placid East & Highway 99	PRV - No power
P244	3021 St. Anton Way	PRV
P245	8319 Mountain View	PRV & Pump
P247	4290 Blackcomb Way	Booster pump & PRV
P248	Village Gate Blvd & Highway 99	PRV
P249	4001 Highway 99	PRV - Not in Service
P251	5758 Alta Lake Road	PRV - Not in Service
P252	2101 Whistler Road	Highland Control Valve
P253	3001 Brio Entrance	PRV - Not in Service
P254	At R225 Olympic Res.	Altitude Valve - to be replaced with New Zone 775 Reservoir
P255	4873 Painted Cliff	PRV
P256	4700 Glacier Drive	PRV
P257	Fitz Creek near Snowy Creek	Check valve & Surge Station
P258	6717 Crabapple Drive	PRV
P259	At R228 Baxter's Res.	Altitude Valve
P260	2025 Karen Crescent	PRV
P261	4450 Blackcomb Way	PRV
P262	4389 Northlands Blvd.	PRV
P263	2399 Cheakamus Way	PRV
P264	Whistler Road at Nordic	PRV & Booster Pump
P265	3840 Sunridge Drive	PRV & Booster Pump

Asset ID	Location	Valve Type & Comment
P266	8407 Golden Bear Plc.	PRV
P267	7314 Blackcomb Way	PRV
P268	4100 Lorimer Road	PRV & Check Valve
P269	7114 Nancy Green	PRV
P270	2400 Taluswood Place	PRV & Pump
P271	2649 Wolverine Cres	PRV
P272	5801 Alta Lake Rd	Butterfly Valve & Flow Meter – not in service
P273	1559 Spring Creek Drive	PRV
P274	5406 Stonebridge Dr.	PRV & Pumps
P275	5438 Stonebridge Dr.	PRV
P276	5310 Alta Lake Rd.	PRV
P277	3025 Hillcrest Dr.	PRV
P278	1010 Janes Lake Rd.	PRV
P282	5590 Alta Lake Rd.	PRV
P283	8522 Ashleigh Mclvor Drive	PRV
P284	Highway 99 at Cheakamus Lake Rd.	PRV

Table 2-4: Wells

Asset ID	Location	Screen Interval Depth (m)	Rated Well Capacity (L/s)
W201-1	9225 Hwy 99	11.6 – 14.9	14.2
W201-2	9225 Hwy 99	16.5 – 18.9	10.7
W201-2	9225 Hwy 99	8.9 – 15.2	31.6
W202	8801 HWY 99	10.0 – 19.5	34.7
W205-1	4490 Blackcomb Way	23.0 – 28.0	27.0
W205-2	4490 Blackcomb Way	16.3 – 21.3	37.9
W205-3	4490 Blackcomb Way	14.4 – 17.6	20.5
W210	8010 Alpine Way	14.3 – 18.9	22.1
W211	4330 Blackcomb Way	15.8 – 18.8	18.0
W212-1	1005 Lynham Road	10.6 – 19.8	41.0
W212-2	1005 Lynham Road	14.6 – 17.7	33
W213	8107 Camino Dr.	42.1 – 46.6	18.9
W217	Cheakumus Crossing Well	16.5 – 20.4	82.5
W218	21 Mile Well	24.7 – 29.7	83.7
PW400	Balsam Park Irrigation Well		
PW401	Rainbow Park Irrigation Well		
PW402	Spruce Grove Park Irrigation Well		

Table 2-5: Reservoirs

Asset ID	Location	Volume (m ³)
R222A	8286 Alpine Way (Rectilinear)	421
R222B	8286 Alpine Way (Circular)	682
R224	2719 Millars Pond Cres.	640
R225	Replacement Zone 775 Reservoir re: Olympic Reservoir	Volume TBD
R226	Above 1100 Cheakamus Lk. Rd.	2500 (2 cells)
R227	8440 Mountain View Dr.	485
R228	Top of Gondola Way	2551
R233	Blackcomb Reservoir	2207
R234	4701 Blackcomb Way	2420
R235	2400 Taluswood Place	1118
R236	Taluswood II Reservoir (913 m. elev.)	2547
R237	Mountain View Dr. Res.	1115
R238	9525 Emerald Dr.	1958
R239	3890 Sunridge Drive	1144
R240	5483 Stonebridge Place	530

Table 2-6: Other Non-Linear Assets

Asset ID	Location	Facility Type & Comment
P279	1135 Cheakamus Lake Rd.	Pumping Station
P280	5785 Alta Lake Rd.	Pumping Station
P281	5825 Alta Lake Rd.	UV Disinfection Facility
R231	21 Mile Creek above RMoW Cemetery	Intake
R232	Blackcomb Creek	Intake
	Various	Water Meters (no. 3,704)

2.2 Replacement Costs: “What is it worth?”

Recent public sector accounting regulations (PSAB 3150) have required that all Canadian municipalities conduct a valuation of their infrastructure as part of the transition towards recognizing and accounting for the depreciation of tangible capital assets. The accounting valuation is based on the historical cost of the assets. However, asset management planning assessments rely on estimating what it will cost to replace the assets. This difference explains why account and engineering valuations of the same infrastructure will differ significantly. Since one of the objectives of this study is to estimate future infrastructure renewal budgets, this distinction is important.

Table 2-7 shows the unit replacement costs and total replacement value in 2014 dollars that are used in this analysis for water mains. These estimates are based on records of recent construction costs at Whistler and include all appurtenances such as fire hydrants and valves.

Table 2-7: Current Replacement Costs of Water Mains (2014)

Diameter (mm)	Cost per meter (2014 dollars)	Length (m)	% of Water Main Inventory	Replacement Cost (2014 dollars)
50	\$ 225	1,467	1.14%	\$ 365,000
65	\$ 230	67	0.05%	\$ 19,900
75	\$ 240	134	0.10%	\$ 34,700
100	\$ 250	2,683	2.09%	\$ 740,000
150	\$ 265	29,718	23.11%	\$ 9,290,000
200	\$ 300	27,688	21.38%	\$ 9,100,000
250	\$ 375	24,420	19.02%	\$ 9,600,000
300	\$ 450	29,209	22.67%	\$ 13,800,000
350	\$ 462	6,742	5.25%	\$ 3,190,000
400	\$ 495	4,752	3.74%	\$ 2,410,000
600	\$ 1,725	1,832	1.43%	\$ 3,210,000
TOTAL		128,713	100%	\$ 51,700,000

Table 2-8 shows the replacement costs and total replacement value in 2014 that are used in this analysis for service connections. These estimates are based on records of recent construction costs at RMoW. Note that for small diameter service connections less than 50 mm there is a total replacement cost per service connection, whereas for larger diameter service connections works are undertaken on a per meter basis.

Table 2-8: Current Replacement Costs of Service Connections (2014)

Diameter (mm)	Cost (2014 dollars)	Count	Length (m)	Replacement Cost (2014 dollars)
20	\$ 1,300 ea	2,878*	28,780*	\$ 3,740,000
25	\$ 1,400 ea	2	49	\$ 2,800
50	\$ 2,000 ea	10	207	\$ 20,000
75	\$ 240 / m	1	28	\$ 6,700
100	\$ 250 / m	31	353	\$ 88,300
150	\$ 265 / m	149	1,925	\$ 510,000
200	\$ 300 / m	95	1,074	\$ 322,000
250	\$ 375 / m	14	138	\$ 51,900
300	\$ 450 / m	3	30	\$ 13,500
TOTAL		3,183	3,584	\$ 4,760,000

*The Copper/Polyethylene 20 mm (3/4") service connections are estimated based on the number of residential houses, duplexes, and pensions serviced by the RMoW water distribution system ; it is assumed that services are 10 m in length on average.

For replacement of the non-linear assets the cost estimates are based on the following assumptions:

- The RMoW PRVs will be replaced on the basis of the current standard design
- Where the PRV is currently below ground and the location permits, it is assumed that the replacement work will include construction of a building and installation of the new equipment above the ground
- All other assets are valued according to their components and estimated replacement costs

A summary of the replacement costs of the non-linear assets is presented in **Table 2-9**.

Table 2-9: Summary of Non-Linear Asset 2014 Replacement Costs

Asset Type	Count	Replacement Cost (2014 dollars)	
Altitude Valve	1	\$	314,000
B/V and Flow meter	1	\$	259,000
Check Valve & Surge Station	1	\$	259,000
Intake	2	\$	800,000
PRV	36	\$	12,347,000
Pumping Station	2	\$	3,878,000
Reservoirs	15	\$	18,225,000
UV Facility	1	\$	1,763,000
Water - Wells	16	\$	5,050,000
Water Meters	3,704	\$	1,499,000
TOTAL	75	\$	44,394,000

The total replacement cost estimate for the RMoW water utility is approximately \$ 101 M.

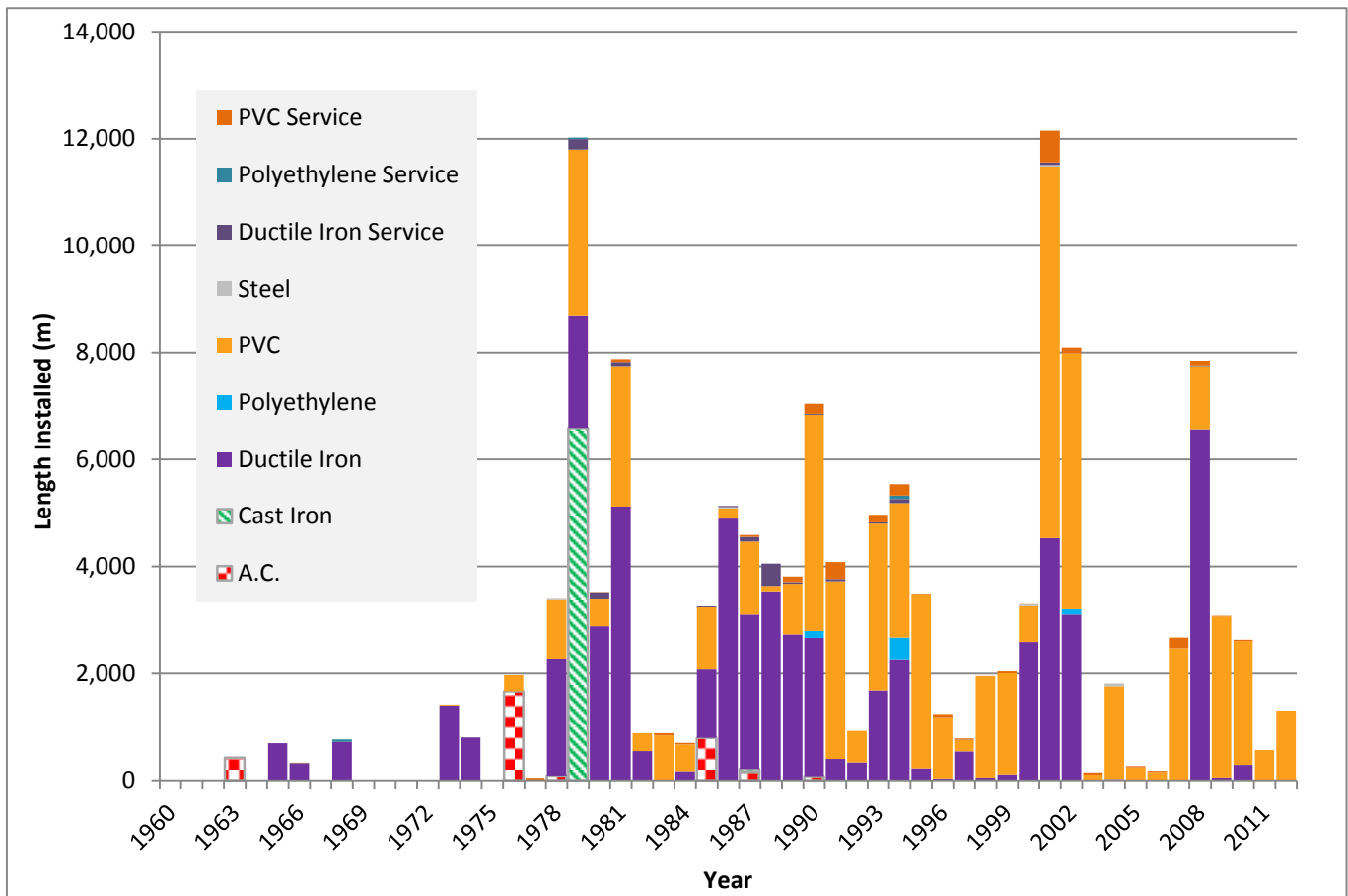
2.3 Infrastructure Age and Material: “What is its Condition?”

Good asset management strategies will result in replacing assets at a point where their physical condition makes replacement more cost effective than responding with higher and higher repair costs. However, conducting physical condition assessments on all underground assets is difficult and expensive. Like most Canadian municipalities, the precise physical condition of Whistler’s water distribution system piping is not known. However, using a combination of information known about the assets including each asset’s installation date, age, and material type, it is possible to estimate the approximate condition of the asset inventory for the purposes of conducting the top-down assessment.

2.3.1 Linear Infrastructure

Since the objective is to estimate when the pipes will need to be replaced, it is crucial to obtain an understanding of the particular blend of pipe age and material that constitute the RMoW water distribution piping system. The bar chart in [Figure 2-2](#) presents the historical installation profile of the piping inventory by pipe material, length, and year of installation. This will form the base from which it will be possible to begin making renewal forecasts.

Figure 2-2: Historical Length of Pipe Installed by Material

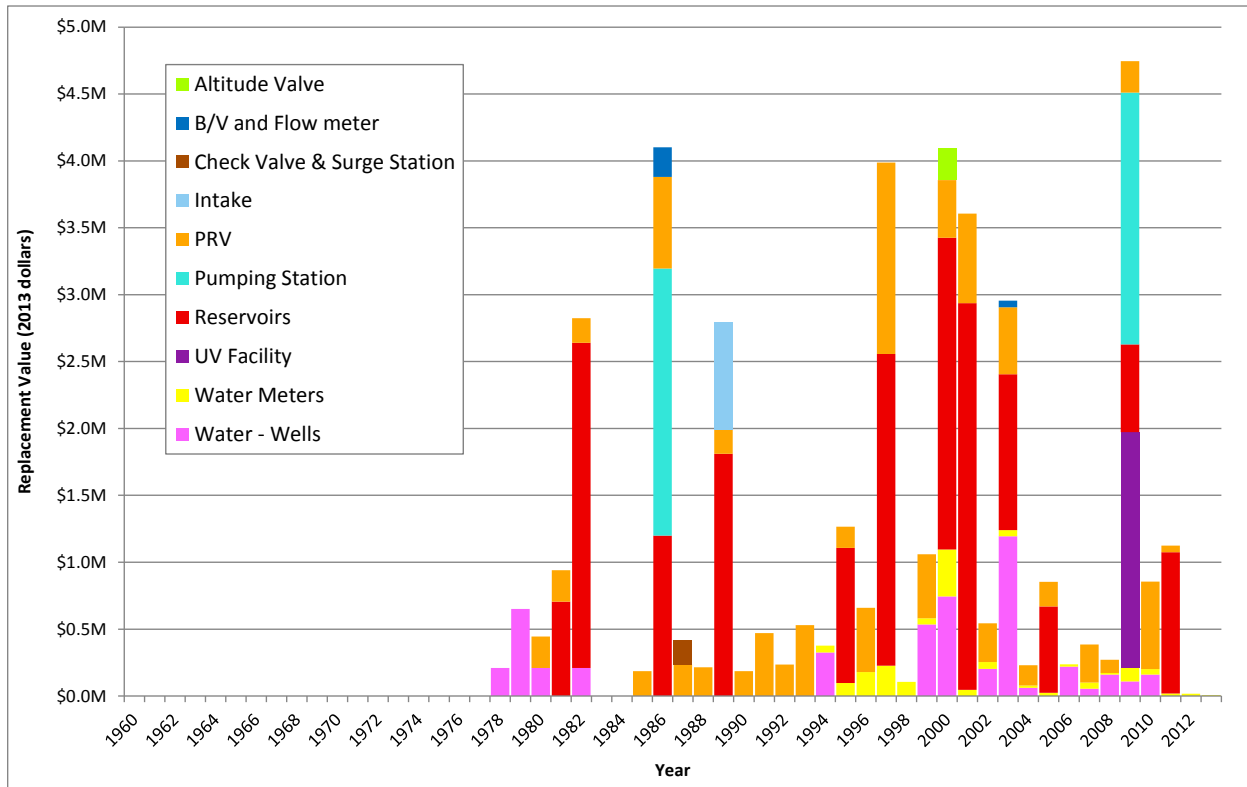


The shape of the graph reflects RMoW growth being driven by periodic surges in development. It is expected that renewal of pipes will reflect this growth pattern. The majority of existing pipe was installed after 1978, and is thus less than 35 years old; this is relatively young compared to most other Canadian municipalities. The oldest mains are asbestos-cement at 50 years old. The inventory of cast iron pipe was primarily installed in 1979 and 1980, with a small installation in 1997. The majority of the pipe inventory has been PVC and ductile iron, with no clear trend in either pipe material use - it appears that use of PVC or ductile iron is based on cost of material and/or developer preference. The small population of steel and polyethylene pipes appear to have been installed in one-off projects as needed.

2.3.2 Non-linear Infrastructure

With regards to the existing non-linear water distribution infrastructure the historical dates of construction and installation is presented in terms of 2014 replacement value in [Figure 2-3](#).

Figure 2-3: Historical Installed Cost of Non-linear Assets



The growth of the non-linear infrastructure appears to lag the pipe network, likely because of the shorter lives of the non-linear assets. However, the overall pattern of growth reflects the expansion of the pipe network and Whistlers periodic development episodes.

2.4 Replacement Method: “What Needs to be Done?”

2.4.1 Linear Assets

To estimate the long range costs and timing of individual renewal projects, assumptions regarding the timing and method of replacement or rehabilitation technologies need to be made. The top-down analysis is designed to take a network view to the overall system, and relies on basic asset life cycle assumptions. The top-down process assumes that the network is maintained according to industry standard practices and that pipes (and associated appurtenances) are replaced based on a mathematical calculation that estimates the end of their expected service lives. For example, if it is expected that PVC water mains have an average of 85 years expected life cycle, a PVC water main that was installed in 1990 will be replaced in 2075. It also assumes that the replacement is made without regard to other utility assets in the area. This is an important consideration, since there are substantial economies if water, sewer, and storm water pipes can be replaced at the same time. The top-down assessment does not factor this possibility into the estimates, so the top down assessment can be considered to represent the upper limit of spending required. With good asset management practices, the RMoW should be able to significantly reduce the total program costs over the long run. In effect the top-down analysis provides the RMoW with a benchmark that can be used to represent the amount of money saved. It also serves to inform decision makers of the sensible limit to spending on the pipe network.

The top-down analysis is based on the materials, installation dates, and length provided by the RMoW and assumes the following:

- All new pipes will be AWWA C900 or C905 PVC “Blue Brute”
- Replacement of pipe will be undertaken once a pipe reaches the end of its expected life
- The expected service life of a new pipe is 85 years

Due to improvements in pipe technology, the expected service life of a new pipe is 85 years

2.4.2 Non-linear Assets

With regards to the non-linear assets it is assumed that the following components will be replaced at the end of service life:

- Electrical/Controls/SCADA
- Process Mechanical
- Generators
- Pumping equipment
- Disinfection Equipment
- Fixtures & Fittings
- Irrigation Wells

However, the following assets are expected to be maintained and only require renewal works at the end of service life:

- Building Structural
- Site Works
- Reservoirs
- Galleries
- Well Bores

These renewal works will include structural repairs, and replacement of sealants, and paints. Refurbishments costs at the end of the expected service life are assumed to be 20% of the estimated replacement cost.

2.5 Replacement Timing: “When Do We Need To Do It?”

2.5.1 Linear Assets

The purpose of this task is to model the projected useful service life of the water main assets. An average service life has been assumed for each pipe material. For this study, the expected service lives have been based on a mix of industry averages from the literature, local knowledge and experience from both within Whistler and from other communities that AECOM has conducted similar studies within the Lower Mainland.

2.5.2 Estimating the Expected Service Lives of Water mains

The expected service lives (ESLs) of RMoW’s existing water mains for the various pipe materials is presented in [Table 2-10](#). We have assumed that all service connections would have an average service life of 50 years, except 20 mm service connections that are assumed to be replaced with the main.

It is important to note that the expected service lives noted below are averages that are based on best case assumptions, e.g., that pipes were installed well, that local soils are non-corrosive, and that once installed, the pipes are generally undisturbed and pressures do not exceed design limits. Any of the above factors can impact the actual service life of a water main (the impacts of these variables will be examined in the bottom-up phase of this study).

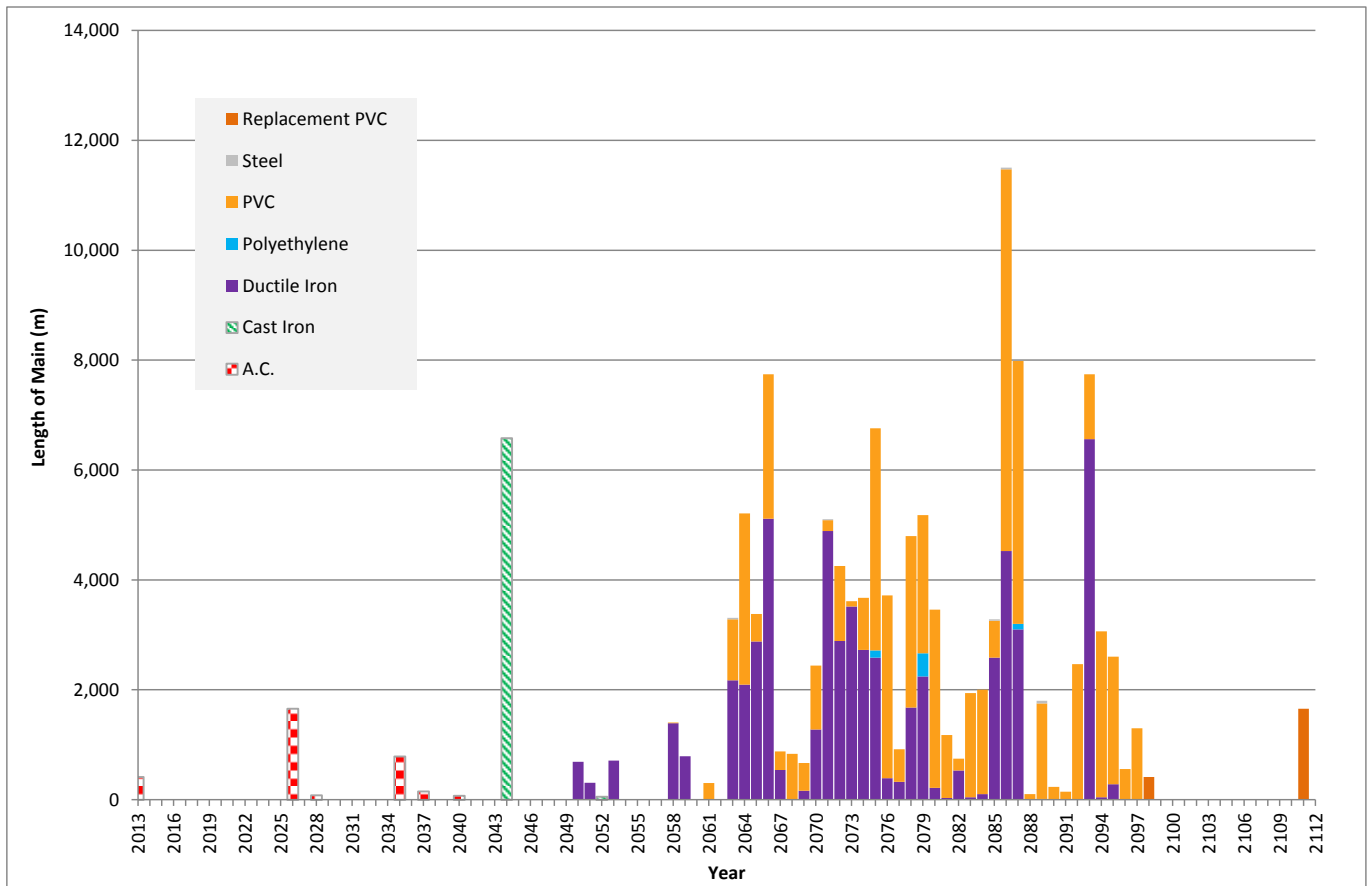
Table 2-10: Expected Service Life of Main based on Material

Material	RMoW ESLs used for this study	West Vancouver	City of Vancouver	Port Moody	Prince George	Canadian-wide Benchmarking Survey
Asbestos Cement	50 years	50 years		50 years	80 years	75 years
Cast Iron (1960-1970)	65 years	75 years	65 years	65 years	80 years	84 years
Ductile Iron	85 years	100 years	100 years	100 years		87 years
Polyethylene	85 years	85 years			80 years	85 years
PVC	85 years	85 years		80 years	80 years	87 years
Steel	85 years	85 years	Transmission mains: 90 years	80 years	80 years	86 years

The oldest water mains within the RMoW system are the asbestos cement and cast iron mains and, as expected, this is the inventory that experiencing the most issues related to deterioration even though they are still a number of years away from their theoretical life expectancy. These issues will be examined in closer detail in the bottom-up portion of the assessment.

Using only the expected service life estimates in [Table 2-10](#) to forecast when individual water mains will need to be replaced, the following graph provides a projection of the next 100 years of water main replacements.

Figure 2-4: Forecast of Water Main Replacements Based Only on Expected Service Life



2.5.3 Linear Assets Service Life Probability Distribution

Figure 2-4 assumes that each water main will need to be replaced at exactly the end of its expected service life, which we know is unlikely. Some water main lengths will last longer and some will be in need of replacement sooner. To simulate this we used the Weibull probability distribution to model a replacement envelope and predict a water main length failure range. To quantify variation in degradation rates in pipelines, the Weibull Probability Density Function (PDF) has previously proven useful^{1,2}. The Weibull distribution has been used extensively in reliability studies and lifetime prediction models in industries ranging from automotive to oil and gas. A further discussion of the Weibull Probability Distribution is provided in [Appendix C](#).

It is assumed that failures will occur as the pipe ages in a statistical Weibull distribution³. Applying this method to the length of main to be replaced for each pipe material and overlaying it on the replacement based on ESL of [Figure 2-4](#) yields the output presented in [Figure 2-5](#).

¹ P. Davis, et al. Long-Term Performance Prediction for PE Pipes, AwwaRF, 2007

² S. Burn, et al. Long-Term Performance Prediction for PVC Pipes, AwwaRF, 2005

³ With a shape parameter of 8, and a scale parameter according to the expected life of the pipe.

Figure 2-5: Water Main Expected Replacement Length by Year, Adjusted for Variability

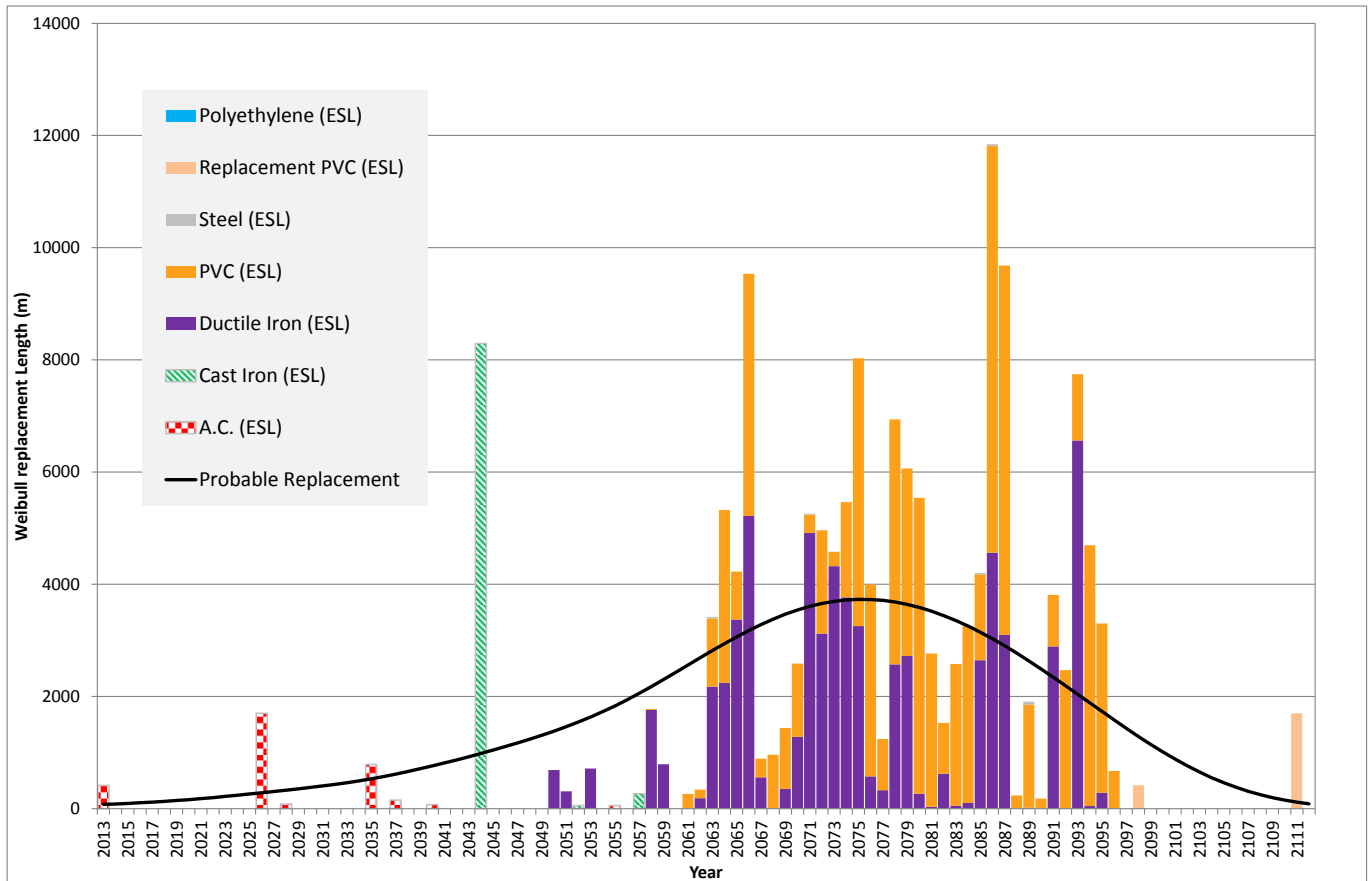


Figure 2-5 shows the expected replacement requirements for each pipe material, and the Weibull Probability Distribution applied to these replacements. It can be seen how applying the Weibull Probability Distribution smooths out the lengths of mains to be replaced. The Weibull predicted replacement shows a fairly low and steady rate of anticipated renewal requirements for the next 20 years and a rapid rise in the need for water main replacements there after. The hump is predicted to occur around 2075, coinciding with the peak replacement for the large inventory of PVC and ductile iron mains that were installed from 1980 to 2010.

This type of replacement curve is sometimes referred to as the “Nessie Curve” (AwwaRF, 2001) and reflects the periods where the system underwent significant growth. The RMoW differs from most municipal water systems in Canada due to its later stage of development.

Most Canadian municipalities experienced significant growth during the 1950’s and 1960’s, while in Whistler this growth occurred 20 years later.

This didn’t reduce future renewal costs, it just delayed them.

2.5.4 Non-linear Assets

The expected service life of the non-linear assets and sub-assets are based on the local experience of AECOM for similar assets in the British Columbia lower mainland and are summarised in [Table 2-11](#).

Table 2-11: Expected Economic Useful Life of Assets by Type

Asset Type	Economic Useful Life (Years)
Building / Structural	50
Disinfection Equipment	40
Electrical / Controls / SCADA	40
Fixtures & Fittings	25
Gallery	75
Generator	20
Motor	40
Process Mechanical	40
Pumping Equipment	40
Reservoir	75
Site Works	50
Well Bore	50

2.6 Forecasting Costs: “How Much Will It Cost?”

Now that we have an understanding of Whistler’s water utility renewal requirements over the next 100 years and the unit replacement costs for water utility assets, we can begin to develop a cash-flow forecast by multiplying the two together. The purpose of this task is to overlay a capital reinvestment funding strategy over the replacement requirements to determine the magnitude of a potential funding gap. A further discussion of this process is provided in [Appendix C](#).

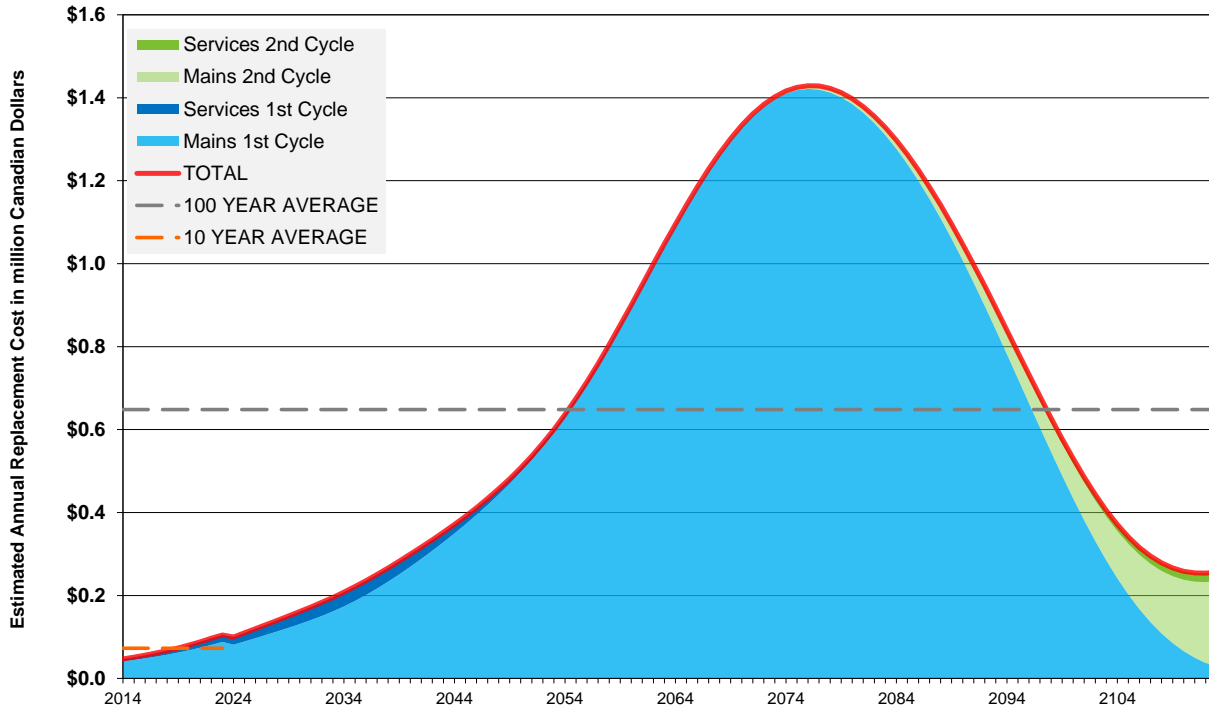
2.6.1 100-year Top-down Forecast

For the purposes of preparing financial forecasts in this assessment, all costs are stated in today’s dollars and we have not factored inflation into any of the projections. This enables the study to make year to year comparisons in consistent dollars. In actuality, all costs will likely rise at varying (and unpredictable) rates due to local rates of inflation, but on the other hand RMoW has the ability to adjust water rates and municipal taxes to meet inflationary pressures. This ability enables the use of current dollars to make renewal program comparisons for the purposes of this study.

2.6.2 Linear Assets

Looking at the longer term, the top-down analysis for the linear assets forecasts the cumulated replacement expenditure to be approximately \$ 64,800,000 for the next 100 years to 2112, with an average replacement expenditure of \$ 648,000. [Figure 2-6](#) presents the 100-year forecast resulting from the top-down analysis.

Figure 2-6: Top-down Forecast Expenditure for Water Main & Service Replacement over the next 100-years



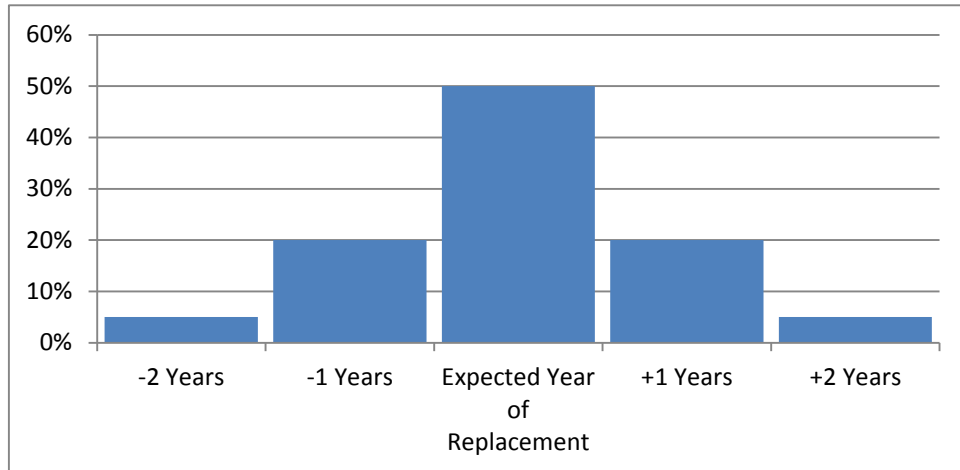
Note: Unit replacement costs include engineering costs, valves and all nodal fittings such as junctions, tees, crosses, bends and ferrules. They do NOT include road resurfacing costs.

The forecast expenditure peaks in 2076 at approximately \$ 1.4 M. The forecast expenditure steadily increases for the next 30 years, then increases rapidly as the bulk of the pipe population reaches the end of its expected service life.

2.6.3 Non-Linear Assets

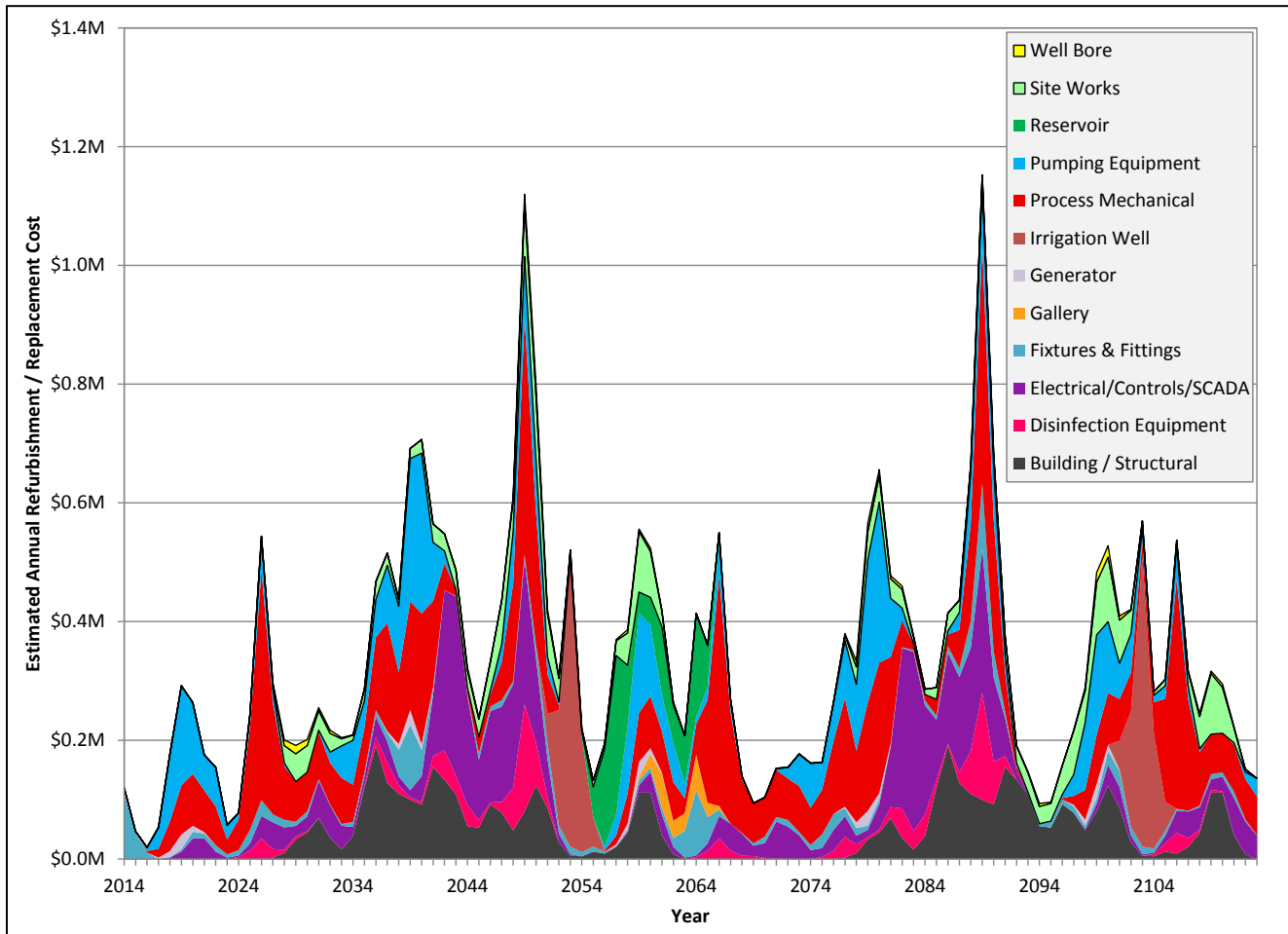
For the non-linear assets the forecast replacement and refurbishment requirements based on expected service lives, and with an uncertainty spread over five years as per Figure 2-7, is presented in Figure 2-8.

Figure 2-7: Cost Spread for Non-Linear Assets



The uncertainty spread is applied to take account of the variability of maintenance projects for fixed assets. The forecast is relatively erratic compared with the linear forecast, with required expenditures ranging from \$ 19,500 up to \$ 1.15 M in 2089. The repeating pattern of the renewal works can be seen clearly with the shorter lived non-linear assets.

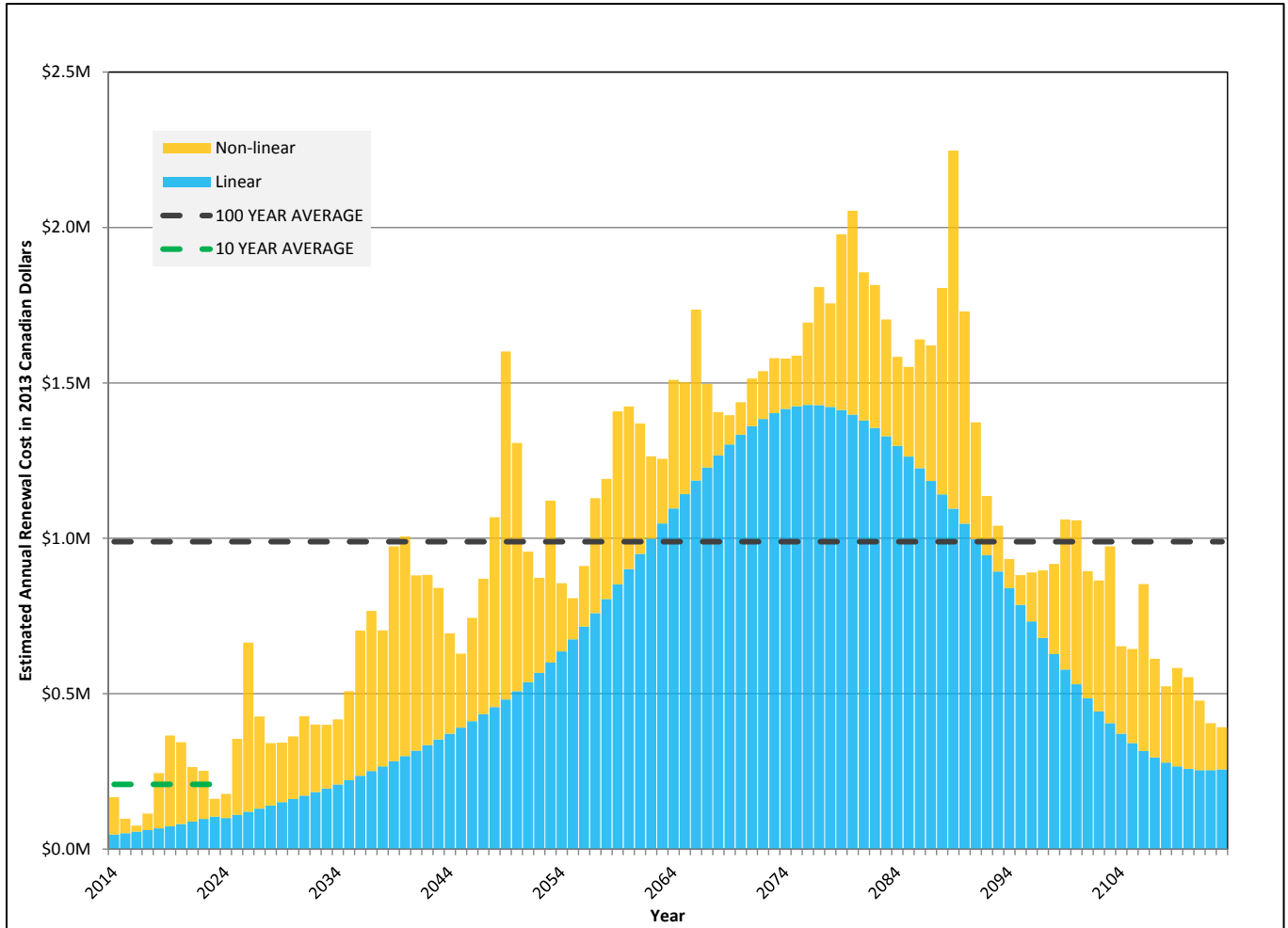
Figure 2-8: Forecast Refurbishment / Replacement Cost for Non-Linear Assets



2.6.4 Combined Top-Down Assessment

We can combine the 100-year forecast renewal for the linear and the non-linear water distribution assets to produce the chart presented in [Figure 2-9 \(following\)](#). When combined the 100 year cumulated expenditure is forecast to be approximately \$ 98 M, with an average annual renewal cost of \$ 989,000. The peak expenditure of approximately \$ 2.2 M occurs in 2089.

Figure 2-9: Combined Linear and Non-Linear 100 Year Forecast Renewal Costs



100 year total expenditures are forecast at \$ 98 M, with an average annual cost of \$ 989,000. The forecast peak expenditure of approximately \$ 2.2 M occurs in 2089.

2.7 Financial Alternatives: “How Will We Pay for It?”

The final step of this analysis is to recommend a strategy that will best meet the RMoW’s need to finance required water main replacements in the most cost effective manner possible according to the following principles:

- Affordable to customers: Minimize the impact on rates, and minimize the need to adjust rates from year to year;
- Meet levels of service: Able to meet all water quality regulatory requirements and provide an acceptable level of service to customers with regards to water pressure and unplanned system interruptions due to asset failure and repairs;
- Financially sustainable: Provide for a stable rate of reserve fund contributions, and minimize the need to adjust rates from year to year; and
- Equitable to current and future customers: Best matches the use of assets with the payment of assets.

It is clear that the liability for maintaining and renewing the water utility will increase with time. Beyond the near term need to renew the A.C. and cast iron pipe inventories, there is a period of approximately 40 years where little major water main renewal works are expected. During this time, it is anticipated that some unexpected and premature failures may occur, and funding will need to be available to respond to these events. In terms of the non-linear assets there are significant renewal works expected to be required between 2020 and 2050, in particular replacement of process mechanical, pumping equipment, electrical controls and SCADA, and refurbishment of structures.

In any case, there is an opportunity to communicate with stakeholders and identify preferred funding strategies to deal with the longer term requirements for asset replacement in the 50 years following 2053.

Recommended strategies to fund the renewal of the water distribution system will be presented in [Section 5](#) based on the bottom-up portion of the assessment.

3. Bottom-up Approach

In the top down assessment, the underlying assumption is that once an asset has reached the end of its theoretical life (based only on age), the asset is entirely replaced, i.e., it is reactive. In the case of water mains, the replacement technology is assumed to be open trenching, and without the benefit of coordinating with other City works (such as synchronizing with road or sewer line replacements). Therefore, the top down estimate represents the “do nothing” scenario, and is reactive. The reactive approach tends to be the most expensive scenario in terms of overall replacement cost, because:

- It does not consider coordination of works with other departments, especially paving programs.
- Reactive repairs are undertaken until the scheduled replacement.
- Catastrophic failures may occur prior to the scheduled replacement with consequential costs.

Good asset management planning seeks to identify asset related decisions based on criteria that include an evaluation of condition and the risk factor of each individual asset. The other cost savings approach is to identify the most cost effective renewal and/or replacement strategy for each asset in need of renewal, and then ensure that all economies are gained by planning necessary capital works in association with one another whenever possible. This should have the benefit of lowering the actual cost of the renewal program. The bottom-up approach refines the predicted expenditure requirements by assessing the particular requirements for each asset based on the risk of failure. The bottom up can be considered as a move from the theoretical to the practical, and takes advantage of cost reduction strategies.

The InfraGuide Best Practice⁴ describes the bottom-up process as follows:

Unlike the top-down approach that focuses on the long-term costs for renewal of a group of assets, the bottom-up approach attempts to quantify the short-term costs for renewal of each component in a distribution system.

For the purpose of this rehabilitation study, the bottom-up assessment focuses on the expected renewal requirements for RMoW over the next ten years to 2023.

3.1 Asset Inventory: “What do we own?”

The bottom-up assessment leverages the results from the top-down assessment but augments the individual asset detail in that it involves a pipe by pipe assessment to develop a more accurate system cost forecast over the shorter term (10 years).

The bottom-up methodology involves determining local factors that will have an impact on when each asset should be renewed in the most cost effective manner while meeting all levels of service requirements (through the best option of repair, rehabilitate, or replacement). Since opportunities for water pipe rehabilitation (e.g., through various lining technologies) are limited, open trench water main replacement will be the most common renewal option. In this study, the bottom-up portion of the study evaluated factors such as asset condition, asset criticality, water quality, and local issues regarding low water pressure. Since this study was conducted without the benefit of comparable renewal plans for sewer and stormwater mains, it was not possible to link related renewal programs. This is noted as a recommendation in [Section 5](#).

⁴ “Developing a Water Distribution System Renewal Plan;” National Guide to Sustainable Municipal Infrastructure (InfraGuide), 2005

3.2 Replacement Costs: “What is it worth?”

The objective of this step is to refine replacement costs for localized replacement priorities. We started with the replacement costs as derived in the top-down analysis as shown in [Table 2-7](#) and [Table 2-8](#), but as part of the bottom-up analysis, we augmented the detail to include closer estimates to the particular renewal priorities that are captured within the 10 year plan.

This study assumes that detailed estimates will be determined and refined at the individual project planning and design phase (when all relevant capital planning factors are identified and investigated so that detailed estimated can be prepared for job scoping).

3.3 What is its Condition?

The top-down assessment used age as the sole factor to estimate condition. An old asset is deemed to be in poor condition. While this is a reasonable assumption in the long run for most water mains, the objective of this step is to determine or estimate a closer approximation of condition in order to prioritize renewals.

Since the RMoW has not conducted any detailed condition assessments on older portions of the water system, the most valuable network information relating to the network condition came from the detailed network knowledge overlay workshop at which information was collected from the managers and operators of the water distribution system. Condition and criticality related information collected from this workshop includes: water main break history (location, date and type), identification of critical mains, poorly installed water mains, water quality issues, tuberculation, corrosive soils and factors that would increase the cost to reconstruct mains. Condition and criticality information was annotated on a water distribution system map during the knowledge overlay workshop. This data was then used to prioritize specific areas for closer examination.

For the non-linear assets a limited visual inspection was conducted to determine the high level condition based on a scale from 1 = as new, to 5 = failure expected shortly.

3.3.1 Applying Risk in Association with Condition to Prioritize Renewals

The risk associated with an asset failing can be determined by multiplying the probability of an asset failing by the consequences of it failing (defined as its criticality). During the knowledge overlay workshop with the RMoW staff, critical mains were identified. A critical main is one in which the potential risks to the RMoW in terms of impact on service and/or substantial damage in the event of a break are high. As the RMoW would like to provide due diligence to prevent breaks in critical mains, these mains should be replaced before they start deteriorating. Therefore criticality is used to prioritize mains for renewal. Examples of critical water mains are:

- Single water supply to an area or a key facility (school, businesses, reservoir etc.).
- Located where unplanned excavation would be difficult, expensive or publicly controversial (e.g., within an arterial road,).
- Due to the location of the water main, a break may pose a threat to life or property (e.g., on the edge of a steep embankment).

Because of the topography of Whistler and the proximity of creeks and wetlands, a break in nearly any water main could result in chlorinated water and silt washing into a natural water body. All water mains are therefore considered equally critical with regard to environmental risk for the purposes of this study.

The Excel-based CAPS model used to generate the renewal forecasting curves (Nessie curves) includes a mathematical function to assist in determining the probability of an asset failing based on its age, expected service life (for the given type of asset) and condition (where known) according to the following formula:

Risk Exposure = Consequences of Failure x Probability of Failure

The CAPS model allows users to input a criticality rating to capture the consequences of an asset failing. In order to prioritize mains for replacement, pipes that met the criticality criteria listed in [Table 3-1](#) were brought forward in rehabilitation planning:

Table 3-1: Criticality Factors for Linear Asset Rehabilitation Prioritization

Factor	Description	Discriminator
Potential interruptions to residents	Pipes that cross the highway or railway.	Within 10 m of highway or railway
Access restrictions	Pipes that would be difficult to access for repairs, e.g., that run under buildings.	Within the Village, Village North, Blackcomb Benchlands, within 10 m of the railway, and the lake crossing.
Break history	Pipes with a reported break history.	Alpine Meadows, A.C. pipe
Maintenance	Pipes that require ongoing maintenance.	Alpine Meadows, Crabapple Drive, cast iron pipe
Population serviced	Pipes that deliver water to large populations.	Suburbs rated per 1000 residences serviced
High pressure	Pipes that operate at high pressure and thus have increased likelihood and consequence of failure.	Pressure rated per MPa
Water Quality	Pipes that contribute to turbidity in the water supply and are causing complaints.	Cast iron pipe in Alpine Meadows.

The prioritization of criticality for the non-linear assets were based on the attributes listed in [Table 3-2](#).

Table 3-2: Criticality Factors for Non-Linear Asset Rehabilitation Prioritization

Asset Class	Attribute
PRVs and other valves	Population in Zone and Pressure
Pumping Stations	Population in Zone
Reservoirs	Volume and feedback from RMoW
Intakes	Feedback from RMoW
Wells	Well Capacity (L/s)

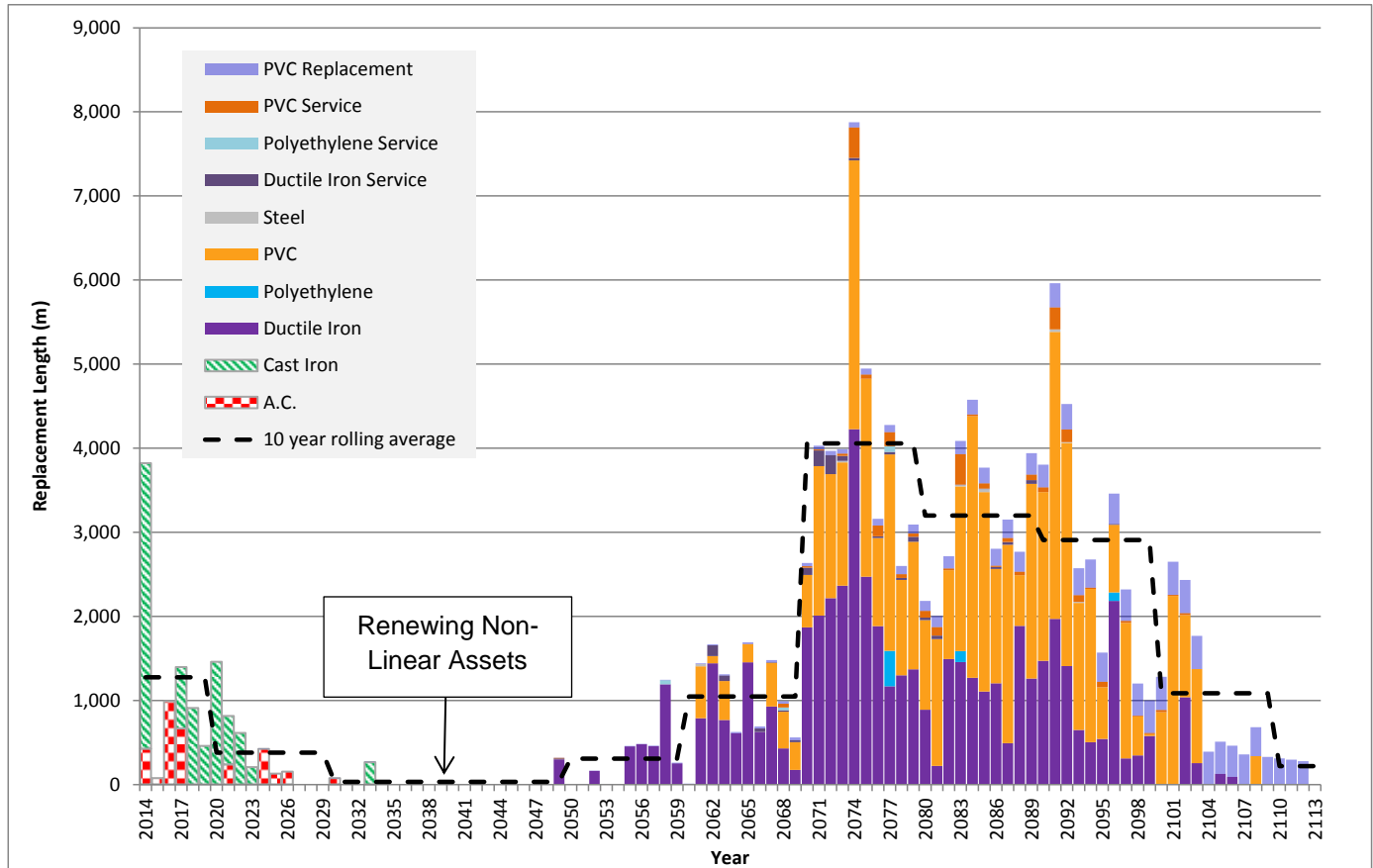
3.4 What Needs to Be Done and When Does it Need to Be Done?

In the top down assessment, the underlying assumption is that once an asset has reached the end of its theoretical life (based only on age), the asset is entirely replaced. In the case of water mains, the replacement technology is assumed to be open trenching, and without the benefit of coordinating with other RMoW works (such as synchronizing with road or sewer line replacements). As mentioned in [Section 2](#), the top down estimate tends to represent the reactive cost of replacing individual assets without the benefit of asset management planning.

After applying a closer examination of asset condition and criticality, the sequence and timing of some renewal interventions requires adjustment from the output of the top-down assessment forecast. Lengths of pipe are packaged for renewal when the Weibull risk of failure for a section exceeds the risk tolerance, i.e., each segment

length of pipe is triggered for replacement when the risk tolerance is exceeded. The revised schedule of interventions per year for the next 100 years is presented in [Figure 3-1](#).

Figure 3-1: Long Term Pipe Replacement – Length by Material



The forecast estimated linear asset works shows an aggressive replacement program for the A.C. and cast iron water main inventories in the near future (within the next 10 years), followed by a period of about 30 years where very little water main replacement is forecast. Compared with [Figure 2-4](#) the bottom up assessment has significantly brought forward the replacement of the high risk A.C and cast iron water mains. The need to rehabilitate/renew the remaining network is not forecasted to begin until 2053, and it progressively increases to a peak of approximately 7.9 km in 2074. We have assumed that 20 mm services are replaced with the water mains, and their costs are directly included in the replacement estimate of the main.

The 30 year interval between roughly 2025 and 2055 present a fortunate period to plan and manage the significant renewal demands of the mid-21st century. This interval also presents a timeframe where renewals can be concentrated on the water utility non-linear assets. Most of these assets do not have as long a service life as water mains, and will require some rehabilitation during this period.

3.5 How Much Will it Cost

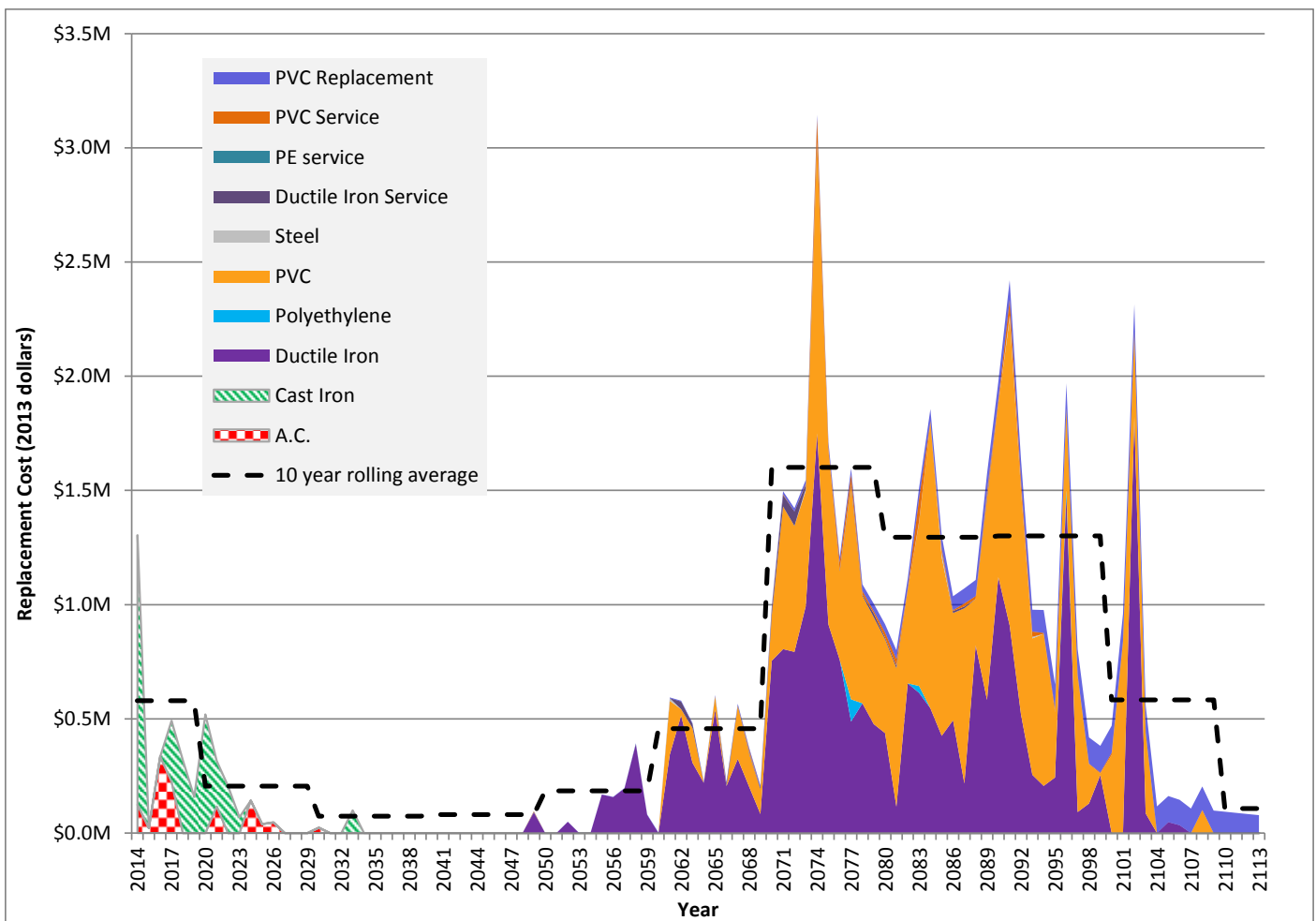
3.5.1 Linear Assets

The nature of the timing of the forecast water main renewals is that there are two reinvestment waves to respond to: there is an immediate need to replace the A.C. and cast iron water mains and services in the next 10 years; and, after a long period of inactivity, a major reinvestment program will be required to replace the ductile iron and PVC mains. The second reinvestment wave will not be required for about 35 years but will be a major financial challenge.

Over the next 100 years, the average annual cost to renew and replace the entire existing water distribution piping network is approximately \$ 648,000 per year for a total expenditure of \$ 64,800,000 (expressed in 2014 dollars). However, the timing of the required renewals makes it neither practical nor efficient to simply set aside this single annual budget estimate into reserves over the full life cycle of the assets. A financial strategy will be required to deal with each wave more or less individually.

Figure 3-2 below presents an estimate of the 100 year renewal budget estimates based on the revised bottom-up assessment. In addition to the yearly estimates, the graph includes a 10 year rolling budget average.

Figure 3-2: 100 Year Renewal Budget Estimates for Linear Assets



To provide a closer examination of the shorter term renewal funding requirements, the 50 and 25 year horizon are presented below in **Figure 3-3** and **Figure 3-4**:

Figure 3-3: 50 Year Renewal Budget Estimates for Linear Assets

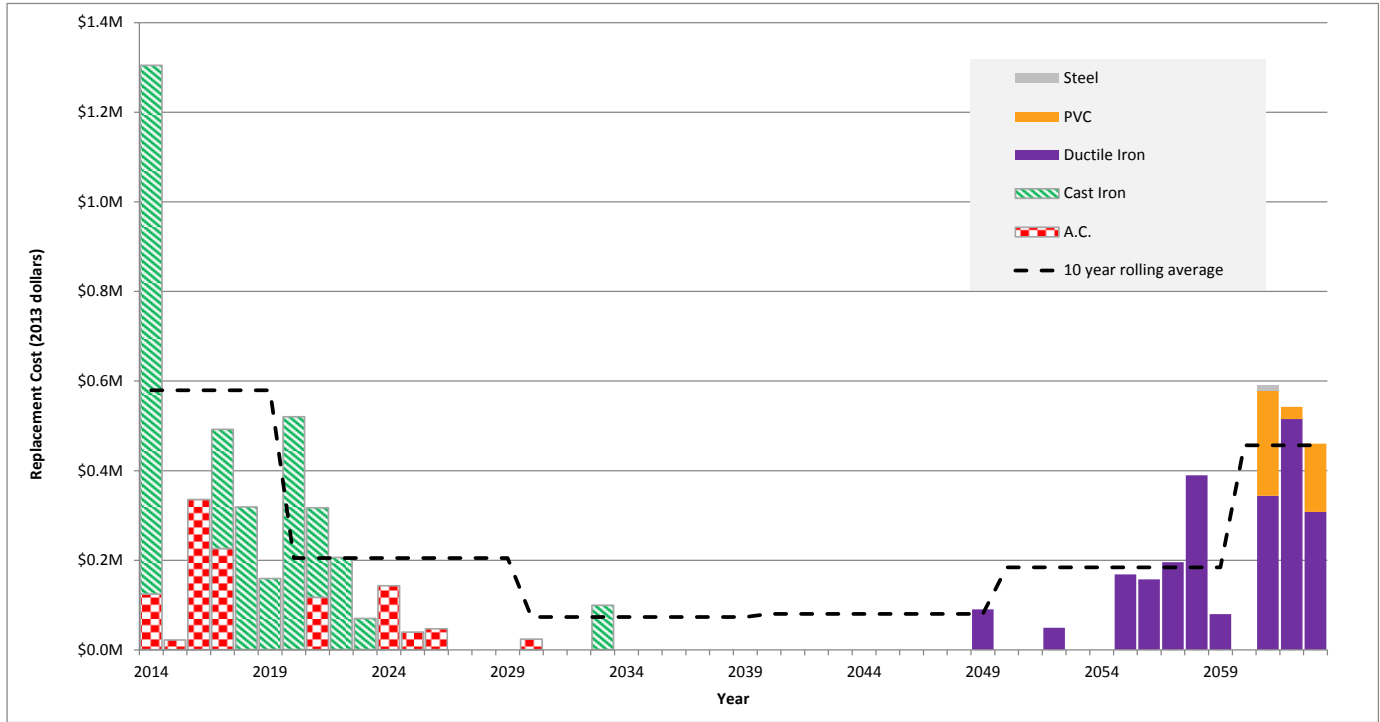
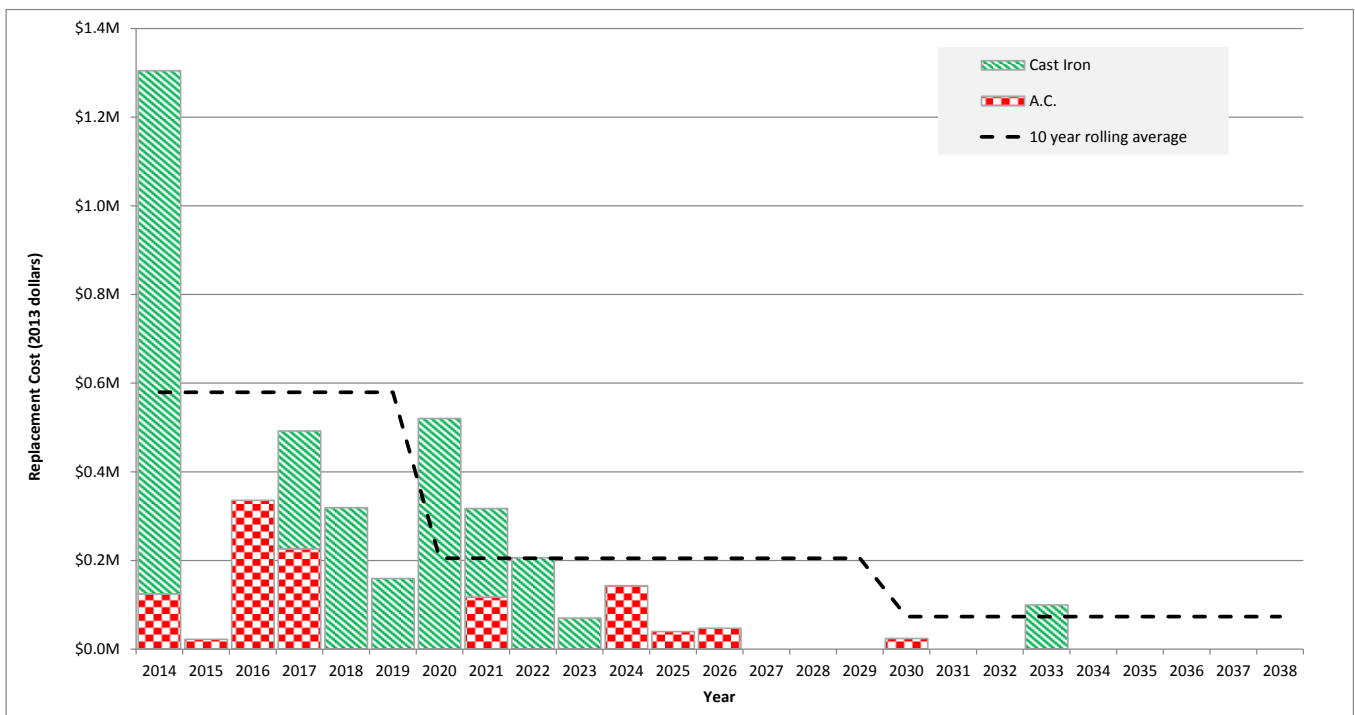


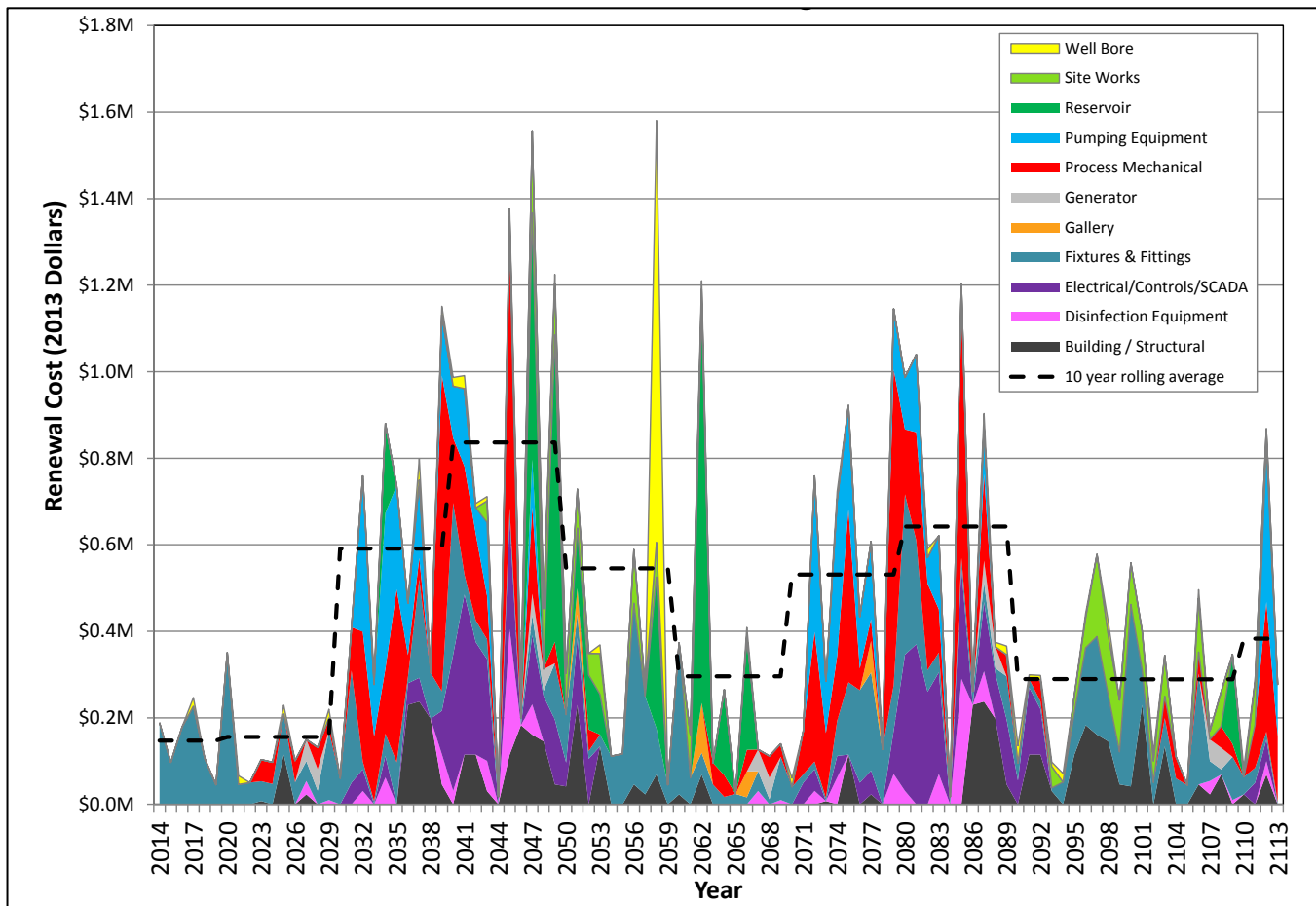
Figure 3-4: 25 Year Renewal Budget Estimates for Linear Assets



3.5.2 Non-Linear Assets

The bottom up analysis of the non-linear assets presents a similar picture to the linear asset renewal forecast in that there are two waves of renewal expected within the next 100 years. Based on the condition assessment of the assets many of the renewal expected in the near future are delayed. Over the next 100 years, the average annual cost to renew and replace the entire inventory of non-linear assets is approximately \$ 442,000 per year for a total expenditure of \$ 44,200,000 (expressed in 2014 dollars). Again there are two periods of intense renewal requirements that occur from 2030 to 2059, and then from 2070 to 2089. The result of the analysis is presented in [Figure 3-5](#).

Figure 3-5: 100 Year Renewal Budget Estimate for Non-Linear Assets



To provide a closer examination of the shorter term renewal funding requirements, the 50 and 25 year horizon are presented below in [Figure 3-6](#) and [Figure 3-7](#).

Figure 3-6: 50 Year Renewal Budget Estimates for Non-Linear Assets

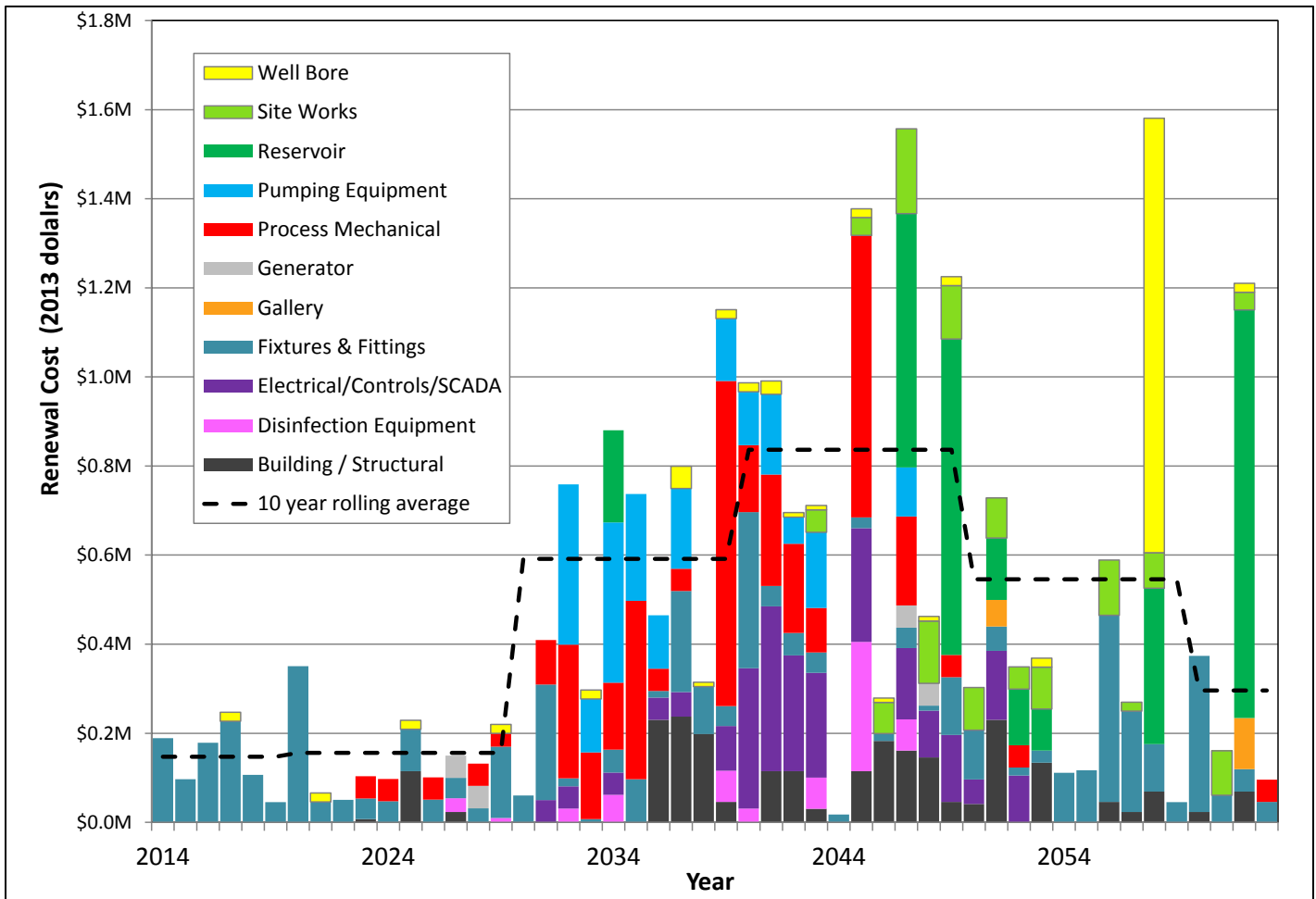
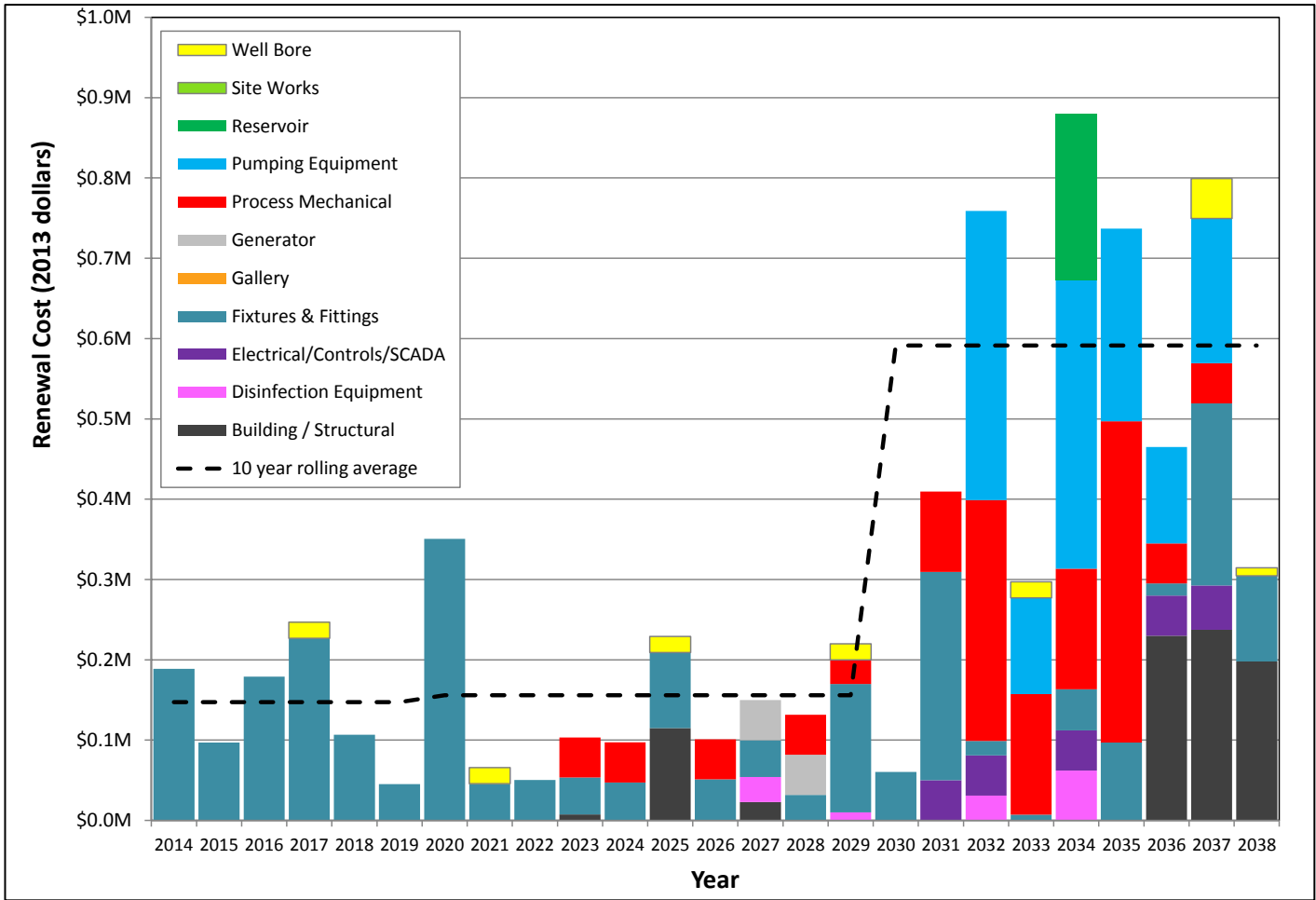


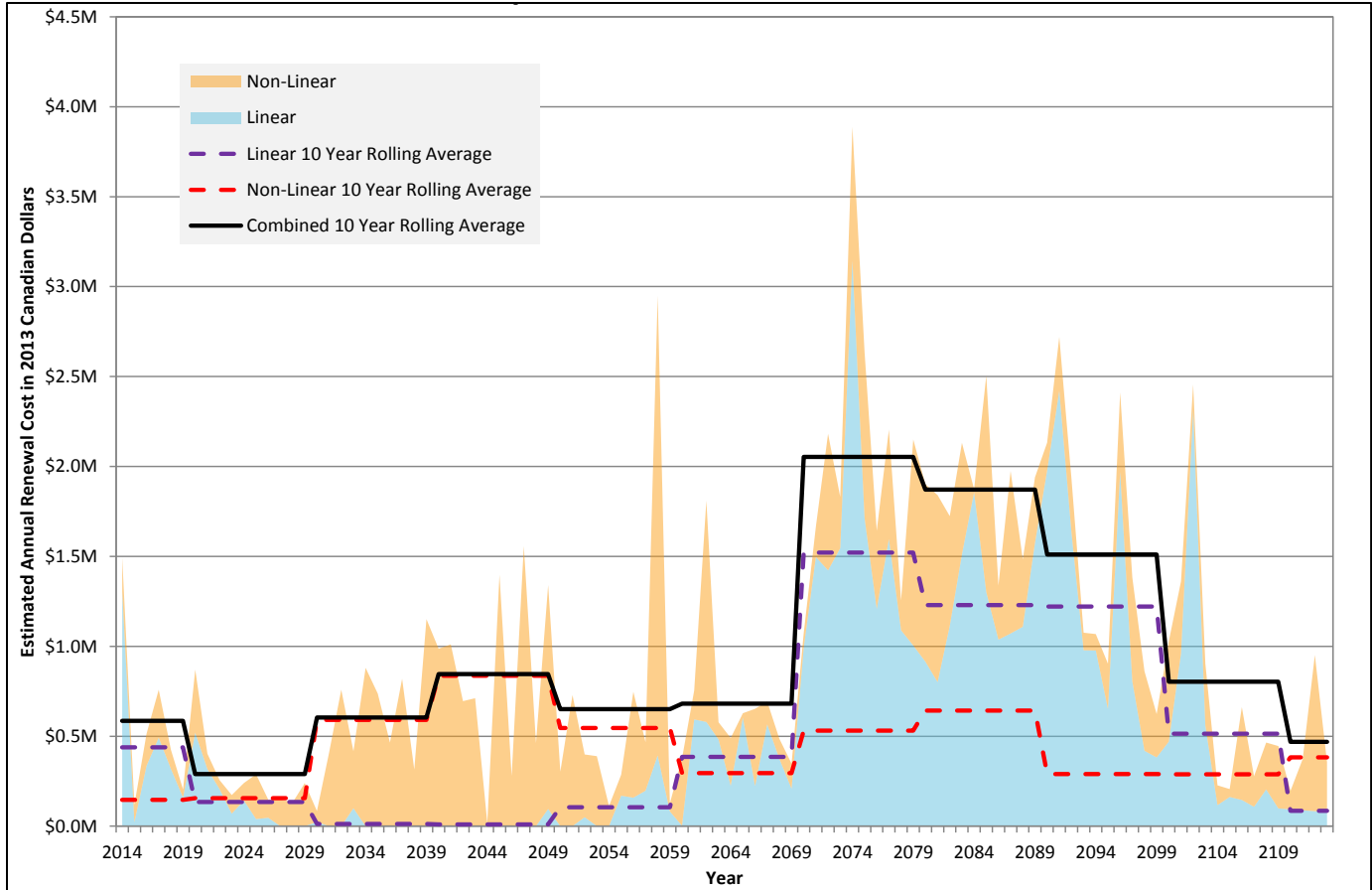
Figure 3-7: 25 Year Renewal Budget Estimates for Non-Linear Assets



3.5.3 Combined Bottom-up Assessment

When the two 100-year bottom-up forecasts are combined they yield the forecast presented in [Figure 3-8](#).

Figure 3-8: 100 Year Combined Renewal Budget Estimates



The forecast shows that in the immediate future the renewal of the water mains will be the priority for RMoW, followed by a period of approximately 30 years where the focus will be on renewal of the non-linear infrastructure. In the latter half of the century the larger second renewal waves for the linear and non-linear assets coincide, with costs forecast to peak in 2074 at approximately \$ 3.9 M.

To provide a closer examination of the shorter term renewal funding requirements, the 50 and 25 year horizon are presented below in [Figure 3-9](#) and [Figure 3-10](#).

Figure 3-9: 50-Year Combined Renewal Budget Estimates

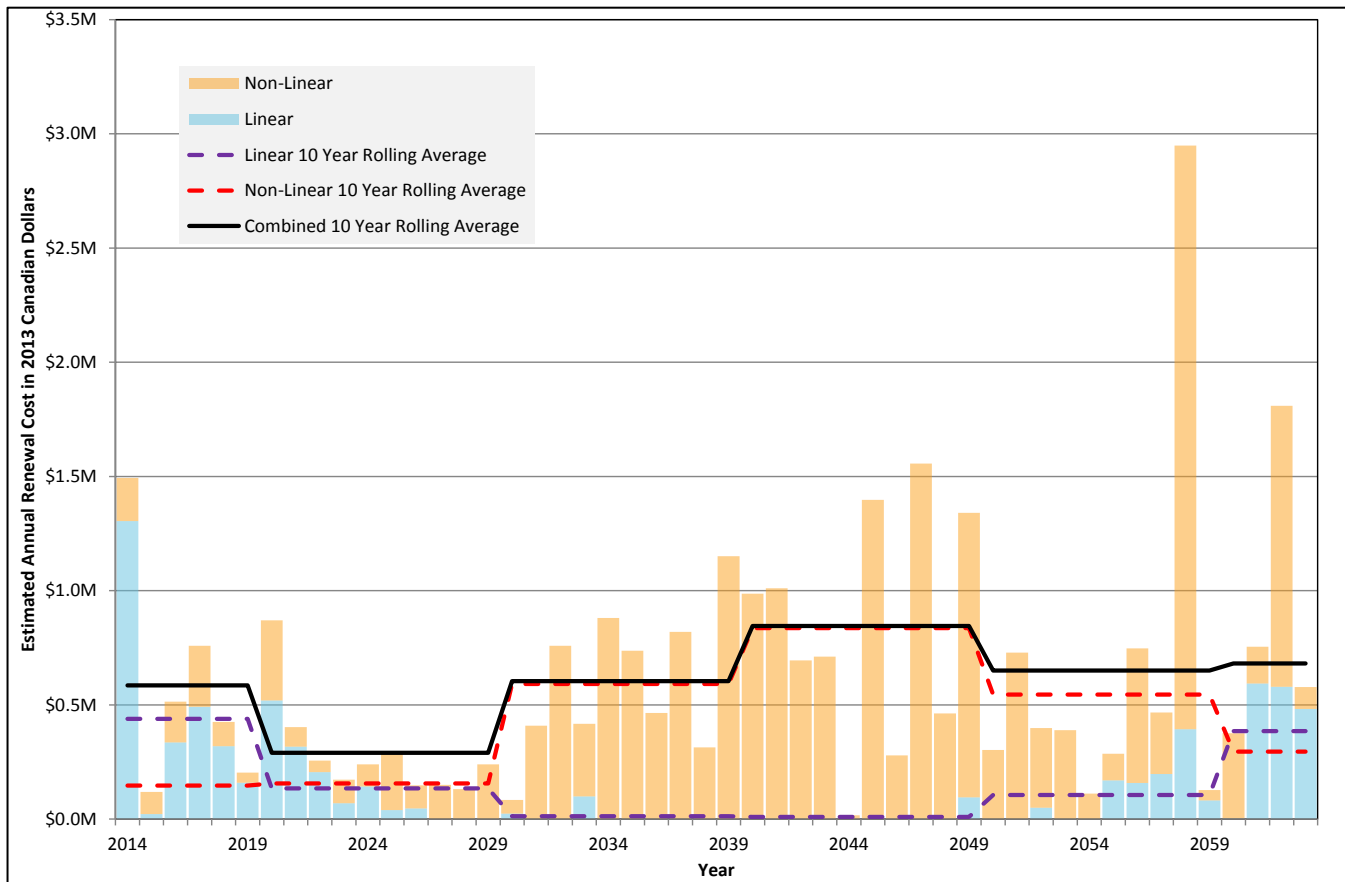
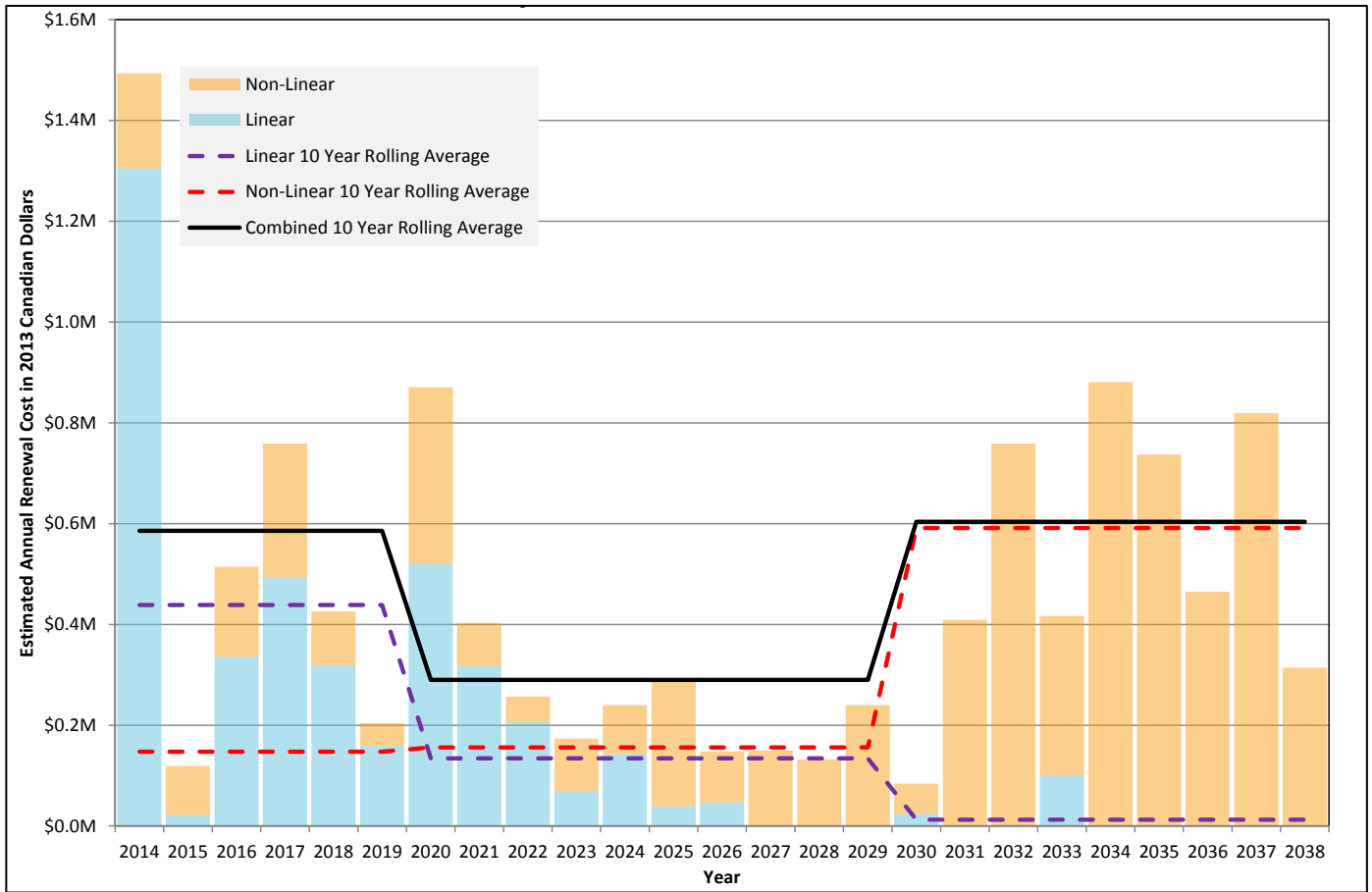


Figure 3-10: 25-Year Combined Renewal Budget Estimates



4. 10 Year Plan: Capital Renewal Program

4.1 Water Main Replacement Program

Through the bottom up assessment, three individual high priority rehabilitation/renewal projects are recommended for completion in the next few years: an asbestos cement pipe replacement program, a cast iron pipe replacement program, and a polybutylene service replacement program. The cost of replacing the A.C. and cast iron pipe over the next ten years is estimated as \$ 3,157,000 to replace approximately 9 km of pipe.

It is considered that there will be limited opportunity to coordinate works within the ten year program, and so repaving costs need to be included for these estimates. It is assumed that the full 8 meter width of the road would require repaving at \$ 36 per square meter, thus the repaving costs are estimated at \$ 288 per linear meter of pipe replaced, at an additional cost of approximately \$ 2,602,000.

The A.C. and cast iron renewal projects have been significantly advanced from the top-down estimates due to the fact that their condition differs from the top down estimate, which was based only on the expected service life of the assets, as evidenced by the number of breaks in these areas and the reportedly spongy A.C. mains. The net effect of this is that these assets should be replaced sooner than anticipated. Each proposed renewal project is detailed below.

4.1.1 Asbestos Cement (A.C.) Pipe Replacement Program

The program will replace the A.C. pipe that was installed in 1963 and 1978, which is reported to be spongy and in White Gold has had the pressure reduced to alleviate the occurrence of leaks and breaks. The preliminary program of works to replace mains and associated services is presented in [Table 4-1](#).

Table 4-1: A.C. Pipe Replacement 10-year Program

Year	Area	Length (m)	Replacement Cost	Paving Costs
2014	Alta Vista	425	\$ 125,000	\$ 122,000
2015	Alta Vista	75	\$ 22,000	\$ 22,000
2016	White Gold	991	\$ 336,000	\$ 285,000
2017	White Gold	667	\$ 226,000	\$ 192,000
2021	Alta Vista	238	\$ 117,000	\$ 69,000
TOTAL		2,396	\$ 826,000	\$ 690,000

Including paving, the total estimated cost for the ten year A.C. Pipe Replacement Program is estimated at \$ 1,516,000.

Beyond 2022, it is recommended that the remaining length of A.C. pipe is progressively replaced, beginning with the remaining length in Alta Vista in 2024-2026, followed by Whistler Cay Heights in 2030.

The benefits of a near-term A.C. water main replacement program include:

- Significantly minimizing the risk of failure of the aged A.C. pipe.
- Reducing lost water to leakage.
- Reduced maintenance costs in the service area resulting in annual O&M savings
- Reinstatement of full pressure to the White Gold area that will allow:
 - Increased fire flow at hydrants.
 - Restoration of normal water pressure which will benefit local customers

A map showing the A.C. pipe replacement by year is presented in [Appendix D](#).

4.1.2 Cast Iron Pipe Replacement Program

The program will replace the corroded cast iron water mains that were installed in Alpine Meadows in 1979 and 1980. This inventory of water mains currently suffers tuberculation and associated breaks and water quality issues. The preliminary program of works to replace mains and associated services is presented in [Table 4-2](#).

Table 4-2: Cast Iron Pipe Replacement 10-year Program

Year	Area	Length (m)	Replacement Cost	Paving Costs
2014	Alpine Meadows North	744	\$ 253,000	\$ 214,000
	Alpine Meadows South	2,171	\$ 764,000	\$ 625,000
2017	Alpine Meadows South	551	\$ 200,000	\$ 159,000
2018	Alpine Meadows North	452	\$ 154,000	\$ 130,000
	Alpine Meadows South	459	\$ 165,000	\$ 132,000
2019	Alpine Meadows South	308	\$ 103,000	\$ 89,000
2020	Alpine Meadows North	63	\$ 20,000	\$ 18,000
	Alpine Meadows South	912	\$ 318,000	\$ 263,000
2021	Alpine Meadows North	102	\$ 35,000	\$ 29,000
	Alpine Meadows South	311	\$ 104,000	\$ 90,000
2022	Alpine Meadows North	170	\$ 58,000	\$ 49,000
	Alpine Meadows South	190	\$ 67,000	\$ 55,000
2023	Alpine Meadows South	206	\$ 70,000	\$ 59,000
TOTAL		6,639	\$ 2,311,000	\$ 1,912,000

Including paving, the total estimated cost for the ten year Cast Iron Pipe Replacement Program is estimated at \$ 4,223,000.

The benefits of the cast iron pipe replacement program include:

- Significantly minimizing the risk of failure of the aged cast iron pipe.
- Reducing the water quality issues arising from corrosion of the water mains.
- Eliminating the risk of constriction of the pipe through tuberculation and associated restriction on pipe capacity.
- O&M crews must now flush some of these mains weekly to ensure water quality. The replacement program will eliminate this need along with other break response services. This will result in reduced operations and maintenance costs in the service area resulting in annual O&M savings.
- Reducing lost water to leakage.

A map showing the cast iron pipe replacement by year is presented in [Appendix D](#).

4.1.3 Polybutylene Service Replacement Program

This program will replace the polybutylene services that were identified in the workshop as being prone to failure. The service connections that do not meet municipal standards are located in Alta Vista and White Gold and will be replaced with the A.C. Pipe Replacement Program.

The benefits of replacing the polybutylene services are a reduced rate of service failure in the areas and reduced leakage.

4.1.4 Rehabilitation / Renewal Method

While the costs used in the estimates provided are based on open cut replacement of pipe, it may be desirable to utilise trenchless technologies. A description of trenchless technologies for rehabilitation/renewal or water distribution piping is contained in [Appendix E](#). Among trenchless technologies available within the local area, pipe bursting is the only one found to be comparable to open cut in terms of direct costs. When indirect costs are considered, trenchless methods like pipe bursting provide benefits over open cut replacement, including the following:

- Reducing interruptions to residents, in particular less road closures are required.
- Reducing the impact on surrounding assets, since disturbances associated with open cuts can reduce the life of roads and pavements by up to 15%.
- Less removal of soil and impact on vegetation.
- Less noise and dust generation.
- Smaller work crew required improving safety and utilization of resources.

Pipe bursting is a method of structural replacement performed by shattering the existing pipe and dislodging its fragments to create a void that will be filled with a new pipe. The method is applicable to non-ductile types of pipes with diameters ranging from 50 mm to 1200 mm. The new pipe is usually HDPE, supplied in sections and butt fused. All service connections must be excavated and uncovered before pipe bursting commences, and where there are many services this limits the advantage of the technique. The shattering is performed using pneumatic, hydraulic or static bursting head that is inserted through an excavation pit. The shattered pipe fragments are compressed into the surrounding soil creating the void for the new pipe, which is simultaneously pulled through behind the bursting head. It is possible to increase the existing pipe diameter by about 30%.

The RMoW may consider replacing services up to 50 mm using pipe bursting performed by RMoW staff with the purchase of specialized equipment.

Due to the low number of contractors available, costs can increase due to lack of supply. Therefore, requests for proposals or tenders should allow the bidder to select the most appropriate rehabilitation/renewal method, rather than being prescriptive – thus allowing more competitive bids. It is likely that a mix of pipe bursting and conventional open cut methods will provide the lowest overall cost, for example when replacing pipe that runs beneath the highway or the railway, pipe bursting is likely to cost less than open cut.

4.2 Non-Linear Renewals

The forecast for non-linear renewals shows very little renewal works required in the next ten years.

The forecast works within the ten year horizon are as follows:

- Decommissioning of PRV **P249** at 4001 Highway 99, this is estimated to cost \$ 7,500 and should be undertaken by 2023. This will remove the risk of future collapse at the site due to ongoing structural deterioration.
- Renewal of the process mechanical equipment of PRV **P248** at Village Gate Boulevard & Highway 99, this is estimated to cost \$ 50,000 and should be completed by 2023. This will ensure the level of service will continue to be maintained.
- Ongoing water meter renewals, this is estimated to cost \$ 1,336,000 over the next 10 years.

Additionally RMoW is undertaking replacement of the altitude valve and chamber **P251** at Baxter's Reservoir in order to meet safety and operational standards. This is estimated to cost \$ 235,000 and is scheduled to be conducted in 2015 – we have included this replacement in the model.

There are a number of other decommissioning works required for redundant assets, which are not programmed or adequately scoped, including the following assets:

- The old wood stave reservoir above Base II on Blackcomb.
- Alpha Creek Intake.
- Whistler Creek Intake.
- Agnew Creek Intake.

A value of \$ 120,000 per structure is included in the financial requirements for environmental impact studies and decommissioning, although this is a preliminary estimate and should not be relied upon. Averaged over the next ten years this cost represents \$ 48,000 per year.

4.2.1 Rehabilitation / Renewal Method

The cost estimates are based on replacement and rehabilitation of the non-linear assets on a like for like basis, with additional costs included where below grade valve pits are anticipated to be replaced with above grade structures for operational and maintenance requirements. However, in the future it may be appropriate to consider upgraded components and new construction techniques. For instance prefabricated construction may offer advantages in quality and price when considering the availability of contractors. Furthermore, some assets may not require replacement, as we have seen in the past when new operating principles or new assets have obviated older assets.

4.3 Recommended Assessments and Studies

Individual capital renewal project recommendations are made in the preceding sections. These recommendations are made based upon the bottom-up assessment and the immediate need of these renewal projects. It is also noted that once the A.C. and cast iron pipe inventories have been replaced, there is a significant interval of time until other major water main renewal projects will likely be required. So that the RMoW can be proactive in dealing with future water main renewal challenges, AECOM recommends the following assessments and studies over the next 10 years so that future water main renewal projects can be completed cost effectively:

4.3.1.1 Asset Management System

It is apparent that the RMoW would benefit from implementing a consolidated asset management system. This would facilitate coordination of works between roads, sewer, drainage, and water. Currently, the RMoW has a management system for the roads, none for the drainage and a separate system for the sewer and water. In order to be able to coordinate between this infrastructure, the sewer and water work order system will need to be reviewed for its capabilities and then developed with the necessary information. When works are coordinated, the amount of re-work and material used is significantly reduced, which has direct cost savings. Asset management planning is also increasingly required for obtaining government grants and not being able to demonstrate adequate asset management planning can preclude access to funds. The cost of implementing an asset management plan and associated databases and systems is estimated at \$ 140,000 over the next ten years.

4.3.1.2 Construction Practices Review

The premature failure of water distribution piping often correlates to poor construction practices, such as mishandling of pipe and improper bedding. Unfortunately it is not currently possible to include these considerations into the deterioration modelling. However, it is worthwhile investigating previous construction practices and examining pipe in

areas where poor construction practices are suspected. While the areas that were highlighted as having high break incidence are likely to correlate with poor installation, other areas that are suspected to have poor installation should be identified with the operations and maintenance staff and inspected opportunistically, e.g., when exposed during roadworks. As this knowledge is held by RMoW staff the work is expected to be undertaken in house and no cost estimate for this is assumed. The RMoW should also ensure independent inspections are taken of works undertaken by third parties such as property developers.

4.3.1.3 Corrosive Soils / Groundwater

Buried assets are at risk of attack from soil and groundwater. The effect of attack varies based on the soil/groundwater chemistry and the material of the asset. The corrosiveness of soils to ferrous alloys is commonly assessed according to AWWA C-105 criteria for soil resistivity, pH, redox potential, sulfides, and moisture content.

Historically, the wetlands in Whistler are known to have been a source of bog iron. This suggests that acidic groundwater and potentially iron reducing bacteria may be present. In particular for the water distribution system piping at Whistler, soil and groundwater testing is recommended to identify areas where the ductile iron pipe is at risk of corrosion. This will allow RMoW to target condition assessment and renewal works to the highest risk assets. Additionally the information on corrosive soils can be used for assessment of other buried assets, such as sewer and drainage pipes.

A testing program to progressively map the soil properties should start with the areas adjacent to waterways, and in particular any areas where ferrous pipes are located in marshlands. This testing program is estimated to cost \$ 70,000 over the next ten years and should include the methods listed in [Table 4-3](#). While other testing methods may improve the accuracy of the information gained from the listed test methods, it is considered that for the purposes of identifying at risk assets, these methods will be sufficient.

Table 4-3: Soil Testing to Assess Corrosion Risk

Soil Property	Test Method	Risk Indicator
Resistivity	ASTM G57-16	< 2000 Ω .cm
pH	ASTM G51-95(12)	< 5
Redox Potential	ASTM G200-09	< +100 mV

It is also recommended that developers are required to assess soils to AWWA C-105 and use corrosion protection where required. Specifically, where soils are deemed to be a corrosion risk, pipe should be polymeric (PVC or HDPE) or if ductile iron, the pipe should be wrapped or cathodically protected.

4.3.2 Condition Assessment

Aside from the A.C. and cast iron pipe that will be replaced, the remaining inventory of ferrous (ductile iron and steel) and the existing and new polymeric (PVC and HDPE) pipe needs to be maintained. The bottom up renewal model currently uses age as a proxy for condition, but in order to refine the model and support decisions to renew the pipe a condition assessment program is required. Since the PVC and ductile iron water mains will not require large scale renewal effort for a number of decades, there is no urgency to a system wide condition assessment. This provides time to allow a number of promising water main condition assessment technologies that are still being commercialized become proven and more cost effective.

4.3.2.1 *Acoustic Leak Detection*

Permanent leak detection uses distributed acoustic sensors that are able to triangulate the position of a leak and raise an alarm before a full main break occurs. This method is recommended to be implemented starting in 2016 and be progressively rolled out to the network, at an estimated cost of \$ 100,000 over ten years.

Note that a temporary leak detection program is considered unable to provide adequate benefits to the RMoW for the ongoing monitoring of the distribution pipes.

4.3.2.2 *Polymeric Pipe – PVC and HDPE*

Although the expected service life of the PVC pipe used for the renewal planning is 85 years, accelerated testing of PVC pipe indicates that when manufactured and installed correctly, this material can be expected to provide a significantly longer service life expectancy provided that pressure does not exceed the design limits.

Unfortunately there are no commercially available technologies for condition assessment of polymer pipe.

There is a technique currently under development that measures the speed of an induced pressure transient in the pipe to determine wall thickness. In the future this method may be able to detect changes in wall thickness, cracking, or defects in PVC pipe.

Current best practice for managing polymeric pipes involves the use of leak detection. Based on the relatively young age of the polymeric pipes and their reported good condition, no active condition assessment beyond leak detection is recommended for the next ten years.

4.3.2.3 *Ferrous Pipe – Ductile Iron and Steel*

Ferrous pipes deteriorate through interaction with the pipe bedding, corrosion causes thinning of the effective wall thickness, and corrosion pits can initiate cracking in the pipe. Failure usually occurs when the pressure of the pipe exceeds the structural strength of the remaining wall thickness, or the critical crack length is exceeded. There are several tools available to measure the wall thickness of ferrous pipe based on electromagnetic methods. The most effective measurement tool currently available for ferrous pipe is remote field eddy current (RFEC), which is normally coupled to a CCTV inspection rig and is run through the inside of the pipe. RFEC is particularly suited to lined pipes because it is able to take measurement of the wall thickness without being in direct contact with the wall. It is recommended that the pipes identified as being at risk through the corrosive soils investigation are assessed by CCTV and RFEC. This condition assessment is estimated to cost \$ 60,000 over the next ten years.

4.4 **Capital Program Recommendations**

The bottom up renewal model and this rehabilitation study have identified the following seven programs that are recommended to be implemented over the next ten years:

1. A.C. Pipe Replacement: to reduce the risk of failure of the A.C. water pipes that are reported to have lost wall strength and will allow the White Gold area to be returned to full operating pressure thus allowing increased fire flow at hydrants, and a higher level of service to residents.
2. Cast Iron Pipe Replacement: to reduce the risk of failure of the Cast Iron pipes that are exhibiting tuberculation and are the source of turbid water requiring weekly flushing, the risk of constriction of the pipe and consequential flow restriction will also be reduced.
3. Non-linear works that include:
 - Shut down of P249 and full decommissioning to make the site safe and remove the risk of collapse.

- Renewal of the process equipment at P248 and the generator at P270 to ensure continued levels of service from these facilities.
 - Replacement of P251 to meet operational and maintenance requirements.
 - Ongoing water meter renewals.
 - Decommissioning of redundant assets.
4. Corrosive Soils Investigation: to target condition assessment and renewal works of their buried metallic assets to those that are identified as being at elevated risk of corrosive soils and to review the current specifications for buried assets for suitability to meet service life expectations. This benefit extends beyond just water assets, but all buried metallic assets such as sewer and drainage pipes.
 5. Ductile Iron Pipe CCTV/RFEC Condition Assessment: to plan rehabilitation of the ductile iron pipe in the network.
 6. Utility-wide asset management program and associated databases and systems to assist in coordinating renewal works for all of water, sewer, storm and roads.
 7. Leak Detection: to prioritize works for pipes that are the source of leaks, to act to prevent catastrophic failures, and to conserve water.

The cost estimates for the works over the next ten years is presented in [Table 4-4](#).

Table 4-4: Recommended Programs for Water Utility Renewal for the Next 10 years to 2023

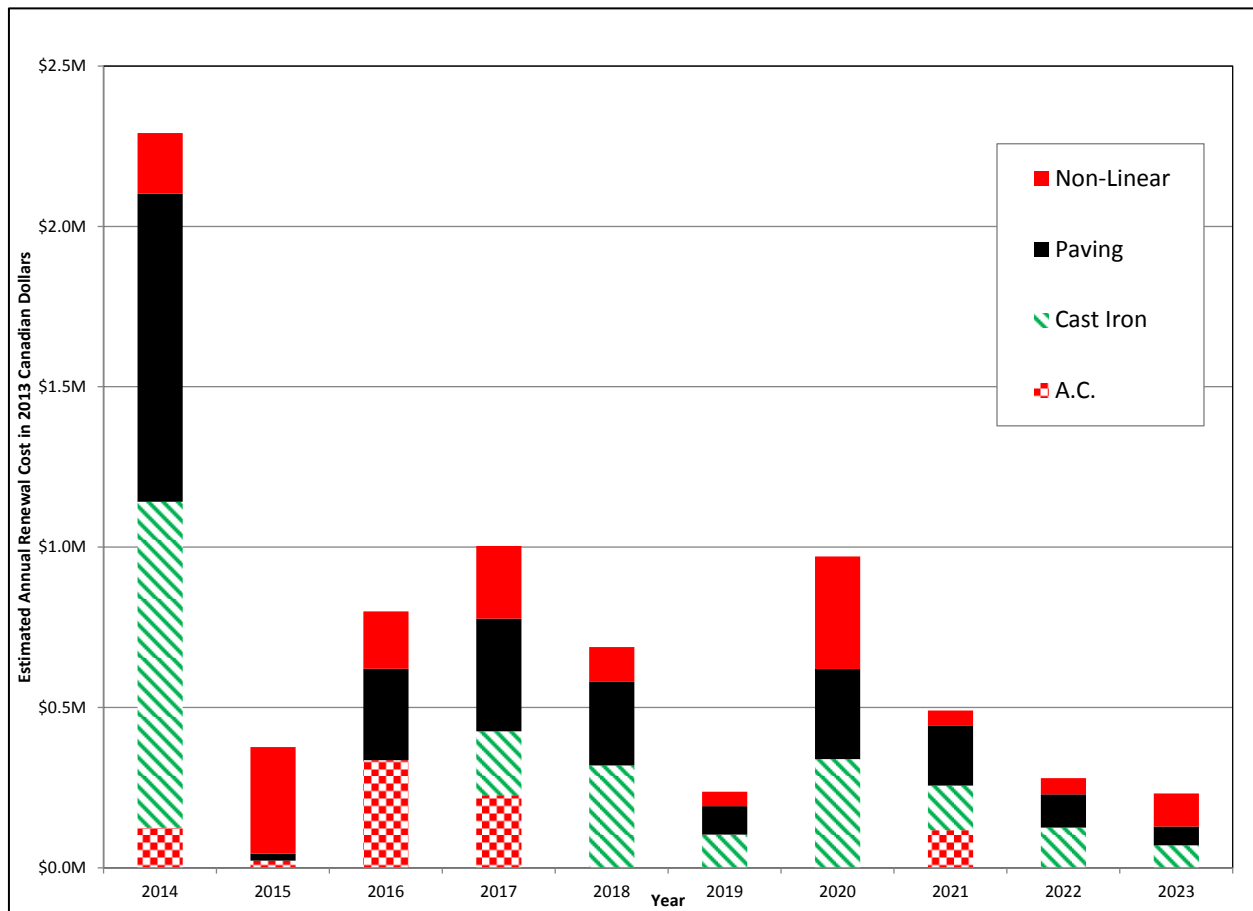
Year	Renewal/Replacement*			Investigation		Condition Assessment		Yearly Total
	A.C. Pipe	Cast Iron Pipe	Non-Linear Works	Asset Mgmt	Corrosive Soils	Ductile Iron Pipe CCTV/RFEC	Leak Detection	
2014	\$ 248,000	\$ 1,856,000	\$ 189,000		\$ 10,000			\$ 2,303,000
2015	\$ 44,000		\$ 332,000	\$ 60,000	\$ 10,000	\$ 50,000		\$ 496,000
2016	\$ 621,000		\$ 179,000					\$ 800,000
2017	\$ 418,000	\$ 358,000	\$ 227,000	\$ 40,000	\$ 10,000		\$ 60,000	\$ 1,113,000
2018		\$ 581,000	\$ 107,000		\$ 10,000	\$ 50,000		\$ 748,000
2019		\$ 192,000	\$ 45,000	\$ 40,000			\$ 20,000	\$ 297,000
2020		\$ 620,000	\$ 351,000		\$ 10,000			\$ 981,000
2021	\$ 186,000	\$ 258,000	\$ 46,000		\$ 10,000	\$ 50,000		\$ 550,000
2022		\$ 229,000	\$ 50,000				\$ 20,000	\$ 299,000
2023		\$ 129,000	\$ 103,000		\$ 10,000			\$ 242,000
Program Total	\$ 1,517,000	\$ 4,223,000	\$ 1,629,000	\$ 140,000	\$ 70,000	\$ 150,000	\$ 100,000	\$ 7,829,000

*Note that the pipe renewal/replacement programs included in the ten-year plan include associated paving costs, assuming a full 8 m repaving is required at \$ 36/m², this is estimated at \$ 288 per linear meter of pipe replaced.

5. Funding Strategies: How Will We Pay for It?

The information gathered through this assessment can now be used to help prepare a financial plan to deal with pending infrastructure renewal projects and activity. [Figure 5-1](#) below shows the 10 year average funding required to conduct the prioritized water distribution system renewals. This needs to be added to the RMoW Capital Plan over the next few years.

Figure 5-1: 10 Year Capital Renewal Forecast



The RMoW prepares a rolling five year capital plan as part of the annual budgeting progress. The capital projects recommended in this assessment can be integrated into the capital plan in years where the construction activity best suits the RMoW. The ten year recommended works plan for the water distribution piping has an average yearly estimated cost of \$ 741,000, ranging from \$ 242,000 to \$ 2,303,000. Therefore, the ten year plan can be undertaken within current funding levels, or with a modest increase. [Table 5-1](#) presents a summarized view of the projects recommended in this study.

Table 5-1: Recommended 10 Year Water Main Renewal Program (1,000s of dollars)

Project Categories	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Renewal/Replacements	\$ 2,293	\$ 376	\$ 800	\$ 1,003	\$ 688	\$ 237	\$ 971	\$ 490	\$ 279	\$ 232
Investigations/Studies	\$ 10	\$ 70	\$ 0	\$ 50	\$ 10	\$ 40	\$ 10	\$ 10	\$ 0	\$ 10
Condition Assessments	\$ 0	\$ 50	\$ 0	\$ 60	\$ 50	\$ 20	\$ 0	\$ 50	\$ 20	\$ 0
TOTAL	\$ 2,303	\$ 496	\$ 800	\$ 1,113	\$ 748	\$ 297	\$ 981	\$ 550	\$ 299	\$ 242

5.1 Funding Renewal Work from the Capital Plan and Operating Plan

The RMoW maintains both a Capital and an Operating Reserve to enable the utility to conduct its work plan that will vary from year to year without the need to have to adjust rates and taxes dramatically to meet occasional spending spikes that may occur. Most of the recommended renewal projects defined in this report would be funded from the capital plan but some of the studies could be funded through the operating plan. To simplify this funding analysis, the capital and operating plans and reserves supplied by RMoW have been combined in Table 5-2 to enable observations regarding overall utility funding and reserve requirements. Some minor changes to the proposed water main renewal activities have been incorporated to replace the Alpine cast iron mains over the next five years.

RMoW is presently budgeting to contribute approximately \$ 3.4 million in total to the Water Utility Capital and Operating Reserves in each of the next ten years. Based upon budget estimates that are presently available, and taking into account the Water Main Renewal Program that is summarized in Table 5-1, currently budgeted reserves are well funded to meet all budgeted capital and operating projects. A summary of the current Capital and Operating Plan is presented in Table 5-2, and the reserve balance analysis by year is presented in Table 5-3.

RMoW is presently budgeting approximately \$ 3.4 M to Water Utility Reserves over the next 10 years. The Water Utility is well funded to meet all budgeted projects throughout this decade.

The capital expenditures are presented graphically in Figure 5-2 below.

Figure 5-2: RMoW 10 Year Capital Expenditures

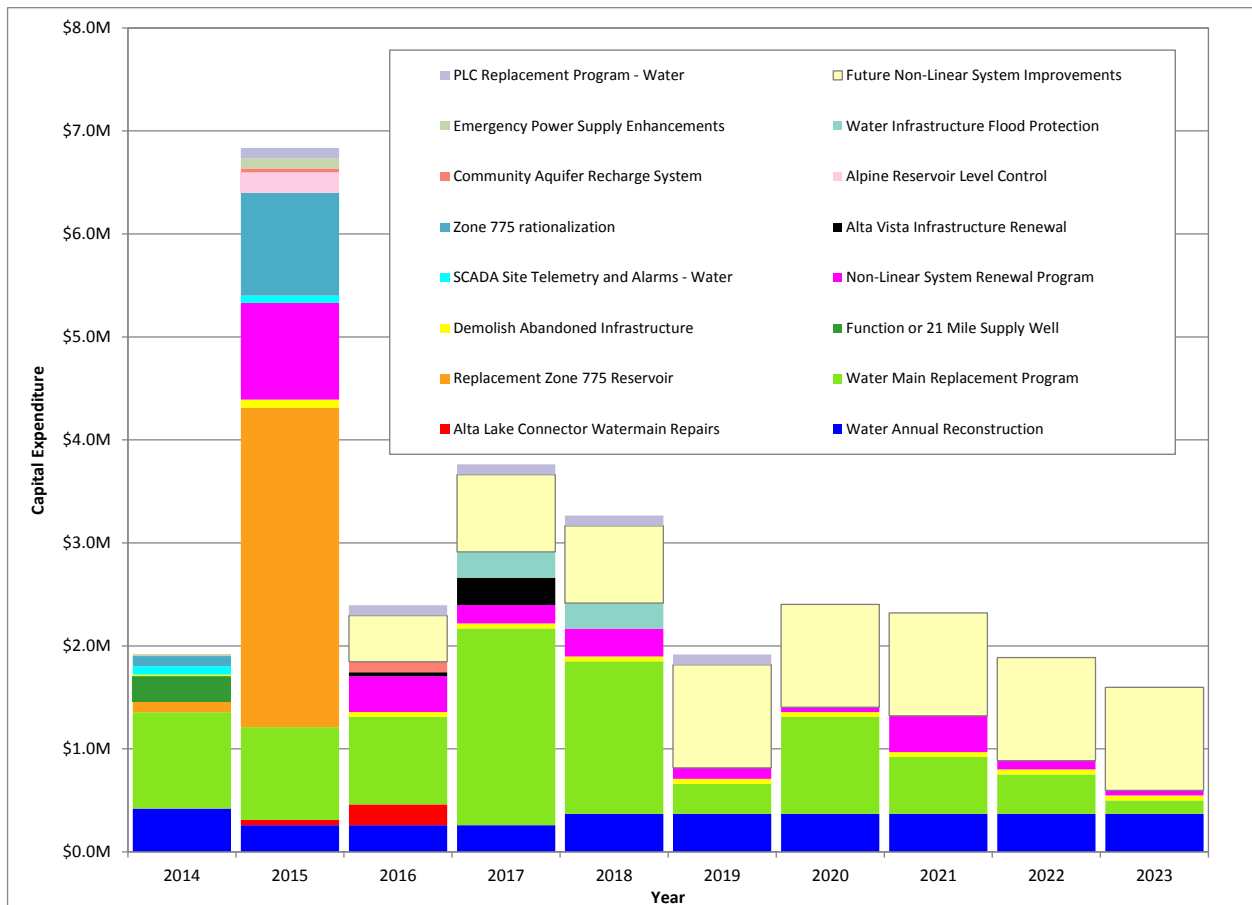


Table 5-2: Recommended RMoW Capital Works and Reserve Balance Summary

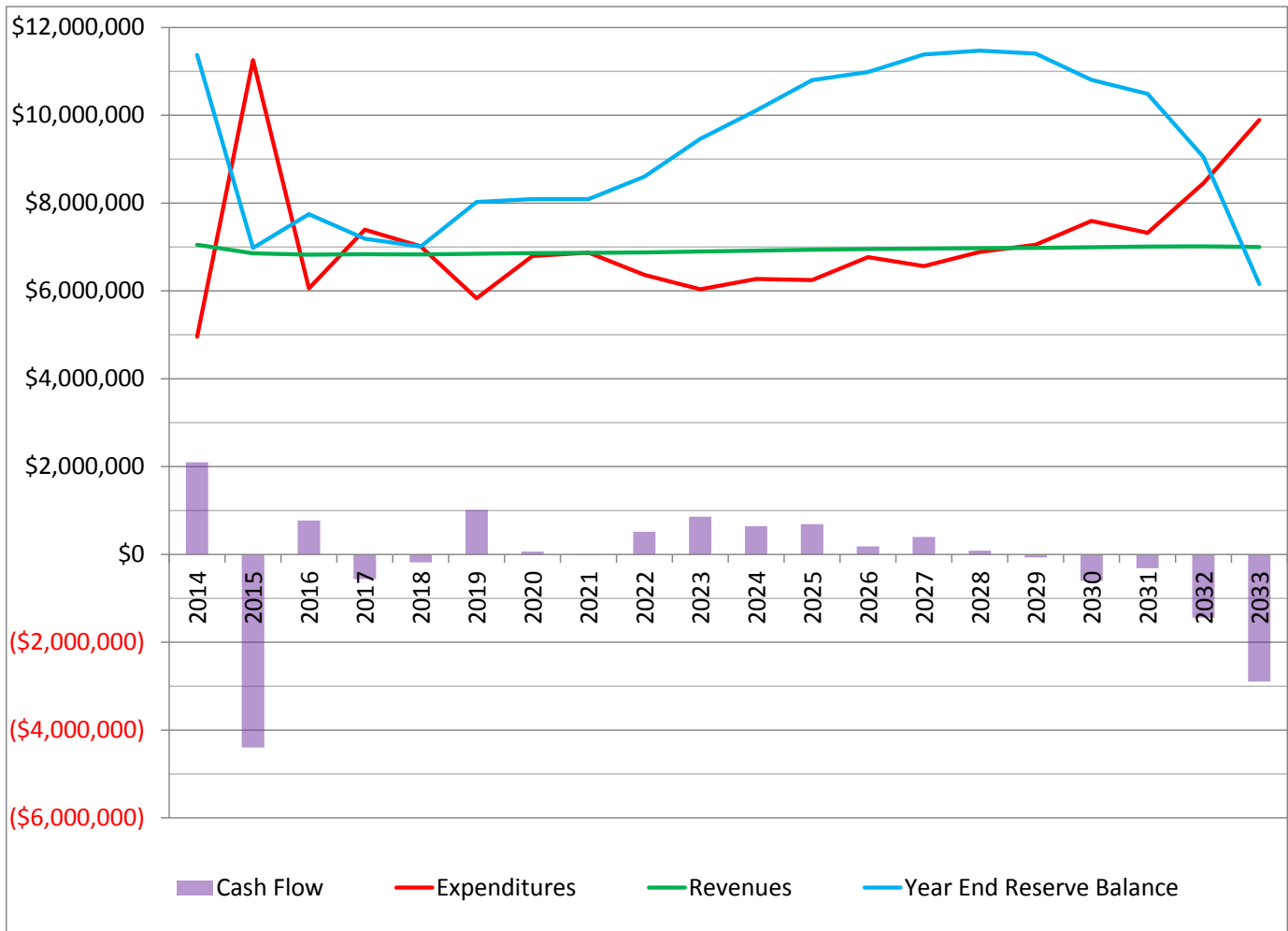
Project Name	Funding Source	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Fire Hydrant Maintenance	Operating	\$ 85,000	\$ 85,000	\$ 85,000	\$ 85,000	\$ 85,000	\$ 85,000	\$ 85,000	\$ 85,000	\$ 85,000	\$ 85,000
Reservoir Inspection & Maintenance	Operating	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000
Workplace Safety-Maint. And Oversight	Operating	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000
Water Annual Reconstruction	Capital	\$ 420,000	\$ 260,000	\$ 260,000	\$ 260,000	\$ 370,000	\$ 370,000	\$ 370,000	\$ 370,000	\$ 370,000	\$ 370,000
Sub-Total Recurring Major Maintenance		\$ 665,000	\$ 505,000	\$ 505,000	\$ 505,000	\$ 615,000	\$ 615,000	\$ 615,000	\$ 615,000	\$ 615,000	\$ 615,000
Water Loss Reduction Program	Capital	\$ 5,000	\$ 5,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Water Conservation Program	Capital	\$ 22,000	\$ 22,000	\$ 22,000	\$ 22,000	\$ 22,000	\$ -	\$ -	\$ -	\$ -	\$ -
Alta Lake Connector Watermain Repairs	Capital	\$ -	\$ 50,000	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Alta Vista Infrastructure Renewal	Capital	\$ -	\$ -	\$ 40,000	\$ 265,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Water Main Replacement Program	Capital	\$ 936,000	\$ 900,000	\$ 850,000	\$ 1,910,000	\$ 1,480,000	\$ 290,687	\$ 940,027	\$ 551,655	\$ 382,799	\$ 129,097
Sub-Total Linear Distribution Renewal		\$ 963,000	\$ 977,000	\$ 1,112,000	\$ 2,197,000	\$ 1,502,000	\$ 290,687	\$ 940,027	\$ 551,655	\$ 382,799	\$ 129,097
Zone 775 rationalization	Capital	\$ 100,000	\$ 1,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Upgrade 21 Mile Creek Intake (design)	Operating	\$ 25,000	\$ 250,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Alpine Reservoir Level Control	Capital	\$ -	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Emerald Wells Improved Protection Plan	Operating	\$ 20,000	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Source Water Protection Plan - 21 Mile	Operating	\$ 21,096	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Function or 21 Mile Supply Well	Capital	\$ 250,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Community Aquifer Recharge System	Capital	\$ -	\$ 35,000	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Water Infrastructure Flood Protection	Capital	\$ -	\$ -	\$ -	\$ 250,000	\$ 250,000	\$ -	\$ -	\$ -	\$ -	\$ -
Emergency Power Supply Enhancements	Capital	\$ 20,000	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Spring Creek Booster Station	Capital	\$ -	\$ 25,000	\$ 450,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Future Non-Linear System Improvements	Capital	\$ -	\$ -	\$ 450,000	\$ 750,000	\$ 750,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000
Demolish Abandoned Infrastructure	Capital	\$ 15,000	\$ 81,000	\$ 48,000	\$ 48,000	\$ 48,000	\$ 48,000	\$ 48,000	\$ 48,000	\$ 48,000	\$ 48,000
Replacement Zone 775 Reservoir	Capital	\$ 100,000	\$ 3,100,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-Linear System Renewal Program	Capital	\$ -	\$ 938,750	\$ 347,050	\$ 178,900	\$ 266,900	\$ 106,600	\$ 45,150	\$ 350,650	\$ 85,900	\$ 50,350
Non-linear renewal - general		\$ -	\$ 688,750	\$ 347,050	\$ 178,900	\$ 266,900	\$ 106,600	\$ 45,150	\$ 350,650	\$ 85,900	\$ 50,350
Kadenwood-Baxters PRV Replacement			\$ 250,000								
Sub-Total Non-Linear System Renewal		\$ 551,096	\$ 6,229,750	\$ 1,395,050	\$ 1,226,900	\$ 1,314,900	\$ 1,154,600	\$ 1,093,150	\$ 1,398,650	\$ 1,133,900	\$ 1,098,350
Benchmarking - Water	Operating	\$ 8,500	\$ 1,500	\$ 8,500	\$ 1,500	\$ 8,500	\$ 1,500	\$ 8,500	\$ 1,500	\$ 8,500	\$ 1,500
Cross Connection Prevention Program	Operating	\$ 178,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Groundwater Monitoring for Final Capital	Operating	\$ 26,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000
Infra. Capacity Analysis-GFA Exclusions	Operating	\$ 20,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Long Term Water Supply Plan Update	Operating	\$ 30,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PLC Replacement Program - Water	Capital	\$ -	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ -	\$ -	\$ -	\$ -
SCADA Site Telemetry and Alarms - Water	Capital	\$ 80,000	\$ 70,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sub-Total Management Systems		\$ 342,500	\$ 201,500	\$ 138,500	\$ 131,500	\$ 138,500	\$ 131,500	\$ 38,500	\$ 31,500	\$ 38,500	\$ 31,500
Sub-Total Capital Projects Cost	Capital	\$ 1,948,000	\$ 6,886,750	\$ 2,867,050	\$ 3,783,900	\$ 3,286,900	\$ 1,915,287	\$ 2,403,177	\$ 2,320,305	\$ 1,886,699	\$ 1,597,447
Sub-Total Operating Projects Cost	Operating	\$ 573,596	\$ 1,026,500	\$ 283,500	\$ 276,500	\$ 283,500	\$ 276,500	\$ 283,500	\$ 276,500	\$ 283,500	\$ 276,500
Total All Projects		\$ 2,521,596	\$ 7,913,250	\$ 3,150,550	\$ 4,060,400	\$ 3,570,400	\$ 2,191,787	\$ 2,686,677	\$ 2,596,805	\$ 2,170,199	\$ 1,873,947

Table 5-3 Reserve Balance Analysis by Year

Item	Escalation Rate	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Reserve Balance - Start of Period		-\$9,277,134	-\$11,375,141	-\$6,978,259	-\$7,748,126	-\$7,190,157	-\$7,007,668	-\$8,022,686	-\$8,089,115	-\$8,088,094	-\$8,603,479
Water Operating Reserve Balance - Start of Period		-\$2,298,910	-\$2,613,533	-\$2,149,324	-\$2,452,697	-\$2,693,321	-\$2,872,376	-\$2,952,202	-\$2,959,971	-\$2,914,929	-\$2,791,094
Fee and Charges	0.00%	-\$2,695,330	-\$2,695,330	-\$2,695,330	-\$2,695,330	-\$2,695,330	-\$2,695,330	-\$2,695,330	-\$2,695,330	-\$2,695,330	-\$2,695,330
Operating Grants	0.00%	-\$178,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Interest on Middle of Period Reserve Balance	2.08%	-\$48,310	-\$46,701	-\$44,975	-\$50,503	-\$54,774	-\$57,389	-\$58,239	-\$57,803	-\$56,011	-\$52,809
Operating Surplus	0.00%	-\$220,072	-\$226,718	-\$233,565	-\$240,619	-\$245,431	-\$250,340	-\$255,347	-\$260,454	-\$265,663	-\$270,976
Operating Cost Uncertainty Factor		1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Operating Costs	2.00%	\$2,200,722	\$2,267,184	\$2,335,653	\$2,406,189	\$2,454,313	\$2,503,400	\$2,553,468	\$2,604,537	\$2,656,628	\$2,709,760
Project Cost Uncertainty Factor		5%	5%	5%	5%	5%	20%	20%	20%	20%	20%
Operating Project Costs	4.00%	\$626,367	\$1,165,776	\$334,844	\$339,639	\$362,167	\$419,833	\$447,680	\$454,091	\$484,211	\$491,145
Water Operating Reserve Balance - End of Period		-\$2,613,533	-\$2,149,324	-\$2,452,697	-\$2,693,321	-\$2,872,376	-\$2,952,202	-\$2,959,971	-\$2,914,929	-\$2,791,094	-\$2,609,304
Parcel Reserve Balance - Start of Period		-\$5,934,870	-\$7,675,037	-\$3,698,250	-\$4,119,709	-\$3,275,147	-\$2,866,676	-\$3,753,964	-\$3,763,725	-\$3,757,829	-\$4,346,094
Parcel Taxes	0.00%	-\$3,727,264	-\$3,727,264	-\$3,727,264	-\$3,727,264	-\$3,727,264	-\$3,727,264	-\$3,727,264	-\$3,727,264	-\$3,727,264	-\$3,727,264
Interest on Middle of Period Reserve Balance	2.08%	-\$140,119	-\$117,093	-\$80,489	-\$76,133	-\$63,233	-\$68,162	-\$77,398	-\$77,437	-\$83,433	-\$99,676
Capital Projects Costs	4.00%	\$2,127,216	\$7,821,144	\$3,386,293	\$4,647,959	\$4,198,967	\$2,908,138	\$3,794,900	\$3,810,598	\$3,222,433	\$2,837,534
Water Capital Reserve Balance - End of Period		-\$7,675,037	-\$3,698,250	-\$4,119,709	-\$3,275,147	-\$2,866,676	-\$3,753,964	-\$3,763,725	-\$3,757,829	-\$4,346,094	-\$5,335,500
Water Works Charges Reserve Balance - Start of Period		-\$1,043,354	-\$1,086,570	-\$1,130,686	-\$1,175,719	-\$1,221,690	-\$1,268,616	-\$1,316,519	-\$1,365,419	-\$1,415,336	-\$1,466,291
Works and Services Charges	0.00%	-\$21,288	-\$21,288	-\$21,288	-\$21,288	-\$21,288	-\$21,288	-\$21,288	-\$21,288	-\$21,288	-\$21,288
Interest on Middle of Period Reserve Balance	2.08%	-\$21,928	-\$22,828	-\$23,745	-\$24,682	-\$25,639	-\$26,615	-\$27,612	-\$28,629	-\$29,668	-\$30,728
Water Works Charges Reserve Balance - End of Period		-\$1,086,570	-\$1,130,686	-\$1,175,719	-\$1,221,690	-\$1,268,616	-\$1,316,519	-\$1,365,419	-\$1,415,336	-\$1,466,291	-\$1,518,307
Revenues - All Sources		\$7,052,312	\$6,857,222	\$6,826,657	\$6,835,819	\$6,832,959	\$6,846,388	\$6,862,477	\$6,868,205	\$6,878,656	\$6,898,071
Expenditures - All Sources		\$4,954,305	\$11,254,104	\$6,056,790	\$7,393,788	\$7,015,448	\$5,831,371	\$6,796,048	\$6,869,226	\$6,363,271	\$6,038,439
Net Revenue after Expenditures - Contribution to Reserve		-\$2,098,007	\$4,396,882	-\$769,867	\$557,969	\$182,489	-\$1,015,017	-\$66,430	\$1,021	-\$515,385	-\$859,632
Reserve Balance - End of Period		-\$11,375,141	-\$6,978,259	-\$7,748,126	-\$7,190,157	-\$7,007,668	-\$8,022,686	-\$8,089,115	-\$8,088,094	-\$8,603,479	-\$9,463,111

The twenty year forecast showing capital and operating expenditures, revenues, cash flow and end of year reserves is presented in **Figure 5-3**.

Figure 5-3: Twenty Year Reserve Balance Forecast



5.1.1 Uncertainty and Reserve Guidelines

There are a number of regulatory and systemic risks that the RMoW needs to plan for. These include anticipated increased quality requirements for drinking water, and unknown condition of buried assets as described below.

5.1.1.1 Reserve Fund Balances – Evolving Demands

The capital work program required to ensure that the RMoW Water Utility will continue provide dependable domestic and fire protection supplies for the “design summer” conditions is nearing completion. Of particular note is the work being considered by Whistler for the final phase of supply needed, being studied by Opus Dayton & Knight Consulting Engineers. Initial conclusions from that study reveal that at least one new groundwater supply node must be developed in order to ensure dependable supply during design conditions. In addition to the above study, there is reason to believe that changes to legislation or regulatory requirements may occur in the near horizon that will place fiscal demands upon the water utility.

5.1.1.2 Legislative and Regulatory Changes – On The Horizon

1. Surface Supplies - Filtration

The RMoW Water Utility is regulated by the Drinking Water Protection Act. Under that act, the appointed official issues an annual operating permit with conditions attached. Whistler's main surface water supply, at 21 Mile Creek, has ultra-violet and chlorine-based disinfection systems, but has no filtration system. It is possible that the Province may mandate that surface supplies move to filtration systems in the coming years.

2. Groundwater Supplies – Ultra-Violet Disinfection

The Province is continuing to study and revise requirements for how surface water and ground water interact. Of significance, it is understood that the Province will soon be mandating changes to how determinations are made to regarding whether groundwater supplies are under the direct influence of surface waters or at risk of pathogens. RMoW would be wise to ensure reserve monies are available for installation of Ultra-Violet disinfection systems at several existing (and one proposed) groundwater supplies, and to ensure reserves are sufficient to deal with this.

3. Water Sustainability Act

The Province is moving forward on a replacement to the Water Act. The new legislation will be called the Water Sustainability Act. Early information reveals that new requirements will be imposed upon Municipalities for the allowable volumes that may be extracted from surface water sources. Although the information is not yet well developed, Whistler may be subject to a reduction in the amount of water that may be extracted from the primary supply source at 21 Mile Creek. If the amount of reduction is substantial, and particularly if the reduction reduces permitted summer or peak tourism period withdrawals, Whistler may need to develop more alternative supply sources than currently being forecast in the capital planning. It would be prudent for RMoW to keep a reasonable reserve fund amount available for this eventuality.

5.1.1.3 Uncertainty

Additionally there are so called unknown unknowns that present risks to RMoW and need to be considered. Thus we have incorporated an uncertainty factor to account for capital project scope risks, as well as a future non-linear system improvements estimate that totals \$ 1 M per year, which is in line with current and past projects of this nature. In this way the forecast is robust and will be able to deal with shocks that may occur due to changing conditions, emergency response, or increased regulatory requirements.

There are various regulatory and systemic risks that the RMoW needs to plan for, including the 2014 Water Sustainability Act and imminent changes to Groundwater disinfection regulations, and unknown future changes.

5.1.1.4 Establishing a Reserve Fund Policy

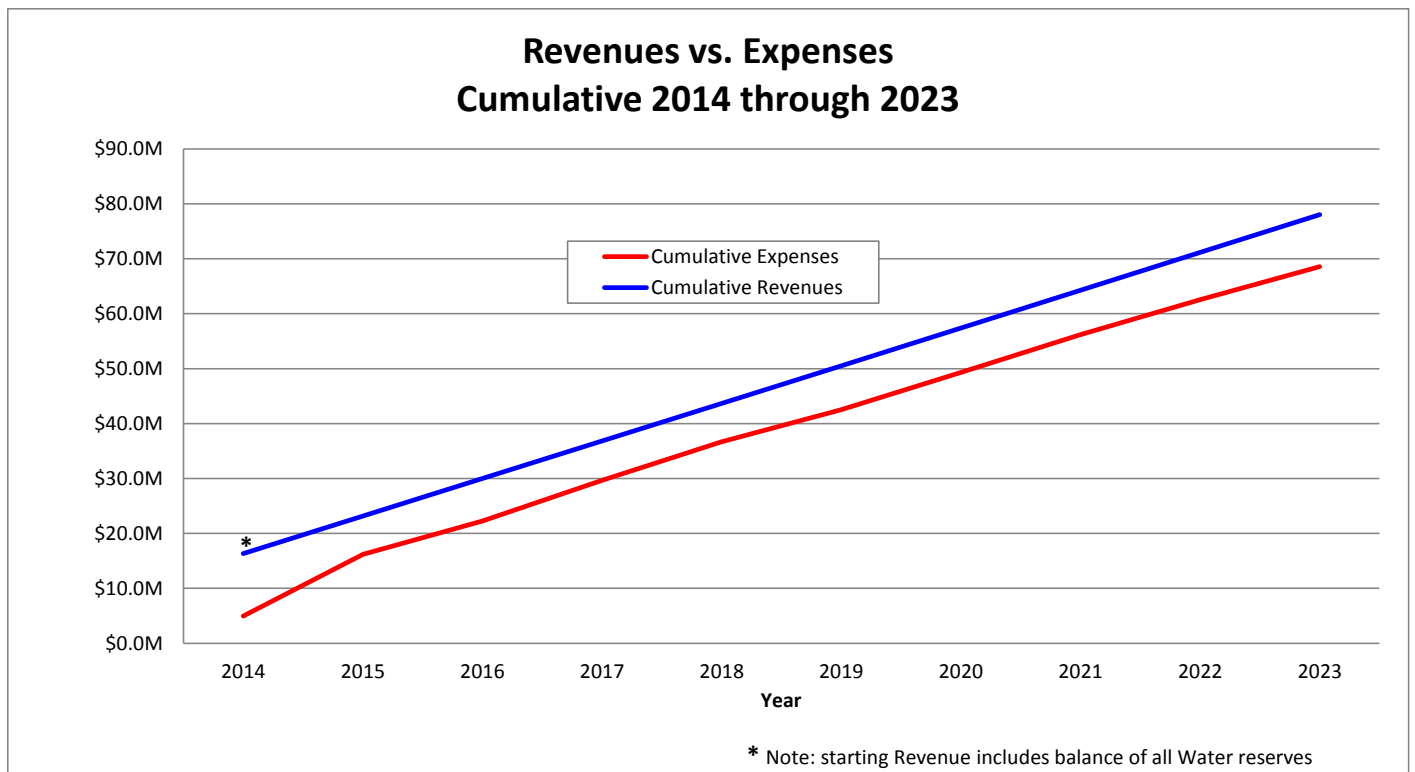
Many utilities and local governments, particularly in the United States, have Reserve Fund Policies. The intent of those policies is to ensure the continued sustainability of the utility, and to minimize the impact of expenditures on the rates and fees charged to the rate-payers. Whistler should consider establishing a Reserve Fund Policy for the water utility. The policy may set maximum and minimum balances for the following example categories:

- Capital Replacement Reserve
- Capital Improvement Reserve
- Operating Reserve
- Works and Services Charges Reserve
- Rate Stabilization Reserve

5.1.2 Funding Recommendations

RMoW is recommended to fund the water distribution system renewal program projects through a debt free funding strategy using rates and/or reserves. The debt free funding recommendation applies to the replacement of existing infrastructure because it results in the least cost funding alternative when compared to using debt. Currently budgeted contributions to reserves are sufficient to fully fund the renewal program and still result in a growing reserve balance from year to year after 2014 to 2023. The cumulative costs and revenues through 2023 are presented in [Figure 5-4](#).

Figure 5-4: Cumulative Costs and Revenues over the next 10 years



Since current reserve balances together with planned reserve contributions are presently adequate to fund the current 10 year plan including recommended renewal projects, this does not appear to pose a funding challenge for the RMoW. If the RMoW is financially able to follow through on its currently budgeted net revenue (revenue net of operating costs), there does not appear to be any short or medium term impact to water rates.

If the RMoW is able to follow through on its currently budgeted net revenue, no change to short or medium term water rates is expected.

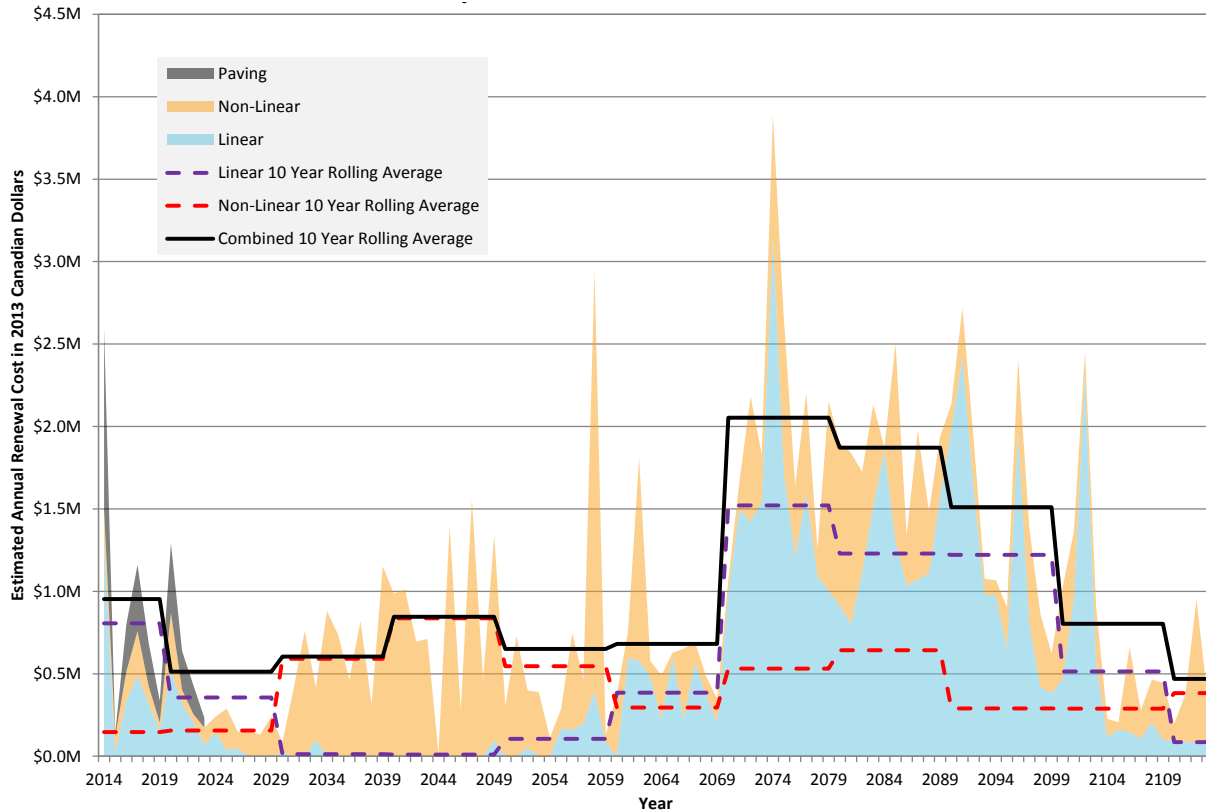
While water rates may have to rise in the future, the RMoW is in the fortunate position in that it can complete the renewal projects defined in this study with existing rates and reserves. This position provides time to consider alternatives, and consult with stakeholders for the purposes of developing a sustainable long range funding strategy to deal with the larger renewal projects that are still decades away. The following financial strategies are recommended:

1. The RMoW should conduct financial planning efforts over the longer term (10 – 15 years): It is recommended that financial planning be conducted over a multi-year period to determine if there are any significant expenses in the future that the RMoW can begin to plan for today to minimize future impacts.
2. Pay-as-you-go funding through rates wherever possible for the replacement of existing infrastructure since pay-as-you-go is the least cost funding alternative. This applies not only to water infrastructure but all municipal infrastructure. The larger funding challenge is still decades away, but beginning now to identify the full life cycle cost of infrastructure will provide a mechanism for the RMoW to proactively plan for the replacement of existing infrastructure and quantify the results. The full life cycle cost approach will approximate the value of the infrastructure that needs to be replaced over time. If the full life cycle cost is collected via rates and placed in a reserve for future replacement of worn-out infrastructure, the RMoW will be in a position to avoid the use of debt financing.
3. Take advantage of infrastructure renewal grants: Federal and Provincial governments have in the past offered grants to assist the funding infrastructure renewal programs. The RMoW is recommended to take full advantage of these grants when they are available. Such programs will require proof that the funded renewal program meets the program guidelines to ensure that the grant program objectives are being met. Studies such as this will assist in the application of grants.
4. Ensure that Development Cost Charges (DCC's) reflect the full cost of allocating existing infrastructure equity to growth in new development. Even though the RMoW is almost fully built out and future development will be limited, Development Cost Charges are a Best Practice that will ensure that new customers share in the cost of infrastructure required for new development and to help the RMoW recover the cost of providing service to each customer group in order to prevent unintentional subsidizing of one group over another.
5. Begin a stakeholder communication process so those stakeholders understand the need to fund infrastructure renewal projects. Fortunately, RMoW is not in an immediate funding shortfall and can approach this undertaking in a well-planned manner.

5.2 Long Term Financial Requirements

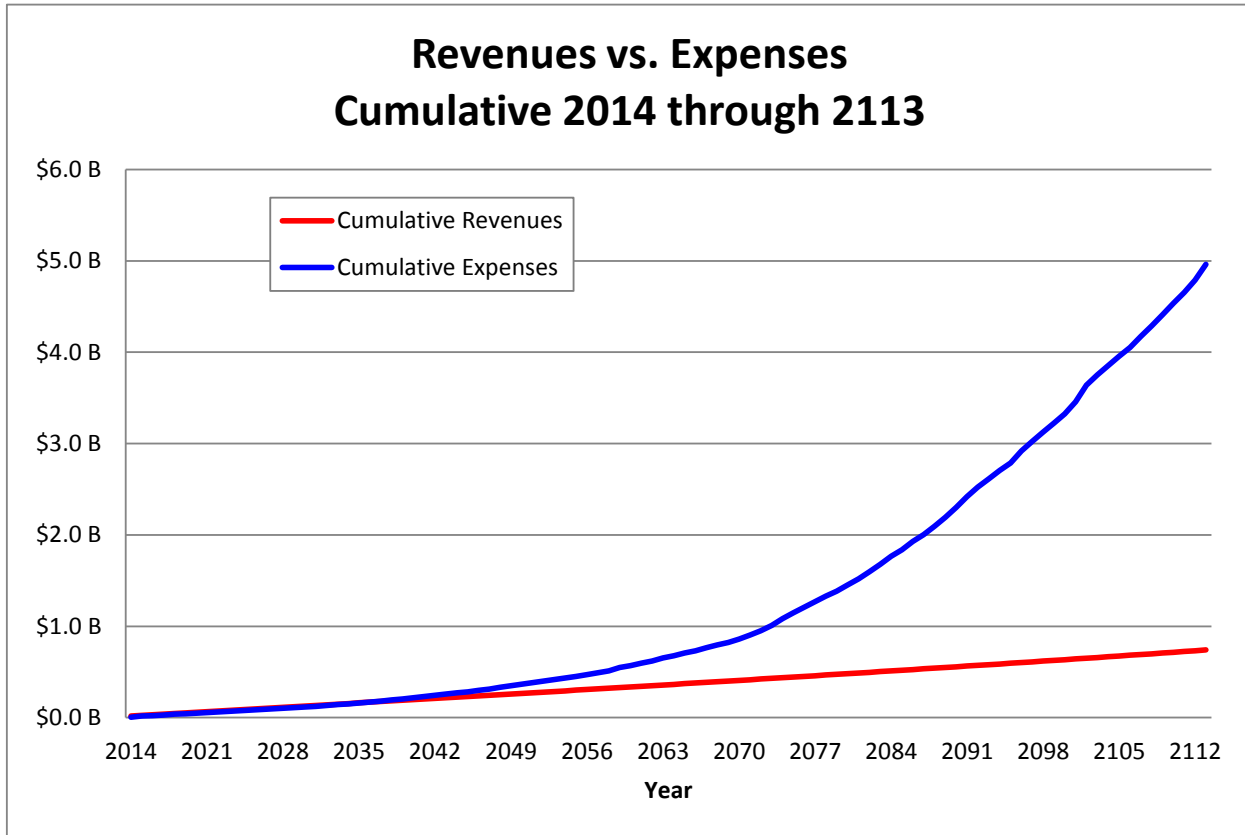
Figure 5-5 below shows the long range funding needs along with the estimated 10 year rolling funding average.

Figure 5-5: 100 Year Renewal Budget Estimates



Using a projection of expected costs provided by RMoW over the next 100 years to 2113 the cumulative revenues and expenses is presented in Figure 5-6. It can be seen that revenues are adequate until around the year 2035, beyond which the cumulative expenses are expected to accelerate. Without a change in rates or other funding sources the RMoW may not be able to meet the Levels of Service required for its water utility.

Figure 5-6: Cumulative Costs and Revenues over the next 100 years



*Note: an engineering evaluation of the 100 year capital forecast has not been undertaken as part of this study.

It is recommended that following 2023, the RMoW takes advantage of the forecasted lull in required works to consider funding alternatives and reserve management policies. In order to avoid large rate increases in the future, a proactive approach to building reserves will be required.

6. Summary of Recommendations

6.1 10-year Work Program Recommendations

The bottom up renewal model and this rehabilitation study have identified the following seven programs that are recommended to be implemented over the next ten years:

- A.C. Pipe Replacement: to reduce the risk of failure of the A.C. water pipes that are reported to have lost wall strength and will allow the White Gold area to be returned to full operating pressure thus allowing increased fire flow at hydrants, and a higher level of service to residents.
- Cast Iron Pipe Replacement: to reduce the risk of failure of the Cast Iron pipes that are exhibiting tuberculation and are the source of turbid water requiring weekly flushing, the risk of constriction of the pipe and consequential flow restriction will also be reduced.
- Non-linear works that include:
 - Shut down of a PRV and full decommissioning to make the site safe and remove the risk of collapse.
 - Renewal of process equipment to ensure continued levels of service.
 - Removal and full decommissioning at those reservoirs and intakes that have been taken out of service.
 - Replacement of an altitude valve and chamber to meet operational and maintenance requirements.
- Corrosive Soils Investigation: to target condition assessment and renewal works of their buried metallic assets to those that are identified as being at elevated risk of corrosive soils and to review the current specifications for buried assets for suitability to meet service life expectations. This benefit extends beyond just water assets, but all buried metallic assets such as sewer and drainage pipes.
- Ductile Iron Pipe CCTV/R FEC Condition Assessment: to plan rehabilitation of the ductile iron pipe in the network.
- Utility-wide asset management program and associated databases and systems to assist in coordinating renewal works for all of water, sewer, storm and roads.
- Leak Detection: to prioritize works for pipes that are the source of leaks, to act to prevent catastrophic failures, and to conserve water.

The cost estimates for the works over the next ten years is presented in [Table 6-1](#).

Table 6-1: Recommended 10 Year Program for the Water Distribution System Piping Renewal

Year	Renewal/Replacement*			Investigation		Condition Assessment		Yearly Total
	A.C. Pipe	Cast Iron Pipe	Non-Linear Works	Asset Mgmt	Corrosive Soils	Ductile Iron Pipe CCTV/R FEC	Leak Detection	
2014	\$ 248,000	\$ 1,856,000	\$ 189,000		\$ 10,000			\$ 2,303,000
2015	\$ 44,000		\$ 332,000	\$ 60,000	\$ 10,000	\$ 50,000		\$ 496,000
2016	\$ 621,000		\$ 179,000					\$ 800,000
2017	\$ 418,000	\$ 358,000	\$ 227,000	\$ 40,000	\$ 10,000		\$ 60,000	\$ 1,113,000
2018		\$ 581,000	\$ 107,000		\$ 10,000	\$ 50,000		\$ 748,000
2019		\$ 192,000	\$ 45,000	\$ 40,000			\$ 20,000	\$ 297,000
2020		\$ 620,000	\$ 351,000		\$ 10,000			\$ 981,000
2021	\$ 186,000	\$ 258,000	\$ 46,000		\$ 10,000	\$ 50,000		\$ 550,000
2022		\$ 229,000	\$ 50,000				\$ 20,000	\$ 299,000
2023		\$ 129,000	\$ 103,000		\$ 10,000			\$ 242,000
Program Total	\$ 1,517,000	\$ 4,223,000	\$ 1,629,000	\$ 140,000	\$ 70,000	\$ 150,000	\$ 100,000	\$ 7,829,000

*Note that the pipe renewal/replacement programs included in the ten-year plan include associated paving costs, assuming a full 8 m repaving is required at \$ 36/m², this is estimated at \$ 288 per linear meter of pipe replaced.

6.2 Funding Recommendation

RMoW is recommended to fund the water system renewal program listed above through a debt free funding strategy using existing rates and reserves. Currently budgeted contributions to reserves are sufficient to fully fund the renewal program and there does not appear to be any short or medium term need to adjust water rates due to issues identified in this study.

However, it is recommended that the funding needs of the renewal requirements are reassessed and reserve funding practices are established to pay for the extensive forecast renewals beyond 2053.

6.3 Asset Management Recommendations

In addition to the project specific recommendations noted above, the RMoW is further recommended to continue to take an asset management approach with regard to the water distribution system and extend this type of analysis to other utility infrastructure. The following is recommended to continually manage and refine the water distribution system renewal plan:

1. Considerable effort was directed at preparing a detailed and current water distribution asset inventory along with important asset condition and criticality information. The RMoW is recommended to consider and subsequently develop an information management strategy that will ensure that this type of data remains current, secure, and available in a flexible format to easily allow other types of engineering analysis in the future. In addition to water main data, this strategy should include similar data from all RMoW infrastructure.
2. Continue to update and use the CAP renewal model for the purpose of long range water system renewal planning. The contents of this report reflect the conditions at the present time. Going forward, the water system will continue to deteriorate, new infrastructure will be added to the system, and maintenance will be applied to portions of the system as the need requires. Even though change of this type tends to be gradual and slow, the RMoW should ensure that the models used in this study are updated on a regular basis.
3. Develop a utility information management strategy. Asset management plans such as this rely on accurate and current information from a broad cross section of RMoW functions including fixed asset data, financial data, maintenance and work program data, long range planning data, etc. While there is no single computerized information management system that can fulfill all of the requirements for asset management planning, RMoW will need to design an information management strategy that balances the need for information with a justifiable cost. We also recommend that this strategy be considered with all RMoW infrastructures in mind (and not just the water distribution system).
4. Conduct a similar renewal plan for the wastewater utility. To ensure that RMoW costs as a result of pipe replacements and excavations can be minimized over the long term, a wastewater system renewal plan should be conducted. This will provide opportunities where both water and sewer pipes might be replaced at the same time to reduce overall construction costs. The same renewal plan methodology used for the water system can be employed. The resulting combined linear system renewal plan (including water mains, sewer mains, and roads) can be designed to ensure that excavations can be minimized and that all pipe replacements are conducted in the most efficient manner possible.
5. Ensure that utility construction is adequately supervised so that poor quality construction doesn't compromise the condition and service life of the RMoW's water mains.
6. Water main repairs provide an ideal opportunity to collect information on the condition of the pipe. RMoW should review with its O&M staff a standard procedure to collect information such as pipe thickness or quality of bedding as regular O&M work is conducted.

APPENDIX A

Water Distribution System Asset Inventory

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
200	Main	Rainbow Drive	W8025	1987	7,91952	Cast Iron	Alpine Meadows South	1026	216	748 Lower Alpine Meadows	65	2014	\$ 2,924.09
200	Main	Rainbow Drive	W8025	1987	47,9191	Cast Iron	Alpine Meadows South	1026	216	748 Lower Alpine Meadows	65	2014	\$ 17,692.96
150	Main	Timber Lane	W8008	1979	97,6639	Cast Iron	Alpine Meadows South	1012.1	216	748 Lower Alpine Meadows	65	2014	\$ 32,641.78
150	Main	Timber Lane	W8008	1979	94,8923	Cast Iron	Alpine Meadows South	1012.1	216	748 Lower Alpine Meadows	65	2014	\$ 31,715.45
200	Main	Alpine Way	W8004	1979	159,215	Cast Iron	Alpine Meadows South	908.4	216	748 Lower Alpine Meadows	65	2014	\$ 58,786.10
200	Main	Rainbow Drive	W8004	1979	10,2562	Cast Iron	Alpine Meadows South	1025.8	216	748 Lower Alpine Meadows	65	2014	\$ 3,786.85
100	Main	Alta Vista Road	W3000	1963	169,436	A.C.	Alta Vista	679.1	240	723 Alta Visita	50	2014	\$ 49,503.20
100	Main	Alpine Crescent	W3000	1963	71,9837	A.C.	Alta Vista	679.1	240	723 Alta Visita	50	2014	\$ 21,031.14
100	Main	Archibald Way	W3000	1963	175,631	A.C.	Alta Vista	713.4	240	723 Alta Visita	50	2014	\$ 51,313.29
150	Main	Brio Entrance	W3009-1	1978	8,45625	A.C.	Brio	1000.7	213	775	50	2014	\$ 2,795.41
150	Main	Timber Lane	W8008	1979	11,3709	Cast Iron	Alpine Meadows South	1000.5	216	748 Lower Alpine Meadows	65	2014	\$ 3,800.43
150	Main	Rainbow Drive	W8008	1979	12,211	Cast Iron	Alpine Meadows South	937	216	748 Lower Alpine Meadows	65	2014	\$ 4,081.22
200	Main	Timber Lane to Rainbow Drive	W8008	1979	94,4611	Cast Iron	Alpine Meadows South	990.8	216	748 Lower Alpine Meadows	65	2014	\$ 34,871.45
150	Main	Matterhorn Drive	W8007	1979	168,34	Cast Iron	Alpine Meadows South	948.2	216	748 Lower Alpine Meadows	65	2014	\$ 56,263.51
200	Main	Rainbow Drive	W8007	1979	147,775	Cast Iron	Alpine Meadows South	1029.8	216	748 Lower Alpine Meadows	65	2014	\$ 54,562.23
200	Main	Rainbow Drive	W8007	1979	140,346	Cast Iron	Alpine Meadows South	1020	216	748 Lower Alpine Meadows	65	2014	\$ 51,819.47
200	Main	Rainbow Drive	W8007	1979	49,0099	Cast Iron	Alpine Meadows South	948.2	216	748 Lower Alpine Meadows	65	2014	\$ 18,095.72
200	Main	Rainbow Drive	W8007	1979	38,563	Cast Iron	Alpine Meadows South	948.2	216	748 Lower Alpine Meadows	65	2014	\$ 14,238.47
200	Main	Rainbow Drive	W8005	1979	98,6255	Cast Iron	Alpine Meadows South	1085.8	216	748 Lower Alpine Meadows	65	2014	\$ 36,415.08
200	Main	Rainbow Drive	W8005	1979	201,289	Cast Iron	Alpine Meadows South	1085.9	216	748 Lower Alpine Meadows	65	2014	\$ 74,324.80
200	Main	Matterhorn Drive	W8004	1979	71,9748	Cast Iron	Alpine Meadows South	1015.6	216	748 Lower Alpine Meadows	65	2014	\$ 26,574.95
150	Main	Cedar Springs Road	W8004	1979	177,191	Cast Iron	Alpine Meadows South	1027.8	216	748 Lower Alpine Meadows	65	2014	\$ 59,221.92
150	Main	Cedar Springs Road	W8004	1979	10,9824	Cast Iron	Alpine Meadows South	1016.3	218	735B Nestors	65	2014	\$ 3,673.93
150	Main	Cedar Springs Road	W8008	1979	60,8111	Cast Iron	Alpine Meadows South	1012.1	216	748 Lower Alpine Meadows	65	2014	\$ 20,324.65
200	Main	Rainbow Drive	W8004	1979	10,5188	Cast Iron	Alpine Meadows South	1025.8	216	748 Lower Alpine Meadows	65	2014	\$ 3,883.79
150	Main	Rainbow Drive	W8004	1979	287,809	Cast Iron	Alpine Meadows South	969.1	216	748 Lower Alpine Meadows	65	2014	\$ 96,192.83
150	Main	Rainbow Drive	W8004	1979	33,3152	Cast Iron	Alpine Meadows South	937	216	748 Lower Alpine Meadows	65	2014	\$ 11,134.79
150	Main	Camino Drive	W8004	1979	108,631	Cast Iron	Alpine Meadows South	1025.8	216	748 Lower Alpine Meadows	65	2014	\$ 36,307.29
200	Main	Alpine Way	W8004	1979	5,25427	Cast Iron	Alpine Meadows South	937	216	748 Lower Alpine Meadows	65	2014	\$ 1,940.01
200	Main	Alpine Way	W8003	1979	14,6811	Cast Iron	Alpine Meadows South	908.4	216	748 Lower Alpine Meadows	65	2014	\$ 5,420.64
150	Main	Parkwood Drive	W8014	1979	184,15	Cast Iron	Alpine Meadows North	946	216	748 Lower Alpine Meadows	65	2014	\$ 62,538.29
150	Main	Meadow Lane	W8015	1979	363,395	Cast Iron	Alpine Meadows North	953.4	216	748 Lower Alpine Meadows	65	2014	\$ 123,410.39
150	Main	Parkwood Drive	W8015	1979	138,264	Cast Iron	Alpine Meadows North	943.1	216	748 Lower Alpine Meadows	65	2014	\$ 46,955.06
150	Main	Rainbow Drive	W8005	1979	9,49405	Cast Iron	Alpine Meadows South	1085.9	216	748 Lower Alpine Meadows	65	2014	\$ 3,173.16
150	Main	Parkwood Drive	W8015	1979	58,503	Cast Iron	Alpine Meadows North	953.4	216	748 Lower Alpine Meadows	65	2014	\$ 19,867.87
150	Main	Saint Anton Way	W3009-2	1978	74,7533	A.C.	Blueberry Hill	992.3	213	775	50	2015	\$ 22,016.87
150	Main	Fitzsimmons Road South	W7000	1976	397,865	A.C.	White Gold	387.1	231	716 White Gold	50	2016	\$ 134,768.54
150	Main	Toni Sailer Lane	W7000	1976	376,483	A.C.	White Gold	379.9	231	716 White Gold	50	2016	\$ 127,525.69
150	Main	Nancy Greene Drive	W7000	1976	113,78	A.C.	White Gold	410.4	231	716 White Gold	50	2016	\$ 38,540.44
150	Main	Nancy Greene Drive	W7000	1976	102,423	A.C.	White Gold	391.7	231	716 White Gold	50	2016	\$ 34,693.49
200	Main	Matterhorn Drive	W8005	1979	208,237	Cast Iron	Alpine Meadows South	816.7	216	748 Lower Alpine Meadows	65	2017	\$ 76,886.33
200	Main	Matterhorn Drive	W8005	1979	41,3128	Cast Iron	Alpine Meadows South	826.4	216	748 Lower Alpine Meadows	65	2017	\$ 15,253.74
200	Main	Matterhorn Drive	W8006	1979	55,0083	Cast Iron	Alpine Meadows South	815.4	216	748 Lower Alpine Meadows	65	2017	\$ 20,310.49
200	Main	Drifter Way	W8005	1979	11,2153	Cast Iron	Alpine Meadows South	826.4	216	748 Lower Alpine Meadows	65	2017	\$ 4,140.98
150	Main	Fitzsimmons Road South	W7000	1976	111,29	A.C.	White Gold	355.3	231	716 White Gold	50	2017	\$ 37,696.99
150	Main	Fitzsimmons Road South	W7000	1976	98,7117	A.C.	White Gold	342.4	231	716 White Gold	50	2017	\$ 33,436.53
150	Main	Ambassador Crescent	W7000	1976	457,023	A.C.	White Gold	342.5	231	716 White Gold	50	2017	\$ 154,807.00
200	Main	Forest Ridge Drive	W8006	1979	124,671	Cast Iron	Alpine Meadows South	815.4	216	748 Lower Alpine Meadows	65	2017	\$ 46,031.79
150	Main	Drifter Way	W8005	1979	34,7896	Cast Iron	Alpine Meadows South	826.4	216	748 Lower Alpine Meadows	65	2017	\$ 11,627.59
150	Main	Needles Drive	W8010	1979	75,9651	Cast Iron	Alpine Meadows South	820.6	216	748 Lower Alpine Meadows	65	2017	\$ 25,389.48
150	Main	Matterhorn Drive	W8006	1979	111,351	Cast Iron	Alpine Meadows South	807.7	216	748 Lower Alpine Meadows	65	2018	\$ 37,216.40
200	Main	Alpine Way	W8003	1979	45,337	Cast Iron	Alpine Meadows South	783.9	216	748 Lower Alpine Meadows	65	2018	\$ 16,739.60
200	Main	Alpine Way	W8003	1979	301,876	Cast Iron	Alpine Meadows South	783.9	216	748 Lower Alpine Meadows	65	2018	\$ 111,460.45
150	Main	Mountain View Drive	W8011	1979	223,443	Cast Iron	Alpine Meadows North	793.2	216	748 Lower Alpine Meadows	65	2018	\$ 75,882.21
150	Main	Mountain View Drive	W8014	1979	33,2461	Cast Iron	Alpine Meadows North	807.9	216	748 Lower Alpine Meadows	65	2018	\$ 11,290.52
150	Main	Mountain View Drive	W8014	1979	195,353	Cast Iron	Alpine Meadows North	794.2	216	748 Lower Alpine Meadows	65	2018	\$ 66,342.69
150	Main	Needles Drive	W8003	1979	308,14	Cast Iron	Alpine Meadows South	730.3	216	748 Lower Alpine Meadows	65	2019	\$ 102,988.21
150	Main	Lakewood Court	W8006	1979	85,7725	Cast Iron	Alpine Meadows South	690.8	216	748 Lower Alpine Meadows	65	2020	\$ 28,667.37
200	Main	Forest Ridge Drive	W8006	1979	44	Cast Iron	Alpine Meadows South	682	216	748 Lower Alpine Meadows	65	2020	\$ 16,245.93
200	Main	Forest Ridge Drive	W8006	1979	105,797	Cast Iron	Alpine Meadows South	682	216	748 Lower Alpine Meadows	65	2020	\$ 39,062.93
200	Main	Alpine Way	W8002	1979	133,56	Cast Iron	Alpine Meadows South	677.3	216	748 Lower Alpine Meadows	65	2020	\$ 49,313.77
150	Main	Drifter Way	W8002	1979	150,889	Cast Iron	Alpine Meadows South	687.3	216	748 Lower Alpine Meadows	65	2020	\$ 50,431.06
150	Main	Drifter Way	W8002	1979	206,82	Cast Iron	Alpine Meadows South	687.3	216	748 Lower Alpine Meadows	65	2020	\$ 69,124.72
150	Main	Drifter Way	W8010	1979	43,2033	Cast Iron	Alpine Meadows South	690.8	216	748 Lower Alpine Meadows	65	2020	\$ 14,439.67
150	Main	Driftwood Close	W8010	1979	44	Cast Iron	Alpine Meadows South	700.6	216	748 Lower Alpine Meadows	65	2020	\$ 14,705.93
200	Main	Drifter Way	W8010	1979	98,2036	Cast Iron	Alpine Meadows South	700.6	216	748 Lower Alpine Meadows	65	2020	\$ 36,259.31
100	Main	Woodland Place	W8011	1979	63,1557	Cast Iron	Alpine Meadows North	720	216	748 Lower Alpine Meadows	65	2020	\$ 20,500.63
300	Main	Lakeside Road	W3012	1985	238,186	A.C.	Alta Vista	1285.4	213	775	50	2021	\$ 117,226.76
150	Main	Drifter Way	W8009	1979	77,1359	Cast Iron	Alpine Meadows South	651.4	216	748 Lower Alpine Meadows	65	2021	\$ 25,780.82
150	Main	Drifter Way	W8009	1979	137,71	Cast Iron	Alpine Meadows South	651.4	216	748 Lower Alpine Meadows	65	2021	\$ 46,026.17
150	Main	Drifter Way	W8009	1979	96,1544	Cast Iron	Alpine Meadows South	651.4	216	748 Lower Alpine Meadows	65	2021	\$ 32,138.61
150	Main	Mountain View Drive	W8012	1979	38,7177	Cast Iron	Alpine Meadows North	632.5	217	784 Upper Alpine Meadows	65	2021	\$ 12,469.50
150	Main	Mountain View Drive	W8012	1979	65,6355	Cast Iron	Alpine Meadows North	632.5	217	784 Upper Alpine Meadows	65	2021	\$ 22,290.09
200	Main	Alpine Way	W8011	1979	36,0822	Cast Iron	Alpine Meadows South	580.5	216	748 Lower Alpine Meadows	65	2022	\$ 13,322.49
200	Main	Alpine Way	W8001	1979	76,3256	Cast Iron	Alpine Meadows South	580.5	216	748 Lower Alpine Meadows	65	2022	\$ 28,181.40
150	Main	Drifter Way	W8009	1979	77,5942	Cast Iron	Alpine Meadows South	568	216	748 Lower Alpine Meadows	65	2022	\$ 25,933.98
150	Main	Mountain View Drive	W8011	1979	169,624	Cast Iron	Alpine Meadows North	563.3	216	748 Lower Alpine Meadows	65	2022	\$ 57,604.99
200	Main	Alpine Way	W8001	1979	24,7459	Cast Iron	Alpine Meadows South	491.1	216	748 Lower Alpine Meadows	65	2023	\$ 9,136.82
150	Main	Wedgview Place	W8009	1979	176,338	Cast Iron	Alpine Meadows South	472.1	216	748 Lower Alpine Meadows	65	2023	\$ 58,936.70
150	Main	Wedgview Place	W8009	1979	5,0001	Cast Iron	Alpine Meadows South	472.1	216	748 Lower Alpine Meadows	65	2023	\$ 1,671.16
150	Main	P250 - Archibald Way	W3014	1985	25,3692	A.C.	Alta Vista	713.4	240	723 Alta Visita	50	2024	\$ 7,792.54
150	Main	Alta Vista Road	W3012	1985	26,1574	A.C.	Alta Vista	782.9	240	723 Alta Visita	50	2024	\$ 8,034.66

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
300	Main	Carleton Way	W3013	1985	41.4994	A.C.	Alta Vista	777	240	723 Alta Visita	50	2024	\$ 20,424.57
300	Main	Lakeside Road	W3013	1985	28.7562	A.C.	Alta Vista	777	240	723 Alta Visita	50	2024	\$ 14,152.82
150	Main	Archibald Way	W3014	1985	16.8765	A.C.	Alta Vista	713.4	240	723 Alta Visita	50	2024	\$ 5,183.87
150	Main	Archibald Way	W3014	1985	171.757	A.C.	Alta Vista	691.9	240	723 Alta Visita	50	2024	\$ 52,757.80
150	Main	Archibald Way	W3015	1985	112.192	A.C.	Alta Vista	596	240	723 Alta Visita	50	2024	\$ 34,461.60
150	Main	Saint Anton Way	W3015	1985	116.146	A.C.	Alta Vista	556.9	240	723 Alta Visita	50	2025	\$ 35,675.99
150	Main	Saint Anton Way	W3015	1985	12.2105	A.C.	Alta Vista	566.7	240	723 Alta Visita	50	2025	\$ 3,750.65
150	Main	Archibald Way	W3017	1987	14.3318	A.C.	Alta Vista	696.7	240	723 Alta Visita	50	2026	\$ 4,402.24
150	Main	Alpine Crescent	W3017	1987	138.282	A.C.	Alta Vista	696.7	240	723 Alta Visita	50	2026	\$ 42,475.35
150	Main	P242 - Balsam Way	W6028	1990	0.72685	A.C.	Whistler Cay Heights	397.4	241	675 Tapley Farm	50	2030	\$ 232.13
150	Main	Balsam Way to/from Eagle Drive	W6028	1990	74.0785	A.C.	Whistler Cay Heights	397.4	241	675 Tapley Farm	50	2030	\$ 23,658.29
150	Abandoned	Highland Lodge	W2060-2	1966	10.39673	Ductile Iron	Nordic Estates	1007.4	208	763 Creekside	85	2049	\$ 2,755.13
50	Service	2117 Whistler Road	W2060-2	1966	5.7	PVC	Nordic Estates	1007.4	208	763 Creekside	85	2049	\$ 2,000.00
150	Main	Hwy99 @ Whistler Road	W2060-2	1966	150.396	Ductile Iron	Nordic Estates	1007.4	208	763 Creekside	85	2049	\$ 45,502.27
150	Main	Watson Way	W2060-2	1966	44.9453	Ductile Iron	Nordic Estates	997.5	208	763 Creekside	85	2049	\$ 13,598.17
150	Service	2020 Watson Way	W2060-2	1966	12.3778	Ductile Iron	Nordic Estates	997.5	208	763 Creekside	85	2049	\$ 3,280.13
150	Main	Hwy99 @ Whistler Road	W2060-2	1966	36.2	Ductile Iron	Nordic Estates	1007.4	208	763 Creekside	85	2049	\$ 10,952.30
150	Main	Whistler Road	W2060-2	1966	66.0944	Ductile Iron	Nordic Estates	1007.4	208	763 Creekside	85	2049	\$ 19,996.84
150	Main	Watson Way	W2060-1	1968	130.235	Ductile Iron	Nordic Estates	868.2	208	763 Creekside	85	2052	\$ 39,402.62
150	Main	Nita Lane	W2060-1	1968	32.385	Ductile Iron	Nordic Estates	868.2	208	763 Creekside	85	2052	\$ 9,798.07
150	Main	Whistler Road	W2060-2	1966	10.969	Ductile Iron	Nordic Estates	997.8	208	763 Creekside	85	2055	\$ 3,318.66
250	Main	Whistler Way south of P248	W4060V	1978	11.1081	Ductile Iron	Village	941.1	213	775	85	2055	\$ 4,165.52
300	Main	Whistler Way south of P248	W4018V	1978	16.7103	Ductile Iron	Village	941.1	213	775	85	2055	\$ 5,013.10
250	Main	Highway 99 between Whistler Way and Village Gate Boulevard	W4018V	1978	7.50005	Ductile Iron	Village	951.4	213	775	85	2055	\$ 2,812.52
250	Main	Highway 99 between Whistler Way and Village Gate Boulevard	W4018V	1978	407.813	Ductile Iron	Village	983.5	213	775	85	2055	\$ 152,929.88
250	Main	Whistler Way	W4012V	1979	155.974	Ductile Iron	Village	963.8	213	775	85	2056	\$ 58,490.17
250	Main	Whistler Way south of P248	W4006V	1979	17.899	Ductile Iron	Village	941.1	213	775	85	2056	\$ 6,712.13
200	Main	Alta Lake Road	W2079-1	1973	304.756	Ductile Iron	Twin Lakes	929.5	204	735 Whistler South	85	2056	\$ 91,996.35
75	Main	Highway 99 at Whistler Cay Drive	W4019V	1978	7.68262	Ductile Iron	Village North	573.8	229	760 Whistler Cay	85	2057	\$ 1,843.83
250	Main	Cheakamus Way	W2079-1	1973	449.364	Ductile Iron	Miller's Pond	726.6	204	735 Whistler South	85	2057	\$ 193,567.64
150	Main	Karen Crescent	W2029-5	1965	395.73	Ductile Iron	Whistler Creek Centre	586.1	222	702 Whistler Creek	85	2058	\$ 115,385.50
150	Main	Drew Drive	W2029-5	1965	134.424	Ductile Iron	Whistler Creek Centre	597.7	222	702 Whistler Creek	85	2058	\$ 39,194.92
150	Main	Karen Crescent	W2029-5	1965	43.6368	Ductile Iron	Whistler Creek Centre	585.7	222	702 Whistler Creek	85	2058	\$ 12,723.47
50	Service	2010 Nita Lane	W2060-1	1968	46.6291	Polyethylene	Nordic Estates	860.3	208	763 Creekside	85	2058	\$ 2,000.00
250	Main	Highway 99 between Village Gate Boulevard and Whistler Cay Drive	W4019V	1978	272.472	Ductile Iron	Village North	560.5	229	760 Whistler Cay	85	2058	\$ 102,177.02
250	Main	Highway 99 between Whistler Way and Village Gate Boulevard	W4018V	1978	228.656	Ductile Iron	Village	560.5	229	760 Whistler Cay	85	2058	\$ 85,745.82
150	Main	Drew Drive/Lake Placid Road connector	W2029-5	1965	116.486	Ductile Iron	Whistler Creek Centre	597.7	222	702 Whistler Creek	85	2058	\$ 33,964.69
50	Service	Whistler Ridge	W2029-3	1965	23.0896	Ductile Iron	Whistler Creek Centre	597.9	222	702 Whistler Creek	85	2058	\$ 5,195.16
150	Main	Whistler Road	W2060-1	1968	205.556	Ductile Iron	Nordic Estates	757.8	213	775	85	2059	\$ 62,190.91
250	Main	Highway 99 to Whistler Golf Club	W4024V	1982	46.5	Ductile Iron	Village	980.8	213	775	85	2059	\$ 17,437.50
100	Abandoned	Highway 99	W7000	1976	62.10867	PVC	White Gold	843.2	218	735B Nestors	85	2060	\$ 15,227.17
150	Abandoned	Highway 99	W7000	1976	20.50655	PVC	White Gold	843.2	218	735B Nestors	85	2060	\$ 5,434.24
150	Abandoned	Highway 99	W7000	1976	27.4588	PVC	White Gold	833.3	218	735B Nestors	85	2060	\$ 7,276.58
75	Main	Highway 99 at Whistler Cay Drive	W4019V	1978	7	PVC	Village	949.9	213	775	85	2061	\$ 1,680.00
100	Main	Highway 99 between Panorama Ridge and Whistler Way	W3009-1	1978	11.4567	PVC	Brio	979.7	213	775	85	2061	\$ 3,615.43
250	Main	Highway 99 between Panorama Ridge and Whistler Way	W3009-1	1978	342.159	Ductile Iron	Brio	958.8	213	775	85	2061	\$ 150,746.52
150	Main	Brio Entrance	W3004	1978	79.3253	PVC	Brio	1000.7	213	775	85	2061	\$ 26,222.87
150	Main	Panorama Ridge	W3009-1	1978	17.0494	PVC	Brio	960.3	213	775	85	2061	\$ 5,636.09
150	Main	Panorama Ridge	W3002	1978	211.587	PVC	Brio	894.7	213	775	85	2061	\$ 69,945.28
150	Main	Saint Anton Way	W3001	1968	87.4157	Ductile Iron	Alta Vista	556.9	240	723 Alta Visita	85	2061	\$ 26,851.07
250	Main	Highway 99 between Brio Entrance and Panorama Ridge	W3009-1	1978	209.877	PVC	Brio	1000.7	213	775	85	2061	\$ 92,466.30
250	Main	Highway 99 between Blueberry Drive and Brio Entrance	W3009-1	1978	81.0217	PVC	Brio	1000.7	213	775	85	2061	\$ 35,696.05
250	Main	Highway 99 between Blueberry Drive and Brio Entrance	W3009-1	1978	26.3044	Steel	Brio	990.3	213	775	85	2061	\$ 11,589.02
250	Main	Highway 99 between Blueberry Drive and Brio Entrance	W3009-1	1978	93.6275	Ductile Iron	Brio	992.3	213	775	85	2061	\$ 41,249.83
400	Main	P247 to R225	W4020(V)	1978	233.398	Ductile Iron	Village	881.4	213	775	85	2061	\$ 115,532.04
100	Main	W205	W4022-1(V)	1978	23.0223	Ductile Iron	Village North	963.5	213	775	85	2061	\$ 5,755.56
300	Main	W205	W4022-1(V)	1978	7.70128	Ductile Iron	Village North	964.7	210	Supply	85	2061	\$ 3,465.58
150	Service	Conference Centre	Building Plans	1979	8.35418	Ductile Iron	Village	938.8	213	775	85	2062	\$ 2,213.86
150	Service	4200 Whistler Way	W4012V	1979	7.45625	Ductile Iron	Village	963.8	213	775	85	2062	\$ 1,975.91
150	Service	4200 Whistler Way	W4012V	1979	7.45625	Ductile Iron	Village	895	213	775	85	2062	\$ 1,975.91
150	Service	Mountainside	W4007(V)	1979	3.532	Ductile Iron	Village	881.3	213	775	85	2062	\$ 935.98
150	Service	Crystal Lodge South	W4007(V)	1979	8.45625	Ductile Iron	Village	891.2	213	775	85	2062	\$ 2,240.91
150	Service	WhistlerView	W4007(V)	1979	7.95438	Ductile Iron	Village	891.2	213	775	85	2062	\$ 2,107.91
200	Main	Village Stroll - Sunrise Alley to Mountain Square	W4007(V)	1979	107.626	Ductile Iron	Village	891.2	213	775	85	2062	\$ 32,287.68
150	Service	Crystal Lodge North	W4007(V)	1979	8.45625	Ductile Iron	Village	901	213	775	85	2062	\$ 2,240.91
250	Main	Sunrise Alley	W4007(V)	1979	69.104	Ductile Iron	Village	896	213	775	85	2062	\$ 25,914.01
150	Service	Adara Whistler Hotel	W4007(V)	1979	8.45625	Ductile Iron	Village	911.1	213	775	85	2062	\$ 2,240.91
150	Service	Windwhistle	W4007(V)	1979	6.39862	Ductile Iron	Village	911.1	213	775	85	2062	\$ 1,685.04
150	Service	Hearthstone Lodge	W4007(V)	1979	12.338	Ductile Iron	Village	901.1	213	775	85	2062	\$ 3,269.57
250	Service	Hearthstone Lodge	W4007(V)	1979	5.83873	Ductile Iron	Village	891.2	213	775	85	2062	\$ 1,547.53
150	Main	Village Stroll - Village Square to Sunrise Alley	W4007(V)	1979	48.827	Ductile Iron	Village	891.2	213	775	85	2062	\$ 18,347.63
150	Main	Village Square	W4007(V)	1979	42.938	Ductile Iron	Village	891.3	213	775	85	2062	\$ 11,378.58
250	Main	Golfer's Approach	W4007(V)	1979	124.576	Ductile Iron	Village	938.8	213	775	85	2062	\$ 46,716.14
300	Main	Whistler Way south of P248	W4006V	1979	163.72	Ductile Iron	Village	940.2	213	775	85	2062	\$ 73,674.16
100	Service	Blackcomb Professional Building	W4006V	1979	20.5189	Ductile Iron	Village	940.1	213	775	85	2062	\$ 5,129.73
100	Service	Rainbow Condos	W4006V	1979	17.2022	Ductile Iron	Village	940.1	213	775	85	2062	\$ 4,300.56
150	Service	Cornerstone Building	W4006V	1979	2.12102	Ductile Iron	Village	940.1	213	775	85	2062	\$ 562.07
200	Main	Whistler Way	W4006V	1979	8.45625	Ductile Iron	Village	920.6	213	775	85	2062	\$ 2,536.87
150	Main	Gate Way Drive	W4006V	1979	44.5	Ductile Iron	Village	940.1	213	775	85	2062	\$ 11,792.50
300	Main	Gate Way Drive	W4006V	1979	5	Ductile Iron	Village	949.9	213	775	85	2062	\$ 2,250.00
300	Main	Gate Way Drive	W4006V	1979	31.5128	Ductile Iron	Village	940.1	213	775	85	2062	\$ 14,180.76
300	Main	Gate Way Drive	W4006V	1979	31.0161	Ductile Iron	Village	949.9	213	775	85	2062	\$ 13,957.26

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
250	Main	Whistler Way	W4010V	1979	153.591	Ductile Iron	Village	934.9		213 775	85	2062	\$ 57,596.47
150	Service	4050 Whistler Way	W4011V	1979		3 Ductile Iron	Village	934.9		213 775	85	2062	\$ 795.00
100	Main	Tyrol Crescent	W3001	1968	259.94	Ductile Iron	Alta Vista	508		240 723 Alta Vista	85	2062	\$ 75,945.48
150	Main	Hwy99 crossing to W201-1	W9004	1979	41.0353	PVC	Emerald Estates Lakeside	947.9		210 Supply	85	2062	\$ 13,341.15
150	Main	Emerald Drive	W9005	1979	44.1857	PVC	Emerald Estates Unserviced	922.3		206 733 Emerald Estates	85	2062	\$ 14,115.93
250	Main	Sundial Place	W4007(V)	1979	252.928	Ductile Iron	Village	886.2		213 775	85	2062	\$ 94,848.02
200	Main	Sundial Place	W4007(V)	1979	71.1713	Ductile Iron	Village	881.3		213 775	85	2062	\$ 21,351.40
300	Main	Blackcomb Way	W4007(V)	1979	27.0951	Ductile Iron	Village North	881.4		213 775	85	2062	\$ 12,192.80
150	Service	Sundial Boutique Hotel	W4007(V)	1979	8.32079	Ductile Iron	Village	861.6		213 775	85	2063	\$ 2,205.01
300	Main	Lake Placid Road	W2015	1981	185.574	Ductile Iron	Gondola Village	1160.2		208 763 Creekside	85	2063	\$ 95,436.59
300	Main	P248 Village	W4016V	1986	11.4562	Ductile Iron	Village	941.1		213 775	85	2063	\$ 5,155.31
250	Main	Highway 99 at Golf Club Underpass	W4059V	1986	47	Ductile Iron	Village	941.2		213 775	85	2063	\$ 17,625.00
250	Main	Whistler Way	W4011V	1979	233.994	Ductile Iron	Village	860.5		213 775	85	2063	\$ 87,747.79
200	Main	Tantalus Drive	W4011V	1979	49.2838	Ductile Iron	Village	837.1		213 775	85	2063	\$ 14,785.14
150	Main	Panorama Ridge	W3007	1979	396.363	PVC	Brio	808.6		213 775	85	2063	\$ 131,027.41
150	Main	Emerald Drive	W9006	1979	66.6534	PVC	Emerald Estates Unserviced	848		206 733 Emerald Estates	85	2063	\$ 21,293.67
150	Main	Tamarisk	1400 Alta Lake R	1973	77.74177	Ductile Iron	Twin Lakes	919.5		204 735 Whistler South	85	2063	\$ 20,601.57
200	Main	Tamarisk	1400 Alta Lake R	1973	212.6059	Ductile Iron	Twin Lakes	909.7		204 735 Whistler South	85	2063	\$ 63,781.78
200	Main	Tamarisk	1400 Alta Lake R	1973	77.16241	Ductile Iron	Twin Lakes	919.5		204 735 Whistler South	85	2063	\$ 23,148.72
150	Service	Mountainside Lodge	W4007(V)	1979	14.4812	Ductile Iron	Village	842.2		213 775	85	2063	\$ 3,837.51
300	Main	Blackcomb Way	W4007(V)	1979	24.0432	Ductile Iron	Village	846.1		213 775	85	2063	\$ 10,819.46
150	Service	Mountainside Lodge	W4007(V)	1979	8.49845	Ductile Iron	Village	866.6		213 775	85	2063	\$ 2,252.09
200	Service	Carlton Lodge	W4007(V)	1979	18.7325	Ductile Iron	Village	861.6		213 775	85	2063	\$ 5,619.75
200	Main	W205	W4023-1(V)	1980	125.496	Ductile Iron	Village North	964.7		210 Supply	85	2063	\$ 37,648.94
150	Main	W205	W4072(V)	1980	13.2774	Ductile Iron	Village North	917.7		213 775	85	2063	\$ 3,518.62
300	Main	Skiers Approach	W4007(V)	1979	36.0526	Ductile Iron	Village	861.8		213 775	85	2063	\$ 16,223.69
300	Main	Skiers Approach	W4007(V)	1979	30.2167	Ductile Iron	Village	861.8		213 775	85	2063	\$ 13,597.52
300	Main	Skiers Approach	W4007(V)	1979	11.9037	Ductile Iron	Village	861.8		213 775	85	2063	\$ 5,356.66
150	Service	Skiers Approach	W4007(V)	1979	12.84	Ductile Iron	Village	861.8		213 775	85	2063	\$ 3,402.60
150	Main	Bayshore Drive	W2007	1980	158.274	Ductile Iron	Bayshores	875.2		204 735 Whistler South	85	2064	\$ 53,393.53
150	Main	Stub to old W206	W2032	1982	5.75	Ductile Iron	Whistler Creek Base	1164.1		208 763 Creekside	85	2064	\$ 1,523.75
300	Main	Highway 99 @ Creekside	W2032	1982	238.636	Ductile Iron	Whistler Creek Base	1183.6		208 763 Creekside	85	2064	\$ 109,088.70
150	Main	Glacier Lane to/from P257	W4016(B)	1980	191.912	Ductile Iron	Blackcomb Benchlands South	814.1		210 Supply	85	2064	\$ 51,990.06
150	Main	Glacier Lane to/from P257	W4016(B)	1980	14.2866	Ductile Iron	Blackcomb Benchlands South	850.6		210 Supply	85	2064	\$ 3,870.31
150	Main	Glacier Lane to/from P257	W4017(B)	1980	237.334	Ductile Iron	Blackcomb Benchlands South	602.2		211 815 Upper Blackcomb	85	2065	\$ 64,294.90
150	Main	Glacier Lane to/from P257	W4017(B)	1980	0.54323	Ductile Iron	Blackcomb Benchlands South	602.2		211 815 Upper Blackcomb	85	2065	\$ 147.17
150	Main	Glacier Lane to/from P257	W4017(B)	1980	59.5356	Ductile Iron	Blackcomb Benchlands South	602.2		211 815 Upper Blackcomb	85	2065	\$ 16,128.49
150	Main	Glacier Lane to/from P257	W4017(B)	1980	36.347	Ductile Iron	Blackcomb Benchlands South	602.2		211 815 Upper Blackcomb	85	2065	\$ 9,846.58
150	Main	Whistler Road	W2029-3	1974	228.105	Ductile Iron	Nordic Estates	757.8		213 775	85	2065	\$ 69,012.94
150	Main	Nesters Road	W7001/W7008	1981	60.4575	Ductile Iron	Nesters	833.3		218 735B Nestors	85	2065	\$ 18,118.93
250	Main	Millars Pond Crescent	W2079-1	1973	10.5951	PVC	Millar's Pond	700.6		204 735 Whistler South	85	2065	\$ 4,563.93
250	Main	Millars Pond Crescent	W2079-1	1973	3.75427	PVC	Millar's Pond	710.9		204 735 Whistler South	85	2065	\$ 1,617.19
250	Main	Nesters Road	W7001	1981	4.56875	Ductile Iron	Nesters	833.3		218 735B Nestors	85	2065	\$ 1,871.80
250	Main	Nesters Road	W7001	1981	252.644	Ductile Iron	Nesters	833.3		218 735B Nestors	85	2065	\$ 103,507.58
300	Main	Cheakamus Way	W2079-1	1973	554.825	Ductile Iron	Whistler Mountain	634.4		204 735 Whistler South	85	2065	\$ 249,671.29
250	Main	Nesters Road	W7001	1981	11.5607	Ductile Iron	White Gold	833.3		218 735B Nestors	85	2065	\$ 5,187.62
150	Main	W205	W4072(V)	1982	92.1568	PVC	Village North	917.7		213 775	85	2065	\$ 24,421.55
100	Main	W205	W4072(V)	1982	111.86	PVC	Village North	930.4		213 775	85	2065	\$ 27,965.02
150	Main	Old Booster Pump Station site - since removed	W4017(B)	1980	3.21204	Ductile Iron	Blackcomb Benchlands South	602.2		211 815 Upper Blackcomb	85	2065	\$ 870.16
150	Main	Old Booster Pump Station site - since removed	W4017(B)	1980	3.21204	Ductile Iron	Blackcomb Benchlands South	602.2		211 815 Upper Blackcomb	85	2065	\$ 870.16
250	Main	Base II	W4018(B)	1980	136.205	Ductile Iron	Blackcomb Benchlands South	531.7		211 815 Upper Blackcomb	85	2066	\$ 51,881.24
150	Main	London lane Condos	W2034	1984	105.672	Ductile Iron	Nordic Estates	1120		208 763 Creekside	85	2066	\$ 31,970.90
150	Service	4880 Glacier Lane	W4020(B)	1980	32.42043	Ductile Iron	Blackcomb Benchlands South	512.1		211 815 Upper Blackcomb	85	2066	\$ 8,591.41
150	Service	4880 Glacier Lane	W4020(B)	1980	14.18634	Ductile Iron	Blackcomb Benchlands South	512.1		211 815 Upper Blackcomb	85	2066	\$ 3,759.38
150	Main	Base II	W4018(B)	1980	85.6495	Ductile Iron	Blackcomb Benchlands South	488.7		211 815 Upper Blackcomb	85	2066	\$ 23,202.87
150	Service	4900 Glacier Drive	W4018(B)	1980	41.2488	Ductile Iron	Blackcomb Benchlands South	488.7		211 815 Upper Blackcomb	85	2066	\$ 10,930.92
200	Main	west of Glacier Lane	W4020(B)	1980	116.397	Ductile Iron	Blackcomb Benchlands South	512.2		211 815 Upper Blackcomb	85	2066	\$ 35,606.51
200	Main	west of Glacier Lane	W4020(B)	1980	77.5931	Ductile Iron	Blackcomb Benchlands South	512.1		211 815 Upper Blackcomb	85	2066	\$ 23,736.10
200	Main	west of Glacier Lane	W4020(B)	1980	5.55455	Ductile Iron	Blackcomb Benchlands South	512.1		211 815 Upper Blackcomb	85	2066	\$ 1,699.44
250	Abandoned	R229	W4019(B)	1980	311.4839	Ductile Iron	Blackcomb Benchlands South	498.5		211 815 Upper Blackcomb	85	2066	\$ 116,806.46
250	Main	Base II	W4018(B)	1980	88.0948	Ductile Iron	Blackcomb Benchlands South	498.5		211 815 Upper Blackcomb	85	2066	\$ 33,555.75
250	Main	Base II	W4018(B)	1980	2.95667	Ductile Iron	Blackcomb Benchlands South	498.5		211 815 Upper Blackcomb	85	2066	\$ 1,126.21
250	Main	Base II	W4018(B)	1980	7.98352	Ductile Iron	Blackcomb Benchlands South	498.5		211 815 Upper Blackcomb	85	2066	\$ 3,040.96
300	Main	Blackcomb Way (Village)	W4015(V)	1984	61.454	Ductile Iron	Village North	930.4		213 775	85	2067	\$ 27,654.31
150	Main	Squaw Valley Crescent	W2029-3	1974	396.778	Ductile Iron	Whistler Creek Centre	598.3		222 702 Whistler Creek	85	2067	\$ 115,691.07
150	Abandoned	Whistler Road	W2029-1	1974	13.68929	Ductile Iron	Whistler Highlands	587.8		213 775	85	2067	\$ 3,627.66
150	Service	Whistler Road	W2029-1	1974	6.62387	Ductile Iron	Nordic Estates	607.7		213 775	85	2067	\$ 1,755.33
150	Main	Whistler Road	W2029-1	1974	169.23	Ductile Iron	Nordic Estates	607.7		213 775	85	2067	\$ 51,200.50
150	Main	Hwy 99 to Highways Maintenance Yard	W3028	1983	130.24	PVC	Brio	810.5		213 775	85	2067	\$ 43,053.94
150	Main	Brio Entrance	W3028	1978	20.244	PVC	Brio	970.7		213 775	85	2067	\$ 6,625.03
150	Main	Alta Vista to/from Nordic Estates	W2026	1985	370.244	PVC	Alta Vista	1071.2		213 775	85	2067	\$ 182,221.10
150	Main	Saint Anton Way	W3009-2	1978	10.1169	Ductile Iron	Blueberry Hill	992.3		213 775	85	2067	\$ 2,979.71
150	Main	Blueberry Drive	W3009-1	1978	7.18343	Ductile Iron	Blueberry Hill	992.3		213 775	85	2067	\$ 2,115.71
250	Main	Blueberry Drive	W3009-1	1978	38.6597	Ductile Iron	Blueberry Hill	992.3		213 775	85	2067	\$ 14,829.85
250	Main	Eagle Drive	W6002	1981	96.0668	Ductile Iron	Whistler Cay Heights	530.1		229 760 Whistler Cay	85	2067	\$ 41,248.01
400	Main	Alta Lake Road	W5001	1986	66.8389	Ductile Iron	Stonebridge	1298.4		210 Supply	85	2067	\$ 33,166.87
400	Main	Alta Lake Road	W5001	1986	51.8667	Ductile Iron	Stonebridge	1298.4		210 Supply	85	2067	\$ 25,737.35
200	Main	P243	W2032	1982	30.3994	Ductile Iron	Whistler Creek Centre	567.9		222 702 Whistler Creek	85	2067	\$ 9,927.72
150	Service	Cavendish Way	W2002-2	1977	43.4796	PVC	Nordic Estates	748		213 775	85	2068	\$ 11,522.10
150	Main	Vale Inn	W2003	1978	104.0161	PVC	Nordic Estates	909.5		208 763 Creekside	85	2068	\$ 27,564.26
300	Main	P248 Village	W4060V	1985	28.1102	Ductile Iron	Village	941.1		213 775	85	2068	\$ 12,649.60
200	Main	Whistler Golf Club	W4060V	1985	36.0142	Ductile Iron	Whistler Golf Course	980.8		213 775	85	2068	\$ 10,804.27

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
150	Main	Whistler Golf Club	W4060V	1985	1	Ductile Iron	Village North	980.8		213 775	85	2068	\$ 265.00
150	Service	4090 Whistler Way	W4027V	1985	2.99648	Ductile Iron	Village North	913.1		213 775	85	2068	\$ 794.07
150	Service	4099 Whistler Way	W4027V	1985	16.5459	Ductile Iron	Village	913.1		213 775	85	2068	\$ 4,384.66
150	Main	Hawthorne Place	W3004	1978	71.8691	PVC	Brio	896.7		213 775	85	2068	\$ 23,758.05
150	Main	Juniper Place	W3003	1978	12.4562	PVC	Brio	887.9		213 775	85	2068	\$ 4,117.71
150	Main	Arbutus Drive	W3003	1978	324.327	PVC	Brio	887.9		213 775	85	2068	\$ 107,214.19
150	Main	Hawthorne Place	W3002	1978	27.5	PVC	Brio	894.7		213 775	85	2068	\$ 9,090.78
150	Main	Backhorn Place	W8007	1979	100.5	PVC	Alpine Meadows South	977.7		216 748 Lower Alpine Meadows	85	2068	\$ 33,589.69
25	Service	Rainbow Drive to S101	W8039	1979	32.5606	Polyethylene	Alpine Meadows South	1085.9		216 748 Lower Alpine Meadows	85	2068	\$ 1,400.00
400	Main	P247 to R225	W4020(V)	1978	348.599	Ductile Iron	Whistler Mountain	861.9		210 Supply	85	2068	\$ 172,556.48
300	Main	P247 to R225	W4020(V)	1978	14.965	Ductile Iron	Whistler Mountain	861.9		210 Supply	85	2068	\$ 6,734.24
300	Main	Gondola Village	W2015	1981	86.5472	Ductile Iron	Gondola Village	1109.9		208 763 Creekside	85	2069	\$ 44,509.31
250	Service	Sarajevo Drive	W2015	1981	8.45669	Ductile Iron	Gondola Village	1134.8		208 763 Creekside	85	2069	\$ 3,171.26
200	Service	2050 Lake Placid Road	W2015	1981	7	Ductile Iron	Gondola Village	1125.1		208 763 Creekside	85	2069	\$ 2,100.00
75	Service	Cavendish Way	W2002-2	1977	15.53934	PVC	Nordic Estates	713.7		213 775	85	2069	\$ 3,729.44
150	Main	Cavendish Way	W2002-2	1977	11.21096	PVC	Nordic Estates	713.7		213 775	85	2069	\$ 2,970.90
150	Main	Cavendish Way	W2002-2	1977	139.7478	PVC	Nordic Estates	713.7		213 775	85	2069	\$ 37,033.16
150	Service	4005 Whistler Way	W4059V	1986	6.47231	Ductile Iron	Village	951.4		213 775	85	2069	\$ 1,715.16
150	Main	Juniper Place	W3005	1979	108.276	PVC	Brio	824.2		213 775	85	2069	\$ 35,793.06
150	Main	Panorama Ridge	W3002	1978	8.45625	PVC	Brio	824.2		213 775	85	2069	\$ 2,240.91
150	Main	Arbutus Drive	W3002	1978	27.5	PVC	Brio	824.4		213 775	85	2069	\$ 9,050.78
150	Main	Lakeshore Drive	W9004	1979	165.475	PVC	Emerald Estates Lakeside	903.7		206 733 Emerald Estates	85	2069	\$ 53,798.20
150	Main	Emerald Drive	W9006	1979	20.9528	PVC	Emerald Estates Unserviced	948		206 733 Emerald Estates	85	2069	\$ 6,693.75
150	Main	Alpha Lake Village	2001-2023 Alpha	1979	122.9893	Ductile Iron	Whistler Creek Centre	919.2		204 735 Whistler South	85	2069	\$ 32,592.18
300	Main	Millars Pond Reservoir connector	W2079-1	1973	86.3915	Ductile Iron	Whistler Mountain	331.5		210 Supply	85	2069	\$ 38,876.18
300	Main	Nesters Road	W7004	1986	70.875	Ductile Iron	White Gold	833.3		218 735B Nestors	85	2070	\$ 37,119.27
300	Main	Nesters Road	W7004	1986	129.878	Ductile Iron	Nesters	833.3		218 735B Nestors	85	2070	\$ 62,951.35
150	Service	Bayshore Drive	W2007	1980	31.7498	Ductile Iron	Bayshores	875.2		204 735 Whistler South	85	2070	\$ 8,413.71
150	Main	Cheakamus Way	W2008	1980	244.173	Ductile Iron	Bayshores	875.2		204 735 Whistler South	85	2070	\$ 82,371.48
300	Main	P243	W2032	1982	8.25484	Ductile Iron	Gondola Village	1183.7		208 763 Creekside	85	2070	\$ 4,245.28
150	Main	Rimrock Estates	W2001-1	1977	188.185	Ductile Iron	Nordic Estates	588.2		213 775	85	2070	\$ 49,869.03
150	Service	2230 Eva Lake Road	W2023	1981	18.0038	PVC	Nordic Estates	971.4		213 775	85	2070	\$ 4,771.00
150	Service	Mountain Lane	W4014V	1987	6.97757	Ductile Iron	Village	941.2		213 775	85	2070	\$ 1,849.06
200	Main	Mountain Lane	W4014V	1987	113.577	Ductile Iron	Village	931.4		213 775	85	2070	\$ 34,073.01
250	Main	Mountain Lane	W4014V	1987	15.2105	Ductile Iron	Village	938.2		213 775	85	2070	\$ 5,703.94
150	Main	Panorama Ridge	W3005	1979	10	PVC	Brio	761.7		213 775	85	2070	\$ 3,305.74
150	Main	Panorama Ridge	W3005	1979	98.6551	PVC	Brio	761.7		213 775	85	2070	\$ 32,612.80
100	Main	Emerald Drive	W9012	1979	98.4503	PVC	Emerald Estates Serviced	801.6		206 733 Emerald Estates	85	2070	\$ 30,486.90
150	Main	Emerald Drive	W9013	1979	57.8943	PVC	Emerald Estates Unserviced	757.1		206 733 Emerald Estates	85	2070	\$ 18,495.41
150	Main	Emerald Drive	W9006	1979	197.809	PVC	Emerald Estates Unserviced	844.1		206 733 Emerald Estates	85	2070	\$ 63,193.79
150	Main	Emerald Drive	W9006	1979	145.371	PVC	Emerald Estates Unserviced	844.1		206 733 Emerald Estates	85	2070	\$ 46,441.45
150	Main	Emerald Drive	W9007	1979	158.237	Ductile Iron	Emerald Estates Unserviced	749.4		206 733 Emerald Estates	85	2070	\$ 50,551.82
150	Main	Mountain Lane	W4014V	1987	4.24968	Ductile Iron	Village	941.2		213 775	85	2070	\$ 1,126.17
150	Service	Nesters Square	W7004	1986	14.1232	Ductile Iron	Nesters	872.4		218 735B Nestors	85	2070	\$ 3,742.64
150	Main	P253 - Brio Entrance	W3016	1987	13.6263	PVC	Brio	1000.7		213 775	85	2070	\$ 4,504.50
350	Main	Spearhead Drive	W4010(B)	1988	81.4666	Ductile Iron	Blackcomb Benchlands South	1055.7		211 815 Upper Blackcomb	85	2070	\$ 38,118.63
350	Main	Spearhead Place	W4021(B)	1988	72.437	Ductile Iron	Blackcomb Benchlands South	1055.7		211 815 Upper Blackcomb	85	2070	\$ 33,893.65
200	Main	Spearhead Place	W4021(B)	1988	33.7537	Ductile Iron	Blackcomb Benchlands South	1050.8		211 815 Upper Blackcomb	85	2070	\$ 10,325.42
200	Service	4557 Blackcomb Way	W4003(B)	1987	15.644	Ductile Iron	Blackcomb Benchlands South	884.2		212 770 Lower Blackcomb	85	2070	\$ 4,693.20
150	Service	4553 Blackcomb Way	W4001(B)	1987	8.45625	Ductile Iron	Blackcomb Benchlands South	888.3		212 770 Lower Blackcomb	85	2070	\$ 2,240.91
250	Main	Blackcomb Way	W4001(B)	1987	56.1092	Ductile Iron	Blackcomb Benchlands South	888.3		212 770 Lower Blackcomb	85	2070	\$ 21,372.27
100	Service	4545 Blackcomb Way	W4001(B)	1987	9.62931	Ductile Iron	Blackcomb Benchlands South	888.3		212 770 Lower Blackcomb	85	2070	\$ 2,407.33
250	Main	Chateau Boulevard	W4003(B)	1987	18.1809	Ductile Iron	Blackcomb Benchlands South	919.2		212 770 Lower Blackcomb	85	2070	\$ 6,925.21
200	Main	Blackcomb Way	W4001(B)	1987	5.0483	Ductile Iron	Blackcomb Benchlands South	888.3		212 770 Lower Blackcomb	85	2070	\$ 1,544.30
200	Main	Blackcomb Way	W4001(B)	1987	45.4234	Ductile Iron	Blackcomb Benchlands South	888.3		212 770 Lower Blackcomb	85	2070	\$ 13,895.26
300	Main	Blackcomb Way	W4001(B)	1987	14.4822	Ductile Iron	Blackcomb Benchlands South	888.3		212 770 Lower Blackcomb	85	2070	\$ 6,602.52
300	Main	Blackcomb Way	W4001(B)	1987	160.276	Ductile Iron	Blackcomb Benchlands South	880.4		212 770 Lower Blackcomb	85	2070	\$ 73,070.66
300	Main	Blackcomb Way	W4003(B)	1987	18.3463	Ductile Iron	Blackcomb Benchlands South	919.2		212 770 Lower Blackcomb	85	2070	\$ 8,364.15
250	Main	Blackcomb Way	W4003(B)	1987	183.481	Ductile Iron	Blackcomb Benchlands South	909.9		212 770 Lower Blackcomb	85	2070	\$ 69,888.80
250	Main	Blackcomb Way	W4003(B)	1987	113.1	Ductile Iron	Blackcomb Benchlands South	884.2		212 770 Lower Blackcomb	85	2070	\$ 43,080.21
350	Main	Spearhead Place	W4025-1(B)	1988	202.036	Ductile Iron	Blackcomb Benchlands South	1050.8		211 815 Upper Blackcomb	85	2070	\$ 94,533.51
300	Main	Snowy Creek Condos to/from Olympic Line	W4016(B)	1980	120.974	Ductile Iron	Whistler Mountain	861.9		210 Supply	85	2071	\$ 54,438.21
350	Main	Spearhead Drive	W4011(B)	1988	56.8049	Ductile Iron	Blackcomb Benchlands South	1001.9		211 815 Upper Blackcomb	85	2071	\$ 26,579.28
200	Service	4580 Chateau Boulevard	W4005(B)	1988	17.061	Ductile Iron	Blackcomb Benchlands South	994.5		212 770 Lower Blackcomb	85	2071	\$ 5,118.30
100	Service	2222 Brandywine Way	W2004-2	1980	10.1367	Ductile Iron	Bayshores	777.3		204 735 Whistler South	85	2071	\$ 2,534.18
150	Main	Brandywine Way	W2004-2	1980	387.034	Ductile Iron	Bayshores	777.3		204 735 Whistler South	85	2071	\$ 130,565.66
200	Main	Cheakamus Way	W2000	1980	151.711	Ductile Iron	Millars Pond	734.2		204 735 Whistler South	85	2071	\$ 53,972.55
150	Main	Cheakamus Way	W2011-2	1980	4	Ductile Iron	Bayshores	782.4		204 735 Whistler South	85	2071	\$ 1,060.00
150	Service	Timber Ridge	W2011-2	1980	8.137691	Ductile Iron	Bayshores	782.4		204 735 Whistler South	85	2071	\$ 2,156.49
150	Main	Timber Ridge	W2011-2	1980	25	Ductile Iron	Bayshores	760.9		204 735 Whistler South	85	2071	\$ 6,625.00
150	Main	Tricorni Place	W2010	1980	11.2555	Ductile Iron	Bayshores	782.4		204 735 Whistler South	85	2071	\$ 3,797.05
150	Main	Courtyard	W2016-2	1981	7.456688	Ductile Iron	Gondola Village	873.6		208 763 Creekside	85	2071	\$ 1,976.02
250	Main	Marmot Place	W2016-2	1981	54.1398	Ductile Iron	Gondola Village	862.8		208 763 Creekside	85	2071	\$ 23,782.43
300	Main	Gondola Way	W2016-1	1981	284.816	Ductile Iron	Gondola Village	872.6		208 763 Creekside	85	2071	\$ 146,474.69
150	Service	2100 Eva Lake Road	W2023	1981	13.0162	PVC	Whistler Highlands	961.7		213 775	85	2071	\$ 3,449.30
300	Main	Eva Lake Road	W2023	1981	314.662	PVC	Nordic Estates	966.8		213 775	85	2071	\$ 153,413.36
150	Main	Helm Place	W2023	1981	92.1283	PVC	Whistler Highlands	961.9		213 775	85	2071	\$ 27,130.03
150	Main	Castle Drive	W2020	1981	37.2809	PVC	Whistler Highlands	851.1		213 775	85	2071	\$ 10,978.52
200	Main	Whistler Golf Club	W4025V	1982	12.9125	Ductile Iron	Whistler Golf Course	980.8		213 775	85	2071	\$ 3,873.75
150	Main	Whistler Golf Club	W4025V	1982	1	Ductile Iron	Whistler Golf Course	980.8		213 775	85	2071	\$ 265.00
150	Main	Whistler Golf Club	W4025V	1982	1	Ductile Iron	Whistler Golf Course	980.8		213 775	85	2071	\$ 265.00
200	Main	Whistler Golf Club	W4025V	1982	7.45625	Ductile Iron	Whistler Golf Course	980.8		213 775	85	2071	\$ 2,236.87

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
150	Main	Panorama Ridge	W3006	1979	8.45625	PVC	Brio	634.5	213	775	85	2071	\$ 2,795.41
150	Main	Panorama Ridge	W3006	1979	5.33397	PVC	Brio	634.5	213	775	85	2071	\$ 1,763.27
150	Main	Panorama Ridge	W3006	1979	234.547	PVC	Brio	634.5	213	775	85	2071	\$ 77,535.24
150	Main	Whistler Golf Course Clubhouse	W6030	1982	41.59966	PVC	Whistler Golf Course	980.8	213	775	85	2071	\$ 11,023.88
200	Main	Whistler Golf Course Clubhouse	W6030	1982	13.5	PVC	Whistler Golf Course	980.8	213	775	85	2071	\$ 4,050.00
200	Main	Whistler Golf Course Clubhouse	W6030	1982	76.2162	PVC	Whistler Golf Course	971	213	775	85	2071	\$ 22,864.85
100	Main	Lorimer Road	W7001	1981	13.0853	PVC	Whistler Cay Heights	952.1	213	775	85	2071	\$ 3,982.74
150	Main	Nancy Greene Drive	W7000	1976	45.8663	PVC	White Gold	410.3	231	716 White Gold	85	2071	\$ 15,536.26
150	Main	Fitzsimmons Road North	W7000	1976	48.0996	PVC	White Gold	421.8	231	716 White Gold	85	2071	\$ 16,292.72
150	Main	Fitzsimmons Road North	W7000	1976	168.837	PVC	White Gold	421.8	231	716 White Gold	85	2071	\$ 57,189.90
200	Main	Fissile Lane	W8001	1979	63.0379	PVC	Alpine Meadows South	706.5	216	748 Lower Alpine Meadows	85	2071	\$ 23,275.21
150	Main	Emerald Drive	W9013	1979	201.964	PVC	Emerald Estates Serviced	725.9	206	733 Emerald Estates	85	2071	\$ 65,571.20
150	Main	Emerald Drive	W9013	1979	137.265	PVC	Emerald Estates Serviced	725.9	206	733 Emerald Estates	85	2071	\$ 44,565.63
50	Main	Pinetree Place	W9006	1979	41.8276	PVC	Emerald Estates Unserviced	660.2	206	733 Emerald Estates	85	2071	\$ 11,689.49
150	Main	Emerald Drive	W9007	1979	233.394	PVC	Emerald Estates Unserviced	712.2	206	733 Emerald Estates	85	2071	\$ 74,562.12
250	Main	Nesters Road	W7001	1981	61.5394	Ductile Iron	Nesters	925.7	213	775	85	2071	\$ 25,212.52
250	Main	Nesters Road	W7001	1981	7.7428	Ductile Iron	Nesters	952.1	213	775	85	2071	\$ 3,172.20
150	Main	Alpha Lake Village	2001-2023 Alpha	1979	21	Ductile Iron	Whistler Creek Centre	634.3	222	702 Whistler Creek	85	2071	\$ 5,565.00
150	Main	"The Seasons" - Bayshores	2561 Tricoumi Pl	1979	70	PVC	Whistler Creek Centre	692.3	204	735 Whistler South	85	2071	\$ 18,550.00
350	Main	Horstman Lane	W4015-1(B)	1988	72.337	Ductile Iron	Blackcomb Benchlands South	943.3	211	815 Upper Blackcomb	85	2071	\$ 33,946.81
250	Main	Painted Cliff Road	W4011(B)	1988	23.3426	Ductile Iron	Blackcomb Benchlands South	972.6	211	815 Upper Blackcomb	85	2071	\$ 8,753.46
350	Main	Spearhead Drive	W4010(B)	1988	34.0461	Ductile Iron	Blackcomb Benchlands South	1001.9	211	815 Upper Blackcomb	85	2071	\$ 15,930.36
150	Service	4910 Spearhead Place	W4021(B)	1988	12.4043	Ductile Iron	Blackcomb Benchlands South	1041	211	815 Upper Blackcomb	85	2071	\$ 3,287.13
150	Service	4905 Spearhead Place	W4021(B)	1988	32.7476	Ductile Iron	Blackcomb Benchlands South	1041	211	815 Upper Blackcomb	85	2071	\$ 8,678.11
150	Service	Spearhead Place	W4021(B)	1988	26.5425	Ductile Iron	Blackcomb Benchlands South	1041	211	815 Upper Blackcomb	85	2071	\$ 7,033.75
150	Service	4821 Spearhead Drive	W4010(B)	1988	15.7874	Ductile Iron	Blackcomb Benchlands South	1001.9	211	815 Upper Blackcomb	85	2071	\$ 4,183.66
200	Service	4822 Spearhead Drive	W4010(B)	1988	7.58558	Ductile Iron	Blackcomb Benchlands South	1001.9	211	815 Upper Blackcomb	85	2071	\$ 2,275.67
350	Main	Painted Cliff Road	W4011(B)	1988	45.446	Ductile Iron	Blackcomb Benchlands South	972.6	211	815 Upper Blackcomb	85	2071	\$ 21,264.41
200	Main	Painted Cliff Road	W4011(B)	1988	13.3283	Ductile Iron	Blackcomb Benchlands South	972.6	211	815 Upper Blackcomb	85	2071	\$ 4,077.19
200	Main	Painted Cliff Road	W4011(B)	1988	44.7887	Ductile Iron	Blackcomb Benchlands South	972.6	211	815 Upper Blackcomb	85	2071	\$ 13,701.10
200	Main	Spearhead Drive	W4011(B)	1988	7.36403	Ductile Iron	Blackcomb Benchlands South	972.6	211	815 Upper Blackcomb	85	2071	\$ 2,252.69
200	Main	Spearhead Drive	W4011(B)	1988	49.825	Ductile Iron	Blackcomb Benchlands South	1001.9	211	815 Upper Blackcomb	85	2071	\$ 15,241.72
200	Main	Spearhead Drive	W4010(B)	1988	21.678	Ductile Iron	Blackcomb Benchlands South	1001.9	211	815 Upper Blackcomb	85	2071	\$ 6,631.41
150	Service	4580 Chateau Boulevard	W4005(B)	1988	17.4482	Ductile Iron	Blackcomb Benchlands South	994.5	212	770 Lower Blackcomb	85	2071	\$ 4,623.78
250	Main	Blackcomb Way	W4005(B)	1988	44.5968	Ductile Iron	Blackcomb Benchlands South	994.5	212	770 Lower Blackcomb	85	2071	\$ 16,987.14
250	Main	Blackcomb Way	W4005(B)	1988	22.0232	Ductile Iron	Blackcomb Benchlands South	994.5	212	770 Lower Blackcomb	85	2071	\$ 8,388.75
250	Main	Blackcomb Way	W4005(B)	1988	60.5915	Ductile Iron	Blackcomb Benchlands South	919.2	212	770 Lower Blackcomb	85	2071	\$ 23,079.59
150	Service	4580 Chateau Boulevard	W4004(B)	1988	22.9643	Ductile Iron	Blackcomb Benchlands South	880.1	212	770 Lower Blackcomb	85	2071	\$ 6,085.54
150	Service	4573 Chateau Boulevard	W4004(B)	1988	8	Ductile Iron	Blackcomb Benchlands South	889.8	212	770 Lower Blackcomb	85	2071	\$ 2,120.00
250	Main	Chateau Boulevard	W4004(B)	1988	54.1025	Ductile Iron	Blackcomb Benchlands South	889.8	212	770 Lower Blackcomb	85	2071	\$ 20,691.91
250	Main	Chateau Boulevard	W4004(B)	1988	9.69281	Ductile Iron	Blackcomb Benchlands South	880.1	212	770 Lower Blackcomb	85	2071	\$ 3,692.04
250	Main	Chateau Boulevard	W4004(B)	1988	15.3809	Ductile Iron	Blackcomb Benchlands South	880.1	212	770 Lower Blackcomb	85	2071	\$ 5,858.65
200	Main	Between Blackcomb Day Lodge and Plaza Pavilion	W4002(B)	1987	66.1534	Ductile Iron	Blackcomb Benchlands South	876	212	770 Lower Blackcomb	85	2071	\$ 20,236.66
250	Main	P257	W4015-6(B)	1987	34.177	Ductile Iron	Blackcomb Benchlands South	841.3	210	Supply	85	2071	\$ 13,018.20
200	Service	4501 Blackcomb Way	Snowy Creek Cor	1987	20.35242	Ductile Iron	Blackcomb Benchlands South	772.8	212	770 Lower Blackcomb	85	2071	\$ 6,105.73
150	Service	Snowy Creek Condos	W4000-1(B)	1987	3.00119	Ductile Iron	Blackcomb Benchlands South	772.8	212	770 Lower Blackcomb	85	2071	\$ 795.32
200	Service	Snowy Creek Condos	W4000-1(B)	1987	3.00119	Ductile Iron	Blackcomb Benchlands South	772.8	212	770 Lower Blackcomb	85	2071	\$ 900.36
250	Main	under Blackcomb Gondola west of Glacier Drive	W4000-1(B)	1987	8.16377	Ductile Iron	Blackcomb Benchlands South	850.6	210	Supply	85	2071	\$ 3,109.62
250	Main	under Blackcomb Gondola west of Glacier Drive	W4000-1(B)	1987	37.6066	Ductile Iron	Blackcomb Benchlands South	850.6	210	Supply	85	2071	\$ 14,324.53
250	Main	under Blackcomb Gondola west of Glacier Drive	W4000-1(B)	1987	80.4224	Ductile Iron	Blackcomb Benchlands South	772.8	212	770 Lower Blackcomb	85	2071	\$ 30,633.29
300	Main	Blackcomb Way	W4000-1(B)	1987	15.9283	Ductile Iron	Blackcomb Benchlands South	865.1	212	770 Lower Blackcomb	85	2071	\$ 7,261.79
300	Main	Blackcomb Way	W4000-1(B)	1987	16.2226	Ductile Iron	Blackcomb Benchlands South	865.1	212	770 Lower Blackcomb	85	2071	\$ 7,395.99
300	Main	Blackcomb Way	W4000-1(B)	1987	125.774	Ductile Iron	Blackcomb Benchlands South	865.1	212	770 Lower Blackcomb	85	2071	\$ 57,341.01
250	Main	P257	W4015-6(B)	1987	14.4163	Ductile Iron	Blackcomb Benchlands South	850.6	210	Supply	85	2071	\$ 5,491.24
250	Main	P257 to Blackcomb Way	W4000-1(B)	1987	8.32364	Ductile Iron	Blackcomb Benchlands South	850.6	210	Supply	85	2071	\$ 3,170.52
300	Main	P257 to Blackcomb Way	W4000-1(B)	1987	59.2799	Ductile Iron	Blackcomb Benchlands South	850.6	210	Supply	85	2071	\$ 27,026.00
150	Service	The Gables	W4000-1(B)	1987	10	Ductile Iron	Blackcomb Benchlands South	865.1	212	770 Lower Blackcomb	85	2071	\$ 2,650.00
100	Service	Brandywine Way	W2004-2	1980	11	Ductile Iron	Bayshores	682.5	204	735 Whistler South	85	2072	\$ 2,750.00
150	Main	Brandywine Way	W2004-1	1980	308.911	Ductile Iron	Bayshores	682.5	204	735 Whistler South	85	2072	\$ 104,210.80
200	Main	Cheakamus Way	W2011-2	1980	157.066	Ductile Iron	Bayshores	672.9	204	735 Whistler South	85	2072	\$ 47,119.79
150	Main	Tricoumi Place	W2005-2	1980	7.6	PVC	Bayshores	706	204	735 Whistler South	85	2072	\$ 2,563.85
150	Main	Kadenwood Drive	W2005-2	1980	44.9662	PVC	Bayshores	635.2	204	735 Whistler South	85	2072	\$ 15,169.33
200	Main	Kadenwood Drive	W2005-2	1980	8.50044	PVC	Bayshores	635.2	204	735 Whistler South	85	2072	\$ 3,165.13
150	Service	Tricoumi Place	W2010	1980	10.7161	Ductile Iron	Bayshores	692.3	204	735 Whistler South	85	2072	\$ 2,839.78
150	Main	Cheakamus Way	W2009	1980	127.861	PVC	Bayshores	640.6	204	735 Whistler South	85	2072	\$ 43,133.95
150	Abandoned	Cheakamus Way	W2009	1980	70.03274	Ductile Iron	Bayshores	672.9	204	735 Whistler South	85	2072	\$ 18,558.68
200	Main	Tricoumi Place	W2010	1980	182.885	Ductile Iron	Bayshores	692.3	204	735 Whistler South	85	2072	\$ 68,096.93
200	Main	Highway 99 south of Lake Placid Road	W2040-2	1987	172.018	Ductile Iron	Whistler Creek Centre	653.9	222	702 Whistler Creek	85	2072	\$ 56,177.11
200	Main	Taylor Way	W2040-2	1987	71.75	Ductile Iron	Whistler Creek Centre	667.8	222	702 Whistler Creek	85	2072	\$ 23,431.85
200	Main	Highway 99 south of Lake Placid Road	W2040-3	1987	211.61	Ductile Iron	Whistler Creek Centre	567.9	222	702 Whistler Creek	85	2072	\$ 69,108.89
300	Service	7221 Gondola Way	W2016-1	1981	6.11932	Ductile Iron	Gondola Village	822	208	763 Creekside	85	2072	\$ 2,753.70
150	Main	Sapporo Drive	W2013	1984	30.57638	PVC	Gondola Village	1118.4	208	763 Creekside	85	2072	\$ 8,102.74
150	Main	Sapporo Drive	W2013	1984	221.7764	PVC	Gondola Village	1125.1	208	763 Creekside	85	2072	\$ 5,770.73
200	Main	Sapporo Drive	W2013	1984	6.99882	PVC	Gondola Village	1109.9	208	763 Creekside	85	2072	\$ 2,549.88
150	Service	Gondola Village	W2012	1984	53	PVC	Gondola Village	1115.2	208	763 Creekside	85	2072	\$ 14,045.00
300	Main	Whistler Road to London lane	W2034	1984	151.094	PVC	Nordic Estates	1115.1	208	763 Creekside	85	2072	\$ 73,667.72
50	Main	Eva Lake Village	2230 Eva Lake R	1983	66.09067	PVC	Nordic Estates	1019.9	213	775	85	2072	\$ 14,870.40
150	Main	Eva Lake Village	2230 Eva Lake R	1983	57.34694	PVC	Nordic Estates	971.4	213	775	85	2072	\$ 15,196.94
150	Main	Castle Drive	W2024	1981	154.661	PVC	Whistler Highlands	792.4	213	775	85	2072	\$ 45,544.63
300	Main	Alta Vista to/from Nordic Estates	W3011	1985	280.959	PVC	Alta Vista	1285.4	213	775	85	2072	\$ 138,278.13
50	Main	Ambassador Crescent	W7000	1976	44.5	PVC	White Gold	342.4	231	716 White Gold	85	2072	\$ 13,293.44
200	Main	Fissile Lane	W8001	1979	198.751	Ductile Iron	Alpine Meadows South	570.9	216	748 Lower Alpine Meadows	85	2072	\$ 73,384.01

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
150	Main	Emerald Drive	W9011	1979	115.208	PVC	Emerald Estates Unserviced	621.5	206	733 Emerald Estates	85	2072	\$ 36,805.41
150	Main	Emerald Drive	W9010	1979	137.54	PVC	Emerald Estates Unserviced	555	206	733 Emerald Estates	85	2072	\$ 43,939.78
150	Main	Emerald Drive	W9011	1979	52.9593	PVC	Emerald Estates Unserviced	621.5	206	733 Emerald Estates	85	2072	\$ 16,918.84
150	Main	Pinetree Lane	W9006	1979	98.6272	PVC	Emerald Estates Unserviced	550.9	206	733 Emerald Estates	85	2072	\$ 31,508.29
200	Main	Deerhorn Place	W9008	1979	207.325	PVC	Emerald Estates Unserviced	586	206	733 Emerald Estates	85	2072	\$ 73,490.19
250	Main	Nesters Road	W7001	1981	138.724	Ductile Iron	Nesters	764.8	218	735B Nestors	85	2072	\$ 56,834.83
150	Service	Triconi Place	W2010	1980	9.40053	Ductile Iron	Whistler Creek Centre	692.3	204	735 Whistler South	85	2072	\$ 2,491.14
200	Service	Timber Ridge	W2011-2	1980	9.001761	Ductile Iron	Bayshores	672.9	204	735 Whistler South	85	2072	\$ 2,700.53
150	Main	Powderhorn	4821 Spearhead	1989	24.87638	PVC	Blackcomb Benclands South	1001.9	211	815 Upper Blackcomb	85	2072	\$ 6,592.24
350	Main	Blackcomb Way	W4013(B)	1989	44.5012	Ductile Iron	Blackcomb Benclands South	972.6	211	815 Upper Blackcomb	85	2072	\$ 20,822.33
200	Main	Horstman Lane	W4013(B)	1989	37.2957	PVC	Blackcomb Benclands South	972.6	211	815 Upper Blackcomb	85	2072	\$ 11,408.95
150	Service	4857 Painted Cliff Road	W4012(B)	1988	7.8663	Ductile Iron	Blackcomb Benclands South	727.5	212	770 Lower Blackcomb	85	2072	\$ 2,084.57
200	Service	4809 Spearhead Drive	W4009(B)	1988	14.9648	Ductile Iron	Blackcomb Benclands South	719.3	212	770 Lower Blackcomb	85	2072	\$ 4,489.45
200	Service	4749 Spearhead Drive	W4008(B)	1988	13.7148	Ductile Iron	Blackcomb Benclands South	748.8	212	770 Lower Blackcomb	85	2072	\$ 4,114.43
150	Service	4749 Spearhead Drive	W4008(B)	1988	17.3592	Ductile Iron	Blackcomb Benclands South	748.8	212	770 Lower Blackcomb	85	2072	\$ 460.02
200	Service	4737 Spearhead Drive	W4008(B)	1988	12.2814	Ductile Iron	Blackcomb Benclands South	788.2	212	770 Lower Blackcomb	85	2072	\$ 3,684.41
150	Service	4737 Spearhead Drive	W4008(B)	1988	4.57745	Ductile Iron	Blackcomb Benclands South	788.2	212	770 Lower Blackcomb	85	2072	\$ 1,213.02
200	Service	4725 Spearhead Drive	W4008(B)	1988	16.7246	Ductile Iron	Blackcomb Benclands South	807.9	212	770 Lower Blackcomb	85	2072	\$ 5,017.38
150	Service	4725 Spearhead Drive	W4008(B)	1988	5.14515	Ductile Iron	Blackcomb Benclands South	807.9	212	770 Lower Blackcomb	85	2072	\$ 1,363.46
200	Main	Spearhead Drive	W4008(B)	1988	59.3617	Ductile Iron	Blackcomb Benclands South	788.2	212	770 Lower Blackcomb	85	2072	\$ 18,159.05
200	Main	Spearhead Drive	W4008(B)	1988	72.7425	Ductile Iron	Blackcomb Benclands South	778.3	212	770 Lower Blackcomb	85	2072	\$ 22,252.29
200	Main	Spearhead Drive	W4009(B)	1988	66.2757	Ductile Iron	Blackcomb Benclands South	748.8	212	770 Lower Blackcomb	85	2072	\$ 20,274.98
200	Main	Spearhead Drive	W4009(B)	1988	95.6159	Ductile Iron	Blackcomb Benclands South	719.3	212	770 Lower Blackcomb	85	2072	\$ 29,249.38
200	Main	Spearhead Drive	W4009(B)	1988	54.6278	Ductile Iron	Blackcomb Benclands South	719.3	212	770 Lower Blackcomb	85	2072	\$ 16,680.32
200	Service	4599 Chateau Boulevard	W4004(B)	1988	17.9331	Ductile Iron	Blackcomb Benclands South	870.8	212	770 Lower Blackcomb	85	2072	\$ 5,379.93
150	Service	4555 Blackcomb Way	W4004(B)	1988	8.63507	Ductile Iron	Blackcomb Benclands South	873.4	212	770 Lower Blackcomb	85	2072	\$ 2,288.29
150	Main	Chateau Boulevard	W4004(B)	1988	7.88669	Ductile Iron	Blackcomb Benclands South	874.2	212	770 Lower Blackcomb	85	2072	\$ 2,085.20
200	Main	Between Glacier Lodge and the Fairmont Chateau	W4004(B)	1988	133.226	Ductile Iron	Blackcomb Benclands South	873.4	212	770 Lower Blackcomb	85	2072	\$ 40,754.59
200	Main	Between Glacier Lodge and the Fairmont Chateau	W4004(B)	1988	23.1478	Ductile Iron	Blackcomb Benclands South	876	212	770 Lower Blackcomb	85	2072	\$ 7,081.03
300	Main	Chateau Boulevard	W4004(B)	1988	13.0074	Ductile Iron	Blackcomb Benclands South	874.2	212	770 Lower Blackcomb	85	2072	\$ 5,853.32
150	Service	4750 Glacier Drive	W4025-3(B)	1988	8.45625	Ductile Iron	Blackcomb Benclands South	825.4	211	815 Upper Blackcomb	85	2072	\$ 2,240.91
250	Main	Glacier Drive	W4025-3(B)	1988	72.1317	Ductile Iron	Blackcomb Benclands South	825.4	211	815 Upper Blackcomb	85	2072	\$ 27,475.33
250	Main	Glacier Drive	W4025-3(B)	1988	25.7203	Ductile Iron	Blackcomb Benclands South	825.4	211	815 Upper Blackcomb	85	2072	\$ 9,797.00
150	Service	4700 Glacier Drive	W4025-4(B)	1988	43.0534	Ductile Iron	Blackcomb Benclands South	864.7	211	815 Upper Blackcomb	85	2072	\$ 11,409.16
350	Main	Spearhead Place	W4025-1(B)	1988	127.536	Ductile Iron	Blackcomb Benclands South	760	211	815 Upper Blackcomb	85	2072	\$ 59,674.58
150	Service	4700 Glacier Drive	W4025-4(B)	1988	31.7527	Ductile Iron	Blackcomb Benclands South	786.3	211	815 Upper Blackcomb	85	2072	\$ 8,414.46
300	Main	Base I	W4025-2(B)	1988	36.2773	Ductile Iron	Blackcomb Benclands South	786.3	211	815 Upper Blackcomb	85	2072	\$ 16,538.99
300	Main	Base II	W4025-2(B)	1988	99.1234	Ductile Iron	Blackcomb Benclands South	786.3	211	815 Upper Blackcomb	85	2072	\$ 45,190.84
300	Main	Whistler Road to London lane	W2034	1984	15.2664	PVC	Nordic Estates	1007.4	208	763 Creekside	85	2073	\$ 7,443.15
50	Main	Timber Ridge	W2011-2	1980	34.83796	Ductile Iron	Bayshores	614.1	204	735 Whistler South	85	2073	\$ 7,838.54
200	Main	Alta Lake Road	W5001	1986	12.0746	Ductile Iron	Stonebridge	1298.8	210	Supply	85	2073	\$ 3,637.12
200	Main	Old Mill Lane/Alta Lake Road connector	W5009	1986	185.331	PVC	Stonebridge	1298.8	210	Supply	85	2073	\$ 55,825.58
100	Main	Brandywine Way	W2004-2	1980	20.8073	Ductile Iron	Bayshores	593.3	204	735 Whistler South	85	2073	\$ 6,707.20
150	Main	Cayley Close	W2004-2	1980	90.499	Ductile Iron	Bayshores	583.5	204	735 Whistler South	85	2073	\$ 30,529.77
50	Service	2322 Cayley Close	W2004-2	1980	10.2547	PVC	Bayshores	584.5	204	735 Whistler South	85	2073	\$ 2,000.00
150	Main	Coyote Drive	W2005-2	1980	136.2967	PVC	Bayshores	545.9	204	735 Whistler South	85	2073	\$ 36,118.64
150	Main	Callaghan Drive	W2005-2	1980	217.3719	PVC	Bayshores	594.9	204	735 Whistler South	85	2073	\$ 57,603.55
200	Main	CN Rail - Old Gravel Road/Alpha Lake Park connector	W5012	1987	380.799	PVC	Old Gravel Road	526.6	222	702 Whistler Creek	85	2073	\$ 119,990.35
250	Service	2240 Gondola Way	W2017	1981	12.5752	Ductile Iron	Gondola Village	679.2	208	763 Creekside	85	2073	\$ 4,715.71
300	Main	Gondola Way	W2017	1981	175.396	Ductile Iron	Gondola Village	679.2	208	763 Creekside	85	2073	\$ 90,202.18
200	Service	Gondola Village	W2012	1984	7.5	PVC	Gondola Village	1076	208	763 Creekside	85	2073	\$ 2,250.00
200	Main	Sarajevo Drive	W2012	1984	187.4223	Ductile Iron	Gondola Village	1076	208	763 Creekside	85	2073	\$ 56,226.70
150	Main	Nordic Drive	W2020	1981	282.16	PVC	Whistler Highlands	719.4	213	775	85	2073	\$ 83,090.71
25	Service	Garibaldi Way	W2025	1983	16.6004	PVC	Whistler Highlands	927.9	213	775	85	2073	\$ 1,400.00
300	Main	Garibaldi Way	W2025	1983	9.3	PVC	Whistler Highlands	969.9	213	775	85	2073	\$ 4,459.17
200	Main	Lakeside Park	W5000	1986	6.22834	Ductile Iron	Alta Vista	1285.4	213	775	85	2073	\$ 2,131.12
150	Main	Garibaldi Way	W2019	1983	119.771	PVC	Whistler Highlands	966.8	213	775	85	2073	\$ 35,270.38
300	Main	Garibaldi Way	W2019	1983	219.01	PVC	Whistler Highlands	891	213	775	85	2073	\$ 105,011.24
300	Main	Garibaldi Way	W2025	1983	89.7543	PVC	Whistler Highlands	943.3	213	775	85	2073	\$ 43,035.47
150	Main	Nordic Place	W2025	1983	111.064	PVC	Whistler Highlands	969.9	213	775	85	2073	\$ 32,706.23
300	Main	Lakeside Park	W5000	1986	17.211	Steel	Alta Vista	1285.4	213	775	85	2073	\$ 8,470.64
350	Main	Alta Lake Crossing	W5000	1986	576.592	Ductile Iron	Alta Vista	1285.4	213	775	85	2073	\$ 290,697.93
200	Main	Eagle Ridge	6127 Eagle Ridge	1984	108.448	PVC	Whistler Cay Heights	980.8	213	775	85	2073	\$ 32,534.39
200	Main	Eagle Ridge	6127 Eagle Ridge	1984	11.9532	PVC	Whistler Golf Course	980.8	213	775	85	2073	\$ 3,585.96
150	Main	Saint Andrews Way	W6012	1981	127.798	Ductile Iron	Whistler Cay Heights	675.6	229	760 Whistler Cay	85	2073	\$ 40,814.47
300	Main	Lorimer Road	W6032	1990	66.3611	Ductile Iron	Village North	980.2	213	775	85	2073	\$ 29,862.48
100	Main	Alta Lake Road	W5001	1986	5.35122	Ductile Iron	Stonebridge	1298.4	210	Supply	85	2073	\$ 1,344.34
300	Main	Alta Lake Road	W5001	1986	14.0085	Ductile Iron	Stonebridge	1298.4	210	Supply	85	2073	\$ 6,320.95
300	Main	Lorimer Road	W6033	1990	244.383	Ductile Iron	Whistler Cay Heights	980.2	213	775	85	2073	\$ 123,259.08
250	Main	R221	W9008	1979	25.7962	PVC	Emerald Estates Unserviced	524.4	206	733 Emerald Estates	85	2073	\$ 11,078.67
200	Main	Timber Ridge	W2011-2	1980	76.7559	Ductile Iron	Bayshores	614.1	204	735 Whistler South	85	2073	\$ 23,026.77
200	Main	Timber Ridge	W2011-2	1980	96.63042	Ductile Iron	Bayshores	623.9	204	735 Whistler South	85	2073	\$ 28,989.13
200	Main	Timber Ridge	W2011-2	1980	95.68271	Ductile Iron	Bayshores	623.9	204	735 Whistler South	85	2073	\$ 25,704.81
300	Main	Horstman Place	W4013(B)	1989	40.1707	Ductile Iron	Blackcomb Benclands South	835.6	211	815 Upper Blackcomb	85	2073	\$ 18,314.01
300	Main	Horstman Place	W4013(B)	1989	161.773	Ductile Iron	Blackcomb Benclands South	825.8	211	815 Upper Blackcomb	85	2073	\$ 73,752.92
200	Service	4865 Painted Cliff Road	W4011(B)	1988	5.91409	Ductile Iron	Blackcomb Benclands South	640	212	770 Lower Blackcomb	85	2073	\$ 1,774.23
150	Service	4865 Painted Cliff Road	W4011(B)	1988	3.45371	Ductile Iron	Blackcomb Benclands South	640	212	770 Lower Blackcomb	85	2073	\$ 915.23
200	Service	4873 Painted Cliff Road	W4011(B)	1988	7	Ductile Iron	Blackcomb Benclands South	591.4	212	770 Lower Blackcomb	85	2073	\$ 2,100.00
150	Service	4873 Painted Cliff Road	W4011(B)	1988	2	Ductile Iron	Blackcomb Benclands South	591.4	212	770 Lower Blackcomb	85	2073	\$ 530.00
350	Main	P255	W4015-1(B)	1988	7.76693	Ductile Iron	Blackcomb Benclands South	591.4	212	770 Lower Blackcomb	85	2073	\$ 3,634.19
250	Service	4800 Spearhead Drive	W4010(B)	1988	8.73027	Ductile Iron	Blackcomb Benclands South	650.6	212	770 Lower Blackcomb	85	2073	\$ 3,273.85
150	Service	4800 Spearhead Drive	W4010(B)	1988	8.46824	Ductile Iron	Blackcomb Benclands South	650.6	212	770 Lower Blackcomb	85	2073	\$ 2,244.08

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
350	Main	Painted Cliff Road	W4011(B)	1988	25.0005	Ductile Iron	Blackcomb Benclhlands South	591.4	212	770 Lower Blackcomb	85	2073	\$ 11,697.87
200	Main	Painted Cliff Road	W4012(B)	1988	241.705	Ductile Iron	Blackcomb Benclhlands South	640	212	770 Lower Blackcomb	85	2073	\$ 73,938.65
200	Main	Painted Cliff Road	W4011(B)	1988	13.5079	Ductile Iron	Blackcomb Benclhlands South	640	212	770 Lower Blackcomb	85	2073	\$ 4,132.12
200	Main	Painted Cliff Road	W4011(B)	1988	87.1661	Ductile Iron	Blackcomb Benclhlands South	581.5	212	770 Lower Blackcomb	85	2073	\$ 26,664.55
200	Main	Painted Cliff Road	W4011(B)	1988	14.5444	Ductile Iron	Blackcomb Benclhlands South	591.4	212	770 Lower Blackcomb	85	2073	\$ 4,449.21
200	Main	Spearehead Drive	W4010(B)	1988	150.282	Ductile Iron	Blackcomb Benclhlands South	650.6	212	770 Lower Blackcomb	85	2073	\$ 45,971.88
200	Main	Spearehead Drive	W4010(B)	1988	2.49671	Ductile Iron	Blackcomb Benclhlands South	650.6	212	770 Lower Blackcomb	85	2073	\$ 763.76
200	Main	Spearehead Drive	W4010(B)	1988	30.5264	Ductile Iron	Blackcomb Benclhlands South	650.6	212	770 Lower Blackcomb	85	2073	\$ 9,338.19
250	Main	P255	W4015-1(B)	1988	26.0748	Ductile Iron	Blackcomb Benclhlands South	591.4	212	770 Lower Blackcomb	85	2073	\$ 9,932.03
250	Main	Staff Housing	4802-4814 Glacier Drive	1988	96.1312	Ductile Iron	Blackcomb Benclhlands South	602.2	211	815 Upper Blackcomb	85	2073	\$ 36,049.20
250	Main	Staff Housing	4802-4814 Glacier Drive	1988	15.1338	Ductile Iron	Blackcomb Benclhlands South	602.2	211	815 Upper Blackcomb	85	2073	\$ 5,764.55
150	Main	Pinnacle Ridge	4700 Glacier Drive	1990	50.58456	Ductile Iron	Blackcomb Benclhlands South	883.1	211	815 Upper Blackcomb	85	2073	\$ 13,404.91
200	Main	Pinnacle Ridge	4700 Glacier Drive	1990	48.83382	Ductile Iron	Blackcomb Benclhlands South	892.9	211	815 Upper Blackcomb	85	2073	\$ 14,650.14
250	Main	Glacier Drive	W4025-3(B)	1988	70.0241	Ductile Iron	Blackcomb Benclhlands South	602.2	211	815 Upper Blackcomb	85	2073	\$ 26,672.54
250	Main	Glacier Drive	W4025-3(B)	1988	19.9853	Ductile Iron	Blackcomb Benclhlands South	669.8	211	815 Upper Blackcomb	85	2073	\$ 7,612.49
150	Main	Cedar Hollow	4701 Glacier Drive	1987	53.5	PVC	Blackcomb Benclhlands South	547.7	212	770 Lower Blackcomb	85	2073	\$ 14,177.50
100	Main	Cedar Hollow	4701 Glacier Drive	1987	15	PVC	Blackcomb Benclhlands South	547.7	212	770 Lower Blackcomb	85	2073	\$ 3,838.58
150	Main	Snowy Creek Condos	4501 Blackcomb	1989	120.7507	Ductile Iron	Blackcomb Benclhlands South	850.6	210	Supply	85	2073	\$ 31,998.94
150	Service	Cedar Hollow	W4000-1(B)	1987	2.5	Ductile Iron	Blackcomb Benclhlands South	547.7	212	770 Lower Blackcomb	85	2073	\$ 662.50
150	Service	Cedar Ridge	W4000-1(B)	1987	5.72505	Ductile Iron	Blackcomb Benclhlands South	547.7	212	770 Lower Blackcomb	85	2073	\$ 1,571.14
100	Service	Cedar Hollow	W4000-1(B)	1987	2.5	Ductile Iron	Blackcomb Benclhlands South	547.7	212	770 Lower Blackcomb	85	2073	\$ 625.00
150	Main	Snowy Creek Condos	4501 Blackcomb	1989	53.90028	Ductile Iron	Blackcomb Benclhlands South	772.8	212	770 Lower Blackcomb	85	2073	\$ 14,283.57
250	Main	under Blackcomb Gondola west of Glacier Drive	W4000-1(B)	1987	11.0074	Ductile Iron	Blackcomb Benclhlands South	547.7	212	770 Lower Blackcomb	85	2073	\$ 4,192.76
250	Main	under Blackcomb Gondola west of Glacier Drive	W4000-1(B)	1987	20.0116	Ductile Iron	Blackcomb Benclhlands South	547.7	212	770 Lower Blackcomb	85	2073	\$ 7,622.60
250	Main	under Blackcomb Gondola west of Glacier Drive	W4000-1(B)	1987	87.8941	Ductile Iron	Blackcomb Benclhlands South	547.7	212	770 Lower Blackcomb	85	2073	\$ 33,479.30
150	Main	Alta Lake Road	W5005	1986	14.066	Ductile Iron	Rainbow Park	1242.4	210	Supply	85	2074	\$ 3,918.36
400	Main	Alta Lake Road/21 Mile connector	W5007	1986	43.7246	Ductile Iron	Rainbow Park	1125.1	210	Supply	85	2074	\$ 22,237.02
300	Main	Lorimer Road	W4044(V)	1991	45.0822	PVC	Village North	1027.3	213	775	85	2074	\$ 20,286.98
300	Main	Lorimer Road	W4044(V)	1991	115.992	PVC	Village North	1019.1	213	775	85	2074	\$ 52,196.20
300	Main	Lorimer Road	W4044(V)	1991	83.3002	PVC	Village North	1039.8	213	775	85	2074	\$ 37,485.09
300	Main	Lorimer Road	W4044(V)	1991	69.1217	PVC	Village North	1041.4	213	775	85	2074	\$ 31,104.76
300	Main	Blackcomb Way	W4045(V)	1991	67.1154	PVC	Village North	959.8	213	775	85	2074	\$ 30,201.92
300	Main	Blackcomb Way	W4045(V)	1991	122.717	PVC	Village North	969.6	213	775	85	2074	\$ 55,222.73
300	Main	Blackcomb Way	W4045(V)	1991	41.6065	PVC	Village North	1018.5	213	775	85	2074	\$ 18,722.91
250	Main	Blackcomb Way	W4047(V)	1991	4.67824	PVC	Village North	998.9	213	775	85	2074	\$ 1,754.34
150	Main	Alta Lake Road	W5005	1986	3	Ductile Iron	Rainbow Park	1242.4	210	Supply	85	2074	\$ 835.71
300	Main	Alta Lake Road	W5007	1986	19.7552	Ductile Iron	Rainbow Park	1125.1	210	Supply	85	2074	\$ 9,157.90
150	Main	Alta Lake Road	W5002	1986	5	Ductile Iron	Stonebridge	1182.3	237	715 Westside	85	2074	\$ 1,325.00
200	Main	Alta Lake Road	W5003	1986	332.682	Ductile Iron	Stonebridge	1153	237	715 Westside	85	2074	\$ 100,210.73
200	Main	Alta Lake Road	W5002	1986	14.5896	Ductile Iron	Stonebridge	1182.3	237	715 Westside	85	2074	\$ 4,394.68
200	Main	Alta Lake Road	W5002	1986	240.226	Ductile Iron	Stonebridge	1182.3	237	715 Westside	85	2074	\$ 72,361.18
200	Main	Alta Lake Road	W5001	1986	191.554	Ductile Iron	Stonebridge	1215.6	237	715 Westside	85	2074	\$ 57,700.11
150	Main	Old Mill Lane	W5009	1986	12.0252	PVC	Stonebridge	1199.9	237	715 Westside	85	2074	\$ 3,201.36
300	Main	Hwy99/Karen Crescent connector	W2066	1992	57.3469	Ductile Iron	Whistler Creek Centre	1173.7	208	763 Creekside	85	2074	\$ 27,330.17
150	Main	Olive Terrace	W2018	1981	107.905	Ductile Iron	Gondola Village	619.5	208	763 Creekside	85	2074	\$ 35,530.76
50	Service	2640 Whistler Road	W2022	1981	8.32183	PVC	Whistler Highlands	563.3	213	775	85	2074	\$ 2,000.00
150	Service	Whistler Road	W2022	1981	7	Ductile Iron	Whistler Highlands	607	213	775	85	2074	\$ 1,855.00
150	Main	Whistler Road	W2022	1981	272.608	Ductile Iron	Whistler Highlands	546.4	213	775	85	2074	\$ 80,277.92
100	Service	2201 Eva Lake Road	W2035	1984	9.16385	PVC	Nordic Estates	955.3	213	775	85	2074	\$ 2,290.96
300	Main	Whistler Road	W2035	1984	160.86	PVC	Nordic Estates	955.3	213	775	85	2074	\$ 78,427.15
300	Main	Eva Lake Road	W2035	1984	135.979	PVC	Nordic Estates	955.3	213	775	85	2074	\$ 66,296.45
150	Service	2200 Eva Lake Road	W2035	1984	18.0016	PVC	Nordic Estates	961.5	213	775	85	2074	\$ 4,770.43
150	Service	2222 Castle Drive	W2024	1983	7.0172	PVC	Whistler Highlands	792.4	213	775	85	2074	\$ 1,857.84
150	Main	Nordic Drive	W2021	1981	117.405	PVC	Whistler Highlands	548	213	775	85	2074	\$ 34,573.48
200	Service	4385 Northlands Boulevard	W4032(V)	1991	5.37687	PVC	Village North	1030.7	213	775	85	2074	\$ 1,613.06
200	Service	4335 Northlands Boulevard	W4032(V)	1991	4.5	PVC	Village North	1009.8	213	775	85	2074	\$ 1,350.00
150	Service	4330 Northlands Boulevard	W4032(V)	1991	14.517	PVC	Village North	1015	213	775	85	2074	\$ 3,847.00
200	Service	4365 Northlands Boulevard	W4032(V)	1991	5.48257	PVC	Village North	1015	213	775	85	2074	\$ 1,644.77
200	Service	4365 Northlands Boulevard	W4032(V)	1991	5.58823	PVC	Village North	1029.9	213	775	85	2074	\$ 1,676.47
100	Main	Northlands Boulevard	W4032(V)	1991	5.18861	PVC	Village North	1025.2	213	775	85	2074	\$ 1,297.15
200	Service	4370 Northlands Boulevard	W4032(V)	1991	10.9137	PVC	Village North	1025.2	213	775	85	2074	\$ 3,274.12
150	Service	4370 Northlands Boulevard	W4032(V)	1991	3.14179	PVC	Village North	1025.2	213	775	85	2074	\$ 832.57
300	Main	Northlands Boulevard	W4032(V)	1991	48.7546	PVC	Village North	1009.8	213	775	85	2074	\$ 21,939.58
300	Main	Northlands Boulevard	W4032(V)	1991	61.2428	PVC	Village North	1029.9	213	775	85	2074	\$ 27,559.26
300	Main	Northlands Boulevard	W4032(V)	1991	27.0303	PVC	Village North	1025.2	213	775	85	2074	\$ 12,163.65
300	Main	Northlands Boulevard	W4032(V)	1991	53.0184	PVC	Village North	1041.4	213	775	85	2074	\$ 23,858.28
300	Main	Northlands Boulevard	W4032(V)	1991	37.1511	PVC	Village North	1030.7	213	775	85	2074	\$ 16,718.01
300	Main	Northlands Boulevard	W4032(V)	1991	18.5799	PVC	Village North	1030.7	213	775	85	2074	\$ 8,360.95
300	Main	Northlands Boulevard	W4032(V)	1991	9.32129	PVC	Village North	1030.7	213	775	85	2074	\$ 4,194.58
200	Service	4375 Northlands Boulevard	W4033(V)	1991	9	PVC	Village North	1025.4	213	775	85	2074	\$ 2,700.00
200	Main	Marketplace Parking Lot	W4049(V)	1991	108.525	PVC	Village North	1015.3	213	775	85	2074	\$ 32,557.58
200	Main	Marketplace Parking Lot	W4049(V)	1991	25.6866	PVC	Village North	1020.2	213	775	85	2074	\$ 7,708.99
150	Main	Marketplace Parking Lot	W4049(V)	1991	91.7551	PVC	Village North	1010.4	213	775	85	2074	\$ 24,315.10
200	Service	4388 Northlands Boulevard	W4044(V)	1991	22.6415	PVC	Village North	1039.8	213	775	85	2074	\$ 6,792.44
200	Main	Marketplace Parking Lot	W4049(V)	1991	8.27971	PVC	Village North	1039.8	213	775	85	2074	\$ 2,483.91
200	Main	Marketplace Parking Lot	W4049(V)	1991	73.8657	PVC	Village North	1030	213	775	85	2074	\$ 22,159.71
150	Service	Marketplace Parking Lot	W4049(V)	1991	30.1473	PVC	Village North	1010.4	213	775	85	2074	\$ 7,989.03
150	Service	4380 Lorimer Road	W4044(V)	1991	13.0476	PVC	Village North	1019.1	213	775	85	2074	\$ 3,457.61
200	Service	4388 Northlands Boulevard	W4044(V)	1991	17.1541	PVC	Village North	1019.1	213	775	85	2074	\$ 5,146.24
300	Main	Lorimer Road	W4033(V)	1991	86.1933	PVC	Village North	1041.4	213	775	85	2074	\$ 38,786.99
300	Main	Lorimer Road	W4033(V)	1991	45.7681	PVC	Village North	1025.4	213	775	85	2074	\$ 20,595.65
150	Service	4334 Main Street	W4047(V)	1991	17.234	PVC	Village North	994	213	775	85	2074	\$ 4,567.01

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost	
150	Service	4350 Lorimer Road	W4047(V)	1991	7.23394	PVC	Village North	989.1	213	775	85	2074	\$ 1,916.99	
100	Service	4380 Lorimer Road	W4047(V)	1991	8.79559	PVC	Village North	998.9	213	775	85	2074	\$ 2,198.90	
100	Service	4380 Lorimer Road	W4047(V)	1991	9.20173	PVC	Village North	998.9	213	775	85	2074	\$ 2,300.43	
100	Service	4380 Lorimer Road	W4047(V)	1991	36.3129	PVC	Village North	1008.7	213	775	85	2074	\$ 9,078.23	
100	Main	Blackcomb Way	W4047(V)	1991	7.45669	PVC	Village North	1008.7	213	775	85	2074	\$ 1,864.17	
100	Main	Blackcomb Way	W4047(V)	1991	7.45669	PVC	Village North	1008.7	213	775	85	2074	\$ 1,864.17	
250	Main	Blackcomb Way	W4047(V)	1991	22.2241	PVC	Village North	1008.7	213	775	85	2074	\$ 8,334.04	
250	Main	Blackcomb Way	W4047(V)	1991	27.4452	PVC	Village North	1008.7	213	775	85	2074	\$ 10,291.94	
250	Main	Blackcomb Way	W4047(V)	1991	34.8791	PVC	Village North	1008.7	213	775	85	2074	\$ 13,079.67	
250	Main	Blackcomb Way	W4047(V)	1991	37.1244	PVC	Village North	998.9	213	775	85	2074	\$ 13,921.66	
250	Main	Blackcomb Way	W4047(V)	1991	27.3863	PVC	Village North	998.9	213	775	85	2074	\$ 10,269.88	
250	Main	Blackcomb Way	W4047(V)	1991	6.38891	PVC	Village North	989.1	213	775	85	2074	\$ 2,395.84	
250	Main	Blackcomb Way	W4047(V)	1991	44.5098	PVC	Village North	989.1	213	775	85	2074	\$ 16,691.16	
200	Main	Blackcomb Way	W4047(V)	1991	28.897	PVC	Village North	994	213	775	85	2074	\$ 8,669.09	
200	Service	4365 Blackcomb Way	W4045(V)	1991	24.6957	PVC	Village North	969.6	213	775	85	2074	\$ 7,408.72	
100	Main	Blackcomb Way	W4046(V)	1991	7.9603	PVC	Village North	930.4	213	775	85	2074	\$ 1,990.08	
100	Main	Blackcomb Way	W4046(V)	1991	4.2386	PVC	Village North	940.2	213	775	85	2074	\$ 1,059.65	
100	Main	Blackcomb Way	W4046(V)	1991	7.45669	PVC	Village North	940.2	213	775	85	2074	\$ 1,864.17	
150	Service	Blackcomb Way	W4046(V)	1991	11.7348	PVC	Village North	940.2	213	775	85	2074	\$ 3,109.73	
100	Service	4335 Blackcomb Way	W4048(V)	1991	4.27444	PVC	Village North	959.8	213	775	85	2074	\$ 3,684.70	
100	Main	Blackcomb Way	W4048(V)	1991	13.7699	PVC	Village North	959.8	213	775	85	2074	\$ 1,068.61	
150	Main	Blackcomb Way	W4048(V)	1991	20.579	PVC	Village North	959.8	213	775	85	2074	\$ 3,849.02	
150	Main	Blackcomb Way	W4048(V)	1991	20.579	PVC	Village North	959.8	213	775	85	2074	\$ 5,453.44	
200	Service	4314 Blackcomb Way	W4048(V)	1991	19.6619	PVC	Village North	959.8	213	775	85	2074	\$ 5,898.57	
150	Service	4355 Blackcomb Way	W4048(V)	1991	4.71557	PVC	Village North	959.8	213	775	85	2074	\$ 1,249.63	
300	Main	Blackcomb Way	W4046(V)	1991	59.3584	PVC	Village North	917.7	213	775	85	2074	\$ 26,711.29	
300	Main	Blackcomb Way	W4046(V)	1991	91.9311	PVC	Village North	940.2	213	775	85	2074	\$ 41,369.00	
300	Main	Blackcomb Way	W4046(V)	1991	50.8548	PVC	Village North	959.8	213	775	85	2074	\$ 22,884.68	
300	Main	Blackcomb Way	W4046(V)	1991	42.2231	PVC	Village North	959.8	213	775	85	2074	\$ 19,000.40	
200	Main	Blackcomb Way	W4045(V)	1991	50.6364	PVC	Village North	1027.2	213	775	85	2074	\$ 15,190.93	
200	Main	Blackcomb Way	W4045(V)	1991	9.32438	PVC	Village North	1027.2	213	775	85	2074	\$ 2,797.31	
200	Main	Blackcomb Way	W4045(V)	1991	18.9567	PVC	Village North	1027.2	213	775	85	2074	\$ 5,687.01	
200	Service	4405 Blackcomb Way	W4045(V)	1991	15.5552	PVC	Village North	1027.2	213	775	85	2074	\$ 4,666.56	
250	Main	Village Gate Boulevard	W4046(V)	1991	13.1541	PVC	Village North	917.7	213	775	85	2074	\$ 4,932.78	
300	Main	Village Stroll	W4056-3(V)	1991	72.586	PVC	Village	930.3	213	775	85	2074	\$ 32,663.70	
150	Main	Whistler Golf Club	W4060V	1985	1.17831	Ductile Iron	Whistler Golf Course	980.8	213	775	85	2074	\$ 312.25	
250	Main	Whistler Golf Club	W4060V	1985	7.45625	Ductile Iron	Whistler Golf Course	980.8	213	775	85	2074	\$ 2,796.09	
200	Main	Northern Lights	4150 Tantalus Dr	1990	504.5652	Ductile Iron	Village	837.1	213	775	85	2074	\$ 151,369.57	
100	Main	Blowoff between Hillcrest Drive and Hwy99	W2026	1985	10	PVC	Alta Vista	1015.6	213	775	85	2074	\$ 2,921.65	
250	Main	Eagle Drive	W6008	1981	57.1582	Ductile Iron	Whistler Cay Heights	558.2	229	760	Whistler Cay	85	2074	\$ 24,541.91
250	Main	Eagle Drive	W6008	1981	249.751	Ductile Iron	Whistler Cay Heights	548.4	229	760	Whistler Cay	85	2074	\$ 107,235.10
150	Main	Palmer Drive	W6015 & W6014	1981	160.477	Ductile Iron	Whistler Cay Heights	616.9	229	760	Whistler Cay	85	2074	\$ 51,251.35
150	Main	Saint Andrews Way	W6011	1981	145.905	Ductile Iron	Whistler Cay Heights	567.9	229	760	Whistler Cay	85	2074	\$ 46,597.38
150	Main	Bishop Way	W6011	1981	112.233	Ductile Iron	Whistler Cay Heights	558.2	229	760	Whistler Cay	85	2074	\$ 35,843.62
150	Main	Saint Andrews Way	W6012	1981	59.9436	Ductile Iron	Whistler Cay Heights	626.6	229	760	Whistler Cay	85	2074	\$ 19,144.05
150	Main	Wedge Lane	W6016	1981	5.872	Ductile Iron	Whistler Cay Heights	626.6	229	760	Whistler Cay	85	2074	\$ 1,875.33
150	Service	Eagle Drive	W6009	1981	13.0014	Ductile Iron	Whistler Cay Heights	607.1	229	760	Whistler Cay	85	2074	\$ 3,445.36
150	Main	Palmer Drive	W6019 & W6014	1981	128.729	PVC	Whistler Cay Heights	607	229	760	Whistler Cay	85	2074	\$ 41,111.87
250	Main	Saint Andrews Way	W6014	1981	10.4925	PVC	Whistler Cay Heights	538.5	229	760	Whistler Cay	85	2074	\$ 4,505.15
250	Main	Saint Andrews Way	W6014	1981	68.2871	PVC	Whistler Cay Heights	538.5	229	760	Whistler Cay	85	2074	\$ 29,320.20
250	Main	Eagle Drive	W6009	1981	50.7097	Ductile Iron	Whistler Cay Heights	616.8	229	760	Whistler Cay	85	2074	\$ 21,773.13
250	Main	Eagle Drive	W6009	1981	54.3953	Ductile Iron	Whistler Cay Heights	607.1	229	760	Whistler Cay	85	2074	\$ 23,356.60
400	Main	Alta Lake Road	W5007	1986	308.917	Ductile Iron	Rainbow Park	1125.1	210	Supply	85	2074	\$ 157,106.23	
400	Main	Alta Lake Road	W5006	1986	162.38	Ductile Iron	Rainbow Park	1203.6	210	Supply	85	2074	\$ 82,581.44	
400	Main	Alta Lake Road	W5006	1986	157.888	Ductile Iron	Rainbow Park	1240.9	210	Supply	85	2074	\$ 80,297.11	
400	Main	Alta Lake Road	W5006	1986	53.2787	Ductile Iron	Rainbow Park	1211.5	210	Supply	85	2074	\$ 27,095.98	
400	Main	Alta Lake Road	W5005	1986	127.851	Ductile Iron	Rainbow Park	1211.5	210	Supply	85	2074	\$ 65,021.47	
400	Main	Alta Lake Road	W5003	1986	332.647	Ductile Iron	Stonebridge	1153	237	715	Westside	85	2074	\$ 165,066.50
400	Main	Alta Lake Road	W5002	1986	254.334	Ductile Iron	Stonebridge	1182.3	237	715	Westside	85	2074	\$ 126,205.62
400	Main	Alta Lake Road	W5001	1986	194.233	Ductile Iron	Stonebridge	1215.6	237	715	Westside	85	2074	\$ 96,382.59
300	Main	Nesters Road	W8035	1991	115.032	PVC	Spruce Grove	1004.4	218	735B	Nesters	85	2074	\$ 54,204.12
300	Main	Nesters Road	W7006	1991	259.27	Ductile Iron	Nesters	921.2	218	735B	Nesters	85	2074	\$ 125,667.41
300	Main	Alta Lake Road	W5007	1986	11.2547	Ductile Iron	Rainbow Park	1125.1	210	Supply	85	2074	\$ 5,217.35	
250	Main	Terasen Gas Storage Facility	W7006	1991	26.0715	PVC	Whistler Creek Centre	989.7	218	735B	Nesters	85	2074	\$ 10,469.70
300	Main	Skiers Approach	W4056-3(V)	1991	29.8415	PVC	Village	930.3	213	775	85	2074	\$ 13,428.68	
150	Main	Crystal Ridge	4873 Painted Cliff	1989	65.35449	PVC	Blackcomb Benchlands South	591.4	212	770	Lower Blackcomb	85	2074	\$ 17,318.94
150	Service	4883 Painted Cliff Road	W4027-3(B)	1990	8.89329	PVC	Blackcomb Benchlands South	727.8	211	815	Upper Blackcomb	85	2074	\$ 2,356.72
250	Main	Painted Cliff Road	W4027-1(B)	1990	89.4425	PVC	Blackcomb Benchlands South	825.8	211	815	Upper Blackcomb	85	2074	\$ 34,069.09
150	Main	Painted Cliff Road	W4027-3(B)	1990	56.8689	PVC	Blackcomb Benchlands South	727.8	211	815	Upper Blackcomb	85	2074	\$ 15,351.90
200	Main	Painted Cliff Road	W4027-2(B)	1990	172.189	PVC	Blackcomb Benchlands South	760	211	815	Upper Blackcomb	85	2074	\$ 52,673.37
200	Main	Painted Cliff Road	W4027-2(B)	1990	27.9587	PVC	Blackcomb Benchlands South	760	211	815	Upper Blackcomb	85	2074	\$ 8,552.71
150	Main	Staff Housing	4802-4814 Glacier	1988	31.9753	Ductile Iron	Blackcomb Benchlands South	541.5	211	815	Upper Blackcomb	85	2074	\$ 8,473.51
150	Main	Staff Housing	4802-4814 Glacier	1988	126.832	Ductile Iron	Blackcomb Benchlands South	541.5	211	815	Upper Blackcomb	85	2074	\$ 33,610.79
250	Main	Staff Housing	4802-4814 Glacier	1988	4.00792	Ductile Iron	Blackcomb Benchlands South	512.1	211	815	Upper Blackcomb	85	2074	\$ 1,526.64
250	Main	Staff Housing	4802-4814 Glacier	1988	77.0205	Ductile Iron	Blackcomb Benchlands South	512.1	211	815	Upper Blackcomb	85	2074	\$ 28,882.69
150	Main	Staff Housing	4802-4814 Glacier	1988	168.5367	Ductile Iron	Blackcomb Benchlands South	521.9	211	815	Upper Blackcomb	85	2074	\$ 44,662.23
150	Main	Pinnacle Ridge	4700 Glacier Drive	1990	155.3051	PVC	Blackcomb Benchlands South	776.5	211	815	Upper Blackcomb	85	2074	\$ 41,155.84
150	Main	Pinnacle Ridge	4700 Glacier Drive	1990	59.08067	PVC	Blackcomb Benchlands South	825.4	211	815	Upper Blackcomb	85	2074	\$ 15,656.38
200	Main	Pinnacle Ridge	4700 Glacier Drive	1990	164.0797	PVC	Blackcomb Benchlands South	854.6	211	815	Upper Blackcomb	85	2074	\$ 49,223.92
150	Service	4750 Glacier Drive	W4025-3(B)	1988	9	Ductile Iron	Blackcomb Benchlands South	430.3	212	770	Lower Blackcomb	85	2074	\$ 2,385.00
300	Main	Base II	W4025-2(B)	1988	150.361	Ductile Iron	Blackcomb Benchlands South	488.7	211	815	Upper Blackcomb	85	2074	\$ 68,550.50
150	Main	Cedar Ridge	4705 Glacier Drive	1988	50	Ductile Iron	Blackcomb Benchlands South	547.7	212	770	Lower Blackcomb	85	2074	\$ 13,250.00

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
150	Main	Cedar Ridge	4705 Glacier Driv	1988	32.5	Ductile Iron	Blackcomb Benclands South	547.7	212	770 Lower Blackcomb	85	2074	\$ 8,612.50
150	Main	Cedar Ridge	4705 Glacier Driv	1988	49.36515	Ductile Iron	Blackcomb Benclands South	547.7	212	770 Lower Blackcomb	85	2074	\$ 13,081.77
300	Main	Blackcomb Way (Village)	W4056-2(V)	1991	74.3295	PVC	Village North	917.7	213	775	85	2074	\$ 33,448.27
150	Main	Old Mill Lane	W5010-3	1987	8.5	PVC	Stonebridge	1199.9	237	715 Westside	85	2075	\$ 2,252.50
200	Main	Alta Lake Road	W5005	1986	26.0861	Ductile Iron	Rainbow Park	1076.9	237	715 Westside	85	2075	\$ 8,179.82
200	Main	Alta Lake Road	W5004	1986	213.254	Ductile Iron	Stonebridge	1082.7	237	715 Westside	85	2075	\$ 64,236.69
150	Main	Old Mill Lane	W5010-3	1987	15.1546	PVC	Stonebridge	1199.9	237	715 Westside	85	2075	\$ 4,034.48
150	Main	Old Mill Lane	W5010-3	1987	71.0925	PVC	Stonebridge	1199.9	237	715 Westside	85	2075	\$ 18,926.29
250	Main	P252	W2058	1986	32.907	Ductile Iron	Nordic Estates	1000.6	208	763 Creekside	85	2075	\$ 13,575.79
300	Main	P262 - 4389 Northlands Boulevard	W4050-1(V)	1992	18.0804	Ductile Iron	Village North	1030.7	213	775	85	2075	\$ 8,136.18
200	Main	P261 - Blackcomb Way North of Lorimer Road	W4051-1(V)	1992	18.9567	Ductile Iron	Village North	1027.2	213	775	85	2075	\$ 5,687.01
200	Main	Blackcomb Way	W4045(V)	1991	40.3784	PVC	Village North	862.8	235	735A Riverside	85	2075	\$ 12,113.53
250	Main	Panorama Ridge	W3029-2	1992	22.7737	PVC	Brio	979.7	213	775	85	2075	\$ 10,033.51
150	Main	Alta Vista Road	W3026	1990	59.3197	PVC	Alta Vista	679.1	240	723 Alta Visita	85	2075	\$ 18,220.97
200	Main	Eagle Ridge	6127 Eagle Ridge	1984	26.95945	PVC	Whistler Cay Heights	794.8	213	775	85	2075	\$ 8,087.84
200	Main	Eagle Ridge	6127 Eagle Ridge	1984	102.7334	PVC	Whistler Cay Heights	794.8	213	775	85	2075	\$ 30,820.01
200	Main	Eagle Ridge	6127 Eagle Ridge	1984	52.08283	PVC	Whistler Cay Heights	814.4	213	775	85	2075	\$ 15,624.85
150	Main	Smoketree	6125 Eagle Ridge	1984	4.64168	PVC	Whistler Cay Heights	794.8	213	775	85	2075	\$ 1,482.40
150	Main	Eagle Ridge	6127 Eagle Ridge	1984	39.9509	PVC	Whistler Cay Heights	794.8	213	775	85	2075	\$ 10,586.99
150	Main	Linkside Road	W6006	1981	221.725	Ductile Iron	Whistler Cay Heights	460.3	229	760 Whistler Cay	85	2075	\$ 70,811.78
150	Main	Linkside Road	W6007	1981	94.2559	Ductile Iron	Whistler Cay Heights	460.3	229	760 Whistler Cay	85	2075	\$ 24,977.81
150	Main	Fairway Drive	W6004	1981	107.444	Ductile Iron	Whistler Cay Heights	460.3	229	760 Whistler Cay	85	2075	\$ 34,314.22
150	Main	Linkside Road	W6003	1981	12.6425	Ductile Iron	Whistler Cay Heights	499.5	229	760 Whistler Cay	85	2075	\$ 4,037.60
150	Main	Linkside Road	W6003	1981	21.8834	Ductile Iron	Whistler Cay Heights	489.7	229	760 Whistler Cay	85	2075	\$ 6,988.85
250	Main	Eagle Drive	W6002	1981	65.1165	Ductile Iron	Whistler Cay Heights	519.3	229	760 Whistler Cay	85	2075	\$ 27,958.94
250	Main	Eagle Drive	W6002	1981	0.68633	Ductile Iron	Whistler Cay Heights	530.1	229	760 Whistler Cay	85	2075	\$ 294.69
200	Main	Eagle Drive	W6002	1981	84.4239	Ductile Iron	Whistler Cay Heights	530.1	229	760 Whistler Cay	85	2075	\$ 29,917.13
150	Main	Eagle Drive	W6003	1981	31.1332	Ductile Iron	Whistler Cay Heights	499.5	229	760 Whistler Cay	85	2075	\$ 9,942.93
150	Main	Fairway Drive	W6010	1981	214.413	Ductile Iron	Whistler Cay Heights	479.9	229	760 Whistler Cay	85	2075	\$ 68,476.65
150	Main	Wedge Lane	W6016	1981	152.871	Ductile Iron	Whistler Cay Heights	479.8	229	760 Whistler Cay	85	2075	\$ 48,822.22
150	Main	Palmer Drive	W6017	1981	128.539	Ductile Iron	Whistler Cay Heights	528.7	229	760 Whistler Cay	85	2075	\$ 41,051.30
150	Main	Palmer Drive	W6017	1981	25.1775	PVC	Whistler Cay Heights	450.4	229	760 Whistler Cay	85	2075	\$ 8,040.89
150	Main	Palmer Drive	W6017	1981	9.84428	PVC	Whistler Cay Heights	450.4	229	760 Whistler Cay	85	2075	\$ 3,143.95
150	Main	Eagle Drive	W6017	1981	65.0652	Ductile Iron	Whistler Cay Heights	450.4	229	760 Whistler Cay	85	2075	\$ 20,779.73
250	Main	Saint Andrews Way	W6014	1981	72.7454	Ductile Iron	Whistler Cay Heights	528.7	229	760 Whistler Cay	85	2075	\$ 31,234.53
250	Main	Saint Andrews Way	W6013	1981	52.7228	Ductile Iron	Whistler Cay Heights	489.6	229	760 Whistler Cay	85	2075	\$ 22,637.47
150	Main	Saint Andrews Way	W6013	1981	124.838	Ductile Iron	Whistler Cay Heights	489.6	229	760 Whistler Cay	85	2075	\$ 39,869.25
150	Main	Eagle Drive	W6017	1981	102.624	Ductile Iron	Whistler Cay Heights	528.7	229	760 Whistler Cay	85	2075	\$ 32,774.75
150	Main	Eagle Drive	W6017	1981	87.3965	Ductile Iron	Whistler Cay Heights	489.6	229	760 Whistler Cay	85	2075	\$ 27,911.62
250	Main	Eagle Drive	W6009	1981	128.689	Ductile Iron	Whistler Cay Heights	479.8	229	760 Whistler Cay	85	2075	\$ 55,254.77
150	Main	Toad Hollow	W6000	1981	48	PVC	Tapley's Farm	518.8	241	675 Tapley Farm	85	2075	\$ 15,184.74
150	Main	Corral Place	W6000	1981	55	PVC	Tapley's Farm	499.2	241	675 Tapley Farm	85	2075	\$ 17,399.18
150	Main	Easy Street	W6000	1981	122.917	PVC	Tapley's Farm	495.3	241	675 Tapley Farm	85	2075	\$ 38,884.77
150	Main	Easy Street	W6000	1981	92.087	PVC	Tapley's Farm	504.1	241	675 Tapley Farm	85	2075	\$ 29,131.59
150	Main	Easy Street	W6000	1981	182.113	PVC	Tapley's Farm	499.2	241	675 Tapley Farm	85	2075	\$ 57,611.08
150	Main	Easy Street	W6000	1981	161.683	PVC	Tapley's Farm	528.5	241	675 Tapley Farm	85	2075	\$ 51,148.20
150	Main	Balsam Way	W6000	1981	159.602	PVC	Tapley's Farm	518.8	241	675 Tapley Farm	85	2075	\$ 50,489.80
150	Main	Balsam Way	W6000	1981	279.392	PVC	Tapley's Farm	495.3	241	675 Tapley Farm	85	2075	\$ 88,385.34
150	Main	Balsam Way	W6000	1981	85.298	PVC	Tapley's Farm	484.6	241	675 Tapley Farm	85	2075	\$ 26,983.90
400	Main	Alta Lake Road	W5005	1986	233.856	Ductile Iron	Rainbow Park	1076.9	237	715 Westside	85	2075	\$ 118,931.96
400	Main	Alta Lake Road	W5004	1986	213.276	Ductile Iron	Stonebridge	1076.9	237	715 Westside	85	2075	\$ 105,831.97
250	Main	Lorimer Road	W6000	1981	8.76581	PVC	Whistler Cay Estates	493.5	241	675 Tapley Farm	85	2075	\$ 3,554.39
250	Main	Lorimer Road	W6000	1981	16.2833	PVC	Whistler Cay Estates	493.5	241	675 Tapley Farm	85	2075	\$ 6,602.62
250	Main	Lorimer Road	W6000	1981	116.206	PVC	Tapley's Farm	492.5	241	675 Tapley Farm	85	2075	\$ 49,544.42
150	Main	Eagle Drive	W6017	1981	49.4099	PVC	Whistler Cay Heights	518.9	229	760 Whistler Cay	85	2075	\$ 15,779.94
300	Main	Nesters Road	W7006	1991	10.6416	Ductile Iron	Nesters	872.4	218	735B Nestors	85	2075	\$ 5,157.94
150	Main	The Aspens	4800 Spearhead	1993	10.91348	PVC	Blackcomb Benclands South	1050.8	211	815 Upper Blackcomb	85	2075	\$ 2,892.07
150	Main	The Aspens	4800 Spearhead	1993	25.63242	PVC	Blackcomb Benclands South	1050.8	211	815 Upper Blackcomb	85	2075	\$ 6,792.59
250	Main	The Aspens	4800 Spearhead	1993	14	PVC	Blackcomb Benclands South	1050.8	211	815 Upper Blackcomb	85	2075	\$ 5,250.00
200	Service	4899 Painted Cliff Road	W4027-1(B)	1990	10.2408	PVC	Blackcomb Benclands South	551.6	211	815 Upper Blackcomb	85	2075	\$ 3,072.24
200	Service	4890 Painted Cliff Road	W4027-1(B)	1990	16.3161	PVC	Blackcomb Benclands South	630	211	815 Upper Blackcomb	85	2075	\$ 4,894.83
150	Service	4891 Painted Cliff Road	W4027-1(B)	1990	11.3457	PVC	Blackcomb Benclands South	630	211	815 Upper Blackcomb	85	2075	\$ 3,006.61
200	Service	4894 Painted Cliff Road	W4027-1(B)	1990	13.1346	PVC	Blackcomb Benclands South	590.8	211	815 Upper Blackcomb	85	2075	\$ 3,940.39
150	Main	Painted Cliff Road	W4027-3(B)	1990	182.016	PVC	Blackcomb Benclands South	639.8	211	815 Upper Blackcomb	85	2075	\$ 49,309.16
250	Main	Painted Cliff Road	W4027-1(B)	1990	14.2325	PVC	Blackcomb Benclands South	630	211	815 Upper Blackcomb	85	2075	\$ 5,421.23
250	Main	Painted Cliff Road	W4027-1(B)	1990	1.71966	PVC	Blackcomb Benclands South	630	211	815 Upper Blackcomb	85	2075	\$ 655.03
250	Main	Painted Cliff Road	W4027-1(B)	1990	67.3375	PVC	Blackcomb Benclands South	590.8	211	815 Upper Blackcomb	85	2075	\$ 25,649.20
250	Main	Painted Cliff Road	W4027-1(B)	1990	21.9193	PVC	Blackcomb Benclands South	590.8	211	815 Upper Blackcomb	85	2075	\$ 8,349.15
250	Main	Painted Cliff Road	W4027-1(B)	1990	76.4544	PVC	Blackcomb Benclands South	561.4	211	815 Upper Blackcomb	85	2075	\$ 29,121.87
300	Main	Painted Cliff Road	W4027-2(B)	1990	13.8465	PVC	Blackcomb Benclands South	551.6	211	815 Upper Blackcomb	85	2075	\$ 4,235.72
200	Main	Painted Cliff Road	W4027-2(B)	1990	7.62102	PVC	Blackcomb Benclands South	551.6	211	815 Upper Blackcomb	85	2075	\$ 2,331.51
200	Main	Horstman Lane	W4014(B)	1989	58.5039	PVC	Blackcomb Benclands South	532.7	212	770 Lower Blackcomb	85	2075	\$ 17,284.82
200	Main	Horstman Lane	W4014(B)	1989	230.296	PVC	Blackcomb Benclands South	527.8	212	770 Lower Blackcomb	85	2075	\$ 70,448.65
200	Main	Horstman Lane	W4013(B)	1989	153.3794	PVC	Blackcomb Benclands South	532.7	212	770 Lower Blackcomb	85	2075	\$ 46,013.82
250	Main	P256	W4015-2(B)	1989	13.1334	Ductile Iron	Blackcomb Benclands South	430.3	212	770 Lower Blackcomb	85	2075	\$ 5,002.68
200	Main	P256	W4015-2(B)	1989	3.04663	Ductile Iron	Blackcomb Benclands South	430.3	212	770 Lower Blackcomb	85	2075	\$ 931.98
250	Main	P256	W4015-2(B)	1989	3.48978	Ductile Iron	Blackcomb Benclands South	430.3	212	770 Lower Blackcomb	85	2075	\$ 1,329.27
250	Main	P256	W4015-2(B)	1989	8.81136	Ductile Iron	Blackcomb Benclands South	430.3	212	770 Lower Blackcomb	85	2075	\$ 3,356.29
300	Main	Blackcomb Way (Village)	W4056-2(V)	1991	47.9014	PVC	Village	861.8	213	775	85	2075	\$ 21,555.64
400	Main	21 Mile Creek Intake connector	W5008-1	1986	93.0898	Ductile Iron	Rainbow Park	965.1	210	Supply	85	2076	\$ 47,342.70
150	Service	1216 Alpha Lake Road	W1007	1981	15.26531	PVC	Function Junction	412.3	205	643 FJ	85	2076	\$ 4,045.31
150	Main	1005 Alpha Lake Road	W1003	1981	31.7962	PVC	Function Junction	422.1	205	643 FJ	85	2076	\$ 8,421.60

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
150	Main	1005 Alpha Lake Road	W1003	1981	2,592,348	PVC	Function Junction	422.1	205	643 FJ	85	2076	\$ 686.97
150	Main	Millars Pond Reservoirs	W2098-1	1980	312,508	PVC	Whistler Mountain	331.5	210	Supply	85	2076	\$ 82,814.56
400	Main	21 Mile Creek Intake	W5008-2	1986	181,958	Ductile Iron	Rainbow Park	965.1	210	Supply	85	2076	\$ 92,538.66
400	Main	21 Mile Creek Intake connector	W5008-1	1986	437,187	Ductile Iron	Rainbow Park	965.1	210	Supply	85	2076	\$ 222,340.35
250	Main	Alpha Lake Road	W1001	1981	63,18888	PVC	Function Junction	392.7	205	643 FJ	85	2076	\$ 23,695.83
250	Main	Alpha Lake Road	W1008	1981	111,6508	PVC	Function Junction	392.7	205	643 FJ	85	2076	\$ 41,869.06
150	Service	1220/1224 Alpha Lake Road	W1007	1981	85,56936	PVC	Function Junction	412.3	205	643 FJ	85	2076	\$ 22,675.88
150	Service	1212 Alpha Lake Road	W1007	1981	15,10173	PVC	Function Junction	412.3	205	643 FJ	85	2076	\$ 4,001.96
150	Service	1209 Alpha Lake Road	W1007	1981	7	PVC	Function Junction	407.4	205	643 FJ	85	2076	\$ 1,855.00
200	Main	Alpha Lake Road	W1006	1981	143,4423	PVC	Function Junction	412.3	205	643 FJ	85	2076	\$ 43,032.68
200	Main	Alpha Lake Road	W1007	1981	215,469	PVC	Function Junction	412.3	205	643 FJ	85	2076	\$ 64,640.70
250	Main	Alpha Lake Road	W1007	1981	134,8502	PVC	Function Junction	392.7	205	643 FJ	85	2076	\$ 50,568.81
250	Main	Miller Creek Road	W1003	1981	35,44891	PVC	Function Junction	412.3	205	643 FJ	85	2076	\$ 13,293.34
250	Main	Alpha Lake Road	W1003	1981	36,16459	PVC	Function Junction	402.5	205	643 FJ	85	2076	\$ 13,561.72
250	Main	1005 Alpha Lake Road	W1003	1981	104,8325	PVC	Function Junction	402.5	205	643 FJ	85	2076	\$ 39,312.19
250	Main	Miller Creek Road	W1002	1981	213,5125	PVC	Function Junction	422.1	205	643 FJ	85	2076	\$ 80,067.17
150	Main	Miller Creek Road/W9	W1002	1981	129,8635	PVC	Function Junction	438.7	205	643 FJ	85	2076	\$ 34,413.83
300	Main	R228 to/from Gondola Way	W2038-10	1982	13,9652	Ductile Iron	Gondola Village	453.7	208	763 Creekside	85	2076	\$ 7,182.01
50	Main	2070 Garibaldi Way	W2070	1987	7,01732	PVC	Whistler Highlands	1008.9	213	775	85	2076	\$ 1,785.78
50	Main	2070 Garibaldi Way	W2070	1987	7,01732	PVC	Whistler Highlands	1008.9	213	775	85	2076	\$ 1,842.85
50	Service	2070 Garibaldi Way	W2038-7	1987	22,4057	PVC	Whistler Highlands	1008.9	213	775	85	2076	\$ 2,000.00
300	Main	Northlands Boulevard	W4032(V)	1991	32,0153	PVC	Village North	591.3	213	775	85	2076	\$ 14,406.87
300	Main	Northlands Boulevard	W4032(V)	1991	6,61404	PVC	Village North	591.3	213	775	85	2076	\$ 2,976.32
300	Main	Northlands Boulevard	W4032(V)	1991	8,14712	PVC	Village North	579.6	213	775	85	2076	\$ 3,666.20
150	Service	The Lagonis at Stoney Creek	4335 Northlands	1993	5,905498	PVC	Village North	1013.1	213	775	85	2076	\$ 1,564.96
150	Service	The Lagonis at Stoney Creek	4335 Northlands	1993	6,822603	PVC	Village North	1013.1	213	775	85	2076	\$ 1,807.99
150	Service	The Lagonis at Stoney Creek	4335 Northlands	1993	8,999413	PVC	Village North	1009.8	213	775	85	2076	\$ 2,384.84
200	Service	The Lagonis at Stoney Creek	4335 Northlands	1993	49,39009	PVC	Village North	1013.1	213	775	85	2076	\$ 14,817.03
200	Service	The Lagonis at Stoney Creek	4335 Northlands	1993	21,72723	PVC	Village North	1013.1	213	775	85	2076	\$ 6,518.17
150	Main	The Sunpath at Stoney Creek	4325 Northlands	1993	8,341308	PVC	Village North	984.5	213	775	85	2076	\$ 2,210.45
200	Main	The Sunpath at Stoney Creek	4325 Northlands	1993	41,63196	PVC	Village North	984.5	213	775	85	2076	\$ 12,489.59
250	Service	4308 Main Street	W4058-1(V)	1993	14,7368	PVC	Village North	964.7	213	775	85	2076	\$ 5,526.29
200	Service	4315 Northlands Boulevard	W4058-1(V)	1993	5,40678	PVC	Village North	979.5	213	775	85	2076	\$ 1,622.04
100	Main	Main Street	W4058-1(V)	1993	3,84379	PVC	Village North	984.5	213	775	85	2076	\$ 960.95
150	Service	4319 Main Street	W4058-1(V)	1993	14,6172	PVC	Village North	984.5	213	775	85	2076	\$ 3,873.57
200	Service	4325 Northlands Boulevard	W4058-1(V)	1993	5,37604	PVC	Village North	984.5	213	775	85	2076	\$ 1,612.81
150	Service	Main Street	W4058-1(V)	1993	5,55709	PVC	Village North	1003.3	213	775	85	2076	\$ 1,472.63
200	Service	4335 Northlands Boulevard	W4058-1(V)	1993	8,71284	PVC	Village North	1013.1	213	775	85	2076	\$ 2,613.85
300	Main	Northlands Boulevard	W4058-1(V)	1993	52,4224	PVC	Village North	1009.8	213	775	85	2076	\$ 23,590.07
300	Main	Northlands Boulevard	W4058-1(V)	1993	18,9752	PVC	Village North	1013.1	213	775	85	2076	\$ 8,538.83
300	Main	Northlands Boulevard	W4058-1(V)	1993	12,461	PVC	Village North	1003.3	213	775	85	2076	\$ 5,607.43
300	Main	Northlands Boulevard	W4058-1(V)	1993	50,3071	PVC	Village North	1003.3	213	775	85	2076	\$ 22,638.18
300	Main	Northlands Boulevard	W4058-1(V)	1993	42,7888	PVC	Village North	984.5	213	775	85	2076	\$ 19,254.96
300	Main	Northlands Boulevard	W4058-1(V)	1993	33,1846	PVC	Village North	979.5	213	775	85	2076	\$ 14,933.07
300	Main	Northlands Boulevard	W4058-1(V)	1993	12,8294	PVC	Village North	979.5	213	775	85	2076	\$ 5,773.22
300	Main	Northlands Boulevard	W4058-1(V)	1993	22,0968	PVC	Village North	964.7	213	775	85	2076	\$ 9,943.56
300	Main	Northlands Boulevard	W4058-1(V)	1993	39,2021	PVC	Village North	964.7	213	775	85	2076	\$ 17,640.94
250	Main	Main Street	W4058-1(V)	1993	14,1886	PVC	Village North	979.5	213	775	85	2076	\$ 5,320.72
300	Main	Gateway Drive	W4073(V)	1993	83,1525	PVC	Village	950	213	775	85	2076	\$ 37,418.60
300	Main	Gateway Drive	W4073(V)	1993	7,81051	PVC	Village North	950	213	775	85	2076	\$ 3,514.73
250	Main	Village Gate Boulevard	W4073(V)	1993	273,507	PVC	Village North	950	213	775	85	2076	\$ 102,565.17
400	Main	P247 to R225	W4020(V)	1978	108,289	Ductile Iron	Whistler Mountain	244	210	Supply	85	2076	\$ 53,602.91
150	Main	Carleton Way	W3013	1985	41,993	Ductile Iron	Alta Vista	777	240	723 Alta Visita	85	2076	\$ 12,898.79
150	Main	Lakeside Road	W3012	1985	231,108	Ductile Iron	Alta Vista	777	240	723 Alta Visita	85	2076	\$ 70,988.38
150	Main	Lakeside Road	W3013	1985	131,256	Ductile Iron	Alta Vista	777	240	723 Alta Visita	85	2076	\$ 40,317.37
150	Service	Eagle Drive	W6003	1981	7,32625	Ductile Iron	Whistler Cay Heights	411.4	229	760 Whistler Cay	85	2076	\$ 1,941.45
150	Service	Eagle Drive	W6003	1981	13,1314	PVC	Whistler Cay Heights	411.4	229	760 Whistler Cay	85	2076	\$ 3,479.83
150	Main	Fairway Drive	W6004	1981	199,352	Ductile Iron	Whistler Cay Heights	396.7	229	760 Whistler Cay	85	2076	\$ 63,666.48
150	Service	Eagle Drive	W6002	1981	14,0379	Ductile Iron	Whistler Cay Heights	441	229	760 Whistler Cay	85	2076	\$ 3,720.03
200	Main	Eagle Drive	W6002	1981	47,281	Ductile Iron	Whistler Cay Heights	411.6	229	760 Whistler Cay	85	2076	\$ 16,754.87
200	Main	Eagle Drive	W6003	1981	80,6843	Ductile Iron	Whistler Cay Heights	413.5	229	760 Whistler Cay	85	2076	\$ 28,591.94
150	Main	Eagle Drive	W6003	1981	42,421	Ductile Iron	Whistler Cay Heights	411.4	229	760 Whistler Cay	85	2076	\$ 13,547.90
150	Main	Par Road	W6005	1981	232,276	Ductile Iron	Whistler Cay Heights	396.7	229	760 Whistler Cay	85	2076	\$ 74,181.50
150	Main	Par Road	W6005	1981	14,6589	Ductile Iron	Whistler Cay Heights	396.7	229	760 Whistler Cay	85	2076	\$ 4,681.57
150	Service	Village gate Boulevard	W4073(V)	1993	15,3865	PVC	Village North	930.4	213	775	85	2076	\$ 4,077.42
400	Main	R228 to/from Gondola Way	W2038-10	1982	2,75427	Ductile Iron	Gondola Village	453.7	208	763 Creekside	85	2076	\$ 1,540.40
200	Service	Bear Lodge	W4073(V)	1993	23,1066	PVC	Village North	930.4	213	775	85	2076	\$ 6,931.99
150	Main	P253 - Brio Entrance	W3016	1987	13,8263	PVC	Brio	1000.7	213	775	85	2076	\$ 4,504.50
200	Main	Pinnacle Ridge	4700 Glacier Driv	1990	24,8324	Ductile Iron	Blackcomb Benchlands South	430.3	212	770 Lower Blackcomb	85	2076	\$ 7,596.36
100	Service	Public Safety Building	4315 Blackcomb	1994	12.5	Ductile Iron	Village North	940.2	213	775	85	2077	\$ 3,125.00
75	Service	Municipal Hall	4315 Blackcomb	1994	27,9217	PVC	Village North	930.4	213	775	85	2077	\$ 6,701.21
150	Service	Municipal Hall	4315 Blackcomb	1994	28,5058	PVC	Village North	930.4	213	775	85	2077	\$ 7,554.03
250	Main	Alpha Lake Road/R13 connector	W1001	1981	70,95063	PVC	Function Junction	363.4	205	643 FJ	85	2077	\$ 26,606.49
250	Main	Alpha Lake Road	W1001	1981	212,2205	PVC	Function Junction	363.4	205	643 FJ	85	2077	\$ 79,582.68
50	Main	Lupin Rock	2100 Eva Lake Rd	1987	77,69851	PVC	Whistler Highlands	961.7	213	775	85	2077	\$ 17,482.16
150	Main	Lorimer Road	W4035-3(B)	1994	50,7646	Ductile Iron	Village North	1027.3	213	775	85	2077	\$ 13,452.63
250	Main	Main Street	W4058-2(V)	1994	19,495	PVC	Village North	959.8	213	775	85	2077	\$ 7,310.63
250	Main	Main Street	W4058-2(V)	1994	34,1067	PVC	Village North	959.8	213	775	85	2077	\$ 12,790.01
250	Main	Main Street	W4058-2(V)	1994	3,23567	PVC	Village North	959.8	213	775	85	2077	\$ 1,213.38
250	Main	Main Street	W4058-2(V)	1994	23,9216	PVC	Village North	959.8	213	775	85	2077	\$ 8,970.60
250	Main	Main Street	W4058-2(V)	1994	37,252	PVC	Village North	959.8	213	775	85	2077	\$ 13,969.50
250	Main	Main Street	W4058-2(V)	1994	14,1911	PVC	Village North	979.5	213	775	85	2077	\$ 5,321.68

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
250	Main	Main Street	W4058-2(V)	1994	23.0609	PVC	Village North	979.5	213	775	85	2077	\$ 8,647.82
100	Service	Main Street	W4058-2(V)	1994	7.65839	PVC	Village North	969.7	213	775	85	2077	\$ 1,914.60
200	Service	4314 Main Street	W4058-2(V)	1994	12.3522	PVC	Village North	969.7	213	775	85	2077	\$ 3,705.67
100	Main	Main Street	W4058-2(V)	1994	1.80958	PVC	Village North	979.5	213	775	85	2077	\$ 452.40
100	Main	Main Street	W4058-2(V)	1994	2.79541	PVC	Village North	979.5	213	775	85	2077	\$ 698.85
100	Main	Main Street	W4058-2(V)	1994	7.34839	PVC	Village North	979.5	213	775	85	2077	\$ 1,837.10
150	Service	4338 Main Street	W4058-2(V)	1994	13.5329	PVC	Village North	979.5	213	775	85	2077	\$ 3,586.23
150	Service	4338 Main Street	W4058-2(V)	1994	13.8047	PVC	Village North	979.6	213	775	85	2077	\$ 3,658.25
100	Main	Main Street	W4058-2(V)	1994	2.68005	PVC	Village North	989.5	213	775	85	2077	\$ 670.01
150	Service	4359 Main Street	W4058-2(V)	1994	10.4431	PVC	Village North	989.5	213	775	85	2077	\$ 2,767.43
150	Service	4368 Main Street	W4058-2(V)	1994	14.3806	PVC	Village North	999.4	213	775	85	2077	\$ 3,810.85
150	Service	4369 Main Street	W4058-2(V)	1994	5.4647	PVC	Village North	999.4	213	775	85	2077	\$ 1,448.14
250	Main	Main Street	W4058-2(V)	1994	69.898	PVC	Village North	999.4	213	775	85	2077	\$ 26,211.75
250	Main	Main Street	W4058-2(V)	1994	57.7653	PVC	Village North	989.5	213	775	85	2077	\$ 21,661.99
250	Main	Main Street	W4058-2(V)	1994	32.2906	PVC	Village North	979.6	213	775	85	2077	\$ 12,108.98
250	Main	Main Street	W4058-2(V)	1994	37.1577	PVC	Village North	979.6	213	775	85	2077	\$ 13,934.12
250	Main	Main Street	W4058-2(V)	1994	27.0998	PVC	Village North	979.5	213	775	85	2077	\$ 10,162.44
250	Main	Main Street	W4058-2(V)	1994	2.90736	PVC	Village North	979.5	213	775	85	2077	\$ 1,090.26
250	Main	Main Street	W4058-2(V)	1994	22.0623	PVC	Village North	969.7	213	775	85	2077	\$ 8,273.35
250	Main	Main Street	W4058-2(V)	1994	11.3448	PVC	Village North	969.7	213	775	85	2077	\$ 4,254.31
50	Service	Main Street	W4057(V)	1994	66.2275	Polyethylene	Village North	959.9	213	775	85	2077	\$ 2,000.00
100	Service	Main Street	W4057(V)	1994	11.9623	Ductile Iron	Village North	959.9	213	775	85	2077	\$ 2,990.59
250	Main	Main Street	W4057(V)	1994	38.093	Ductile Iron	Village North	950.1	213	775	85	2077	\$ 14,284.87
250	Main	Main Street	W4057(V)	1994	36.7942	Ductile Iron	Village North	950.1	213	775	85	2077	\$ 13,797.84
250	Main	Main Street	W4057(V)	1994	48.7352	Ductile Iron	Village North	959.9	213	775	85	2077	\$ 18,275.71
250	Main	Main Street	W4057(V)	1994	3.02889	Ductile Iron	Village North	959.9	213	775	85	2077	\$ 1,136.21
250	Main	Main Street	W4057(V)	1994	45.4418	Ductile Iron	Village North	959.9	213	775	85	2077	\$ 17,040.68
100	Service	Village Gate House	W4071(V)-1	1994	8.45463	PVC	Village	949.9	213	775	85	2077	\$ 2,113.66
250	Main	Northern Lights	4150 Tantalus Dr	1990	33.85	Ductile Iron	Village	381.6	213	775	85	2077	\$ 12,693.75
250	Main	Northern Lights	4150 Tantalus Dr	1990	7.50854	Ductile Iron	Village	381.6	213	775	85	2077	\$ 2,815.70
200	Main	Northern Lights	4150 Tantalus Dr	1990	31.74573	Ductile Iron	Village	372	213	775	85	2077	\$ 9,523.72
250	Main	Hillcrest Drive	W3027	1989	225.695	PVC	Alta Vista	1182	213	775	85	2077	\$ 94,152.15
150	Main	Archibald Way	W3014	1985	224.197	Ductile Iron	Alta Vista	725.1	240	723 Alta Vista	85	2077	\$ 110,342.02
150	Main	Carleton Way	W3014	1985	64.6798	Ductile Iron	Alta Vista	725.1	240	723 Alta Vista	85	2077	\$ 19,867.41
150	Main	Saint Moritz Crescent	3102-3188 Saint	1987	287.442	PVC	Blueberry Hill	923.2	213	775	85	2077	\$ 76,172.12
150	Service	Saint Moritz Crescent	W3051	1987	8.00052	PVC	Blueberry Hill	923.2	213	775	85	2077	\$ 2,120.14
250	Main	Blueberry Drive	W3051	1987	147.64	PVC	Blueberry Hill	923.2	213	775	85	2077	\$ 59,724.37
150	Service	Lorimer Road	W6046	1983	15.5639	PVC	Whistler Cay Estates	505.1	241	675 Tapley Farm	85	2077	\$ 4,124.44
600	Main	Lorimer Road	W6036	1990	22.605	Ductile Iron	Whistler Cay Estates	1287.5	213	775	85	2077	\$ 39,682.70
250	Main	Spruce Grove Way	Spruce Grove Fo	1994	204.175	PVC	Spruce Grove	1009.2	218	735B Nestors	85	2077	\$ 80,895.93
300	Main	Muirfield Crescent to Mons Road	Nicklaus North F	1995	50.8296	PVC	Nicklaus North Estates	1077.7	218	735B Nestors	85	2077	\$ 26,858.81
300	Main	Muirfield Crescent to Mons Road	Nicklaus North F	1995	24.9091	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2077	\$ 11,737.39
200	Main	Highway 99 - Cypress Drive to/from P256 (Golden Bear Place)	Nicklaus North F	1995	180.463	PVC	Nicklaus North Estates	1105	218	735B Nestors	85	2077	\$ 68,288.93
300	Main	Meadow Park Sports Centre	Nicklaus North F	1995	313.053	PVC	Alpine Meadows South	1096.3	218	735B Nestors	85	2077	\$ 162,545.44
150	Main	McKeever's Place	W8027	1987	25.6951	PVC	Alpine Meadows South	950.5	216	748 Lower Alpine Meadows	85	2077	\$ 8,587.96
200	Main	Alpine Way	W8027	1987	56.1638	PVC	Alpine Meadows South	937	216	748 Lower Alpine Meadows	85	2077	\$ 20,737.10
200	Main	Alpine Way	W8027	1987	6.10879	PVC	Alpine Meadows South	950.5	216	748 Lower Alpine Meadows	85	2077	\$ 2,255.52
200	Main	Alpine Way	W8027	1987	5.04594	PVC	Alpine Meadows South	950.5	216	748 Lower Alpine Meadows	85	2077	\$ 1,863.09
250	Main	Alpine Way	W8040-1	1994	151.777	PVC	Alpine Meadows South	1011	216	748 Lower Alpine Meadows	85	2077	\$ 67,423.09
150	Main	High School	8000 Alpine Way	1994	17.2385	PVC	Wedge Park	1023	216	748 Lower Alpine Meadows	85	2077	\$ 4,671.16
150	Main	High School	8000 Alpine Way	1994	49.509	PVC	Wedge Park	1023	216	748 Lower Alpine Meadows	85	2077	\$ 13,415.58
200	Main	Emerald Drive	W9012	1993	123.899	PVC	Emerald Estates Unserviced	801.6	206	733 Emerald Estates	85	2077	\$ 43,918.38
200	Main	Emerald Drive	W9011	1993	161.171	PVC	Emerald Estates Unserviced	728.2	206	733 Emerald Estates	85	2077	\$ 57,129.91
150	Main	Lorimer Road	W6046	1983	12.9459	PVC	Whistler Cay Estates	505.1	241	675 Tapley Farm	85	2077	\$ 3,825.31
150	Main	Lorimer Road	W6046	1983	146.975	PVC	Whistler Cay Estates	495.4	241	675 Tapley Farm	85	2077	\$ 43,428.70
50	Main	Highway 99 - Firehall #2	no as-built	1994	421.663	Polyethylene	Wedge Park	1023	216	748 Lower Alpine Meadows	85	2077	\$ 97,392.57
150	Service	Saint Andrews House	W4071(V)-1	1994	7.88654	Ductile Iron	Village	930.3	213	775	85	2077	\$ 2,089.93
150	Main	4891 Painted Cliff Road	W4026(B)	1992	160.216	Ductile Iron	Blackcomb Benchlands South	551.6	211	815 Upper Blackcomb	85	2077	\$ 43,403.20
250	Main	Blackcomb Way	W4006(B)	1988	110.145	Ductile Iron	Blackcomb Benchlands North	1009.4	212	770 Lower Blackcomb	85	2077	\$ 41,470.35
250	Main	Blackcomb Way	W4005(B)	1988	26.0446	Ductile Iron	Blackcomb Benchlands North	984	212	770 Lower Blackcomb	85	2077	\$ 9,805.99
250	Main	Blackcomb Way	W4005(B)	1988	43.4778	Ductile Iron	Blackcomb Benchlands North	984	212	770 Lower Blackcomb	85	2077	\$ 16,369.70
250	Main	Blackcomb Way	W4005(B)	1988	48.9924	Ductile Iron	Blackcomb Benchlands North	984	212	770 Lower Blackcomb	85	2077	\$ 18,445.98
300	Main	Lorimer Road	W4035-4(B)	1994	28.5876	Ductile Iron	Blackcomb Benchlands South	994.5	212	770 Lower Blackcomb	85	2077	\$ 13,033.23
300	Main	Lorimer Road	W4035-4(B)	1994	116.088	Ductile Iron	Blackcomb Benchlands South	994.5	212	770 Lower Blackcomb	85	2077	\$ 52,924.92
300	Main	Lorimer Road	W4035-3(B)	1994	93.0271	Ductile Iron	Village North	1027.3	213	775	85	2077	\$ 41,862.19
300	Main	Mons Road	Nicklaus North F	1995	182.151	PVC	Spruce Grove	1019	218	735B Nestors	85	2078	\$ 85,831.37
300	Main	Mons Road	Nicklaus North F	1995	40.9348	PVC	Spruce Grove	1019	218	735B Nestors	85	2078	\$ 19,288.85
200	Service	Hillcrest Drive	W3027-2	1989	17.5122	PVC	Alta Vista	996	213	775	85	2078	\$ 5,253.67
200	Main	Nordic Place	W2053	1988	97.2612	PVC	Whistler Highlands	933.8	213	775	85	2078	\$ 32,045.72
300	Main	Saint Anton Way	W3015	1985	249.114	Ductile Iron	Alta Vista	605.8	240	723 Alta Vista	85	2078	\$ 122,805.54
300	Main	Archibald Way	W3015	1985	112.473	Ductile Iron	Alta Vista	596	240	723 Alta Vista	85	2078	\$ 55,355.08
150	Main	Snowridge Crescent	W2046	1987	52.0339	Ductile Iron	Nordic Estates	765.3	213	775	85	2078	\$ 15,742.84
150	Main	Snowridge Crescent	W2046	1987	79.5965	Ductile Iron	Nordic Estates	765.3	213	775	85	2078	\$ 24,081.90
200	Main	Aspen Drive	W2049	1989	264.8573	PVC	Nordic Estates	1019.9	213	775	85	2078	\$ 79,457.18
150	Main	Aspen Court	W2048	1989	79	PVC	Nordic Estates	1019.9	213	775	85	2078	\$ 20,935.00
200	Service	The Lagoon at Stoney Creek	4335 Northlands	1993	28.85196	PVC	Village North	573.8	229	760 Whistler Cay	85	2078	\$ 8,655.59
150	Main	The Sunpath at Stoney Creek	4325 Northlands	1993	8.068158	PVC	Village North	559.9	229	760 Whistler Cay	85	2078	\$ 2,138.06
150	Main	The Sunpath at Stoney Creek	4325 Northlands	1993	12.75145	PVC	Village North	559.9	229	760 Whistler Cay	85	2078	\$ 3,379.13
200	Main	The Sunpath at Stoney Creek	4325 Northlands	1993	9.674407	PVC	Village North	559.9	229	760 Whistler Cay	85	2078	\$ 2,902.32
200	Service	Hillcrest Drive	W3027-2	1989	12.8163	PVC	Alta Vista	1015.6	213	775	85	2078	\$ 3,844.89
250	Service	Hillcrest Drive	W3027	1989	13.1276	PVC	Alta Vista	1044.9	213	775	85	2078	\$ 4,922.86
250	Main	Hillcrest Drive	W3027-2	1989	111.676	PVC	Alta Vista	996	213	775	85	2078	\$ 46,587.50

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
300	Main	Blueberry Drive	W3045-4	1990	194.434	Ductile Iron	Blueberry Hill	1125.2	213	775	85	2078	\$ 93,236.36
300	Main	Lorimer Road	W6035	1990	193.369	Ductile Iron	Whistler Cay Heights	1172	213	775	85	2078	\$ 97,528.92
300	Main	Lorimer Road	W6035	1990	90.1072	Ductile Iron	Tapley's Farm	1172	213	775	85	2078	\$ 45,175.13
150	Main	Myrtle Philip Community School	6195 Lorimer Ro	1990	122.479	PVC	Tapley's Farm	1188.7	213	775	85	2078	\$ 38,745.92
200	Main	Myrtle Philip Community School	6195 Lorimer Ro	1990	9.09459	PVC	Tapley's Farm	1188.7	213	775	85	2078	\$ 3,195.37
200	Main	Myrtle Philip Community School	6195 Lorimer Ro	1990	115.835	PVC	Tapley's Farm	1172	213	775	85	2078	\$ 40,698.54
300	Main	Mons Road	Nicklaus North F	1995	240.391	PVC	Spruce Grove	1026.8	218	735B Nestors	85	2078	\$ 113,274.42
300	Main	Mons Road	Nicklaus North F	1995	67	PVC	Spruce Grove	1026.8	218	735B Nestors	85	2078	\$ 31,571.04
300	Main	Nesters Road	Nicklaus North F	1995	103.167	PVC	Spruce Grove	1004.4	218	735B Nestors	85	2078	\$ 48,613.23
150	Main	Meadow Lane	W8028	1988	78.4854	Ductile Iron	Alpine Meadows North	910.2	216	748 Lower Alpine Meadows	85	2078	\$ 26,653.98
250	Main	The Aspens	4800 Spearhead	1993	35.92718	PVC	Blackcomb Benchlands South	650.6	212	770 Lower Blackcomb	85	2078	\$ 13,472.69
250	Main	The Aspens	4800 Spearhead	1993	49.57964	PVC	Blackcomb Benchlands South	650.6	212	770 Lower Blackcomb	85	2078	\$ 18,592.36
150	Main	Cedar Creek	4883 Painted Clif	1994	42.62581	PVC	Blackcomb Benchlands South	727.8	211	815 Upper Blackcomb	85	2078	\$ 11,295.84
150	Main	Arrowhead Point	4890 Painted Clif	1993	25.32934	PVC	Blackcomb Benchlands South	620.2	211	815 Upper Blackcomb	85	2078	\$ 6,712.28
100	Main	Arrowhead Point	4890 Painted Clif	1993	8.560576	PVC	Blackcomb Benchlands South	620.2	211	815 Upper Blackcomb	85	2078	\$ 2,140.14
250	Main	Blackcomb Way	W4007(B)	1988	30.0077	Ductile Iron	Blackcomb Benchlands North	857	212	770 Lower Blackcomb	85	2078	\$ 11,298.12
200	Main	Spearhead Drive	W4008(B)	1988	83.5834	Ductile Iron	Blackcomb Benchlands North	857	212	770 Lower Blackcomb	85	2078	\$ 25,200.98
200	Service	4628 Blackcomb Way	W4007(B)	1988	4.9864	Ductile Iron	Blackcomb Benchlands North	857	212	770 Lower Blackcomb	85	2078	\$ 1,495.92
150	Service	4612 Blackcomb Way	W4006(B)	1988	7.75526	Ductile Iron	Blackcomb Benchlands North	948.9	212	770 Lower Blackcomb	85	2078	\$ 2,055.14
300	Service	4628 Blackcomb Way	W4006(B)	1988	8.51608	Ductile Iron	Blackcomb Benchlands North	948.9	212	770 Lower Blackcomb	85	2078	\$ 2,554.42
250	Main	Blackcomb Way	W4006(B)	1988	58.6004	Ductile Iron	Blackcomb Benchlands North	887.6	212	770 Lower Blackcomb	85	2078	\$ 22,063.47
250	Main	Blackcomb Way	W4006(B)	1988	22.797	Ductile Iron	Blackcomb Benchlands North	887.6	212	770 Lower Blackcomb	85	2078	\$ 8,583.25
250	Main	Blackcomb Way	W4006(B)	1988	53.4251	Ductile Iron	Blackcomb Benchlands North	948.9	212	770 Lower Blackcomb	85	2078	\$ 20,114.94
250	Main	Blackcomb Way	W4006(B)	1988	1.85071	Ductile Iron	Blackcomb Benchlands North	948.9	212	770 Lower Blackcomb	85	2078	\$ 696.81
100	Main	Springs Lane	W4061V	1995	39.4468	PVC	Village	912.6	213	775	85	2078	\$ 9,861.70
150	Main	Skier's Approach	W4071(V)-2	1994	4.33261	PVC	Village	861.8	213	775	85	2078	\$ 1,148.14
150	Service	Westin Hotel	1995	1.79984	PVC	Village	912.6	213	775	85	2078	\$ 476.96	
150	Main	Sunrise	6117 Eagle Drive	1988	7.910507	PVC	Whistler Cay Heights	814.4	213	775	85	2079	\$ 2,096.28
150	Main	6800 Crabapple Drive	6800 Crabapple	1985	5.9437	PVC	Whistler Cay Estates	508.1	241	675 Tapley Farm	85	2079	\$ 1,756.26
200	Main	Crabapple Drive	6800 Crabapple	1985	94.3227	PVC	Whistler Cay Estates	508.1	241	675 Tapley Farm	85	2079	\$ 31,172.10
200	Main	Crabapple Drive	6800 Crabapple	1985	4.4683	PVC	Whistler Cay Estates	508.1	241	675 Tapley Farm	85	2079	\$ 1,476.70
150	Service	6880 Crabapple Drive	W6054-1	1985	64.85835	PVC	Whistler Cay Estates	507.1	241	675 Tapley Farm	85	2079	\$ 17,387.46
150	Main	Kathleen Place	W2040-2	1987	90	Ductile Iron	Whistler Creek Centre	634.3	222	702 Whistler Creek	85	2079	\$ 26,241.87
150	Main	Lake Placid Road	W2040-5	1987	183.43	Ductile Iron	Whistler Creek Centre	634.3	222	702 Whistler Creek	85	2079	\$ 53,483.98
200	Main	Lake Placid Road	W2040-2	1987	281.627	Ductile Iron	Whistler Creek Centre	653.9	222	702 Whistler Creek	85	2079	\$ 91,972.57
150	Service	2200 Taylor Way	W2040-2	1987	18.0009	Ductile Iron	Whistler Creek Centre	667.6	222	702 Whistler Creek	85	2079	\$ 4,770.23
200	Main	Snowridge Crescent	W2046	1987	314.427	Ductile Iron	Nordic Estates	696.8	213	775	85	2079	\$ 106,134.62
150	Main	Snowridge Circle	W2047	1987	96.4	Ductile Iron	Nordic Estates	657.7	213	775	85	2079	\$ 25,546.00
150	Main	Whistler Road	W2047	1987	8.721924	Ductile Iron	Nordic Estates	667.5	213	775	85	2079	\$ 2,311.31
200	Main	Whistler Road	W2046	1987	100.354	Ductile Iron	Nordic Estates	667.5	213	775	85	2079	\$ 33,874.41
50	Main	Quail Run Estates	W2027-2	1986	25.6493	Ductile Iron	Whistler Highlands	563.3	213	775	85	2079	\$ 5,771.09
200	Main	Aspen Drive	W2049	1989	18.3872	PVC	Nordic Estates	955.3	213	775	85	2079	\$ 6,206.60
100	Main	The Northstar at Stoney Creek	4355 Northlands	1996	3.35945	PVC	Village North	1029.9	213	775	85	2079	\$ 839.86
100	Main	The Northstar at Stoney Creek	4355 Northlands	1996	41.5631	PVC	Village North	1029.9	213	775	85	2079	\$ 10,390.77
100	Main	The Northstar at Stoney Creek	4355 Northlands	1996	10.1358	PVC	Village North	1029.9	213	775	85	2079	\$ 2,533.94
100	Main	The Northstar at Stoney Creek	4355 Northlands	1996	4.61268	PVC	Village North	1015	213	775	85	2079	\$ 1,153.17
100	Main	The Northstar at Stoney Creek	4355 Northlands	1996	5.42071	PVC	Village North	1015	213	775	85	2079	\$ 1,355.18
100	Main	The Northstar at Stoney Creek	4355 Northlands	1996	7.4121	PVC	Village North	1015	213	775	85	2079	\$ 1,853.03
200	Main	The Northstar at Stoney Creek	4355 Northlands	1996	38.8993	PVC	Village North	1015	213	775	85	2079	\$ 11,669.80
200	Main	The Northstar at Stoney Creek	4355 Northlands	1996	53.8831	PVC	Village North	1015	213	775	85	2079	\$ 16,164.92
200	Main	The Northstar at Stoney Creek	4355 Northlands	1996	31.6058	PVC	Village North	1015	213	775	85	2079	\$ 9,481.74
200	Main	The Northstar at Stoney Creek	4355 Northlands	1996	32.9318	PVC	Village North	1015	213	775	85	2079	\$ 9,879.53
150	Main	Twin Peaks Resort and Valhalla	4355 Northlands	1996	6.980019	PVC	Village North	1025.2	213	775	85	2079	\$ 1,849.70
200	Main	Twin Peaks Resort and Valhalla	4355 Northlands	1996	65.61579	PVC	Village North	1025.2	213	775	85	2079	\$ 19,684.74
200	Main	Twin Peaks Resort and Valhalla	4355 Northlands	1996	53.35063	PVC	Village North	1029.9	213	775	85	2079	\$ 16,005.19
150	Service	Ptarmigan Place	W3023	1989	6.17155	PVC	Blueberry Hill	846.2	213	775	85	2079	\$ 1,753.65
150	Service	Ptarmigan Place	W3023	1989	13.6831	PVC	Blueberry Hill	846.2	213	775	85	2079	\$ 3,626.02
150	Service	Osprey Place	W3023	1989	9.051	PVC	Blueberry Hill	908.2	213	775	85	2079	\$ 2,398.52
150	Service	Osprey Place	W3023	1989	8.45669	PVC	Blueberry Hill	908.2	213	775	85	2079	\$ 2,241.02
150	Main	Nighthawk Lane	W3023	1989	129.623	PVC	Blueberry Hill	908.2	213	775	85	2079	\$ 34,363.16
200	Main	Ptarmigan Place	W3023	1989	169.569	PVC	Blueberry Hill	846.2	213	775	85	2079	\$ 55,877.58
200	Main	Osprey Place	W3023	1989	75.6026	PVC	Blueberry Hill	918	213	775	85	2079	\$ 24,913.10
150	Main	Heron Place	W3024	1990	87.6405	PVC	Blueberry Hill	1029.2	213	775	85	2079	\$ 25,812.50
150	Main	Blueberry Drive	W3045-4	1990	32.5	PVC	Blueberry Hill	1065.9	213	775	85	2079	\$ 9,572.13
150	Main	Crabapple Drive	6800 Barnfield P	1985	95.6631	PVC	Whistler Cay Estates	508.1	241	675 Tapley Farm	85	2079	\$ 28,266.87
150	Main	6800 Crabapple Drive	6800 Crabapple	1985	143.9475	PVC	Whistler Cay Estates	508.1	241	675 Tapley Farm	85	2079	\$ 38,146.09
150	Main	Crabapple Drive	W6054-1	1985	7.32333	PVC	Whistler Cay Estates	507.1	241	675 Tapley Farm	85	2079	\$ 2,163.92
150	Main	Crabapple Drive	W6054-1 & W60	1985	3.48659	PVC	Whistler Cay Estates	507.1	241	675 Tapley Farm	85	2079	\$ 1,030.23
150	Main	Crabapple Drive	W6054-1 & W60	1985	248.073	PVC	Whistler Cay Estates	508.1	241	675 Tapley Farm	85	2079	\$ 73,301.33
150	Main	Crabapple Drive	W6054-1 & W60	1985	0.89463	PVC	Whistler Cay Estates	488.6	241	675 Tapley Farm	85	2079	\$ 264.35
150	Main	Crabapple Drive	W6054-1 & W60	1985	2.13816	PVC	Whistler Cay Estates	488.6	241	675 Tapley Farm	85	2079	\$ 631.79
50	Main	Crabapple Drive	W6054-1	1985	38.6475	PVC	Whistler Cay Estates	514.9	241	675 Tapley Farm	85	2079	\$ 9,873.78
200	Main	Sunrise	6117 Eagle Drive	1988	73.2952	PVC	Whistler Cay Heights	814.4	213	775	85	2079	\$ 21,988.57
150	Main	Sunrise	6117 Eagle Drive	1988	44.75203	PVC	Whistler Cay Heights	814.4	213	775	85	2079	\$ 11,859.29
150	Main	Fitzsimmons Road North	W8022_2	1984	14.8023	PVC	White Gold	421.8	231	716 White Gold	85	2079	\$ 5,013.98
50	Main	Meadow Park	W8036	1990	41.7474	PVC	Alpine Meadows South	1016.3	218	735B Nestors	85	2079	\$ 12,283.15
200	Main	Twin Lakes Village	1200 Alta Lake R	1989	229.9548	Ductile Iron	Twin Lakes	900.1	204	735 Whistler South	85	2079	\$ 68,986.44
200	Service	Twin Lakes Village	1200 Alta Lake R	1989	11.466	Ductile Iron	Twin Lakes	909.9	204	735 Whistler South	85	2079	\$ 3,439.80
150	Main	Cedar Springs Road	W8036	1990	40.1	PVC	Alpine Meadows South	1016.3	218	735B Nestors	85	2079	\$ 13,402.46
200	Main	Alpha Lake Park	W5011	1987	198.344	PVC	Whistler Creek Centre	634.3	222	702 Whistler Creek	85	2079	\$ 64,774.47
200	Main	Twin Lakes Village	1200 Alta Lake R	1989	236.1226	Ductile Iron	Twin Lakes	909.9	204	735 Whistler South	85	2079	\$ 70,836.78
200	Service	Twin Lakes Village	1200 Alta Lake R	1989	4.37681	Ductile Iron	Twin Lakes	890.5	204	735 Whistler South	85	2079	\$ 1,313.04

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
200	Main	Lake Placid Road	W5011	1987	106.155	PVC	Whistler Creek Centre	634.3		222	702 Whistler Creek	85	2079 \$ 34,667.66
200	Main	Twin Lakes Village	1200 Alta Lake R	1989	59.60003	Ductile Iron	Twin Lakes	890.4		204	735 Whistler South	85	2079 \$ 17,880.01
350	Main	R233	W4022-2(B)	1989	135.966	Ductile Iron	Blackcomb Benchlands North	943.3		211	815 Upper Blackcomb	85	2079 \$ 63,021.13
250	Main	Blackcomb Way	W4007(B)	1988	96.3373	Ductile Iron	Blackcomb Benchlands North	836.9		212	770 Lower Blackcomb	85	2079 \$ 36,271.69
250	Main	Blackcomb Way	W4007(B)	1988	21.1738	Ductile Iron	Blackcomb Benchlands North	806.1		212	770 Lower Blackcomb	85	2079 \$ 7,972.10
250	Main	Blackcomb Way	W4007(B)	1988	48.3469	Ductile Iron	Blackcomb Benchlands North	795.9		212	770 Lower Blackcomb	85	2079 \$ 18,202.95
250	Main	Blackcomb Way	W4007(B)	1988	65.3471	Ductile Iron	Blackcomb Benchlands North	776		212	770 Lower Blackcomb	85	2079 \$ 24,603.64
200	Service	4637 Blackcomb Way	W4007(B)	1988	13.9826	Ductile Iron	Blackcomb Benchlands North	806.1		212	770 Lower Blackcomb	85	2079 \$ 4,194.79
200	Service	4636 Blackcomb Way	W4007(B)	1988	11.9747	Ductile Iron	Blackcomb Benchlands North	806.1		212	770 Lower Blackcomb	85	2079 \$ 3,592.40
300	Main	Lorimer Road	W4036-5(B)	1996	33.49	Ductile Iron	Blackcomb Benchlands South	994.5		212	770 Lower Blackcomb	85	2079 \$ 15,268.28
150	Main	Falcon Crescent	W3022	1990	14.9453	Ductile Iron	Blueberry Hill	868.9		213	775	85	2080 \$ 4,401.81
150	Main	Snowridge Circle	W2047	1987	127.4834	Ductile Iron	Nordic Estates	599		213	775	85	2080 \$ 33,783.10
50	Service	2636 Whistler Road	W2057	1987	6.99993	PVC	Whistler Highlands	563.3		213	775	85	2080 \$ 2,000.00
50	Service	2222 Casttle Drive	W2073-1	1990	2.02906	PVC	Nordic Estates	951.7		213	775	85	2080 \$ 2,000.00
150	Main	Greyhawk	3309 Ptarmigan	1990	31.27132	PVC	Blueberry Hill	908.2		213	775	85	2080 \$ 8,286.90
150	Service	Osprey Place	3309 Ptarmigan	1990	8.62207	PVC	Blueberry Hill	908.2		213	775	85	2080 \$ 2,284.85
150	Service	Ptarmigan Place	W3023	1989	13.8827	PVC	Blueberry Hill	826.4		213	775	85	2080 \$ 3,678.92
150	Service	Ptarmigan Place	3309 Ptarmigan	1990	12.1765	PVC	Blueberry Hill	846.2		213	775	85	2080 \$ 3,226.78
150	Main	Greyhawk	3309 Ptarmigan	1990	10	PVC	Blueberry Hill	846.2		213	775	85	2080 \$ 2,650.00
150	Service	3200 Blueberry Drive	W3018	1990	8	PVC	Blueberry Hill	923.2		213	775	85	2080 \$ 2,120.00
250	Main	Blueberry Drive	W3018	1990	278.463	PVC	Blueberry Hill	923.2		213	775	85	2080 \$ 112,645.74
200	Main	Osprey Place	W3021	1990	165.542	PVC	Blueberry Hill	905.8		213	775	85	2080 \$ 54,550.57
200	Main	Osprey Place	W3020	1990	8.45669	PVC	Blueberry Hill	905.8		213	775	85	2080 \$ 2,786.71
150	Service	3502 Falcon Crescent	3502 Falcon Cres	1990	13.7359	Ductile Iron	Blueberry Hill	900		213	775	85	2080 \$ 3,640.00
300	Main	Falcon Crescent	W3022	1990	73.3061	Ductile Iron	Blueberry Hill	855.4		213	775	85	2080 \$ 35,152.24
300	Main	Falcon Crescent	W3022	1990	59.8744	PVC	Blueberry Hill	855.4		213	775	85	2080 \$ 28,711.58
300	Main	Blueberry Drive	W3020	1990	238.962	Ductile Iron	Blueberry Hill	900		213	775	85	2080 \$ 114,588.66
150	Main	Blueberry Drive	W3020	1990	11.5004	PVC	Blueberry Hill	900		213	775	85	2080 \$ 3,387.17
200	Main	Falcon Crescent	W3022	1990	56.1598	PVC	Blueberry Hill	855.4		213	775	85	2080 \$ 18,506.18
200	Main	Falcon Crescent	W3045-2	1990	192.357	PVC	Blueberry Hill	899		213	775	85	2080 \$ 63,386.68
150	Service	3554 Falcon Crescent	W3045-2	1990	12.1081	PVC	Blueberry Hill	899		213	775	85	2080 \$ 3,208.66
300	Main	Falcon Crescent	W3045-2	1990	143.738	PVC	Blueberry Hill	850		213	775	85	2080 \$ 68,926.48
300	Main	ROW between Falcon Crescent & Blueberry Drive	W3045-3	1990	55.6728	Ductile Iron	Blueberry Hill	924.8		213	775	85	2080 \$ 26,696.62
250	Main	Nesters Road	W6034	1990	48.3323	Ductile Iron	Whistler Cay Heights	952.1		213	775	85	2080 \$ 20,752.32
150	Service	3552 Falcon Crescent	W3045-2	1990	15.5	PVC	Blueberry Hill	899		213	775	85	2080 \$ 4,107.50
250	Main	Nesters Road	W6034	1990	5.95063	Ductile Iron	Nesters	941.4		213	775	85	2080 \$ 2,437.96
250	Main	Nesters Road	W6034	1990	7.60017	Ductile Iron	Nesters	952.1		213	775	85	2080 \$ 3,113.77
250	Main	Nesters Road	W6034	1990	13.2539	PVC	Whistler Cay Heights	952.1		213	775	85	2080 \$ 5,690.78
250	Main	Nesters Road	W6034	1990	25.8984	PVC	Whistler Cay Heights	952.1		213	775	85	2080 \$ 11,119.96
400	Main	R228 to/from Gondola Way	W2038-10	1982	189.315	Ductile Iron	Gondola Village	228.9		208	763 Creekside	85	2080 \$ 105,879.66
150	Main	Lorimer Road - Whistler Cay Estates	W6027	1986	77.51694	PVC	Whistler Cay Estates	495.3		241	675 Tapley Farm	85	2080 \$ 20,541.99
100	Main	Lorimer Road - Whistler Cay Estates	W6027	1986	49.50356	PVC	Whistler Cay Estates	505.1		241	675 Tapley Farm	85	2080 \$ 12,375.89
150	Main	Lake Placid Road	W5011	1987	12	PVC	Whistler Creek Centre	614.8		222	702 Whistler Creek	85	2080 \$ 3,498.92
300	Main	Lorimer Road	W6034	1990	46.6109	Ductile Iron	Whistler Cay Heights	941.4		213	775	85	2080 \$ 23,509.03
300	Main	Lorimer Road	W6034	1990	101.27	Ductile Iron	Whistler Cay Heights	952.1		213	775	85	2080 \$ 51,077.37
300	Main	Lorimer Road	W6033	1990	52.2805	Ductile Iron	Whistler Cay Heights	941.4		213	775	85	2080 \$ 26,368.62
250	Main	Blackcomb Way	W4014(B)	1989	22.6175	PVC	Blackcomb Benchlands North	755.3		212	770 Lower Blackcomb	85	2080 \$ 8,515.66
250	Main	Blackcomb Way	W4014(B)	1989	10.3583	Ductile Iron	Blackcomb Benchlands North	744.8		212	770 Lower Blackcomb	85	2080 \$ 3,899.95
150	Service	4645 Blackcomb Way	W4014(B)	1989	15.5609	Ductile Iron	Blackcomb Benchlands North	755.3		212	770 Lower Blackcomb	85	2080 \$ 4,123.64
250	Main	Base II	W4034(B)	1994	75.7522	PVC	Blackcomb Benchlands South	498.5		211	815 Upper Blackcomb	85	2080 \$ 28,854.40
300	Main	P247	W4036(B)-4	1997	24.2844	Ductile Iron	Village North	881.4		213	775	85	2080 \$ 10,927.99
300	Main	P247	W4036(B)-4	1997	19.6312	Ductile Iron	Village North	881.4		213	775	85	2080 \$ 8,834.02
50	Service	Chateau Whistler Golf Club	4612 Blackcomb	1991	63.01879	Ductile Iron	Blackcomb Benchlands North	948.9		212	770 Lower Blackcomb	85	2081 \$ 14,179.23
200	Main	Lynham Road	W1010	1995	160.7796	PVC	Function Junction	412.3		205	643 FJ	85	2081 \$ 48,233.89
200	Main	Alta Lake Road/Clifftop Lane connector	W2080	1998	327.677	PVC	Twin Lakes	965.6		204	735 Whistler South	85	2081 \$ 98,915.69
150	Service	1201 Alta Lake Road	1201 Alta Lake R	1991	24.2146	Ductile Iron	Twin Lakes	929.5		204	735 Whistler South	85	2081 \$ 6,416.86
150	Service	1201 Alta Lake Road	1201 Alta Lake R	1991	62.98642	Ductile Iron	Twin Lakes	929.5		204	735 Whistler South	85	2081 \$ 16,691.40
150	Main	Boulder Ridge	W2039-1	1988	18.5012	Ductile Iron	Whistler Creek Centre	596.7		222	702 Whistler Creek	85	2081 \$ 5,394.53
150	Main	Los Lenas Place	W2068-2	1989	113.8054	Ductile Iron	Gondola Village	703.9		208	763 Creekside	85	2081 \$ 30,158.42
400	Main	Gondola Way	W2068-1	1989	153.893	Ductile Iron	Gondola Village	642.2		208	763 Creekside	85	2081 \$ 86,068.91
300	Main	Gondola Way	W2068-1	1989	11.2105	Ductile Iron	Gondola Village	679.2		208	763 Creekside	85	2081 \$ 5,765.32
300	Main	Gondola Way	W2068-1	1989	10	Ductile Iron	Gondola Village	679.2		208	763 Creekside	85	2081 \$ 5,142.78
50	Main	2640 Whistler Road	2640 Whistler Rd	1988	71.63435	Ductile Iron	Whistler Highlands	537.5		213	775	85	2081 \$ 16,117.73
150	Main	Castle Estates	W2073-1	1990	53.3202	PVC	Whistler Highlands	792.4		213	775	85	2081 \$ 14,129.85
50	Main	Castle Estates	W2073-1	1990	94.65848	PVC	Whistler Highlands	802.1		213	775	85	2081 \$ 21,298.16
50	Main	Castle Estates	W2073-1	1990	21	PVC	Whistler Highlands	802.1		213	775	85	2081 \$ 4,725.00
150	Main	Castle Estates	W2073-1	1990	87.33169	PVC	Whistler Highlands	802.1		213	775	85	2081 \$ 23,142.90
150	Service	2222 Casttle Drive	W2073-1	1990	26.892	PVC	Whistler Highlands	792.4		213	775	85	2081 \$ 7,126.37
150	Main	Harmony Court	W2045	1989	32.72181	PVC	Whistler Highlands	719.4		213	775	85	2081 \$ 8,671.28
150	Service	Harmony Court	W2045	1989	7.00028	PVC	Whistler Highlands	719.4		213	775	85	2081 \$ 1,855.07
150	Main	Glacier's Reach	4388 Northlands	1996	23.17587	PVC	Village North	569.8		213	775	85	2081 \$ 6,141.61
200	Service	4388 Northlands Boulevard	W4062(V)	1996	15.9755	PVC	Village North	591.3		213	775	85	2081 \$ 4,792.65
200	Main	Glacier's Reach	4388 Northlands	1996	74.13473	PVC	Village North	591.3		213	775	85	2081 \$ 22,240.42
150	Main	Glacier's Reach	4388 Northlands	1996	81.52139	PVC	Village North	569.8		213	775	85	2081 \$ 21,603.17
150	Main	4385 Northlands Boulevard	W4062(V)	1996	7.499224	PVC	Village North	591.3		213	775	85	2081 \$ 1,987.29
150	Service	4385 Northlands Boulevard	W4062(V)	1996	5.34468	PVC	Village North	591.3		213	775	85	2081 \$ 1,416.34
150	Main	4385 Northlands Boulevard	W4062(V)	1996	11.8139	PVC	Village North	591.3		213	775	85	2081 \$ 3,130.68
150	Main	4385 Northlands Boulevard	W4062(V)	1996	27.69513	PVC	Village North	591.3		213	775	85	2081 \$ 7,339.21
150	Main	The Lynx	3201 Blueberry Dr	1990	23.75	PVC	Blueberry Hill	826.4		213	775	85	2081 \$ 6,293.75
150	Service	3200 Blueberry Drive	W3018	1990	8	PVC	Blueberry Hill	828.1		213	775	85	2081 \$ 2,120.00
150	Service	Blueberry Drive	W3018	1990	8.00054	PVC	Blueberry Hill	838.1		213	775	85	2081 \$ 2,120.14
200	Service	Blueberry Drive	W3018	1990	8.00004	PVC	Blueberry Hill	733.2		213	775	85	2081 \$ 2,400.01

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
300	Main	Osprey Place	W3020	1990	86.6944	PVC	Blueberry Hill	778.7	213	775	85	2081	\$ 41,572.32
150	Service	Blueberry Drive	W3019	1990	7.96755	PVC	Blueberry Hill	763.8	213	775	85	2081	\$ 2,111.40
300	Main	Blueberry Drive	W3019	1990	171.423	PVC	Blueberry Hill	763.8	213	775	85	2081	\$ 82,201.93
250	Main	Blueberry Drive	W3019	1990	145.109	PVC	Blueberry Hill	758.9	213	775	85	2081	\$ 58,700.38
150	Main	Public Works Yard	Works Yard Fold	1998	27.7574	PVC	Spruce Grove	1004.4	218	735B Nestors	85	2081	\$ 7,944.42
300	Main	Meadow Park	W8047-1	1992	76.2889	PVC	Alpine Meadows South	1042.5	216	748 Lower Alpine Meadows	85	2081	\$ 39,611.16
200	Main	Meadow Park	W8047-1	1992	68.245	PVC	Alpine Meadows South	1099.9	210	Supply	85	2081	\$ 25,197.81
200	Main	Meadow Park	W8047-1	1992	105.213	PVC	Alpine Meadows South	1099.9	210	Supply	85	2081	\$ 38,847.17
300	Main	Meadow Park	W8047-2	1992	212.356	PVC	Alpine Meadows South	1056.8	218	735B Nestors	85	2081	\$ 110,260.88
300	Main	Meadow Park	W8047-2	1992	107.706	PVC	Alpine Meadows South	1016.3	218	735B Nestors	85	2081	\$ 55,923.63
150	Service	The Lynx	3201 Blueberry C	1990	14.9756	PVC	Blueberry Hill	828.1	213	775	85	2081	\$ 3,968.53
150	Main	The Lynx	3201 Blueberry C	1990	32.87761	PVC	Blueberry Hill	828.1	213	775	85	2081	\$ 8,712.57
300	Main	Highway 99 @ Spring Creek	W1015	2000	27.7264	Ductile Iron	Spring Creek	1270	210	Supply	85	2081	\$ 12,845.95
63	Main	Alpine Greens	4628 Blackcomb	1991	74.00141	Ductile Iron	Blackcomb Benclands North	887.6	212	770 Lower Blackcomb	85	2081	\$ 16,650.32
200	Main	Alpine Greens	4628 Blackcomb	1991	30.39817	Ductile Iron	Blackcomb Benclands North	887.6	212	770 Lower Blackcomb	85	2081	\$ 9,119.45
200	Service	Alpine Greens	4628 Blackcomb	1991	17.6034	Ductile Iron	Blackcomb Benclands North	948.9	212	770 Lower Blackcomb	85	2081	\$ 5,281.02
150	Main	Skier's Plaza (to Hydrant 4033)	W4061V	1997	85.8863	PVC	Village	851.7	213	775	85	2081	\$ 22,759.87
150	Main	Springs Lane	W4061V	1998	92.769	PVC	Village	944.9	213	775	85	2081	\$ 24,583.77
100	Main	Mountain Star	4894 Painted Cl	1997	7.500481	PVC	Blackcomb Benclands South	600.6	211	815 Upper Blackcomb	85	2082	\$ 1,875.12
300	Main	CN Rail ROW - Westside of Alta Lake	Stonebridge - 24	2001	140.76	PVC	Stonebridge	1200.4	210	Supply	85	2082	\$ 63,614.06
300	Main	CN Rail ROW - Westside of Alta Lake	Stonebridge - 24	2001	37.7943	PVC	Stonebridge	1298.4	210	Supply	85	2082	\$ 17,053.57
250	Main	Stonebridge Drive	Stonebridge - 32	2001	22.9853	PVC	Stonebridge	2272.8	242	872 Upper Stonebridge	85	2082	\$ 8,651.29
250	Main	Stonebridge Drive	Stonebridge - 32	2001	117.872	PVC	Stonebridge	2272.8	242	872 Upper Stonebridge	85	2082	\$ 44,345.82
300	Main	CN Rail ROW - Westside of Alta Lake	Stonebridge - 28	2001	79.5878	PVC	Stonebridge	1307.3	210	Supply	85	2082	\$ 35,911.69
300	Main	CN Rail ROW - Westside of Alta Lake	Stonebridge - 28	2001	12.6362	PVC	Stonebridge	1307.3	210	Supply	85	2082	\$ 5,701.73
300	Main	CN Rail ROW - Westside of Alta Lake	Stonebridge - 23	2001	23.8152	PVC	Stonebridge	1307.3	210	Supply	85	2082	\$ 10,745.91
300	Main	CN Rail ROW - Westside of Alta Lake	Stonebridge - 23	2001	52.7598	PVC	Stonebridge	1307.3	210	Supply	85	2082	\$ 23,806.30
300	Main	CN Rail ROW - Westside of Alta Lake	Stonebridge - 23	2001	125.975	PVC	Stonebridge	1307.3	210	Supply	85	2082	\$ 56,845.65
200	Main	Old Gravel Road	W5012	1987	35.2126	PVC	Old Gravel Road	438.5	222	702 Whistler Creek	85	2082	\$ 11,095.54
150	Main	Boulder Ridge	W2039-1	1988	103.3343	Ductile Iron	Whistler Creek Centre	493.2	222	702 Whistler Creek	85	2082	\$ 27,383.58
150	Main	Snow Valley Place	W2068-2	1989	58	Ductile Iron	Gondola Village	551.4	208	763 Creekside	85	2082	\$ 15,370.00
400	Main	Snow Valley Place	W2068-2	1989	80.4419	Ductile Iron	Gondola Village	610.1	208	763 Creekside	85	2082	\$ 44,989.55
150	Main	P264	W2070-31	1993	3.45644	Ductile Iron	Whistler Highlands	1044.9	210	Supply	85	2082	\$ 1,017.86
200	Main	P264	W2070-31	1993	22.1786	PVC	Whistler Highlands	1044.9	210	Supply	85	2082	\$ 7,307.42
200	Main	Whistler Road	W2070-31	1993	37.4392	Ductile Iron	Whistler Highlands	1044.5	215	819 Lower Taluswood	85	2082	\$ 12,335.50
150	Main	Whistler Road	W2070-31	1993	34.7	PVC	Whistler Highlands	1044.5	215	819 Lower Taluswood	85	2082	\$ 10,218.49
150	Service	Castle Ridge	2104 Nordic Driv	1991	7.00013	PVC	Whistler Highlands	840.9	213	775	85	2082	\$ 1,855.04
150	Main	Castle Ridge	2104 Nordic Driv	1991	68.21451	PVC	Whistler Highlands	840.9	213	775	85	2082	\$ 18,076.85
100	Main	Castle Ridge	2104 Nordic Driv	1991	25.54575	PVC	Whistler Highlands	830.3	213	775	85	2082	\$ 6,386.44
200	Main	Northern Lights	Sunridge Plateau	1995	11.211	PVC	Village	388.8	213	775	85	2082	\$ 3,363.29
250	Main	Northern Lights	Sunridge Plateau	1995	82.53904	PVC	Village	388.8	213	775	85	2082	\$ 30,952.14
250	Main	Panorama Ridge	W3029-1	1992	236.0261	PVC	Brio	930	213	775	85	2082	\$ 88,509.77
250	Main	Panorama Ridge	W3029-2	1992	84.31914	PVC	Brio	939.8	213	775	85	2082	\$ 31,619.68
150	Main	Piccolo Drive	W6045-4	1991	11.6602	PVC	Whistler Cay Heights	743.9	229	760 Whistler Cay	85	2082	\$ 3,723.90
150	Main	Piccolo Drive	W6045-4	1991	201.919	PVC	Whistler Cay Heights	743.9	229	760 Whistler Cay	85	2082	\$ 64,486.35
200	Main	Muirfield Crescent	Nicklaus North F	1993	261.0538	PVC	Nicklaus North Estates	1077.6	218	735B Nestors	85	2082	\$ 78,316.14
250	Main	R222	W8000-1	1985	54.4623	Ductile Iron	Wildlife Reserve	303.1	216	748 Lower Alpine Meadows	85	2082	\$ 20,423.37
150	Main	Mountain View Drive	W8031	1991	112.231	PVC	Alpine Meadows North	807.9	216	748 Lower Alpine Meadows	85	2082	\$ 38,114.07
300	Main	Spring Creek Drive	Spring Creek Ma	2001	175.27	Ductile Iron	Spring Creek	1270	210	Supply	85	2082	\$ 81,204.53
200	Main	Nancy Greene Drive	W7000	1998	10.8599	PVC	White Gold	843.2	218	735B Nestors	85	2082	\$ 4,058.67
200	Main	Gleneagles	4636 Blackcomb	1991	38.2178	Ductile Iron	Blackcomb Benclands North	806.1	212	770 Lower Blackcomb	85	2082	\$ 11,465.34
200	Main	Gleneagles	4636 Blackcomb	1991	32.5664	Ductile Iron	Blackcomb Benclands North	806.1	212	770 Lower Blackcomb	85	2082	\$ 9,769.92
200	Main	Gleneagles	4636 Blackcomb	1991	8.85037	Ductile Iron	Blackcomb Benclands North	806.1	212	770 Lower Blackcomb	85	2082	\$ 2,655.11
150	Service	Mountain Star	4894 Painted Cl	1997	15.8823	PVC	Blackcomb Benclands South	590.8	211	815 Upper Blackcomb	85	2082	\$ 4,208.81
150	Main	Mountain Star	4894 Painted Cl	1997	91.24265	PVC	Blackcomb Benclands South	590.8	211	815 Upper Blackcomb	85	2082	\$ 24,179.30
100	Main	Mountain Star	4894 Painted Cl	1997	24.7588	PVC	Blackcomb Benclands South	600.6	211	815 Upper Blackcomb	85	2082	\$ 6,189.70
100	Main	R232 to R233	W4022-4(B)	1989	8.45669	Ductile Iron	Lost Lake Park	585.1	212	770 Lower Blackcomb	85	2082	\$ 2,114.17
300	Main	R232 to R233	W4022-4(B)	1989	260.584	Ductile Iron	Blackcomb Benclands North	564.3	212	770 Lower Blackcomb	85	2082	\$ 117,655.30
300	Main	R232 to R233	W4022-4(B)	1989	80.9372	Ductile Iron	Lost Lake Park	585.1	212	770 Lower Blackcomb	85	2082	\$ 28,421.72
300	Main	R232 to R233	W4022-4(B)	1989	163.93	Ductile Iron	Lost Lake Park	585.1	212	770 Lower Blackcomb	85	2082	\$ 73,768.49
300	Main	R232 to R233	W4022-5(B)	1989	218.678	Ductile Iron	Lost Lake Park	585.1	212	770 Lower Blackcomb	85	2082	\$ 98,405.32
400	Main	R232	W4022-2(B)	1989	82.9539	Ductile Iron	Lost Lake Park	585.1	212	770 Lower Blackcomb	85	2082	\$ 41,062.20
300	Main	R232	W4022-2(B)	1989	25.7353	Ductile Iron	Lost Lake Park	585.1	212	770 Lower Blackcomb	85	2082	\$ 11,580.89
200	Service	Gleneagles	4636 Blackcomb	1991	10.36126	Ductile Iron	Blackcomb Benclands North	806.1	212	770 Lower Blackcomb	85	2082	\$ 3,108.38
100	Main	Glacier Ridge Employee Housing	4815 Glacier Lan	1997	50.5	Ductile Iron	Blackcomb Benclands South	551.3	211	815 Upper Blackcomb	85	2082	\$ 12,625.10
250	Main	Glacier Lane	W4038-2(B)	1997	99.4883	Ductile Iron	Blackcomb Benclands South	551.3	211	815 Upper Blackcomb	85	2082	\$ 37,895.61
250	Main	Glacier Lane	W4038-2(B)	1997	108.781	Ductile Iron	Blackcomb Benclands South	610	211	815 Upper Blackcomb	85	2082	\$ 41,435.27
250	Main	Glacier Lane	W4038-1(B)	1997	91.8956	Ductile Iron	Blackcomb Benclands South	669.8	211	815 Upper Blackcomb	85	2082	\$ 35,003.50
200	Main	Lorimer Road	W6034	1990	16.5168	Ductile Iron	Whistler Cay Heights	606.9	229	760 Whistler Cay	85	2083	\$ 5,853.01
250	Main	Spruce Grove Way	Spruce Grove Fo	1994	11.5757	PVC	Spruce Grove	939.3	218	735B Nestors	85	2083	\$ 4,586.42
300	Main	CN Rail ROW - Westside of Alta Lake	Stonebridge - 24	2001	25.5382	PVC	Stonebridge	1170.5	237	715 Westside	85	2083	\$ 11,522.46
300	Main	CN Rail ROW - Westside of Alta Lake	Stonebridge - 24	2001	75.8961	PVC	Stonebridge	1199.9	237	715 Westside	85	2083	\$ 34,155.67
300	Main	CN Rail ROW - Westside of Alta Lake	Stonebridge - 24	2001	120.356	PVC	Stonebridge	1199.9	237	715 Westside	85	2083	\$ 54,307.11
200	Service	5468 Stonebridge Place	Stonebridge - 38	2001	52.94792	PVC	Stonebridge	2152.9	242	872 Upper Stonebridge	85	2083	\$ 15,884.38
200	Service	5468 Stonebridge Place	Stonebridge - 38	2001	7.00889	PVC	Stonebridge	2152.9	242	872 Upper Stonebridge	85	2083	\$ 2,102.67
150	Service	5472 Stonebridge Place	Design only	2001	7.467492	PVC	Stonebridge	2152.9	242	872 Upper Stonebridge	85	2083	\$ 1,978.89
150	Service	5464 Stonebridge Place	Stonebridge - 38	2001	5.85471	PVC	Stonebridge	2152.9	242	872 Upper Stonebridge	85	2083	\$ 1,551.50
150	Service	5473 Stonebridge Place	Design only	2001	14.0858	PVC	Stonebridge	2152.9	242	872 Upper Stonebridge	85	2083	\$ 3,732.74
150	Service	5464 Stonebridge Place	Stonebridge - 38	2001	14.0777	PVC	Stonebridge	2152.9	242	872 Upper Stonebridge	85	2083	\$ 3,730.60
150	Service	5476 Stonebridge Place	Stonebridge - 39	2001	2.0297	PVC	Stonebridge	2152.9	242	872 Upper Stonebridge	85	2083	\$ 537.87
150	Service	5476 Stonebridge Place	Design only	2001	66.15288	PVC	Stonebridge	2152.9	242	872 Upper Stonebridge	85	2083	\$ 17,530.51
250	Main	Stonebridge Place	Stonebridge - 39	2001	15.508	PVC	Stonebridge	2152.9	242	872 Upper Stonebridge	85	2083	\$ 5,834.43

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
250	Main	Stonebridge Place	Stonebridge - 38	2001	100.656	PVC	Stonebridge	2152.9		242 872 Upper Stonebridge	85	2083	\$ 37,868.74
250	Main	Stonebridge Place	Stonebridge - 38	2001	2.10388	PVC	Stonebridge	2152.9		242 872 Upper Stonebridge	85	2083	\$ 791.52
250	Main	Stonebridge Place	Stonebridge - 38	2001	23.3151	PVC	Stonebridge	2152.9		242 872 Upper Stonebridge	85	2083	\$ 8,771.64
250	Main	Stonebridge Place	Stonebridge - 38	2001	86.8772	PVC	Stonebridge	2152.9		242 872 Upper Stonebridge	85	2083	\$ 32,685.01
100	Service	5450 Stonebridge Drive	Stonebridge Driv	2001	12.18317	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 3,045.79
200	Service	5453 Stonebridge Drive	Stonebridge - 34	2001	7.91408	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 2,374.22
100	Service	5454 Stonebridge Drive	Stonebridge Driv	2001	4.883735	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 1,220.93
150	Service	5454 Stonebridge Drive	Stonebridge Driv	2001	141.0881	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 37,388.36
150	Service	5454 Stonebridge Drive	Stonebridge Driv	2001	10.2376	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 2,712.97
150	Service	5458 Stonebridge Drive	Stonebridge Driv	2001	42.3048	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 11,210.77
200	Service	5458 Stonebridge Drive	Stonebridge Driv	2001	43.0994	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 12,929.81
200	Service	5458 Stonebridge Drive	Stonebridge - 35	2001	13.5356	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 4,060.69
150	Service	5462 Stonebridge Drive	Stonebridge Driv	2001	58.8954	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 15,607.29
200	Service	5462 Stonebridge Drive	Stonebridge - 35	2001	6.66957	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 2,000.87
200	Service	5453 Stonebridge Drive	Stonebridge - 35	2001	4.92157	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 1,476.47
150	Service	5453 Stonebridge Drive	Stonebridge Driv	2001	11.86325	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 3,143.76
100	Service	5466 Stonebridge Drive	Stonebridge Driv	2001	3.16501	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 791.25
150	Service	5466 Stonebridge Drive	Stonebridge Driv	2001	32.6104	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 8,641.77
200	Service	5466 Stonebridge Drive	Stonebridge - 35	2001	11.0881	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 3,326.43
200	Main	Stonebridge Drive	Stonebridge - 35	2001	24.0768	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 7,252.42
200	Main	Stonebridge Drive	Stonebridge - 35	2001	17.4868	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 5,267.39
200	Service	5453 Stonebridge Drive	Stonebridge - 35	2001	10.1073	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 3,032.18
150	Service	5453 Stonebridge Drive	Stonebridge Driv	2001	58.2592	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 15,703.69
100	Service	5453 Stonebridge Drive	Stonebridge Driv	2001	2.50442	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 626.10
200	Main	Stonebridge Drive	Stonebridge - 35	2001	9.84862	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 2,966.61
200	Main	Stonebridge Drive	Stonebridge - 35	2001	37.1356	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 11,186.02
200	Main	Stonebridge Drive	Stonebridge - 35	2001	111.989	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 33,733.51
200	Main	Stonebridge Drive	Stonebridge - 35	2001	101.107	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 30,455.47
200	Main	Stonebridge Drive	Stonebridge - 34	2001	3.04596	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 917.51
200	Main	Stonebridge Drive	Stonebridge - 34	2001	44.6514	PVC	Stonebridge	2046.9		242 872 Upper Stonebridge	85	2083	\$ 13,449.93
300	Main	CN Rail ROW - Westside of Alta Lake	Stonebridge - 23	2001	163.674	PVC	Stonebridge	1170.5		237 715 Westside	85	2083	\$ 73,853.15
300	Main	Baxter Reservoir Millars Pond connector	W2069-4	1993	84.3034	Ductile Iron	Whistler Mountain	882.4		210 Supply	85	2083	\$ 37,936.55
		Old Gravel Road	W5012	1987	95.7246	PVC	Old Gravel Road	330.9		222 702 Whistler Creek	85	2083	\$ 22,983.61
150	Main	Old Gravel Road	W5012	1987	153.286	PVC	Old Gravel Road	321.1		222 702 Whistler Creek	85	2083	\$ 42,935.57
400	Main	Gondola Way	W2068-1	1989	32.5	Ductile Iron	Gondola Village	453.7		208 763 Creekside	85	2083	\$ 18,176.53
300	Main	Gondola Way	W2068-1	1989	12.711	Ductile Iron	Gondola Village	453.7		208 763 Creekside	85	2083	\$ 6,536.97
400	Main	Gondola Way	W2068-1	1989	26.7204	Ductile Iron	Gondola Village	453.7		208 763 Creekside	85	2083	\$ 14,944.14
150	Main	Gondola Way	W2068-1	1989	169.25	Ductile Iron	Gondola Village	463.4		208 763 Creekside	85	2083	\$ 44,851.25
300	Main	Highway 99 @ Creekside	Design Drawing	2001	20.1411	Ductile Iron	Whistler Creek Base	1183.6		208 763 Creekside	85	2083	\$ 9,207.18
300	Main	Highway 99 @ Creekside	Design Drawing	2001	118.5	Ductile Iron	Whistler Creek Base	1124.9		208 763 Creekside	85	2083	\$ 54,170.40
200	Main	Powderwood	2070-33	1993	30.2889	PVC	Whistler Highlands	865		215 819 Lower Taluswood	85	2083	\$ 9,086.67
150	Main	Wolverine Crescent	W2061-2	1990	9	Ductile Iron	Whistler Highlands	587.9		213 775	85	2083	\$ 2,650.33
150	Main	Wolverine Crescent	W2061-2	1990	115.493	Ductile Iron	Whistler Highlands	587.8		213 775	85	2083	\$ 34,010.59
200	Main	Alta Vista Pointe II	3070 Hillcrest Dr	1994	37.91089	PVC	Alta Vista	1000.9		213 775	85	2083	\$ 11,373.27
200	Main	Alta Vista Pointe II	3070 Hillcrest Dr	1994	41.93041	PVC	Alta Vista	1000.9		213 775	85	2083	\$ 12,579.12
100	Main	Alta Vista Pointe II	3070 Hillcrest Dr	1994	52	PVC	Alta Vista	1010.7		213 775	85	2083	\$ 13,000.00
200	Main	Alta Vista Pointe I	3050 Hillcrest Dr	1994	256.0456	PVC	Alta Vista	1015.6		213 775	85	2083	\$ 76,813.68
150	Main	Sunrise	6117 Eagle Drive	1988	31.60597	PVC	Whistler Cay Heights	411.4		229 760 Whistler Cay	85	2083	\$ 8,375.58
100	Service	Spruce Grove Way	Spruce Grove Fo	1994	19.8893	PVC	Spruce Grove	999.3		218 735B Nestors	85	2083	\$ 4,972.34
250	Main	Spruce Grove Way	Spruce Grove Fo	1994	88.8613	PVC	Spruce Grove	999.3		218 735B Nestors	85	2083	\$ 35,207.69
250	Main	Spruce Grove Way	Spruce Grove Fo	1994	39.7697	PVC	Spruce Grove	979.7		218 735B Nestors	85	2083	\$ 15,757.12
150	Main	Spruce Grove Way	Spruce Grove Fo	1994	15.0924	PVC	Spruce Grove	1016.9		218 735B Nestors	85	2083	\$ 4,319.59
200	Service	Riverwalk Employee Housing	Spruce Grove Fo	1994	7.08892	PVC	Spruce Grove	1026.7		218 735B Nestors	85	2083	\$ 2,126.68
200	Main	Golden Bear Place	Nicklaus North F	1995	3.70209	PVC	Nicklaus North Estates	1105		218 735B Nestors	85	2083	\$ 1,400.90
200	Main	P266 - Nicklaus North PRV	Nicklaus North F	1995	18.3991	PVC	Nicklaus North Estates	1105		218 735B Nestors	85	2083	\$ 6,962.37
250	Main	Alpine Way	W8040-1	1994	110.971	PVC	Wedge Park	1011		216 748 Lower Alpine Meadows	85	2083	\$ 42,276.95
250	Main	Alpine Way	W8040-1	1994	68.6897	PVC	Wedge Park	1021.9		216 748 Lower Alpine Meadows	85	2083	\$ 26,168.91
150	Main	High School	8000 Alpine Way	1994	13.1147	PVC	Wedge Park	1023		216 748 Lower Alpine Meadows	85	2083	\$ 3,553.72
150	Main	High School	8000 Alpine Way	1994	7.62776	PVC	Wedge Park	1023		216 748 Lower Alpine Meadows	85	2083	\$ 2,066.92
200	Main	High School	8000 Alpine Way	1994	92.0033	PVC	Wedge Park	1021.9		216 748 Lower Alpine Meadows	85	2083	\$ 28,150.51
200	Main	High School	8000 Alpine Way	1994	49.4035	PVC	Wedge Park	1023		216 748 Lower Alpine Meadows	85	2083	\$ 15,116.13
100	Main	W201-1/W201-2 Connection	W9020-1	2000	49.2791	PVC	Emerald Estates Unserviced	947.9		210 Supply	85	2083	\$ 15,003.95
300	Main	Highway 99 to W212	W1012-1	2001	48.1018	Ductile Iron	Function Junction	1183.2		0	85	2083	\$ 21,645.79
100	Main	Alpine Way	W8040-1	1994	8.9681	PVC	Wedge Park	1011		216 748 Lower Alpine Meadows	85	2083	\$ 2,295.59
300	Main	Highway 99 - Montebello to Nancy Greene Drive	W7011	1999	82.2328	PVC	White Gold	843.2		218 735B Nestors	85	2083	\$ 43,067.70
300	Main	Highway 99 at Nancy Greene Drive	W7011	1999	55.2632	PVC	White Gold	833.3		218 735B Nestors	85	2083	\$ 28,942.93
150	Main	W211	W4066-2(V)	2000	4.34688	Ductile Iron	Village North	959.8		213 775	85	2083	\$ 1,151.92
300	Main	Lorimer Road	W6034	1990	73.2327	Ductile Iron	Whistler Cay Heights	606.9		229 760 Whistler Cay	85	2083	\$ 36,936.21
300	Main	Lorimer Road	W6034	1990	72.3337	Ductile Iron	Whistler Cay Heights	606.9		229 760 Whistler Cay	85	2083	\$ 36,482.80
100	Main	Alpine Way	W8040-1	1994	31.4432	PVC	Wedge Park	1011		216 748 Lower Alpine Meadows	85	2083	\$ 8,520.24
150	Main	R232 to R233	W4022-4(B)	1989	9.95669	Ductile Iron	Blackcomb Benchlands North	505.5		212 770 Lower Blackcomb	85	2083	\$ 2,504.18
100	Main	R232 to R233	W4022-4(B)	1989	171.758	Ductile Iron	Lost Lake Park	505.5		212 770 Lower Blackcomb	85	2083	\$ 77,290.99
150	Main	Intrawest Resort Club	4580 Chateau Bc	1993	19.8853	PVC	Blackcomb Benchlands North	880.1		212 770 Lower Blackcomb	85	2083	\$ 5,369.66
200	Main	Glacier Ridge Employee Housing	4815 Glacier Lan	1987	37.8	Ductile Iron	Blackcomb Benchlands South	541.5		211 815 Upper Blackcomb	85	2083	\$ 1,340.00
200	Service	4815 Glacier Lane	W4038-2(B)	1997	5.92923	Ductile Iron	Blackcomb Benchlands South	541.5		211 815 Upper Blackcomb	85	2083	\$ 1,778.77
250	Main	Glacier Lane	W4038-2(B)	1997	45.8792	Ductile Iron	Blackcomb Benchlands South	512.1		211 815 Upper Blackcomb	85	2083	\$ 17,475.63
250	Main	Glacier Lane	W4038-2(B)	1997	144.465	Ductile Iron	Blackcomb Benchlands South	521.9		211 815 Upper Blackcomb	85	2083	\$ 55,027.38
200	Main	Summit Lane	W4037(B)-1	1998	98.44273	PVC	Blackcomb Benchlands South	659		211 815 Upper Blackcomb	85	2083	\$ 29,532.82
200	Main	Summit Lane	W4037(B)-2	1998	142.5058	PVC	Blackcomb Benchlands South	659		211 815 Upper Blackcomb	85	2083	\$ 42,751.75
300	Main	Lorimer Road	W4035-4(B)	1994	133.603	Ductile Iron	Lost Lake Park	979.4		212 770 Lower Blackcomb	85	2083	\$ 60,121.45
300	Main	Lorimer Road	W4035-4(B)	1994	43.2382	Ductile Iron	Lost Lake Park	989.1		212 770 Lower Blackcomb	85	2083	\$ 19,457.20
300	Main	Lorimer Road	W4035-3(B)	1994	172.956	Ductile Iron	Lost Lake Park	989.1		212 770 Lower Blackcomb	85	2083	\$ 77,830.25

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
50	Main	Chateau Whistler Golf Course	4612 Blackcomb	1990	133.293	Polyethylene	Lost Lake Park	585.1	212	770 Lower Blackcomb	85	2083	\$ 29,990.99
100	Main	W211	W4066-2(V)	2000	13.7182	Steel	Village North	940.2	213	775	85	2083	\$ 3,429.56
100	Main	W211	W4066-2(V)	2000	98.5739	Ductile Iron	Village North	959.8	213	775	85	2083	\$ 24,643.48
200	Main	Intrawest Resort Club	4580 Chateau Bc	1993	161.0787	PVC	Blackcomb Benclands North	889.8	212	770 Lower Blackcomb	85	2083	\$ 48,323.61
200	Main	Nicklaus North Golf Course	Nicklaus North F	1995	214.1581	Polyethylene	Nicklaus North Estates	1077.6	218	735B Nestors	85	2084	\$ 64,242.47
150	Main	4644 Blackcomb Way	W4031(B)	1993	15.02446	PVC	Blackcomb Benclands North	744.8	212	770 Lower Blackcomb	85	2084	\$ 3,981.48
300	Main	Mons Court	Nicklaus North F	1995	0.69372	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2084	\$ 326.89
150	Main	R222	W8000-1	1985	14.06811	Ductile Iron	Wildlife Reserve	175.6	210	Supply	85	2084	\$ 3,728.05
150	Main	R222	W8000-1	1985	35.0189	Ductile Iron	Wildlife Reserve	175.6	210	Supply	85	2084	\$ 9,280.00
200	Main	Cheakamus Way	W2069-5	1993	7.23119	PVC	Millar's Pond	734.2	204	735 Whistler South	85	2084	\$ 2,572.56
200	Main	Lorimer Road	W6034	1990	14.5646	Ductile Iron	Whistler Cay Heights	460.1	229	760 Whistler Cay	85	2084	\$ 5,161.24
200	Main	Alpine Way	W8040-1	1994	10.2546	PVC	Alpine Meadows South	950.5	216	748 Lower Alpine Meadows	85	2084	\$ 3,786.25
300	Main	South Lake Lane	Stonebridge - 25	2001	130.24	PVC	Stonebridge	1008.9	213	775	85	2084	\$ 58,766.98
100	Service	1208 Alpha Lake Road	1208 Alpha Lake	1989	15.25067	PVC	Function Junction	407.4	205	643 FJ	85	2084	\$ 3,812.67
200	Main	Clifftop Lane	W2069-10	1993	187.776	PVC	Millar's Pond	760.2	204	735 Whistler South	85	2084	\$ 66,803.18
250	Main	Nordic Drive	W2070-33	1993	144.139	Ductile Iron	Whistler Highlands	826	215	819 Lower Taluswood	85	2084	\$ 58,301.52
200	Service	Powderwood	2070-33	1993	13.1154	PVC	Whistler Highlands	826	215	819 Lower Taluswood	85	2084	\$ 3,934.61
150	Main	Valley Trail - London Lane to/from Whistler Road	W2084	2001	90.3423	Ductile Iron	Nordic Estates	1007.4	208	763 Creekside	85	2084	\$ 27,333.01
200	Main	Blueberry Drive	W2047-3	1993	7.75595	PVC	Blueberry Hill	749.8	213	775	85	2084	\$ 2,555.80
300	Main	Crabapple Drive	W6037	1990	271.308	Ductile Iron	Whistler Cay Estates	491.7	241	675 Tapley Farm	85	2084	\$ 130,359.15
300	Main	Crabapple Drive	W6037	1990	33.253	Ductile Iron	Whistler Cay Estates	481.8	241	675 Tapley Farm	85	2084	\$ 15,977.49
300	Main	Beaver Lane	W2045-5	1990	156.294	Ductile Iron	Whistler Cay Estates	485.2	241	675 Tapley Farm	85	2084	\$ 75,056.92
150	Main	Piccolo Drive	W6045-3	1991	20.9244	PVC	Whistler Cay Heights	606.9	229	760 Whistler Cay	85	2084	\$ 6,682.57
150	Main	Piccolo Drive	W6045-3	1991	112.986	PVC	Whistler Cay Heights	606.9	229	760 Whistler Cay	85	2084	\$ 36,084.00
150	Main	Oboe Place	W6045-5	1991	173.942	PVC	Whistler Cay Heights	577.5	229	760 Whistler Cay	85	2084	\$ 55,551.33
150	Main	ROW - Piccolo Drive to Palmer Drive	W6045-6	1991	54.6029	Ductile Iron	Whistler Cay Heights	558	229	760 Whistler Cay	85	2084	\$ 17,438.41
150	Main	ROW - Piccolo Drive to Palmer Drive	W6045-6	1991	69.2426	Ductile Iron	Whistler Cay Heights	558	229	760 Whistler Cay	85	2084	\$ 22,113.85
150	Main	Crabapple Drive	W6037	1990	17.7714	PVC	Whistler Cay Estates	496	241	675 Tapley Farm	85	2084	\$ 5,251.15
150	Main	Crabapple Drive	W6037	1990	59.6995	PVC	Whistler Cay Estates	496	241	675 Tapley Farm	85	2084	\$ 17,640.21
150	Main	Crabapple Drive	W6037	1990	106.202	PVC	Whistler Cay Estates	491.7	241	675 Tapley Farm	85	2084	\$ 31,380.91
150	Main	Crabapple Drive	W6037	1990	169.576	PVC	Whistler Cay Estates	471.6	241	675 Tapley Farm	85	2084	\$ 50,107.00
150	Main	Balsam Way	W6036	1990	16.0009	PVC	Whistler Cay Estates	485.5	241	675 Tapley Farm	85	2084	\$ 4,728.01
200	Main	Balsam Way	W6036	1990	7.85657	PVC	Whistler Cay Estates	485.5	241	675 Tapley Farm	85	2084	\$ 2,356.97
300	Main	Crabapple Drive	W6036	1990	82.9262	Ductile Iron	Whistler Cay Estates	492.5	241	675 Tapley Farm	85	2084	\$ 39,844.64
200	Main	Balsam Way	W6036	1990	57.5314	PVC	Tapley's Farm	484.6	241	675 Tapley Farm	85	2084	\$ 20,213.58
300	Main	Lorimer Road	W6036	1990	14.7238	Ductile Iron	Whistler Cay Estates	492.5	241	675 Tapley Farm	85	2084	\$ 7,074.55
300	Main	Lorimer Road	W6036	1990	234.3	Ductile Iron	Tapley's Farm	492.5	241	675 Tapley Farm	85	2084	\$ 117,465.89
200	Main	Mons Road	Nicklaus North F	1995	10.8272	PVC	Spruce Grove	1064	218	735B Nestors	85	2084	\$ 3,477.80
300	Main	Mons Road	Nicklaus North F	1995	119.817	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2084	\$ 56,458.84
300	Main	Mons Road	Nicklaus North F	1995	11.302	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2084	\$ 5,325.59
300	Main	Mons Road	Nicklaus North F	1995	65.045	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2084	\$ 30,649.84
300	Main	Mons Road	Nicklaus North F	1995	18.2448	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2084	\$ 8,597.11
300	Main	Mons Road	Nicklaus North F	1995	257.59	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2084	\$ 121,379.01
300	Main	Muirfield Crescent to Mons Road	Nicklaus North F	1995	195.042	PVC	Nicklaus North Estates	1077.6	218	735B Nestors	85	2084	\$ 103,061.73
300	Main	Muirfield Crescent	Nicklaus North F	1995	182.869	PVC	Nicklaus North Estates	1077.6	218	735B Nestors	85	2084	\$ 96,629.38
250	Main	Golden Bear Place	Nicklaus North F	1995	78.3102	PVC	Nicklaus North Estates	1097.2	218	735B Nestors	85	2084	\$ 35,506.53
300	Main	Nocklaus North Boulevard	Nicklaus North F	1995	111.77	PVC	Nicklaus North Estates	1097.2	218	735B Nestors	85	2084	\$ 59,060.32
250	Main	Nocklaus North Boulevard	Nicklaus North F	1995	125.898	PVC	Nicklaus North Estates	1097.2	218	735B Nestors	85	2084	\$ 57,083.06
300	Main	Golden Bear Place	Nicklaus North F	1995	178.858	PVC	Nicklaus North Estates	1097.2	218	735B Nestors	85	2084	\$ 94,510.00
150	Main	R222	W8000-1	1985	1.63108	Ductile Iron	Wildlife Reserve	175.6	210	Supply	85	2084	\$ 432.23
200	Main	R222	W8000-1	1985	33.0723	Ductile Iron	Wildlife Reserve	175.6	210	Supply	85	2084	\$ 9,921.70
200	Main	Alpine Way	W8033	1990	167.059	PVC	Alpine Meadows South	461.1	216	748 Lower Alpine Meadows	85	2084	\$ 61,682.44
150	Main	Beaver Lane	W6041	1990	164.825	PVC	Whistler Cay Estates	481.8	241	675 Tapley Farm	85	2084	\$ 48,703.03
150	Main	Beaver Lane	W6041	1990	33.8411	PVC	Whistler Cay Estates	481.8	241	675 Tapley Farm	85	2084	\$ 9,940.39
150	Main	Crabapple Drive	W6040	1990	112.585	PVC	Whistler Cay Estates	481.8	241	675 Tapley Farm	85	2084	\$ 33,267.15
150	Main	Crabapple Drive	W6040	1990	4.48789	PVC	Whistler Cay Estates	481.8	241	675 Tapley Farm	85	2084	\$ 1,326.10
200	Main	R222	W8000-1	1985	8.21881	Ductile Iron	Wildlife Reserve	175.6	210	Supply	85	2084	\$ 2,465.64
200	Main	Cheakamus Way	W2069-7	1993	176.703	PVC	Whistler Creek Centre	737.7	204	735 Whistler South	85	2084	\$ 57,706.90
150	Main	Mons Road	Nicklaus North F	1995	9.44012	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2084	\$ 2,701.85
200	Main	R222	W8000-1	1985	6.43271	Ductile Iron	Wildlife Reserve	175.6	210	Supply	85	2084	\$ 1,929.81
300	Main	P258 - Crabapple Drive	W6038	1990	5.08682	Ductile Iron	Whistler Cay Estates	481.8	241	675 Tapley Farm	85	2084	\$ 2,444.13
100	Main	4644 Blackcomb Way	W4031(B)	1993	50.35735	PVC	Blackcomb Benclands North	744.8	212	770 Lower Blackcomb	85	2084	\$ 12,589.34
100	Main	4644 Blackcomb Way	W4031(B)	1993	24.5	PVC	Blackcomb Benclands North	744.8	212	770 Lower Blackcomb	85	2084	\$ 6,125.00
200	Main	4644 Blackcomb Way	W4031(B)	1993	14.82853	PVC	Blackcomb Benclands North	744.8	212	770 Lower Blackcomb	85	2084	\$ 4,448.56
200	Main	4644 Blackcomb Way	W4031(B)	1993	66.54445	PVC	Blackcomb Benclands North	744.8	212	770 Lower Blackcomb	85	2084	\$ 19,963.33
200	Service	4644 Blackcomb Way	W4031(B)	1993	8.15276	PVC	Blackcomb Benclands North	744.8	212	770 Lower Blackcomb	85	2084	\$ 2,445.83
200	Main	Chateau Whistler Golf Course	4612 Blackcomb	1993	379.3906	Ductile Iron	Lost Lake Park	800.4	212	770 Lower Blackcomb	85	2084	\$ 113,817.38
350	Main	Nita Lake Estates	W5014-5	2004	64.2771	PVC	Old Gravel Road	1297	210	Supply	85	2085	\$ 30,866.69
350	Main	Nita Lake Estates	W5014-5	2004	39.2784	PVC	Old Gravel Road	1297	210	Supply	85	2085	\$ 18,739.77
350	Main	Nita Lake Estates	W5014-4	2004	107.78	PVC	Old Gravel Road	1297	210	Supply	85	2085	\$ 51,422.16
350	Main	Nita Lake Lodge/Lake Placid Road Connector	W2103-1	2004	38.7949	Steel	Old Gravel Road	1297	210	Supply	85	2085	\$ 17,554.57
150	Service	1080 Millar Creek Road	1080 Millar Cree	1990	12.46294	PVC	Function Junction	438.7	205	643 FJ	85	2085	\$ 3,302.68
150	Service	1090 Millar Creek Road	1080 Millar Cree	1990	3.684068	PVC	Function Junction	438.7	205	643 FJ	85	2085	\$ 976.28
150	Main	Millars Pond Crescent	W2069-9	1993	233.24	PVC	Millar's Pond	686.9	204	735 Whistler South	85	2085	\$ 74,813.84
200	Main	Coyote Place	W2069-8	1993	131.68	PVC	Millar's Pond	711.9	204	735 Whistler South	85	2085	\$ 46,846.54
200	Service	Cheakamus Way	W2069-6	1993	7	PVC	Millar's Pond	711.9	204	735 Whistler South	85	2085	\$ 2,100.00
200	Service	2720 Cheakamus Way	W2069-6	1993	7	PVC	Millar's Pond	726.6	204	735 Whistler South	85	2085	\$ 2,100.00
200	Service	2704 Cheakamus Way	W2069-5	1993	9.35728	PVC	Millar's Pond	721.7	204	735 Whistler South	85	2085	\$ 2,807.19
150	Main	Karen Crescent	W2066	1992	16.5687	Ductile Iron	Whistler Creek Centre	606.9	222	702 Whistler Creek	85	2085	\$ 4,831.05
200	Main	P260 - Beaver Flats	W2066	1992	8.45625	Ductile Iron	Whistler Creek Centre	606.9	222	702 Whistler Creek	85	2085	\$ 2,761.61
200	Main	P260 - Beaver Flats	W2066	1992	13.4562	Ductile Iron	Whistler Creek Centre	606.9	222	702 Whistler Creek	85	2085	\$ 4,394.49
250	Main	Hwy99/Karen Crescent connector	W2066	1992	27	Ductile Iron	Whistler Creek Centre	606.9	222	702 Whistler Creek	85	2085	\$ 10,842.56

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
150	Service	2250 Nordic Drive	W2070-30	1993	6.4376	Ductile Iron	Whistler Highlands	693.1	215	819 Lower Taluswood	85	2085	\$ 1,705.96
300	Main	R235	W2070-3	1995	2.98783	PVC	Whistler Highlands	948.7	209	913 Upper Talus	85	2085	\$ 1,432.61
200	Main	R235	W2070-3	1995	19.3907	PVC	Whistler Highlands	948.7	209	913 Upper Talus	85	2085	\$ 6,388.87
300	Main	R235	W2070-3	1995	7.4994	PVC	Whistler Highlands	948.7	209	913 Upper Talus	85	2085	\$ 3,595.82
250	Main	Nordic Drive	W2070-34	1993	149.541	Ductile Iron	Whistler Highlands	678.4	215	819 Lower Taluswood	85	2085	\$ 60,486.83
100	Main	Powderwood	2641 Whistler Rd	1996	27.2228	PVC	Whistler Highlands	982.4	215	819 Lower Taluswood	85	2085	\$ 6,623.07
250	Main	Sunridge Plateau between Sunridge Drive and Panorama Ridge	Sunridge Plateau	1995	38.24835	PVC	Brio	920.1	213	775	85	2085	\$ 14,343.13
250	Main	Sunridge Plateau between Sunridge Drive and Panorama Ridge	Sunridge Plateau	1995	48.97015	Ductile Iron	Brio	920.1	213	775	85	2085	\$ 18,363.81
200	Main	Peak Drive	W3047-2	1993	318.744	PVC	Blueberry Hill	631.7	213	775	85	2085	\$ 105,034.91
150	Main	Peak Drive	W3047-1	1993	98.936	PVC	Blueberry Hill	641.4	213	775	85	2085	\$ 29,139.32
200	Main	Peak Drive	W3047-1	1993	97.5	PVC	Blueberry Hill	660.9	213	775	85	2085	\$ 32,128.89
200	Main	Summer Lane	W9023-15	2002	11.2554	Ductile Iron	Emerald Estates Lakeside	922.3	206	733 Emerald Estates	85	2085	\$ 4,053.24
150	Main	Tapley Place	W6040	1991	24.5239	PVC	Whistler Cay Estates	491.7	241	675 Tapley Farm	85	2085	\$ 7,246.41
150	Main	Cedar Grove Lane	W6040	1991	1.72581	PVC	Whistler Cay Estates	493.5	241	675 Tapley Farm	85	2085	\$ 509.95
150	Main	Cedar Grove Lane	W6040	1991	145.774	PVC	Whistler Cay Estates	493.5	241	675 Tapley Farm	85	2085	\$ 43,073.79
150	Main	Cedar Grove Lane	W6040	1991	15.0932	PVC	Whistler Cay Estates	491.7	241	675 Tapley Farm	85	2085	\$ 4,459.79
150	Main	Balsam Way	W6032a	1990	171.805	PVC	Whistler Cay Estates	446.3	241	675 Tapley Farm	85	2085	\$ 50,765.66
150	Main	Balsam Way	W6032a	1990	67.812	PVC	Whistler Cay Estates	397.4	241	675 Tapley Farm	85	2085	\$ 20,037.33
150	Main	P242 - Balsam Way	W6028	1990	12.0886	PVC	Whistler Cay Estates	397.4	241	675 Tapley Farm	85	2085	\$ 3,571.98
150	Main	Balsam Way	W6032a	1990	246.328	PVC	Whistler Cay Estates	407.2	207	720 Balsam W	85	2085	\$ 72,785.80
250	Main	Sappos Way	Nesters Hill Fold	2001	339.236	Ductile Iron	Nesters	872.4	218	735B Nestors	85	2085	\$ 138,983.83
200	Main	Muirfield Crescent	Nicklaus North F	1993	192.8854	PVC	Nicklaus North Estates	722.9	232	714 Nic North	85	2085	\$ 57,865.61
200	Main	Muirfield Crescent	Nicklaus North F	1993	101.0403	PVC	Nicklaus North Estates	701.4	232	714 Nic North	85	2085	\$ 30,312.10
150	Main	Muirfield Lane	Nicklaus North F	1993	58.55213	PVC	Nicklaus North Estates	701.4	232	714 Nic North	85	2085	\$ 15,516.31
150	Main	Lakeshore Drive	W9023-8	2002	81.7807	Ductile Iron	Emerald Estates Lakeside	935.1	206	733 Emerald Estates	85	2085	\$ 26,588.03
200	Main	Summer Lane	W9023-15	2002	53.5671	Ductile Iron	Emerald Estates Lakeside	909.6	206	733 Emerald Estates	85	2085	\$ 19,290.25
200	Main	P260 - Beaver Flats	W2066	1992	8.75427	Ductile Iron	Whistler Creek Centre	606.9	212	702 Whistler Creek	85	2085	\$ 2,858.94
300	Main	Blackcomb Lodge Gate House	W4065	2002	79.1767	Ductile Iron	Village	949.9	213	775	85	2085	\$ 35,629.50
150	Service	Muirfield Crescent to Englewood Green	Nicklaus North F	1993	8.56735	PVC	Nicklaus North Estates	722.9	232	714 Nic North	85	2085	\$ 2,270.35
200	Main	Cheakamus Way	W2069-5	1993	223.077	Ductile Iron	Whistler Creek Centre	683.5	204	735 Whistler South	85	2085	\$ 72,851.75
200	Main	Cheakamus Way	W2069-6	1993	364.736	PVC	Whistler Creek Centre	726.6	204	735 Whistler South	85	2085	\$ 119,114.07
150	Main	The Woods	4652 Blackcomb	1994	47.43555	PVC	Blackcomb Benchlands North	731.9	212	770 Lower Blackcomb	85	2085	\$ 12,570.42
150	Main	The Woods	4652 Blackcomb	1994	29	PVC	Blackcomb Benchlands North	731.9	212	770 Lower Blackcomb	85	2085	\$ 7,250.00
150	Main	The Woods	4652 Blackcomb	1994	73.53825	PVC	Blackcomb Benchlands North	733.9	212	770 Lower Blackcomb	85	2085	\$ 19,487.64
150	Main	The Woods	4652 Blackcomb	1994	22.56741	PVC	Blackcomb Benchlands North	731.9	212	770 Lower Blackcomb	85	2085	\$ 5,980.36
150	Main	The Woods	4652 Blackcomb	1994	97.53005	PVC	Blackcomb Benchlands North	731.9	212	770 Lower Blackcomb	85	2085	\$ 25,845.46
200	Service	4652 Blackcomb Way	W4033-7(B)	1994	11.5631	PVC	Blackcomb Benchlands North	731.9	212	770 Lower Blackcomb	85	2085	\$ 3,468.93
200	Main	Lost Lake Road	W4033-7(B)	1994	97.3248	PVC	Blackcomb Benchlands North	731.9	212	770 Lower Blackcomb	85	2085	\$ 29,344.11
200	Main	Lost Lake Road	W4033-7(B)	1994	56.8476	PVC	Blackcomb Benchlands North	800.4	212	770 Lower Blackcomb	85	2085	\$ 17,139.94
200	Main	Lost Lake Road	W4033-7(B)	1994	45.2617	PVC	Blackcomb Benchlands North	800.4	212	770 Lower Blackcomb	85	2085	\$ 13,646.73
200	Service	4652 Blackcomb Way	W4033-6(B)	1994	7	PVC	Blackcomb Benchlands North	733.9	212	770 Lower Blackcomb	85	2085	\$ 2,100.00
200	Service	4653 Blackcomb Way	W4033-6(B)	1994	12.2181	PVC	Blackcomb Benchlands North	733.9	212	770 Lower Blackcomb	85	2085	\$ 3,665.43
300	Main	Blackcomb Way	W4033-6(B)	1994	92.2575	Ductile Iron	Blackcomb Benchlands North	744.8	212	770 Lower Blackcomb	85	2085	\$ 41,654.89
300	Main	Blackcomb Way	W4033-6(B)	1994	0.91641	Ductile Iron	Blackcomb Benchlands North	733.9	212	770 Lower Blackcomb	85	2085	\$ 413.76
250	Main	Montebello Place	W4070-1(V)	1996	33.4281	PVC	Montebello	867	235	735A Riverside	85	2086	\$ 12,535.52
250	Main	Montebello Place	W4069(V)	1996	7.5	PVC	Montebello	867.6	235	735A Riverside	85	2086	\$ 2,812.50
150	Main	Montebello Place	W4069(V)	1996	41.9658	PVC	Montebello	867.6	235	735A Riverside	85	2086	\$ 11,120.94
150	Service	1210 Millar Creek Road	1210 Millar Cree	1991	9.144	PVC	Function Junction	402.5	205	643 FJ	85	2086	\$ 2,423.16
150	Service	1210 Millar Creek Road	1210 Millar Cree	1991	7.00025	PVC	Function Junction	412.3	205	643 FJ	85	2086	\$ 1,855.01
200	Main	Clifftop Lane	W2069-11	1993	230.239	PVC	Millar's Pond	594.8	204	735 Whistler South	85	2086	\$ 81,909.59
150	Main	Coyote Place	W2069-8	1993	151.779	PVC	Millar's Pond	606.2	204	735 Whistler South	85	2086	\$ 48,684.49
300	Main	Baxter Reservoir Millars Pond connector	W2069-3	1993	321	Ductile Iron	Whistler Mountain	545.9	204	735 Whistler South	85	2086	\$ 144,450.00
300	Service	2250 Nordic Drive	W2070-34	1993	12.4643	Ductile Iron	Whistler Highlands	559.6	215	819 Lower Taluswood	85	2086	\$ 5,608.94
250	Main	Nordic Drive	W2070-35	1993	145.44	Ductile Iron	Whistler Highlands	559.6	215	819 Lower Taluswood	85	2086	\$ 58,827.72
200	Main	Nordic Drive	W2070-32	1993	126	Ductile Iron	Whistler Highlands	547	213	775	85	2086	\$ 41,514.61
200	Main	P264	W2070-31	1993	6.95172	Ductile Iron	Whistler Highlands	546.4	213	775	85	2086	\$ 2,290.46
200	Main	Powderwood	2641 Whistler Rd	1996	10.47817	PVC	Whistler Highlands	865	215	819 Lower Taluswood	85	2086	\$ 3,143.45
100	Main	Powderwood	2641 Whistler Rd	1996	18.60635	PVC	Whistler Highlands	855.2	215	819 Lower Taluswood	85	2086	\$ 4,651.59
150	Main	Deer Run	3300 Ptarmigan	1996	33.6	PVC	Blueberry Hill	846.2	213	775	85	2086	\$ 8,904.00
150	Main	Deer Run	3300 Ptarmigan	1996	7.171848	PVC	Blueberry Hill	908.2	213	775	85	2086	\$ 1,900.54
200	Main	ROW north of Peak Drive	W3047-3	1993	108.067	PVC	Blueberry Hill	573.5	213	775	85	2086	\$ 35,611.03
150	Main	Cedar Grove Lane to/from Balsam Way	W6032a	1991	164.431	PVC	Whistler Cay Estates	446.3	241	675 Tapley Farm	85	2086	\$ 48,586.53
200	Main	P267 - Spruce Grove	W7028-3	1997	29.8099	PVC	Spruce Grove	999.3	218	735B Nestors	85	2086	\$ 9,575.23
250	Main	P267 - Spruce Grove	W7028-3	1997	45.6648	PVC	Spruce Grove	999.3	218	735B Nestors	85	2086	\$ 18,092.81
200	Main	Glen Abbey Lane	Nicklaus North F	1995	30.54239	PVC	Nicklaus North Estates	740.5	232	714 Nic North	85	2086	\$ 9,162.72
200	Main	Golden Bear Place	Nicklaus North F	1995	209.0063	PVC	Nicklaus North Estates	740.8	232	714 Nic North	85	2086	\$ 62,701.88
200	Main	Golden Bear Place	Nicklaus North F	1995	19.4962	PVC	Nicklaus North Estates	739.8	232	714 Nic North	85	2086	\$ 7,377.53
250	Main	Nicklaus North Boulevard	Nicklaus North F	1995	36.7343	PVC	Nicklaus North Estates	740.5	232	714 Nic North	85	2086	\$ 16,655.63
75	Main	Golden Bear Place	Nicklaus North F	1995	46.79285	PVC	Nicklaus North Estates	760.3	232	714 Nic North	85	2086	\$ 11,230.28
250	Main	Golden Bear Place	Nicklaus North F	1995	78.1811	PVC	Nicklaus North Estates	739.8	232	714 Nic North	85	2086	\$ 34,541.16
250	Main	Autumn Drive	W9023-1	2002	80.4541	Ductile Iron	Emerald Estates Serviced	801.6	206	733 Emerald Estates	85	2086	\$ 34,970.81
250	Main	Summer Lane	W9023-1	2002	28.8827	Ductile Iron	Emerald Estates Serviced	845.6	206	733 Emerald Estates	85	2086	\$ 12,554.39
250	Main	Summer Lane	W9023-1	2002	9.55161	Ductile Iron	Emerald Estates Lakeside	845.6	206	733 Emerald Estates	85	2086	\$ 4,156.04
200	Main	Emerald Park	W9023-7	2002	148.299	Ductile Iron	Emerald Estates Unserviced	844.1	206	733 Emerald Estates	85	2086	\$ 52,567.20
200	Main	W201-1 Emerald Park	W9023-7	2002	94.9789	Ductile Iron	Emerald Estates Unserviced	844.1	206	733 Emerald Estates	85	2086	\$ 33,667.04
250	Main	Montebello Place	W4069(V)	1996	1.19599	PVC	Montebello	869.5	235	735A Riverside	85	2086	\$ 448.50
150	Main	Montebello Place	W4069(V)	1996	45.6617	PVC	Montebello	869.5	235	735A Riverside	85	2086	\$ 12,100.35
150	Main	Montebello Place	W4069(V)	1996	36.5333	PVC	Montebello	871.1	235	735A Riverside	85	2086	\$ 9,681.32
150	Service	Montebello Place	W4069(V)	1996	7.5	PVC	Montebello	871.1	235	735A Riverside	85	2086	\$ 1,987.50
250	Main	Montebello Place	W4069(V)	1996	56.1689	PVC	Montebello	871.1	235	735A Riverside	85	2086	\$ 21,063.35
250	Main	Montebello Place	W4069(V)	1996	34.8061	PVC	Montebello	871.1	235	735A Riverside	85	2086	\$ 13,052.28
250	Main	Montebello Place	W4069(V)	1996	101.861	PVC	Montebello	869.5	235	735A Riverside	85	2086	\$ 38,198.03

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
250	Main	Montebello Place	W4069(V)	1996	93.5475	PVC	Montebello	867.6	235	735A Riverside	85	2086	\$ 35,080.29
150	Main	Montebello Place	W4069(V)	1996	13.2807	PVC	Montebello	871.1	235	735A Riverside	85	2086	\$ 3,519.40
150	Main	Montebello Place	W4069(V)	1996	20.4225	PVC	Montebello	871.1	235	735A Riverside	85	2086	\$ 5,411.95
200	Main	Montebello Place	W4069(V)	1996	10.1632	PVC	Montebello	862.8	235	735A Riverside	85	2086	\$ 3,048.95
150	Main	Powderwood	2641 Whistler Rd	1996	361.8941	PVC	Whistler Highlands	933.4	215	819 Lower Taluswood	85	2086	\$ 95,901.93
50	Main	The Woods	4652 Blackcomb	1994	20.74573	PVC	Blackcomb Benchlands North	713.3	212	770 Lower Blackcomb	85	2086	\$ 4,667.79
200	Service	4660 Blackcomb Way	W4033-5(B)	1994	6.28985	PVC	Blackcomb Benchlands North	643.3	212	770 Lower Blackcomb	85	2086	\$ 1,886.95
150	Service	4661 Blackcomb Way	W4033-5(B)	1994	12.7206	Ductile Iron	Blackcomb Benchlands North	643.3	212	770 Lower Blackcomb	85	2086	\$ 3,370.97
300	Main	Blackcomb Way	W4033-6(B)	1994	29.1596	Ductile Iron	Blackcomb Benchlands North	713.3	212	770 Lower Blackcomb	85	2086	\$ 13,165.78
300	Main	Blackcomb Way	W4033-6(B)	1994	63.5211	Ductile Iron	Blackcomb Benchlands North	713.3	212	770 Lower Blackcomb	85	2086	\$ 28,680.23
300	Main	Blackcomb Way	W4033-5(B)	1994	61.2127	Ductile Iron	Blackcomb Benchlands North	722.1	212	770 Lower Blackcomb	85	2086	\$ 27,637.96
300	Main	Blackcomb Way	W4033-5(B)	1994	73.8177	Ductile Iron	Blackcomb Benchlands North	643.3	212	770 Lower Blackcomb	85	2086	\$ 33,329.19
300	Main	Blackcomb Way	W4033-5(B)	1994	3.67437	Ductile Iron	Blackcomb Benchlands North	643.3	212	770 Lower Blackcomb	85	2086	\$ 1,659.00
300	Main	Blackcomb Way	W4033-5(B)	1994	9.9458	Ductile Iron	Blackcomb Benchlands North	643.3	212	770 Lower Blackcomb	85	2086	\$ 4,490.60
200	Main	Chateau Whistler Golf Course	4612 Blackcomb	1993	514.8785	Ductile Iron	Lost Lake Park	585.1	212	770 Lower Blackcomb	85	2086	\$ 154,463.55
50	Main	Public Works Yard	Works Yard Fold	1998	10.7137	PVC	Spruce Grove	1009.3	218	735B Nestors	85	2087	\$ 2,637.81
50	Main	Public Works Yard	Works Yard Fold	1998	64.7346	PVC	Spruce Grove	999.5	218	735B Nestors	85	2087	\$ 15,938.29
50	Main	Public Works Yard	Works Yard Fold	1998	27.8034	PVC	Spruce Grove	1009.3	218	735B Nestors	85	2087	\$ 6,796.22
50	Main	Public Works Yard	Works Yard Fold	1998	13.6146	PVC	Spruce Grove	999.5	218	735B Nestors	85	2087	\$ 3,352.04
200	Main	Stonebridge Drive	Stonebridge - 30	2001	15.7769	PVC	Stonebridge	1469.4	242	872 Upper Stonebridge	85	2087	\$ 4,762.33
200	Main	Stonebridge Drive	Stonebridge - 30	2001	134.994	PVC	Stonebridge	1469.4	242	872 Upper Stonebridge	85	2087	\$ 40,869.97
200	Main	Stonebridge Drive	Stonebridge - 30	2001	38.7468	PVC	Stonebridge	1469.4	242	872 Upper Stonebridge	85	2087	\$ 11,972.67
200	Main	Stonebridge Drive	Stonebridge - 30	2001	110.211	PVC	Stonebridge	1469.4	242	872 Upper Stonebridge	85	2087	\$ 33,197.48
200	Main	Riverwalk Employee Housing	7292-7327 Spruce	1998	103.7536	PVC	Spruce Grove	1026.7	218	735B Nestors	85	2087	\$ 31,136.09
200	Service	5412 Stonebridge Drive	Stonebridge - 30	2001	8.70856	PVC	Stonebridge	1469.4	242	872 Upper Stonebridge	85	2087	\$ 2,612.67
100	Service	5415 Stonebridge Drive	Stonebridge Drive	2001	21.1862	PVC	Stonebridge	1469.4	242	872 Upper Stonebridge	85	2087	\$ 5,296.55
100	Service	5419 Stonebridge Drive	Stonebridge Drive	2001	60.4758	PVC	Stonebridge	1469.4	242	872 Upper Stonebridge	85	2087	\$ 15,119.15
200	Service	5415 Stonebridge Drive	Stonebridge Drive	2001	70.85126	PVC	Stonebridge	1469.4	242	872 Upper Stonebridge	85	2087	\$ 21,255.38
200	Service	5415 Stonebridge Drive	Stonebridge - 30	2001	14.7529	PVC	Stonebridge	1469.4	242	872 Upper Stonebridge	85	2087	\$ 4,425.87
200	Main	Stonebridge Drive	Stonebridge - 31	2001	148.636	PVC	Stonebridge	1469.4	242	872 Upper Stonebridge	85	2087	\$ 44,772.31
150	Service	1055 Millar Creek Road	1055 Millar Cree	1992	10.1694	PVC	Function Junction	422.1	205	643 FJ	85	2087	\$ 2,694.89
150	Service	1055 Millar Creek Road	1055 Millar Cree	1992	38.99	PVC	Function Junction	422.1	205	643 FJ	85	2087	\$ 10,332.35
150	Main	Employee Housing	2728 Cheakamus	1995	6	PVC	Millar's Pond	711.9	204	735 Whistler South	85	2087	\$ 1,590.00
150	Service	Gondola Six Employee Housing	2238 Gondola W	1995	12.9375	PVC	Gondola Village	668.3	208	763 Creekside	85	2087	\$ 3,428.43
100	Service	2323 Taluswood Place	W2085-5	1999	11.72	PVC	Whistler Highlands	1105.3	209	913 Upper Talus	85	2087	\$ 2,930.00
100	Main	The Bluffs	2301-2323 Talus	1999	52.56461	PVC	Whistler Highlands	1105.3	209	913 Upper Talus	85	2087	\$ 13,141.15
100	Main	The Bluffs	2301-2323 Talus	1999	47.86014	PVC	Whistler Highlands	1105.3	209	913 Upper Talus	85	2087	\$ 11,965.03
250	Main	Nordic Drive	W2070-36	1993	121.42	Ductile Iron	Whistler Highlands	492.1	215	819 Lower Taluswood	85	2087	\$ 49,112.09
150	Main	Nordic Drive	W2074	1997	52.1071	PVC	Whistler Highlands	879.8	213	775	85	2087	\$ 15,344.56
100	Main	Sunridge Drive	Sunridge Plateau	1995	110.6505	PVC	Brio	713.5	219	818 Sunridge	85	2087	\$ 27,662.63
250	Main	Sunridge Drive	Sunridge Plateau	1995	18.34448	PVC	Brio	645.8	213	775	85	2087	\$ 6,879.18
250	Main	ROW between Sunridge Drive and Sunridge Place	Sunridge Plateau	1995	57.38669	PVC	Brio	645.8	213	775	85	2087	\$ 21,520.01
150	Main	Deer Run	3300 Ptarmigan	1996	39	PVC	Blueberry Hill	797.2	213	775	85	2087	\$ 10,335.00
50	Main	Public Works Yard	Works Yard Fold	1998	30.4843	PVC	Spruce Grove	999.5	218	735B Nestors	85	2087	\$ 7,505.52
50	Main	Public Works Yard	Works Yard Fold	1998	35.3541	PVC	Spruce Grove	999.5	218	735B Nestors	85	2087	\$ 8,704.51
50	Main	Public Works Yard	Works Yard Fold	1998	227.076	PVC	Spruce Grove	999.5	218	735B Nestors	85	2087	\$ 55,908.31
150	Main	Public Works Yard	Works Yard Fold	1998	1.67245	PVC	Spruce Grove	999.5	218	735B Nestors	85	2087	\$ 478.67
150	Main	Public Works Yard	Works Yard Fold	1998	18.355	PVC	Spruce Grove	999.5	218	735B Nestors	85	2087	\$ 5,253.38
150	Main	Public Works Yard	Works Yard Fold	1998	175.578	PVC	Spruce Grove	999.5	218	735B Nestors	85	2087	\$ 50,252.22
200	Main	Nicklaus North Golf Course Parking Lot	Nicklaus North F	1995	108.1439	PVC	Nicklaus North Estates	730.7	232	714 Nic North	85	2087	\$ 32,443.18
250	Main	Nicklaus North Boulevard	Nicklaus North F	1995	181.855	PVC	Nicklaus North Estates	730.7	232	714 Nic North	85	2087	\$ 82,454.80
200	Main	Englewood Green	Nicklaus North F	1995	14.0619	PVC	Nicklaus North Estates	730.8	232	714 Nic North	85	2087	\$ 5,321.14
250	Main	Nicklaus North Boulevard	Nicklaus North F	1995	9.7745	PVC	Nicklaus North Estates	730.8	232	714 Nic North	85	2087	\$ 4,431.85
250	Main	Nicklaus North Boulevard	Nicklaus North F	1995	143.901	PVC	Nicklaus North Estates	730.7	232	714 Nic North	85	2087	\$ 65,246.13
250	Main	Nicklaus North Boulevard	Nicklaus North F	1995	91.0056	PVC	Nicklaus North Estates	730.8	232	714 Nic North	85	2087	\$ 41,262.73
250	Main	Alpine Way	W8033	1990	25.8159	PVC	Wildlife Reserve	303.1	216	748 Lower Alpine Meadows	85	2087	\$ 9,680.95
65	Main	Meadow Park W	7328 Kirkpatrick	1998	66.5992	PVC	Alpine Meadows South	1016.3	218	735B Nestors	85	2087	\$ 19,928.20
100	Main	Spruce Grove Park	7328 Kirkpatrick	1998	15.5409	PVC	Spruce Grove	1009.1	218	735B Nestors	85	2087	\$ 4,214.84
200	Main	Spruce Grove Park	7328 Kirkpatrick	1998	82.9599	PVC	Spruce Grove	1009.1	218	735B Nestors	85	2087	\$ 26,647.50
200	Main	Spruce Grove Park	7328 Kirkpatrick	1998	78.4006	PVC	Spruce Grove	1009.1	218	735B Nestors	85	2087	\$ 25,183.03
300	Main	Lake Placid Road	W2089-3	2002	135.364	Ductile Iron	Whistler Creek Centre	585.6	222	702 Whistler Creek	85	2087	\$ 64,511.34
300	Main	Lake Placid Road	W2087-3	2002	113.877	PVC	Whistler Creek Centre	585.6	222	702 Whistler Creek	85	2087	\$ 54,271.14
200	Main	Spruce Grove Park	7328 Kirkpatrick	1998	50.0184	PVC	Spruce Grove	1026.7	218	735B Nestors	85	2087	\$ 16,066.37
75	Main	Spruce Grove Park	7328 Kirkpatrick	1998	119.447	PVC	Spruce Grove	1009.1	218	735B Nestors	85	2087	\$ 31,200.69
100	Main	Spruce Grove Park	7328 Kirkpatrick	1998	47.6072	PVC	Spruce Grove	1009.1	218	735B Nestors	85	2087	\$ 12,911.52
100	Main	Spruce Grove Park	7328 Kirkpatrick	1998	69.7913	PVC	Spruce Grove	1009.1	218	735B Nestors	85	2087	\$ 18,928.08
50	Main	Spruce Grove Park	7328 Kirkpatrick	1998	74.0298	PVC	Spruce Grove	1026.7	218	735B Nestors	85	2087	\$ 18,226.85
200	Main	Spruce Grove Park	7328 Kirkpatrick	1998	16.4433	PVC	Spruce Grove	1026.7	218	735B Nestors	85	2087	\$ 5,281.74
200	Main	Spruce Grove Park	7328 Kirkpatrick	1998	29.5081	PVC	Spruce Grove	1026.7	218	735B Nestors	85	2087	\$ 9,478.28
250	Main	Alta Lake Road	W2080	1998	22.5738	PVC	Twin Lakes	1004.8	204	735 Whistler South	85	2087	\$ 8,658.11
150	Main	Blackcomb Way	W4033-5(B)	1994	54.08739	Ductile Iron	Blackcomb Benchlands North	554.6	212	770 Lower Blackcomb	85	2087	\$ 14,333.26
150	Main	Blackcomb Way	W4033-5(B)	1994	15.0734	Ductile Iron	Blackcomb Benchlands North	574.2	212	770 Lower Blackcomb	85	2087	\$ 4,017.17
150	Service	4660 Blackcomb Way	W4033-8(B)	1994	3.8657	Ductile Iron	Blackcomb Benchlands North	603.8	212	770 Lower Blackcomb	85	2087	\$ 1,024.30
150	Service	4676 Blackcomb Way	W4033-5(B)	1994	10.6061	Ductile Iron	Blackcomb Benchlands North	574.2	212	770 Lower Blackcomb	85	2087	\$ 2,810.61
150	Service	4676 Blackcomb Way	W4033-5(B)	1994	16.3623	Ductile Iron	Blackcomb Benchlands North	574.2	212	770 Lower Blackcomb	85	2087	\$ 4,336.01
300	Main	Woodland Estates	W4033-8(B)	1994	115.102	Ductile Iron	Blackcomb Benchlands North	564.3	212	770 Lower Blackcomb	85	2087	\$ 51,969.25
300	Main	Woodland Estates	W4033-8(B)	1994	8.97753	Ductile Iron	Blackcomb Benchlands North	603.8	212	770 Lower Blackcomb	85	2087	\$ 4,053.42
300	Main	Blackcomb Way	W4033-5(B)	1994	84.0431	Ductile Iron	Blackcomb Benchlands North	603.8	212	770 Lower Blackcomb	85	2087	\$ 37,946.07
300	Main	Blackcomb Way	W4033-5(B)	1994	11.8462	Ductile Iron	Blackcomb Benchlands North	574.2	212	770 Lower Blackcomb	85	2087	\$ 5,348.64
150	Main	Lorimer Road	W6055	1994	34.4992	PVC	Whistler Cay Estates	505.1	241	675 Tapley Farm	85	2088	\$ 10,193.94
200	Main	Spruce Grove Way	Spruce Grove Fo	1994	15.6469	PVC	Spruce Grove	461	231	716 White Gold	85	2088	\$ 5,025.93
200	Main	Spruce Grove Way	Spruce Grove Fo	1994	17.7863	PVC	Spruce Grove	461	231	716 White Gold	85	2088	\$ 5,713.12

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
300	Main	Highway 99 - Function/Spring Creek connector	W1015	2000	573.482	Ductile Iron	Function Junction	171.1		210 Supply	85	2088	\$ 258,066.80
300	Main	CN Rail ROW - Westside of Alta Lake	2001	131.132	PVC	Stonebridge		1307.3	210	Supply	85	2088	\$ 59,169.61
150	Main	2250 Nordic Drive	W2070-230	1994	128.468	Ductile Iron	Whistler Highlands	501.8	215	819 Lower Taluswood	85	2088	\$ 37,831.49
250	Main	2250 Nordic Drive	W2070-29	1994	136.567	Ductile Iron	Whistler Highlands	462.6	215	819 Lower Taluswood	85	2088	\$ 55,238.66
150	Main	2250 Nordic Drive	W2070-28	1994	92.4557	Ductile Iron	Whistler Highlands	472.5	215	819 Lower Taluswood	85	2088	\$ 27,226.45
150	Main	2250 Nordic Drive	W2070-27	1994	16.8452	Ductile Iron	Whistler Highlands	501.8	215	819 Lower Taluswood	85	2088	\$ 4,960.60
300	Main	2250 Nordic Drive	W2070-26	1994	125.723	Ductile Iron	Whistler Highlands	482.2	215	819 Lower Taluswood	85	2088	\$ 60,281.74
300	Main	2250 Nordic Drive	W2070-27	1994	65.0272	Ductile Iron	Whistler Highlands	511.5	215	819 Lower Taluswood	85	2088	\$ 31,179.32
250	Main	Sunridge Place	Sunridge Plateau	1995	38.63093	PVC	Brio	538	213	775	85	2088	\$ 14,486.60
150	Main	Palmer Drive	W6049	1994	35.1974	PVC	Whistler Cay Heights	450.4	229	760 Whistler Cay	85	2088	\$ 11,240.93
150	Main	6299 Lorimer Road	W6055	1994	13.4325	PVC	Whistler Cay Estates	505.1	241	675 Tapley Farm	85	2088	\$ 3,969.08
150	Main	6299 Lorimer Road	W6055	1994	107.4205	PVC	Whistler Cay Estates	505.1	241	675 Tapley Farm	85	2088	\$ 28,466.43
150	Main	Spruce Grove Way	Spruce Grove Fo	1994	22.368	PVC	Spruce Grove	461	231	716 White Gold	85	2088	\$ 6,401.93
150	Main	Riverside Campgrounds	8018 Mons Road	1999	51.04829	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2088	\$ 13,527.80
50	Main	Riverside Campgrounds	8018 Mons Road	1999	44.48371	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2088	\$ 10,008.84
100	Main	Riverside Campgrounds	8018 Mons Road	1999	6.865263	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2088	\$ 1,716.32
100	Main	Riverside Campgrounds	8018 Mons Road	1999	35.55997	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2088	\$ 8,889.99
50	Main	Riverside Campgrounds	8018 Mons Road	1999	50.02658	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2088	\$ 11,255.98
150	Main	Riverside Campgrounds	8018 Mons Road	1999	31.07296	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2088	\$ 8,234.33
150	Main	Riverside Campgrounds	8018 Mons Road	1999	38.40446	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2088	\$ 10,177.18
150	Main	Riverside Campgrounds	8018 Mons Road	1999	38.20906	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2088	\$ 10,390.40
50	Main	Riverside Campgrounds	8018 Mons Road	1999	68.75018	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2088	\$ 15,468.79
50	Main	Riverside Campgrounds	8018 Mons Road	1999	67.84743	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2088	\$ 15,265.67
150	Main	Riverside Campgrounds	8018 Mons Road	1999	31.8451	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2088	\$ 8,438.95
150	Main	Riverside Campgrounds	8018 Mons Road	1999	22.7783	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2088	\$ 6,036.25
150	Main	Riverside Campgrounds	8018 Mons Road	1999	19.58927	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2088	\$ 5,101.18
200	Main	Riverside Campgrounds	8018 Mons Road	1999	47.11173	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2088	\$ 14,133.52
200	Main	Riverside Campgrounds	8018 Mons Road	1999	73.23087	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2088	\$ 21,969.26
200	Main	Riverside Campgrounds	8018 Mons Road	1999	50.91962	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2088	\$ 15,275.89
200	Main	Riverside Campgrounds	8018 Mons Road	1999	153.4639	PVC	Spruce Grove	1026.8	218	735B Nestors	85	2088	\$ 46,039.18
150	Main	Englewood Green	8030 Nicklaus N	1996	33.18644	PVC	Nicklaus North Estates	730.8	232	714 Nic North	85	2088	\$ 8,794.41
150	Main	Englewood Green	8030 Nicklaus N	1996	105.0273	PVC	Nicklaus North Estates	730.8	232	714 Nic North	85	2088	\$ 27,832.24
150	Main	Englewood Green	8030 Nicklaus N	1996	124.81	PVC	Nicklaus North Estates	722.9	232	714 Nic North	85	2088	\$ 33,074.64
200	Main	Glen Abbey Lane	8313-8329 Glen	1997	84.07487	PVC	Nicklaus North Estates	740.5	232	714 Nic North	85	2088	\$ 25,222.46
75	Main	Nicklaus North Employee Housing	8314 Glen Abbey	1997	69.66134	PVC	Nicklaus North Estates	740.5	232	714 Nic North	85	2088	\$ 16,718.72
150	Service	Spring Creek Drive	Spring Creek Ma	2001	11.8268	PVC	Spring Creek	1270	210	Supply	85	2088	\$ 3,134.09
300	Main	Spring Creek Drive	Spring Creek Ma	2001	217.104	Ductile Iron	Spring Creek	1270	210	Supply	85	2088	\$ 100,586.64
300	Main	Spring Creek Drive	Spring Creek Ma	2001	155.274	Ductile Iron	Spring Creek	1270	210	Supply	85	2088	\$ 17,940.08
300	Main	Spring Creek Drive	Spring Creek Drive	2001	160.982	Ductile Iron	Spring Creek	1270	210	Supply	85	2088	\$ 74,584.70
200	Service	Cedar Glen	1517 Cedar Glen	2001	33.5	PVC	Spring Creek	1270	210	Supply	85	2088	\$ 10,050.00
100	Main	Spring Creek Daycare	1519 Spring Cree	2001	32.76986	PVC	Spring Creek	1270	210	Supply	85	2088	\$ 8,192.47
100	Service	Spring Creek Daycare	1519 Spring Cree	2001	3.230138	PVC	Spring Creek	1270	210	Supply	85	2088	\$ 807.53
200	Main	Spring Creek Drive	Spring Creek Ma	2001	9.53341	PVC	Spring Creek	1270	210	Supply	85	2088	\$ 2,986.92
250	Service	1500 Spring Creek Drive	Spring Creek Ma	2001	1.59219	PVC	Spring Creek	1270	210	Supply	85	2088	\$ 597.07
200	Main	Spring Creek Drive	Spring Creek Ma	2001	120.607	PVC	Spring Creek	1270	210	Supply	85	2088	\$ 37,787.65
150	Main	1505 Spring Creek Drive	Spring Creek Ma	2001	15.8409	PVC	Spring Creek	1270	210	Supply	85	2088	\$ 4,408.70
150	Main	Spring Creek Drive	Spring Creek Ma	2001	48.7777	PVC	Spring Creek	1270	210	Supply	85	2088	\$ 12,575.38
300	Main	Spring Creek Drive	Spring Creek Ma	2001	53.1695	Ductile Iron	Spring Creek	1270	210	Supply	85	2088	\$ 24,634.03
150	Service	1505 Spring Creek Drive	Spring Creek Ma	2001	16.1301	PVC	Spring Creek	1270	210	Supply	85	2088	\$ 4,274.48
200	Main	Spring Creek Drive	Spring Creek Ma	2001	108.142	PVC	Spring Creek	1270	210	Supply	85	2088	\$ 33,881.98
250	Service	Spring Creek Drive	Spring Creek Ma	2001	12.2187	PVC	Spring Creek	1270	210	Supply	85	2088	\$ 4,582.03
200	Main	Spring Creek Drive	Spring Creek Ma	2001	28.2441	PVC	Spring Creek	1270	210	Supply	85	2088	\$ 8,849.20
300	Main	Spring Creek Drive	Spring Creek Ma	2001	162.278	Ductile Iron	Spring Creek	1270	210	Supply	85	2088	\$ 75,185.41
200	Main	Lost Lake Lodge	4660 Blackcomb	1997	13.94667	PVC	Blackcomb Benchlands North	731.9	212	770 Lower Blackcomb	85	2088	\$ 4,184.00
100	Main	Treeline	4661 Blackcomb	1996	59.89573	PVC	Blackcomb Benchlands North	722.1	212	770 Lower Blackcomb	85	2088	\$ 14,973.61
150	Main	Treeline	4661 Blackcomb	1996	122.1296	PVC	Blackcomb Benchlands North	643.3	212	770 Lower Blackcomb	85	2088	\$ 32,364.35
200	Service	Lake Placid Road	Design Drawing	2001	21.7	Ductile Iron	Gondola Village	1125.1	208	763 Creekside	85	2089	\$ 6,510.00
300	Main	21-Mile Pump Station - Lorimer Road Connection	W5020	2008	389.578	Ductile Iron	Rainbow Park	1242.4	210	Supply	85	2089	\$ 180,596.69
200	Main	Eaglecrest Employee Housing	2720 Cheakamus	1997	75.72952	PVC	Miller's Pond	716.8	204	735 Whistler South	85	2089	\$ 22,718.86
200	Main	Eaglecrest Employee Housing	2720 Cheakamus	1997	64.75	PVC	Miller's Pond	716.8	204	735 Whistler South	85	2089	\$ 19,425.00
200	Main	Miller's Ridge Employee Housing	2704 Cheakamus	1997	147.6436	PVC	Miller's Pond	675.5	204	735 Whistler South	85	2089	\$ 44,293.09
200	Main	First Tracks	2202 Gondola W	2001	35.53297	Ductile Iron	Whistler Creek Base	1109.9	208	763 Creekside	85	2089	\$ 10,659.89
200	Service	2202 Gondola Way	W2081	2001	13.7172	Ductile Iron	Gondola Village	1109.9	208	763 Creekside	85	2089	\$ 4,115.15
300	Service	2202 Gondola Way	W2081	2001	11.4253	Ductile Iron	Gondola Village	1109.9	208	763 Creekside	85	2089	\$ 5,141.37
300	Main	Creekside - World Cup Plaza	Design Drawing	2001	163.899	Ductile Iron	Whistler Creek Base	1115.4	208	763 Creekside	85	2089	\$ 74,924.00
200	Service	2036 London Lane	Design Drawing	2001	9.56771	PVC	Whistler Creek Base	1125	208	763 Creekside	85	2089	\$ 2,870.31
300	Main	London Lane	Design Drawing	2001	153.503	Ductile Iron	Whistler Creek Base	1125	208	763 Creekside	85	2089	\$ 70,171.44
150	Service	Rob Boyd Way	Design Drawing	2001	10.2009	PVC	Whistler Creek Base	1125	208	763 Creekside	85	2089	\$ 2,703.25
300	Main	P270 to/from 2250 Nordic Drive	W2070-23	1995	217.884	Ductile Iron	Whistler Highlands	511.5	215	819 Lower Taluswood	85	2089	\$ 104,471.06
300	Main	P270	W2070-11	1999	7.64511	PVC	Whistler Highlands	948.7	209	913 Upper Talus	85	2089	\$ 3,665.68
300	Main	P270	W2070-11	1999	34.8655	Ductile Iron	Whistler Highlands	948.7	209	913 Upper Talus	85	2089	\$ 16,717.83
300	Main	Taluswood Place	W2085-5	1999	88.7221	PVC	Whistler Highlands	948.7	209	913 Upper Talus	85	2089	\$ 42,540.57
150	Main	Taluswood Place	W2085-5	1999	6.89369	PVC	Whistler Highlands	948.7	209	913 Upper Talus	85	2089	\$ 2,030.06
50	Main	Nordic Drive	W2091-1	1999	2.26457	PVC	Whistler Highlands	909.2	209	913 Upper Talus	85	2089	\$ 2,000.00
300	Main	Nordic Drive	W2091-1	1999	3.75967	PVC	Whistler Highlands	909.2	209	913 Upper Talus	85	2089	\$ 1,802.69
250	Main	Nordic Drive	W2091-1	1999	13.9652	PVC	Whistler Highlands	909.2	209	913 Upper Talus	85	2089	\$ 5,648.67
200	Main	Nordic Drive	W2091-1	1999	23.9396	PVC	Whistler Highlands	909.2	209	913 Upper Talus	85	2089	\$ 7,887.65
200	Service	Nordic Drive	W2091-1	1999	7.73879	PVC	Whistler Highlands	909.2	209	913 Upper Talus	85	2089	\$ 2,321.64
300	Main	R236 to/from Nordic Drive	W2075-13	1999	56.8528	PVC	Whistler Mountain	909.2	209	913 Upper Talus	85	2089	\$ 25,493.77
150	Service	Powderwood	2641 Whistler Rd	1996	16.17	PVC	Whistler Highlands	537.5	213	775	85	2089	\$ 4,285.04
150	Service	WHA Employee Housing	2116-2120 Nord	1997	10	PVC	Whistler Highlands	677.9	213	775	85	2089	\$ 2,650.00
150	Main	WHA Employee Housing	2116-2120 Nord	1997	36.06764	PVC	Whistler Highlands	637.7	213	775			

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
100	Main	WHA Employee Housing	2116-2120 Nord	1997	29.53786	PVC	Whistler Highlands	637.7		213 775	85	2089	\$ 7,384.47
250	Main	Sunridge Court	Sunridge Plateau	1995	133.75	PVC	Brio	477.8		213 775	85	2089	\$ 50,156.25
250	Main	ROW between Sunridge Place and Sunridge Drive	Sunridge Plateau	1995	106.6677	PVC	Brio	528.1		213 775	85	2089	\$ 40,000.40
200	Main	Sunridge Place	Sunridge Plateau	1995	54.86907	PVC	Brio	528.1		213 775	85	2089	\$ 16,460.72
200	Main	Sunridge Drive	Sunridge Plateau	1995	233.7876	PVC	Brio	527.7		213 775	85	2089	\$ 70,136.28
200	Main	The Grove	6715-6717 Craba	2002	73.01242	PVC	Whistler Cay Estates	1264.3		210 Supply	85	2089	\$ 21,903.73
150	Main	Spruce Grove Circle	Spruce Grove Fo	1994	102.823	PVC	Spruce Grove	441.4		231 716 White Gold	85	2089	\$ 29,428.80
150	Main	Spruce Grove Circle	Spruce Grove Fo	1994	184.901	PVC	Spruce Grove	421.8		231 716 White Gold	85	2089	\$ 52,920.34
150	Main	Spruce Grove Circle	Spruce Grove Fo	1994	43.9283	PVC	Spruce Grove	421.8		231 716 White Gold	85	2089	\$ 12,572.70
200	Main	Spruce Grove Way	Spruce Grove Fo	1994	67.9866	PVC	Spruce Grove	441.4		231 716 White Gold	85	2089	\$ 21,837.94
200	Main	Spruce Grove Way	Spruce Grove Fo	1994	192.251	PVC	Spruce Grove	431.6		231 716 White Gold	85	2089	\$ 61,752.77
200	Main	Spruce Grove Fo	Spruce Grove Fo	1994	58.2866	PVC	Spruce Grove	431.6		231 716 White Gold	85	2089	\$ 18,722.22
100	Main	Spruce Grove Circle	Spruce Grove Fo	1994	45.3879	PVC	Spruce Grove	431.6		231 716 White Gold	85	2089	\$ 12,309.64
150	Main	McKeevers Place	8116-8120 Mcke	2000	57.10718	PVC	Alpine Meadows South	1023		216 748 Lower Alpine Meadows	85	2089	\$ 15,133.40
200	Main	Casabella Crescent	W4070(V)-3	1999	136.0755	PVC	Montebello	896.2		235 735A Riverside	85	2089	\$ 40,822.65
200	Main	Casabella Crescent	W4070(V)-2	1999	49.58204	PVC	Montebello	863.9		235 735A Riverside	85	2089	\$ 14,874.61
300	Main	Casabella Crescent	W4070(V)-2	1999	92.4023	PVC	Montebello	863.3		235 735A Riverside	85	2089	\$ 41,581.03
300	Main	Casabella Crescent	W4070(V)-2	1999	157.584	PVC	Montebello	863.3		235 735A Riverside	85	2089	\$ 70,912.79
250	Main	Sertbellio Drive	W4070(V)-1	1999	109.034	PVC	Montebello	896.2		235 735A Riverside	85	2089	\$ 40,887.84
300	Main	Sertbellio Drive	W4070(V)-1	1999	69.277	PVC	Montebello	866.7		235 735A Riverside	85	2089	\$ 30,721.51
150	Main	Montebello Place	W4069(V)	1996	24.879	PVC	Montebello	579.6		213 775	85	2089	\$ 6,592.68
300	Main	Taluswood Drive	W2085 - 4	1999	161.449	PVC	Whistler Highlands	909.2		209 913 Upper Talus	85	2089	\$ 77,411.50
300	Main	Nordic Drive	W2091 - 1	1999	80.5076	PVC	Whistler Highlands	909.2		209 913 Upper Talus	85	2089	\$ 38,601.99
250	Main	Tynebridge - Spring Creek	Tynebridge - 19	2002	117.239	PVC	Spring Creek	1270		210 Supply	85	2089	\$ 45,525.23
200	Main	Bear Ridge Employee Housing	1500 Spring Cree	2002	160.1523	PVC	Spring Creek	1270		210 Supply	85	2089	\$ 48,045.70
150	Main	The Glades - Spring Creek	1530 Tynebridge	2002	48.54746	PVC	Spring Creek	1270		210 Supply	85	2089	\$ 12,865.08
200	Main	The Glades - Spring Creek	1530 Tynebridge	2002	91.32261	PVC	Spring Creek	1270		210 Supply	85	2089	\$ 27,396.78
200	Service	1530 Tynebridge Lane	Tynebridge - 19	2002	11.9398	PVC	Spring Creek	1270		210 Supply	85	2089	\$ 3,581.95
150	Main	The Glades - Spring Creek	1530 Tynebridge	2002	35.72204	PVC	Spring Creek	1270		210 Supply	85	2089	\$ 9,466.34
250	Main	Tynebridge - Spring Creek	Tynebridge - 18	2002	237.984	PVC	Spring Creek	1270		210 Supply	85	2089	\$ 92,411.77
250	Main	Tynebridge - Spring Creek	Tynebridge - 20	2002	188.991	PVC	Spring Creek	1270		210 Supply	85	2089	\$ 73,387.39
200	Main	Bear Ridge Employee Housing	Webster Digital	2002	120.6526	PVC	Spring Creek	1270		210 Supply	85	2089	\$ 36,195.78
100	Main	Tynebridge - Spring Creek	Tynebridge - 21	2002	41.2267	PVC	Spring Creek	1270		210 Supply	85	2089	\$ 10,855.46
250	Main	Tynebridge - Spring Creek	Tynebridge - 27	2002	40.6473	PVC	Spring Creek	1270		210 Supply	85	2089	\$ 15,783.82
250	Main	Bear Ridge Employee Housing	1500 Spring Cree	2002	31.7057	PVC	Spring Creek	1270		210 Supply	85	2089	\$ 12,311.69
200	Main	Bear Ridge Employee Housing	1500 Spring Cree	2002	123.4984	PVC	Spring Creek	1270		210 Supply	85	2089	\$ 37,049.52
200	Main	Nancy Greene Drive	W7000	1998	9.01993	PVC	White Gold	843.2		218 735B Nestors	85	2089	\$ 3,371.01
200	Main	Nancy Greene Drive	W7000	1998	52.3058	PVC	White Gold	843.2		218 735B Nestors	85	2089	\$ 19,548.19
150	Main	4890 Glacier Lane	Design Drawings	2003	38.97352	PVC	Blackcomb Benclands South	502.3		211 815 Upper Blackcomb	85	2089	\$ 10,327.98
200	Main	4890 Glacier Lane	Design Drawings	2003	96.17322	PVC	Blackcomb Benclands South	502.3		211 815 Upper Blackcomb	85	2089	\$ 28,851.97
200	Main	4890 Glacier Lane	Design Drawings	2003	1.288646	PVC	Blackcomb Benclands South	502.3		211 815 Upper Blackcomb	85	2089	\$ 386.59
300	Main	R234	W4036-3(b)	1994	301.194	Ductile Iron	Blackcomb Benclands North	386.6		210 Supply	85	2089	\$ 135,991.36
600	Main	21-Mile Pump Station - Lorimer Road Connection	W5019	2008	350.576	Ductile Iron	Rainbow Park	1211.5		210 Supply	85	2090	\$ 609,501.51
300	Main	21-Mile Pump Station - Lorimer Road Connection	W5019	2008	348.851	Ductile Iron	Rainbow Park	1211.5		210 Supply	85	2090	\$ 161,716.74
250	Main	Function Junction Highway 99 Crossing	W1026	2008	100.812	Ductile Iron	Cheakamus	1183.2		0	85	2090	\$ 37,928.67
400	Main	Function Junction Highway 99 Crossing	W1026	2008	98.4581	Ductile Iron	Cheakamus	1183.2		0	85	2090	\$ 48,857.92
150	Service	1314 Alpha Lake Road	1314 Alpha Lake	1995	16.22243	PVC	Function Junction	392.7		205 643 FJ	85	2090	\$ 4,298.94
200	Main	Stonebridge Drive	Stonebridge - 30	2001	15.4797	PVC	Stonebridge	1002.9		239 825 Lower Stonebridge	85	2090	\$ 4,662.79
350	Main	Spring Creek/Millars Pond connector	W2097	2000	8.04633	Ductile Iron	Whistler Mountain	865		208 763 Creekside	85	2090	\$ 3,717.40
350	Main	Spring Creek/Millars Pond connector	W2097	2000	554.23	Ductile Iron	Whistler Mountain	865		208 763 Creekside	85	2090	\$ 256,054.42
150	Service	6880 Crabapple Drive	W6054-1	1996	14.0273	PVC	Whistler Cay Estates	507.1		241 675 Tapley Farm	85	2090	\$ 3,717.25
300	Main	South Lake Lane	Stonebridge - 25	2001	2.28443	PVC	Stonebridge	1008.9		213 775	85	2090	\$ 1,027.99
200	Main	South Lake Lane	Stonebridge - 25	2001	22.9379	PVC	Stonebridge	1008.9		213 775	85	2090	\$ 6,909.36
300	Main	Unnamed Road ROW by P276	Stonebridge - 26	2001	2.24161	PVC	Stonebridge	1032.8		210 Supply	85	2090	\$ 1,011.46
200	Service	5302 Alta lake Road	Stonebridge - 27	2001	12.6899	PVC	Stonebridge	1032.8		210 Supply	85	2090	\$ 3,806.96
150	Main	Alta Lake Road @ Stonebridge Drive	Stonebridge - 26	2001	8.49997	PVC	Stonebridge	1032.8		210 Supply	85	2090	\$ 2,252.49
150	Service	5422 Stonebridge Drive	Stonebridge Driv	2001	192.6785	PVC	Stonebridge	1030		242 872 Upper Stonebridge	85	2090	\$ 51,059.81
150	Service	5422 Stonebridge Drive	Stonebridge Driv	2001	6.77534	PVC	Stonebridge	1030		242 872 Upper Stonebridge	85	2090	\$ 1,795.47
100	Service	5425 Stonebridge Drive	Stonebridge Driv	2001	44.01743	PVC	Stonebridge	1030		242 872 Upper Stonebridge	85	2090	\$ 11,004.36
150	Service	5425 Stonebridge Drive	Stonebridge Driv	2001	162.5148	PVC	Stonebridge	1030		242 872 Upper Stonebridge	85	2090	\$ 43,066.41
150	Service	5425 Stonebridge Drive	Stonebridge Driv	2001	16.8758	PVC	Stonebridge	1030		242 872 Upper Stonebridge	85	2090	\$ 4,472.10
250	Main	Stonebridge Drive	Stonebridge - 32	2001	48.941	PVC	Stonebridge	1030		242 872 Upper Stonebridge	85	2090	\$ 18,412.62
100	Main	Stonebridge Drive - P274/P275 connector	Stonebridge - 32	2001	28.684	PVC	Stonebridge	1030		242 872 Upper Stonebridge	85	2090	\$ 7,206.02
100	Main	Stonebridge Drive - P274/P275 connector	Stonebridge - 31	2001	366.182	PVC	Stonebridge	1030		242 872 Upper Stonebridge	85	2090	\$ 91,992.46
200	Main	P275 - Stonebridge Drive	Stonebridge - 32	2001	25.4416	PVC	Stonebridge	1030		242 872 Upper Stonebridge	85	2090	\$ 7,663.55
200	Main	Stonebridge Drive	Stonebridge - 31	2001	15.4364	PVC	Stonebridge	1030		242 872 Upper Stonebridge	85	2090	\$ 4,649.76
200	Main	Stonebridge Drive	Stonebridge - 31	2001	36.1805	PVC	Stonebridge	1030		242 872 Upper Stonebridge	85	2090	\$ 10,898.32
200	Main	Stonebridge Drive	Stonebridge - 31	2001	19.862	PVC	Stonebridge	1030		242 872 Upper Stonebridge	85	2090	\$ 5,982.84
200	Main	Stonebridge Drive	Stonebridge - 31	2001	86.1119	PVC	Stonebridge	1030		242 872 Upper Stonebridge	85	2090	\$ 25,938.69
200	Main	Stonebridge Drive	Stonebridge - 31	2001	25.1132	PVC	Stonebridge	1030		242 872 Upper Stonebridge	85	2090	\$ 7,566.43
300	Main	Stonebridge Drive	Stonebridge - 31	2001	35.8748	PVC	Stonebridge	1030		242 872 Upper Stonebridge	85	2090	\$ 10,806.24
250	Main	Alta Lake Road @ Stonebridge Drive	Stonebridge - 26	2001	110.809	PVC	Stonebridge	1032.8		210 Supply	85	2090	\$ 41,698.75
250	Main	Alta Lake Road @ Stonebridge Drive	Stonebridge - 26	2001	107.083	PVC	Stonebridge	1032.8		210 Supply	85	2090	\$ 40,286.90
300	Main	Alta Lake Road @ Stonebridge Drive	Stonebridge - 26	2001	0.41219	PVC	Stonebridge	1032.8		210 Supply	85	2090	\$ 185.99
300	Main	Unnamed Road ROW - Stonebridge connector	Stonebridge - 27	2001	76.4675	PVC	Stonebridge	1032.8		210 Supply	85	2090	\$ 34,503.71
300	Main	Unnamed Road ROW - Stonebridge connector	Stonebridge - 27	2001	200.119	PVC	Stonebridge	1032.8		210 Supply	85	2090	\$ 90,298.02
150	Service	1006 Lynham Road	W1010	1995	5.270138	PVC	Function Junction	422.1		205 643 FJ	85	2090	\$ 1,396.59
150	Service	1002 Lynham Road	W1010	1995	5.270138	PVC	Function Junction	412.3		205 643 FJ	85	2090	\$ 1,396.59
150	Service	1314 Alpha Lake Road	1314 Alpha Lake	1995	13.03914	PVC	Function Junction	392.7		205 643 FJ	85	2090	\$ 3,455.37
150	Service	1314 Alpha Lake Road	1314 Alpha Lake	1995	45.26321	PVC	Function Junction	392.7		205 643 FJ	85	2090	\$ 11,994.75
150	Service	1003 Lynham Road	W1010	1995	10.55559	PVC	Function Junction	412.3		205 643 FJ	85	2090	\$ 2,797.23
150	Service	1365 Alpha Lake Road	1365 Alpha Lake	1994	6.998867	PVC	Function Junction	363.4		205 643 FJ	85	2090	\$ 1,854.70

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
300	Main	Taluswood to Skier's Bridge	W2096	1999	280.473	PVC	Whistler Creek Base	824.1		213 775			
200	Main	The Heights - Taluswood	2324 Taluswood	2000	6.808046	PVC	Whistler Highlands	948.7		209 913 Upper Talus	85	2090	\$ 128,213.62
100	Main	The Heights	2324 Taluswood	2000	66.24236	PVC	Whistler Highlands	948.7		209 913 Upper Talus	85	2090	\$ 16,550.59
150	Main	The Heights	2324 Taluswood	2000	1.587433	PVC	Whistler Highlands	948.7		209 913 Upper Talus	85	2090	\$ 420.67
100	Main	The Heights	2324 Taluswood	2000	61.41752	PVC	Whistler Highlands	909.2		209 913 Upper Talus	85	2090	\$ 15,354.38
200	Main	The Heights	2324 Taluswood	2000	187.9023	PVC	Whistler Highlands	948.7		209 913 Upper Talus	85	2090	\$ 56,370.68
300	Main	Crabapple Drive	W6054-1	1996	202.883	PVC	Whistler Cay Estates	514.9		241 675 Tapley Farm	85	2090	\$ 97,481.69
300	Main	Crabapple Drive	W6054-1	1996	20.233	PVC	Whistler Cay Estates	507.1		241 675 Tapley Farm	85	2090	\$ 9,721.60
150	Main	Barnfield Place	6800 Barnfield P	1996	91.96551	PVC	Whistler Cay Estates	482.7		241 675 Tapley Farm	85	2090	\$ 24,370.86
150	Main	Barnfield Place	6800 Barnfield P	1996	40.83341	PVC	Whistler Cay Estates	498.4		241 675 Tapley Farm	85	2090	\$ 10,820.85
150	Main	Barnfield Place	6800 Barnfield P	1996	8.10252	PVC	Whistler Cay Estates	498.4		241 675 Tapley Farm	85	2090	\$ 2,394.16
100	Main	Daisy Lane	6800 Barnfield P	1996	42	PVC	Whistler Cay Estates	482.7		241 675 Tapley Farm	85	2090	\$ 10,500.00
150	Main	Crabapple Drive	W6054-2	1996	1.67044	PVC	Whistler Cay Estates	481.8		241 675 Tapley Farm	85	2090	\$ 493.59
150	Main	Crabapple Drive	W6054-2	1996	4.2319	PVC	Whistler Cay Estates	481.8		241 675 Tapley Farm	85	2090	\$ 1,250.46
100	Main	McKeever's Place	8116-8120 Mcke	2000	52.10273	PVC	Alpine Meadows South	913.8		216 748 Lower Alpine Meadows	85	2090	\$ 13,025.68
250	Main	McKeever's Place	8116-8120 Mcke	2000	45.49469	PVC	Alpine Meadows South	950.5		216 748 Lower Alpine Meadows	85	2090	\$ 17,060.51
250	Main	McKeever's Place	W8046	2000	86.0291	PVC	Alpine Meadows South	950.5		216 748 Lower Alpine Meadows	85	2090	\$ 38,216.35
300	Main	Highway 99 at Nancy Greene Drive	W7011	1999	5.33995	PVC	White Gold	843.2		218 735B Nestors	85	2090	\$ 2,796.69
200	Main	Highway 99 at Nancy Greene Drive	W7011	1999	6.4401	PVC	White Gold	843.2		218 735B Nestors	85	2090	\$ 2,406.85
150	Service	1509 Spring Creek Drive	Design Drawing	2003	24.38438	Ductile Iron	Spring Creek	1270		210 Supply	85	2090	\$ 6,461.86
200	Service	1509 Spring Creek Drive	Design Drawing	2003	31.46015	Ductile Iron	Spring Creek	1270		210 Supply	85	2090	\$ 9,438.05
150	Main	W211	W4056-2(V)	2000	9.79852	Ductile Iron	Whistler Creek Centre	959.8		213 775	85	2090	\$ 2,857.02
150	Main	P258 - Crabapple Drive	W6054-2	1996	3.27858	PVC	Whistler Cay Estates	481.8		241 675 Tapley Farm	85	2090	\$ 968.77
200	Main	Crabapple Drive	W6054-2	1996	4.01475	PVC	Whistler Cay Estates	498.4		241 675 Tapley Farm	85	2090	\$ 1,326.81
250	Main	Crabapple Drive	W6054-2	1996	24.618	PVC	Whistler Cay Estates	481.8		241 675 Tapley Farm	85	2090	\$ 9,982.20
250	Main	Crabapple Drive	W6054-2	1996	123.945	PVC	Whistler Cay Estates	498.4		241 675 Tapley Farm	85	2090	\$ 50,257.63
150	Main	Forest Creek	4668 Blackcomb	1998	23.91342	PVC	Blackcomb Benchlands North	643.3		212 770 Lower Blackcomb	85	2090	\$ 6,337.06
100	Main	Forest Creek	4668 Blackcomb	1998	62.25	PVC	Blackcomb Benchlands North	643.3		212 770 Lower Blackcomb	85	2090	\$ 15,550.50
150	Service	4668 Blackcomb Way	4668 Blackcomb	1998	6.78501	PVC	Blackcomb Benchlands North	643.3		212 770 Lower Blackcomb	85	2090	\$ 1,792.73
150	Main	The Cedars	4676 Blackcomb	1997	48.46465	PVC	Blackcomb Benchlands North	554.6		212 770 Lower Blackcomb	85	2090	\$ 12,843.13
100	Service	1205 Mount Fee Road	CC1	2007	7.08896	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 1,772.24
100	Service	1205 Mount Fee Road	CC1	2007	6.93694	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 1,734.24
100	Service	Mount Fee Road	CC1	2007	10.636	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 2,659.01
100	Service	1310 Cloudburst Drive	CC3	2007	31.0244	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 2,000.00
100	Service	1315 Cloudburst Drive	CC3	2007	6.80614	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 1,701.54
100	Service	1310 Cloudburst Drive	CC3	2007	14.7708	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 3,692.70
100	Service	1310 Cloudburst Drive	CC3	2007	15.9873	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 3,996.83
100	Service	1315 Cloudburst Drive	CC3	2007	5.79845	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 1,449.61
150	Service	1025 Legacy Way	CC4	2007	8.68566	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 2,301.70
100	Service	Legacy Way	CC4	2007	16.2954	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 4,073.84
100	Service	1015 Legacy Way	CC4	2007	7.28653	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 1,821.63
200	Main	Mount Fee Road	CC1	2007	334.432	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 100,741.33
200	Main	Mount Fee Road	CC2	2007	42.6871	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 12,858.67
200	Main	Cloudburst Drive	CC2	2007	217.175	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 65,419.78
200	Main	Cloudburst Drive	CC3	2007	256.494	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 77,263.83
300	Main	Legacy Way	CC4	2007	188.759	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 85,174.08
200	Main	Madeley Place	CC8	2007	193.081	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 58,162.01
200	Main	Whitewater Drive	CC6	2007	250.909	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 75,581.48
200	Service	1245 Mount Fee Road	CC1	2007	7.02172	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 2,106.52
200	Service	1240 Mount Fee Road	CC1	2007	13.0293	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 3,908.80
200	Service	1275 Mount Fee Road	CC1	2007	6.88844	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 2,066.53
150	Main	Mount Fee Road	CC2	2007	28.9108	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 7,696.94
200	Service	1380 Cloudburst Drive	CC2	2007	14.2226	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 4,266.78
200	Service	1375 Cloudburst Drive	CC2	2007	7.48594	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 2,245.78
200	Service	1350 Cloudburst Drive	CC2	2007	12.2778	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 3,683.34
200	Service	1350 Cloudburst Drive	CC2	2007	12.31375	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 3,694.12
200	Service	1025 Legacy Way	CC1	2007	8.25648	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 2,476.94
350	Main	Legacy Way	CC4	2007	162.226	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 75,148.22
350	Main	Legacy Way	W1018	2007	21.126	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 9,786.22
300	Main	Cheakamus Lake Road - Bridge Crossing	W1018	2007	45.9829	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 20,748.89
350	Main	Cheakamus Lake Road	W1018	2007	86.2788	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 39,967.01
350	Main	Cheakamus Lake Road	W1019	2007	316.679	PVC	Cheakamus	1859.2		214 721 Athletes Village	85	2091	\$ 146,695.28
200	Main	Glen Abbey Lane	8331-8398 Glen	2000	34.40239	PVC	Nicklaus North Estates	740.5		232 714 Nic North	85	2091	\$ 10,320.72
350	Main	London Mountain Lodge	W5015-1	2004	77.6293	PVC	Old Gravel Road	1297		210 Supply	85	2091	\$ 37,037.05
350	Main	London Mountain Lodge	W5015-1	2004	139.188	PVC	Old Gravel Road	1297		210 Supply	85	2091	\$ 66,406.55
300	Main	R236 to/from Nordic Drive	W2075-12	1999	88.9266	PVC	Whistler Mountain	674.3		209 913 Upper Talus	85	2091	\$ 40,016.53
300	Main	R236 to/from Nordic Drive	W2075-11	1999	174.474	PVC	Whistler Mountain	674.3		209 913 Upper Talus	85	2091	\$ 78,513.24
300	Main	R236 to/from Nordic Drive	W2075-10	1999	119.513	PVC	Whistler Mountain	674.3		209 913 Upper Talus	85	2091	\$ 53,780.68
350	Main	Spring Creek to/from Kadenwood Drive	W2104	2001	121.808	Ductile Iron	Whistler Mountain	882.4		210 Supply	85	2091	\$ 56,275.53
300	Main	Kadenwood Drive	W2105	2001	144.049	Ductile Iron	Bayshores	882.4		210 Supply	85	2091	\$ 75,244.12
350	Main	Spring Creek to/from Kadenwood Drive	W2104	2001	2.00823	Steel	Whistler Mountain	882.4		210 Supply	85	2091	\$ 927.80
350	Main	Spring Creek to/from Kadenwood Drive	W2104	2001	27.8423	Steel	Whistler Mountain	882.4		210 Supply	85	2091	\$ 12,863.15
350	Main	Spring Creek to/from Kadenwood Drive	W2104	2001	192.016	Ductile Iron	Whistler Mountain	882.4		210 Supply	85	2091	\$ 88,711.39
350	Main	Nita Lake Drive	W5014-2	2004	22.4451	PVC	Old Gravel Road	1297		210 Supply	85	2091	\$ 10,708.60
250	Main	Nita Lake Drive	W5014-1	2004	5.25317	PVC	Old Gravel Road	1297		210 Supply	85	2091	\$ 2,049.27
250	Main	Nita Lake Drive	W5014-1	2004	133.353	PVC	Old Gravel Road	1297		210 Supply	85	2091	\$ 52,020.98
200	Main	Nita Lake Estates	5200-5241 Jorda	2004	15.95078	PVC	Old Gravel Road	1297		210 Supply	85	2091	\$ 4,785.23
200	Main	Nita Lake Estates	5200-5241 Jorda	2004	49.2058	PVC	Old Gravel Road	1297		210 Supply	85	2091	\$ 14,761.74
350	Main	Nita Lake Estates	W5014-4	2004	9.0939	PVC	Old Gravel Road	1297		210 Supply	85	2091	\$ 4,338.71
350	Main	Nita Lake Estates	W5014-4	2004	97.8541	PVC	Old Gravel Road	1297		210 Supply	85	2091	\$ 46,686.33
350	Main	Nita Lake Estates	W5014-3	2004	12.2503	PVC	Old Gravel Road	1297		210 Supply	85	2091	\$ 5,844.64
350	Main	Nita Lake Estates	W5014-3	2004	87.8569	PVC	Old Gravel Road	1					

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
350	Main	Nita Lake Estates	W5014-3	2004	109.172	PVC	Old Gravel Road	1297	210	Supply	85	2091	\$ 52,086.28
200	Main	Nita Lake Estates	5200-5241 Jorda	2004	38.14613	PVC	Old Gravel Road	1297	210	Supply	85	2091	\$ 11,443.84
350	Main	Nita Lake Lodge/Lake Placid Road Connector	W2103-1	2004	5.79783	PVC	Old Gravel Road	1297	210	Supply	85	2091	\$ 2,766.15
350	Main	Nita Lake Lodge/Lake Placid Road Connector	W2103-1	2004	5.17011	PVC	Whistler Creek Centre	1297	210	Supply	85	2091	\$ 2,525.99
200	Service	First Nations Cultural Centre	4584 Blackcomb	2008	7	PVC	Blackcomb Benchlands South	994.5	212	770 Lower Blackcomb	85	2091	\$ 2,100.00
200	Service	First Nations Cultural Centre	4584 Blackcomb	2008	30.83256	PVC	Blackcomb Benchlands South	994.5	212	770 Lower Blackcomb	85	2091	\$ 9,249.77
350	Main	Spring Creek Drive	Spring Creek Ma	2001	85.6521	Ductile Iron	Spring Creek	905.6	204	735 Whistler South	85	2091	\$ 40,711.41
100	Main	W213	W8045-1	2002	4.03609	PVC	Alpine Meadows South	1099.9	210	Supply	85	2091	\$ 1,288.42
250	Main	1005 Alpha Lake Road	1005 Alpha Lake	1996	119.2685	PVC	Function Junction	422.1	205	643 FJ	85	2091	\$ 44,725.69
300	Main	Spring Creek to/from Kadenwood Drive	W2104	2001	11.2543	Ductile Iron	Whistler Mountain	882.4	210	Supply	85	2091	\$ 5,064.42
300	Main	between Snowridge and Taluswood	W2093-2	2000	8.45625	Ductile Iron	Whistler Creek Base	811.9	208	763 Creekside	85	2091	\$ 3,865.64
300	Main	between Snowridge and Creekside	W2093-2	2000	150.78	Ductile Iron	Whistler Creek Base	811.9	208	763 Creekside	85	2091	\$ 68,926.54
300	Main	Skier's Bridge to Snowridge	W2093-3	2000	130.862	Ductile Iron	Whistler Creek Base	811.9	208	763 Creekside	85	2091	\$ 59,821.41
250	Main	Kadenwood to/from Nordic Drive	W2075-12	1999	11.2094	PVC	Whistler Mountain	674.3	209	913 Upper Talus	85	2091	\$ 4,203.53
200	Main	R236	W2075-4	1999	30.5816	PVC	Whistler Mountain	674.3	209	913 Upper Talus	85	2091	\$ 9,174.47
300	Main	R236 to/from Nordic Drive	W2075-13	1999	49.9825	PVC	Whistler Mountain	674.3	209	913 Upper Talus	85	2091	\$ 22,492.11
300	Main	R236 to/from Nordic Drive	W2075-12	1999	62.3665	PVC	Whistler Mountain	674.3	209	913 Upper Talus	85	2091	\$ 28,064.94
250	Main	Treetop Lane	Nesters Hill Fold	2001	145.792	Ductile Iron	Nesters	925.7	213	775	85	2091	\$ 59,730.39
75	Main	Glen Abbey Lane	8331-8398 Glen	2000	46.29592	PVC	Nicklaus North Estates	740.5	232	714 Nic North	85	2091	\$ 11,111.02
75	Main	Glen Abbey Lane	8331-8398 Glen	2000	55.32339	PVC	Nicklaus North Estates	740.5	232	714 Nic North	85	2091	\$ 13,277.61
200	Main	McKeevers Place	8116-8120 McK	2000	108.6641	PVC	Alpine Meadows South	744.7	216	748 Lower Alpine Meadows	85	2091	\$ 32,599.22
250	Main	London Mountain Lodge	Design Drawings	2004	11.4278	PVC	Old Gravel Road	1297	210	Supply	85	2091	\$ 4,285.43
300	Main	Spring Creek Drive	Spring Creek Ma	2001	214.28	Ductile Iron	Spring Creek	905.6	204	735 Whistler South	85	2091	\$ 99,278.54
300	Main	Spring Creek Drive	Spring Creek Ma	2001	189.478	Ductile Iron	Spring Creek	905.6	204	735 Whistler South	85	2091	\$ 87,787.43
300	Main	Spring Creek Drive	Spring Creek Ma	2001	189.302	Ductile Iron	Spring Creek	905.6	204	735 Whistler South	85	2091	\$ 87,705.87
300	Main	Spring Creek Drive	Spring Creek Ma	2001	214.403	Ductile Iron	Spring Creek	905.6	204	735 Whistler South	85	2091	\$ 99,335.23
200	Service	Khyber Lane	1564-1569 Khyb	2001	6.025811	PVC	Spring Creek	905.6	204	735 Whistler South	85	2091	\$ 1,807.74
200	Main	Khyber Lane	1564-1569 Khyb	2001	193.3245	PVC	Spring Creek	905.6	204	735 Whistler South	85	2091	\$ 57,997.36
250	Main	P273	Spring Creek PRV	2001	12.5164	Ductile Iron	Spring Creek	905.6	204	735 Whistler South	85	2091	\$ 4,860.27
200	Main	Westside Employee Housing	1301 Alta Lake R	2001	76.45465	PVC	Twin Lakes	906.9	204	735 Whistler South	85	2091	\$ 22,936.39
300	Main	Spring Creek PRV	Spring Creek PRV	2001	8.36352	Ductile Iron	Spring Creek	905.6	204	735 Whistler South	85	2091	\$ 3,874.91
100	Main	P273	Spring Creek PRV	2001	5.4367	Ductile Iron	Spring Creek	905.6	204	735 Whistler South	85	2091	\$ 1,431.54
300	Main	Spring Creek Drive	Spring Creek Ma	2001	62.2899	Ductile Iron	Spring Creek	905.6	204	735 Whistler South	85	2091	\$ 28,859.59
250	Main	P273	Spring Creek PRV	2001	8.50425	Ductile Iron	Spring Creek	905.6	204	735 Whistler South	85	2091	\$ 3,302.29
300	Main	Spring Creek Drive	Spring Creek Ma	2001	2.99417	Ductile Iron	Spring Creek	905.6	204	735 Whistler South	85	2091	\$ 1,387.23
300	Main	Spring Creek Drive	Spring Creek Ma	2001	6.69035	Ductile Iron	Spring Creek	905.6	204	735 Whistler South	85	2091	\$ 3,099.71
300	Main	Spring Creek Drive	Spring Creek Ma	2001	62.845	Ductile Iron	Spring Creek	905.6	204	735 Whistler South	85	2091	\$ 29,116.78
250	Service	4591 Blackcomb Way	W4040(B)	2002	10.1957	PVC	Blackcomb Benchlands North	984	212	770 Lower Blackcomb	85	2091	\$ 3,823.38
150	Service	4591 Blackcomb Way	W4040(B)	2002	28.5785	PVC	Blackcomb Benchlands North	984	212	770 Lower Blackcomb	85	2091	\$ 7,573.30
250	Service	4591 Blackcomb Way	W4040(B)	2002	15.0567	PVC	Blackcomb Benchlands North	984	212	770 Lower Blackcomb	85	2091	\$ 5,646.26
200	Main	Horstman House	4653 Blackcomb	1999	12.808	PVC	Blackcomb Benchlands North	713.3	212	770 Lower Blackcomb	85	2091	\$ 3,861.69
200	Main	Horstman House	4653 Blackcomb	1999	19.65902	PVC	Blackcomb Benchlands North	713.3	212	770 Lower Blackcomb	85	2091	\$ 5,897.71
300	Main	Nesters Road	W8050	2009	189.03	PVC	Spruce Grove	1019	218	735B Nestors	85	2092	\$ 89,072.74
50	Service	1375 Cloudburst Drive	1375 Cloudburst	2008	12.15998	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 2,736.00
150	Service	1040 Legacy Way	CC7	2008	5.169707	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 1,369.97
100	Service	Parking Lot	CC7	2008	3.969049	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 992.26
50	Service	1050 Legacy Way	CC7	2008	29.30834	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 6,594.38
150	Service	1050 Legacy Way	CC7	2008	25.56261	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 6,774.09
150	Service	1060 Legacy Way	CC7	2008	3.418637	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 905.94
100	Service	1345 Cloudburst Drive	CC7	2008	4.011812	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 1,002.95
100	Service	1345 Cloudburst Drive	CC7	2008	6.798923	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 1,699.73
50	Service	1345 Cloudburst Drive	CC7	2008	19.02242	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 4,280.04
100	Service	1345 Cloudburst Drive	CC7	2008	6.829798	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 1,707.45
150	Service	1345 Cloudburst Drive	CC7	2008	4.037806	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 1,009.45
100	Service	1090 Legacy Way	CC5	2008	31.9765	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 8,473.79
150	Service	1080 Legacy Way	CC5	2008	7.76353	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 2,057.33
100	Service	Legacy Way	CC5	2008	24.5741	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 6,143.53
150	Service	Legacy Way	CC5	2008	8.07614	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 2,140.18
150	Main	WWTP Access Road	W1027	2008	7.19467	Ductile Iron	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 1,915.44
200	Main	Legacy Way	CC5	2008	319.568	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 96,263.83
350	Main	Jane Lakes Road (P278)	CC9	2008	131.706	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 61,010.08
350	Main	Jane Lakes Road (P278)	CC9	2008	119.268	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 55,248.63
300	Main	Legacy Way to West Side Main	CC9	2008	97.4767	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 43,984.50
200	Service	1245 Mount Fee Road	1245 Mount Fee	2008	131.5957	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 39,478.72
200	Service	1240 Mount Fee Road	1240 Mount Fee	2008	109.6899	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 32,906.97
200	Service	1275 Mount Fee Road	1275 Mount Fee	2008	139.3012	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 41,790.35
200	Service	1380 Cloudburst Drive	2008	113.8904	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 34,167.12	
200	Service	1375 Cloudburst Drive	2008	107.8363	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 32,350.88	
200	Service	1375 Cloudburst Drive	2008	30.14729	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 9,044.19	
300	Service	1350 Cloudburst Drive	2008	124.676	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 37,402.79	
200	Main	Right of Way between Legacy and Cloudburst	Design Drawings	2008	87.3839	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 26,318.19
300	Main	Right of Way between Legacy and Cloudburst	CC7	2008	240.895	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 108,698.16
200	Service	1035 Legacy Way	CC5	2008	9.93266	PVC	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 2,979.80
400	Main	P279/W217	W1027	2008	36.3469	Ductile Iron	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 18,036.44
150	Main	WWTP Access Road	W1027	2008	52.9131	Ductile Iron	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 14,087.10
250	Main	P279/W217	W1027	2008	32.295	Ductile Iron	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 12,150.37
250	Main	WWTP Access Road	W1027	2008	85.3287	Ductile Iron	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 32,103.28
350	Main	P279/W217	W1027	2008	37.9742	Ductile Iron	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 17,590.80
350	Main	WWTP Access Road	W1027	2008	87.4243	Ductile Iron	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 40,497.63
200	Main	WWTP	1135 Cheakamus	2008	129.701	Ductile Iron	Cheakamus	1859.2	214	721 Athletes Village	85	2092	\$ 39,069.89
150	Main	Rainbow to Trudy's Landing	W8048	2009	177.0918	Polyethylene	Rainbow	1021.9	216	748 Lower Alpine Meadows	85	2092	\$

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
50	Main	Rainbow to Trudy's Landing	W8048	2009	1,173,701	Polyethylene	Rainbow		1021.9	216	748 Lower Alpine Meadows	85	2092 \$ 264.08
150	Main	Kadenwood Fold	12.4418	2002	12,4418	PVC	Whistler Creek Base		909	209	913 Upper Talus	85	2092 \$ 3,385.83
200	Main	Whistler Sliding Centre	4910 Glacier Lan	2006	162,8905	Ductile Iron	Blackcomb Benchlands South		502.3	211	815 Upper Blackcomb	85	2092 \$ 48,867.16
100	Service	5448 Stonebridge Place	Stonebridge Driv	2001	3,00066	PVC	Stonebridge		793.9	242	872 Upper Stonebridge	85	2092 \$ 750.02
150	Service	5448 Stonebridge Place	Stonebridge Driv	2001	88,97979	PVC	Stonebridge		793.9	242	872 Upper Stonebridge	85	2092 \$ 23,579.64
200	Service	5448 Stonebridge Place	Stonebridge Driv	2001	9,377636	PVC	Stonebridge		793.9	242	872 Upper Stonebridge	85	2092 \$ 2,813.29
200	Service	5448 Stonebridge Place	Stonebridge - 36	2001	12,5711	PVC	Stonebridge		793.9	242	872 Upper Stonebridge	85	2092 \$ 3,771.31
150	Service	5441 Stonebridge Place	Design only	2001	23,06344	PVC	Stonebridge		843.1	242	872 Upper Stonebridge	85	2092 \$ 6,111.81
150	Service	5441 Stonebridge Place	Stonebridge - 36	2001	11,4798	PVC	Stonebridge		843.1	242	872 Upper Stonebridge	85	2092 \$ 3,042.14
200	Service	5453 Stonebridge Drive	Stonebridge - 36	2001	9,08183	PVC	Stonebridge		843.1	242	872 Upper Stonebridge	85	2092 \$ 2,724.55
150	Service	5476 Stonebridge Place	Design only	2001	19,48085	PVC	Stonebridge		793.9	242	872 Upper Stonebridge	85	2092 \$ 5,162.43
250	Main	Stonebridge Place	Stonebridge - 36	2001	81,3215	PVC	Stonebridge		793.9	242	872 Upper Stonebridge	85	2092 \$ 30,594.85
250	Main	Stonebridge Place	Stonebridge - 36	2001	56,6864	PVC	Stonebridge		793.9	242	872 Upper Stonebridge	85	2092 \$ 21,326.62
250	Main	Stonebridge Place	Stonebridge - 36	2001	69,8618	PVC	Stonebridge		793.9	242	872 Upper Stonebridge	85	2092 \$ 26,283.45
250	Main	Stonebridge Place	Stonebridge - 36	2001	16,6944	PVC	Stonebridge		843.1	242	872 Upper Stonebridge	85	2092 \$ 6,280.77
250	Main	Stonebridge Place	Stonebridge - 36	2001	33,4028	PVC	Stonebridge		843.1	242	872 Upper Stonebridge	85	2092 \$ 12,566.85
100	Service	5442 Stonebridge Drive	Stonebridge Driv	2001	5,003441	PVC	Stonebridge		843.1	242	872 Upper Stonebridge	85	2092 \$ 1,250.86
150	Service	5442 Stonebridge Drive	Stonebridge Driv	2001	17,4011	PVC	Stonebridge		843.1	242	872 Upper Stonebridge	85	2092 \$ 4,611.26
200	Main	5442 Stonebridge Drive	Stonebridge Driv	2001	16,1452	PVC	Stonebridge		843.1	242	872 Upper Stonebridge	85	2092 \$ 4,843.56
200	Service	5450 Stonebridge Drive	Stonebridge Driv	2001	200,4382	PVC	Stonebridge		843.1	242	872 Upper Stonebridge	85	2092 \$ 60,131.46
100	Service	5446 Stonebridge Drive	Stonebridge Driv	2001	2,814842	PVC	Stonebridge		843.1	242	872 Upper Stonebridge	85	2092 \$ 703.71
150	Service	5446 Stonebridge Drive	Stonebridge Driv	2001	113,5238	PVC	Stonebridge		843.1	242	872 Upper Stonebridge	85	2092 \$ 30,084.35
200	Service	5446 Stonebridge Drive	Stonebridge Driv	2001	195,8773	PVC	Stonebridge		843.1	242	872 Upper Stonebridge	85	2092 \$ 58,763.18
200	Service	5446 Stonebridge Drive	Stonebridge Driv	2001	14,8883	PVC	Stonebridge		843.1	242	872 Upper Stonebridge	85	2092 \$ 4,466.60
200	Main	Stonebridge Drive	Stonebridge - 34	2001	150,847	PVC	Stonebridge		843.1	242	872 Upper Stonebridge	85	2092 \$ 45,438.31
200	Main	Stonebridge Drive	Stonebridge - 34	2001	89,2005	PVC	Stonebridge		843.1	242	872 Upper Stonebridge	85	2092 \$ 26,869.06
200	Main	Stonebridge Drive	Stonebridge - 33	2001	19,1287	PVC	Stonebridge		843.1	242	872 Upper Stonebridge	85	2092 \$ 5,761.96
250	Main	Stonebridge Drive	Stonebridge - 33	2001	22,3898	PVC	Stonebridge		843.1	242	872 Upper Stonebridge	85	2092 \$ 8,423.52
250	Main	Stonebridge Drive	Stonebridge - 33	2001	20,377	PVC	Stonebridge		843.1	242	872 Upper Stonebridge	85	2092 \$ 7,666.24
250	Main	Stonebridge Drive	Stonebridge - 33	2001	157,403	PVC	Stonebridge		843.1	242	872 Upper Stonebridge	85	2092 \$ 59,218.20
100	Main	At Nature's Door	2300 Nordic Driv	2002	35,37778	PVC	Whistler Highlands		909.2	209	913 Upper Talus	85	2092 \$ 8,844.45
150	Main	At Nature's Door	2300 Nordic Driv	2002	79,80929	PVC	Whistler Highlands		909.2	209	913 Upper Talus	85	2092 \$ 21,149.46
200	Main	At Nature's Door	2300 Nordic Driv	2002	98,41877	PVC	Whistler Highlands		909.2	209	913 Upper Talus	85	2092 \$ 29,525.63
200	Main	At Nature's Door	2300 Nordic Driv	2002	125,1913	PVC	Whistler Highlands		909.2	209	913 Upper Talus	85	2092 \$ 37,557.39
200	Main	The Lookout	2500 Taluswood	2002	34,83698	PVC	Whistler Highlands		948.7	209	913 Upper Talus	85	2092 \$ 10,451.09
100	Main	The Lookout	2500 Taluswood	2002	22,66121	PVC	Whistler Highlands		909.2	209	913 Upper Talus	85	2092 \$ 5,665.30
150	Main	The Lookout	2500 Taluswood	2002	94,30067	PVC	Whistler Highlands		948.7	209	913 Upper Talus	85	2092 \$ 24,989.68
200	Main	The Lookout	2500 Taluswood	2002	51,5891	PVC	Whistler Highlands		948.7	209	913 Upper Talus	85	2092 \$ 15,476.73
100	Main	Sunridge Drive	Sunridge Plateau	1995	243,1613	PVC	Brio		261.9	213	775	85	2092 \$ 60,790.32
250	Main	Sunridge Drive	Sunridge Plateau	1995	312,559	PVC	Brio		261.9	213	775	85	2092 \$ 117,209.64
200	Main	Summer Place	W9023-17	2002	35,2511	Ductile Iron	Emerald Estates Lakeside		932.1	206	733 Emerald Estates	85	2092 \$ 12,694.71
150	Main	Lorimer Court Employee Housing	6320 Lorimer Ro	1998	93,576	PVC	Whistler Cay Estates		505.1	241	675 Tapley Farm	85	2092 \$ 27,650.15
150	Main	Seppos Way	Nesters Hill Fold	2001	29,6088	Ductile Iron	Nesters		803.9	218	735B Nestors	85	2092 \$ 8,873.68
150	Main	Seppos Way	Nesters Hill Fold	2001	29,7089	Ductile Iron	Nesters		803.9	218	735B Nestors	85	2092 \$ 8,903.67
250	Main	Seppos Way	Nesters Hill Fold	2001	142,473	Ductile Iron	Nesters		823.4	218	735B Nestors	85	2092 \$ 58,370.89
250	Main	Seppos Way	Nesters Hill Fold	2001	20,4154	Ductile Iron	Nesters		803.9	218	735B Nestors	85	2092 \$ 8,364.12
200	Main	Treetop Lane	Nesters Hill Fold	2001	140,157	PVC	Nesters		823.4	218	735B Nestors	85	2092 \$ 46,910.15
150	Main	Mountain View Drive - P245	W8043-6	2000	5,28995	Steel	Alpine Meadows North		632.5	217	784 Upper Alpine Meadows	85	2092 \$ 1,796.49
150	Main	Mountain View Drive - P245	W8043-6	2000	5,55228	Steel	Alpine Meadows North		632.5	217	784 Upper Alpine Meadows	85	2092 \$ 1,885.58
200	Main	Chalet Drive	W8042	2000	250,567	PVC	Alpine Meadows North		675.8	216	748 Lower Alpine Meadows	85	2092 \$ 93,863.53
150	Main	Lakeshore Drive	W9023-7	2002	5,50854	Ductile Iron	Emerald Estates Lakeside		902.8	206	733 Emerald Estates	85	2092 \$ 1,790.90
200	Main	Lakeshore Drive	W9023-7	2002	109,696	Ductile Iron	Emerald Estates Lakeside		927.2	206	733 Emerald Estates	85	2092 \$ 39,502.95
200	Main	Lakeshore Drive	W9023-7	2002	24,9692	Ductile Iron	Emerald Estates Lakeside		927.2	206	733 Emerald Estates	85	2092 \$ 8,991.77
200	Main	Lakeshore Drive	W9023-7	2002	119,142	Ductile Iron	Emerald Estates Lakeside		935.1	206	733 Emerald Estates	85	2092 \$ 42,904.60
200	Main	Summer Lane	W9023-16	2002	132,302	Ductile Iron	Emerald Estates Lakeside		903.7	206	733 Emerald Estates	85	2092 \$ 47,643.86
200	Main	Summer Lane	W9023-16	2002	60,6351	Ductile Iron	Emerald Estates Lakeside		922.3	206	733 Emerald Estates	85	2092 \$ 21,835.53
200	Main	Summer Lane	W9023-15	2002	24,9834	Ductile Iron	Emerald Estates Lakeside		932.1	206	733 Emerald Estates	85	2092 \$ 8,996.87
200	Main	Summer Lane	W9023-15	2002	205,234	Ductile Iron	Emerald Estates Lakeside		870.5	206	733 Emerald Estates	85	2092 \$ 73,907.56
50	Main	At Nature's Door	2300 Nordic Driv	2002	16,57717	PVC	Whistler Highlands		909.2	209	913 Upper Talus	85	2092 \$ 3,729.86
200	Main	Heritage Peaks Trail	Kadenwood Fold	2002	235,489	PVC	Whistler Creek Base		909	209	913 Upper Talus	85	2092 \$ 72,326.74
350	Main	Nita Lake P276	W5015-2	2004	8.5	PVC	Stonebridge		1032.8	210	Supply	85	2093 \$ 3,937.38
350	Main	Nita Lake P276	W5015-2	2004	8.5	PVC	Stonebridge		1032.8	210	Supply	85	2093 \$ 3,937.38
350	Main	London Mountain Lodge	W5015-2	2004	224,759	PVC	Old Gravel Road		1032.8	210	Supply	85	2093 \$ 107,232.70
350	Main	London Mountain Lodge	W5015-2	2004	1,87169	Ductile Iron	Stonebridge		1032.8	210	Supply	85	2093 \$ 867.00
350	Main	London Mountain Lodge	W5015-2	2004	19,4394	PVC	Stonebridge		1032.8	210	Supply	85	2093 \$ 9,004.74
350	Main	London Mountain Lodge	W5015-2	2004	13,5466	Steel	Old Gravel Road		1032.8	210	Supply	85	2093 \$ 6,462.61
350	Main	London Mountain Lodge	W5015-2	2004	10,9864	PVC	Old Gravel Road		1032.8	210	Supply	85	2093 \$ 5,241.61
350	Main	London Mountain Lodge	W5015-2	2004	16,277	Ductile Iron	Old Gravel Road		1032.8	210	Supply	85	2093 \$ 7,765.77
350	Main	London Mountain Lodge	W5015-1	2004	20,1806	PVC	Old Gravel Road		1032.8	210	Supply	85	2093 \$ 9,628.21
350	Main	London Mountain Lodge	W5015-1	2004	62,2594	PVC	Old Gravel Road		1032.8	210	Supply	85	2093 \$ 29,704.05
250	Main	Kadenwood to/from Taluswood	W2106-2	2001	282,728	PVC	Whistler Mountain		674.3	209	913 Upper Talus	85	2093 \$ 106,022.84
250	Main	London Mountain Lodge	Design Drawings	2004	17,044	PVC	Old Gravel Road		1032.8	210	Supply	85	2093 \$ 6,391.49
200	Main	Lakecrest Road to Lakecrest Lane	W3053-5	2006	150,6876	PVC	Alta Vista		1285.4	213	775	85	2093 \$ 45,206.29
200	Service	5451 Stonebridge Place	Stonebridge - 37	2001	4,56413	PVC	Stonebridge		636.4	242	872 Upper Stonebridge	85	2093 \$ 1,369.24
200	Service	5451 Stonebridge Place	Stonebridge - 37	2001	7,72831	PVC	Stonebridge		636.4	242	872 Upper Stonebridge	85	2093 \$ 2,318.49
150	Service	5455 Stonebridge Place	Design only	2001	22,14411	PVC	Stonebridge		636.4	242	872 Upper Stonebridge	85	2093 \$ 5,868.19
150	Service	5455 Stonebridge Place	Stonebridge - 37	2001	8,46801	PVC	Stonebridge		636.4	242	872 Upper Stonebridge	85	2093 \$ 2,244.02
150	Service	5459 Stonebridge Place	Design only	2001	23,0506	PVC	Stonebridge		636.4	242	872 Upper Stonebridge	85	2093 \$ 6,108.41
150	Service	5459 Stonebridge Place	Stonebridge - 37	2001	14,3732	PVC	Stonebridge		636.4	242	872 Upper Stonebridge	85	2093 \$ 3,808.91
150	Service	5464 Stonebridge Place	Design only	2001	13,79433	PVC	Stonebridge		636.4	242	872 Upper Stonebridge	85	2093 \$ 3,655.50
150	Service	5464 Stonebridge Place	Stonebridge - 37	2001	4,21869	PVC	Stonebridge		636.4	242	872 Upper Stonebridge	85	2093 \$ 1,117.95
250	Main	Stonebridge Place	Stonebridge - 38	2001	61,5747	PVC	Stonebridge						

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
250	Main	Stonebridge Place	Stonebridge - 37	2001	2,15465	PVC	Stonebridge	636.4	242	872 Upper Stonebridge	85	2093	\$ 810.62
250	Main	Stonebridge Place	Stonebridge - 37	2001	23,1424	PVC	Stonebridge	636.4	242	872 Upper Stonebridge	85	2093	\$ 8,706.64
250	Main	Stonebridge Place	Stonebridge - 37	2001	37,6737	PVC	Stonebridge	636.4	242	872 Upper Stonebridge	85	2093	\$ 14,173.61
250	Main	Stonebridge Place	Stonebridge - 37	2001	60,6208	PVC	Stonebridge	636.4	242	872 Upper Stonebridge	85	2093	\$ 22,806.79
250	Main	Stonebridge Place	Stonebridge - 37	2001	2,63668	PVC	Stonebridge	636.4	242	872 Upper Stonebridge	85	2093	\$ 991.97
250	Main	Stonebridge Place	Stonebridge - 37	2001	82,606	PVC	Stonebridge	636.4	242	872 Upper Stonebridge	85	2093	\$ 31,078.10
250	Main	Stonebridge Place	Stonebridge - 37	2001	94,3321	PVC	Stonebridge	636.4	242	872 Upper Stonebridge	85	2093	\$ 35,489.71
100	Service	5422 Stonebridge Drive	Stonebridge Drive	2001	4,939975	PVC	Stonebridge	679.9	239	825 Lower Stonebridge	85	2093	\$ 1,234.99
150	Service	5436 Stonebridge Drive	Design only	2001	178,1732	PVC	Stonebridge	679.9	239	825 Lower Stonebridge	85	2093	\$ 47,215.90
150	Service	5428 Stonebridge Drive	Design only	2001	101,5597	PVC	Stonebridge	679.9	239	825 Lower Stonebridge	85	2093	\$ 26,913.31
200	Service	5428 Stonebridge Drive	Stonebridge - 31	2001	6,33581	PVC	Stonebridge	679.9	239	825 Lower Stonebridge	85	2093	\$ 1,900.74
150	Service	5432 Stonebridge Drive	Design only	2001	149,6629	PVC	Stonebridge	679.9	239	825 Lower Stonebridge	85	2093	\$ 39,660.67
150	Service	5432 Stonebridge Drive	Design only	2001	49,43443	PVC	Stonebridge	679.9	239	825 Lower Stonebridge	85	2093	\$ 13,099.86
200	Service	5432 Stonebridge Drive	Stonebridge - 31	2001	6,49963	PVC	Stonebridge	679.9	239	825 Lower Stonebridge	85	2093	\$ 1,949.89
200	Main	P275 - Stonebridge Drive	Stonebridge - 32	2001	2,7296	PVC	Stonebridge	679.9	239	825 Lower Stonebridge	85	2093	\$ 822.21
200	Main	P275 - Stonebridge Drive	Stonebridge - 32	2001	4,69586	PVC	Stonebridge	679.9	239	825 Lower Stonebridge	85	2093	\$ 1,414.49
100	Main	The Ridge	2269 Nordic Driv	1998	31.5	PVC	Whistler Highlands	374.7	215	819 Lower Taluswood	85	2093	\$ 7,875.00
100	Main	The Ridge	2269 Nordic Driv	1998	34	PVC	Whistler Highlands	384.2	215	819 Lower Taluswood	85	2093	\$ 8,500.00
250	Main	The Ridge	2269 Nordic Driv	1998	141.7	PVC	Whistler Highlands	374.7	215	819 Lower Taluswood	85	2093	\$ 53,137.49
250	Main	Brio Reservoir to/from Sunridge Drive	W3050	2002	407,957	PVC	Whistler Mountain	762.4	219	818 Sunridge	85	2093	\$ 152,981.78
250	Main	Autumn Drive	W9023-1	2002	120.52	Ductile Iron	Emerald Estates Serviced	801.6	206	733 Emerald Estates	85	2093	\$ 52,386.06
250	Main	Summer Lane	W9023-1	2002	0,89678	Ductile Iron	Emerald Estates Lakeside	845.6	206	733 Emerald Estates	85	2093	\$ 390.20
200	Main	Autumn Drive	W9023-1	2002	11,0047	Ductile Iron	Emerald Estates Serviced	801.6	206	733 Emerald Estates	85	2093	\$ 3,968.04
200	Main	Autumn Drive	W9023-1	2002	18,0017	Ductile Iron	Emerald Estates Serviced	801.6	206	733 Emerald Estates	85	2093	\$ 6,474.63
200	Main	Emerald Drive	W9023-9	2002	184,672	Ductile Iron	Emerald Estates Unserviced	757.1	206	733 Emerald Estates	85	2093	\$ 65,460.27
200	Main	Emerald Drive	W9023-9	2002	86,7384	Ductile Iron	Emerald Estates Unserviced	844.1	206	733 Emerald Estates	85	2093	\$ 30,746.03
250	Main	Pinetree Lane	W9023-6	2002	155,15	Ductile Iron	Emerald Estates Unserviced	757.1	206	733 Emerald Estates	85	2093	\$ 66,632.11
250	Main	London Mountain Lodge	Design Drawings	2004	16,4562	PVC	Old Gravel Road	1032.8	210	Supply	85	2093	\$ 6,171.09
250	Main	Emerald Drive	W9023-12 Detail	2002	24,1321	Ductile Iron	Emerald Estates Unserviced	757.1	206	733 Emerald Estates	85	2093	\$ 10,364.00
250	Main	Emerald Drive	W9023-12 Detail	2002	10,9486	Ductile Iron	Emerald Estates Unserviced	757.1	206	733 Emerald Estates	85	2093	\$ 4,702.07
150	Main	Beaver Flats	W2083	2000	17,5925	Ductile Iron	Whistler Creek Centre	606.9	222	702 Whistler Creek	85	2093	\$ 5,129.55
150	Main	Beaver Flats	W2083	2000	55,84437	Ductile Iron	Whistler Creek Centre	606.9	222	702 Whistler Creek	85	2093	\$ 14,798.76
150	Main	Beaver Flats	W2083	2000	88,82687	PVC	Whistler Creek Centre	596.7	222	702 Whistler Creek	85	2093	\$ 23,539.12
150	Main	Beaver Flats	W2083	2000	17,1385	PVC	Whistler Creek Centre	596.7	222	702 Whistler Creek	85	2093	\$ 4,997.17
200	Main	Brio Reservoir	W3050	2002	42,1329	PVC	Whistler Mountain	762.4	219	818 Sunridge	85	2093	\$ 12,639.86
75	Main	Sunridge Drive	Sunridge Plateau	1995	38,76335	PVC	Brio	222.8	219	818 Sunridge	85	2093	\$ 9,303.20
200	Service	4617 Blackcomb Way	W4039(B)	2003	16,1931	PVC	Blackcomb Benchlands North	887.6	212	770 Lower Blackcomb	85	2093	\$ 4,857.92
250	Service	4617 Blackcomb Way	W4039(B)	2003	10,1181	PVC	Blackcomb Benchlands North	948.9	212	770 Lower Blackcomb	85	2093	\$ 3,794.30
150	Service	4617 Blackcomb Way	W4039(B)	2003	5,58828	PVC	Blackcomb Benchlands North	948.9	212	770 Lower Blackcomb	85	2093	\$ 1,480.89
300	Main	Emerald Drive	W9023-5	2002	62,5252	PVC	Emerald Estates Unserviced	706.4	206	733 Emerald Estates	85	2094	\$ 31,541.98
200	Main	ROW - Hillcrest Lane to Lakecrest Lane	W3053-4	2006	90,13088	PVC	Alta Vista	1182	213	775	85	2094	\$ 27,039.26
200	Main	Hillcrest Drive	W3052-7	2005	17,8507	PVC	Alta Vista	1044.9	213	775	85	2094	\$ 6,107.88
200	Main	Hillcrest Drive	W3052-7	2005	9,12774	PVC	Alta Vista	1044.9	213	775	85	2094	\$ 3,123.20
200	Main	Hillcrest Drive	W3052-7	2005	8,77461	PVC	Alta Vista	1044.9	213	775	85	2094	\$ 3,002.37
200	Main	Lakecrest Lane	W3053-6	2006	155,3321	PVC	Alta Vista	1182	213	775	85	2094	\$ 46,599.64
150	Service	2301 Taluswood Place	W2085-4	1999	15,9254	PVC	Whistler Highlands	394.2	215	819 Lower Taluswood	85	2094	\$ 4,220.24
100	Main	The Bluffs	2301-2323 Talus	1999	21,01494	PVC	Whistler Highlands	394.2	215	819 Lower Taluswood	85	2094	\$ 5,253.74
150	Main	The Bluffs	2301-2323 Talus	1999	88,05603	PVC	Whistler Highlands	394.2	215	819 Lower Taluswood	85	2094	\$ 23,334.85
300	Main	Whistler Creek to/from Taluswood	W2082	2000	237,116	PVC	Whistler Highlands	492.1	215	819 Lower Taluswood	85	2094	\$ 113,692.42
150	Main	Treetop Lane	Nesters Hill Fold	2001	30,732	PVC	Nesters	578.8	218	735B Nestors	85	2094	\$ 9,210.29
200	Main	Treetop Lane	Nesters Hill Fold	2001	68,3757	PVC	Nesters	578.8	218	735B Nestors	85	2094	\$ 22,885.16
200	Main	Treetop Lane	Nesters Hill Fold	2001	33,6134	PVC	Nesters	578.8	218	735B Nestors	85	2094	\$ 11,250.31
250	Main	Mountain View Drive	W8044-7	2000	235,835	Ductile Iron	Alpine Meadows North	520	217	784 Upper Alpine Meadows	85	2094	\$ 106,032.32
250	Main	Mountain View Drive	W8044-7	2000	60,4837	Ductile Iron	Alpine Meadows North	520	217	784 Upper Alpine Meadows	85	2094	\$ 27,193.72
200	Main	Autumn Drive	W9023-11	2002	135,155	Ductile Iron	Emerald Estates Unserviced	679.3	206	733 Emerald Estates	85	2094	\$ 47,908.12
300	Main	Emerald Drive	W9023-5	2002	158,697	PVC	Emerald Estates Unserviced	674.1	206	733 Emerald Estates	85	2094	\$ 80,057.61
300	Main	Emerald Drive	W9023-5	2002	90,7038	PVC	Emerald Estates Unserviced	674.1	206	733 Emerald Estates	85	2094	\$ 45,757.24
200	Main	Nancy Greene Drive	W7012	1998	1,80148	Ductile Iron	White Gold	360.2	231	716 White Gold	85	2094	\$ 673.26
200	Main	Nancy Greene Drive	W7012	1998	30,1037	Ductile Iron	White Gold	360.2	231	716 White Gold	85	2094	\$ 11,250.61
150	Main	Whistler Road	Doug Bush Digiti	2002	23,2969	Ductile Iron	Nordic Estates	663.6	213	775	85	2094	\$ 7,048.46
200	Main	Nancy Greene Drive	W7012	1998	8,50044	Ductile Iron	White Gold	360.2	231	716 White Gold	85	2094	\$ 3,176.86
200	Main	Nancy Greene Drive	W7012	1998	8,49811	Ductile Iron	White Gold	360.2	231	716 White Gold	85	2094	\$ 3,175.99
200	Main	Kadenwood Drive	Kadenwood Fold	2002	966,388	PVC	Whistler Creek Base	644.8	209	913 Upper Talus	85	2094	\$ 296,810.54
200	Main	Kadenwood Drive to/from Ancient Cedars Lane	Kadenwood Fold	2002	130,376	PVC	Whistler Creek Base	644.8	209	913 Upper Talus	85	2094	\$ 40,042.87
200	Main	Kadenwood Drive to/from Ancient Cedars Lane	Kadenwood Fold	2002	6,58213	PVC	Whistler Creek Base	644.8	209	913 Upper Talus	85	2094	\$ 2,021.60
100	Main	Big Timber Court	Kadenwood Fold	2002	69,21714	PVC	Whistler Creek Base	644.8	209	913 Upper Talus	85	2094	\$ 17,304.28
200	Main	Big Timber Court	Kadenwood Fold	2002	39,62271	PVC	Whistler Creek Base	644.8	209	913 Upper Talus	85	2094	\$ 11,886.81
200	Main	High Point Drive	Kadenwood Fold	2002	45,21228	PVC	Whistler Creek Base	635	209	913 Upper Talus	85	2094	\$ 13,563.68
250	Main	Lake Placid Road	W1018	2007	8,77717	Ductile Iron	Cheakamus	1183.2	0		85	2095	\$ 3,302.24
150	Service	Lake Placid Road	W2087-1	2002	12,3395	PVC	Whistler Creek Centre	614.8	222	702 Whistler Creek	85	2095	\$ 3,269.57
200	Service	2131 Lake Placid Road	W2087-1	2002	15,1345	PVC	Whistler Creek Centre	595.4	222	702 Whistler Creek	85	2095	\$ 4,540.54
200	Service	Hillcrest Drive	W3053-9	2006	6,35733	PVC	Alta Vista	996	213	775	85	2095	\$ 1,907.20
200	Service	Hillcrest Drive	W3053-9	2006	6,80368	PVC	Alta Vista	996	213	775	85	2095	\$ 2,041.10
300	Main	Lake Placid Road	W2089-2	2002	150,265	Ductile Iron	Whistler Creek Centre	605.2	222	702 Whistler Creek	85	2095	\$ 71,612.74
200	Main	Hillcrest Lane	W3053-3	2006	166,2503	PVC	Alta Vista	1044.9	213	775	85	2095	\$ 49,875.09
200	Main	Lakecrest Lane	W3053-7	2006	122,1968	PVC	Alta Vista	996	213	775	85	2095	\$ 36,659.05
200	Main	Lakecrest Lane	W3053-8	2006	49,79136	PVC	Alta Vista	1000.9	213	775	85	2095	\$ 14,937.41
100	Main	Lakecrest Lane	W3053-8	2006	36,67214	PVC	Alta Vista	996	213	775	85	2095	\$ 9,168.04
250	Main	P271	W2095-2	2000	4,97377	Ductile Iron	Whistler Highlands	374.7	215	819 Lower Taluswood	85	2095	\$ 2,011.60
250	Main	P271	W2095-2	2000	4,89629	Ductile Iron	Whistler Highlands	374.7	215	819 Lower Taluswood	85	2095	\$ 1,980.46
150	Service	The Heights	2324 Taluswood	2000	15,90841	PVC	Whistler Highlands	394.2	215	819 Lower Taluswood	85	2095	\$ 4,215.73
50	Service	The Heights	2324 Taluswood	2000	7,86178	PVC	Whistler Highlands	394.2	215	819 Lower Taluswood	85	2095	\$ 2,000.00

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
150	Main	2257-2263 Nordic Drive	W2082	2000	8.42077	PVC	Whistler Highlands	384.4	215	819 Lower Taluswood	85	2095	\$ 2,231.50
100	Main	2257-2263 Nordic Drive	W2082	2000	39.85	PVC	Whistler Highlands	384.4	215	819 Lower Taluswood	85	2095	\$ 9,962.50
250	Main	Mountain View Drive	W8044-7	2000	34,907.5	Ductile Iron	Alpine Meadows North	416.2	217	784 Upper Alpine Meadows	85	2095	\$ 15,694.56
250	Main	Autumn Drive	W9023-1	2002	150.966	Ductile Iron	Emerald Estates Serviced	555	206	733 Emerald Estates	85	2095	\$ 65,619.91
300	Main	Emerald Drive	W9023-2	2002	11.266	PVC	Emerald Estates Unserviced	555	206	733 Emerald Estates	85	2095	\$ 5,683.34
300	Main	Emerald Drive	W9023-3	2002	176.191	PVC	Emerald Estates Unserviced	550.9	206	733 Emerald Estates	85	2095	\$ 88,882.88
250	Main	Pinetree Lane	W9023-6	2002	137.927	Ductile Iron	Emerald Estates Unserviced	623.1	206	733 Emerald Estates	85	2095	\$ 59,235.52
300	Main	Emerald Drive	W9023-4	2002	89.4943	PVC	Emerald Estates Unserviced	550.9	206	733 Emerald Estates	85	2095	\$ 45,147.07
150	Main	Nordic Drive	Doug Bush Digt	2002	22.4576	PVC	Whistler Highlands	548	213	775	85	2095	\$ 6,613.35
300	Main	Lake Placid Road	W2089-1	2002	49.9718	Ductile Iron	Whistler Creek Centre	614.8	222	702 Whistler Creek	85	2095	\$ 23,815.36
150	Main	Karen Crescent	W2088	2002	54.5003	PVC	Whistler Creek Centre	586	222	702 Whistler Creek	85	2095	\$ 15,891.01
150	Service	2129 Lake Placid Road	W2087-2	2002	15.1509	PVC	Whistler Creek Centre	595.4	222	702 Whistler Creek	85	2095	\$ 4,014.99
300	Main	Lake Placid Road	W2087-2	2002	157.017	PVC	Whistler Creek Centre	605.2	222	702 Whistler Creek	85	2095	\$ 74,830.57
150	Main	Lake Placid Road	W2087-1	2002	4.45779	PVC	Whistler Creek Centre	614.8	222	702 Whistler Creek	85	2095	\$ 1,299.79
300	Main	Lake Placid Road	W2087-1	2002	98.2893	PVC	Whistler Creek Centre	614.8	222	702 Whistler Creek	85	2095	\$ 46,842.37
600	Main	21-Mile Pump Station - Lorimer Road Connection	W5020	2008	395.956	Ductile Iron	Whistler Cay Estates	1242.4	210	Supply	85	2096	\$ 695,094.61
400	Main	21-Mile Creek Pump Station	W5023	2008	31.2949	Ductile Iron	Rainbow Park	1203.6	210	Supply	85	2096	\$ 15,915.65
400	Main	21-Mile Creek Pump Station	W5023	2008	33.2641	Ductile Iron	Rainbow Park	1203.6	210	Supply	85	2096	\$ 16,917.14
300	Main	21-Mile Creek Pump Station	W5023	2008	25.4929	Ductile Iron	Rainbow Park	1203.6	210	Supply	85	2096	\$ 11,817.76
600	Main	21-Mile Creek Pump Station	W5023	2008	24.756	Ductile Iron	Rainbow Park	1203.6	210	Supply	85	2096	\$ 43,047.3
250	Main	Cheakamus Reservoir/Function Junction Tie-in Location	W1022	2008	11.3533	Ductile Iron	Cheakamus	1193.2	0		85	2096	\$ 4,271.47
300	Main	Function Junction Highway 99 Crossing	W1026	2008	4.25022	PVC	Function Junction	1193.2	0		85	2096	\$ 1,912.60
400	Main	Cheakamus Lake Road	W1021	2008	127.415	Ductile Iron	Cheakamus	1193.2	0		85	2096	\$ 63,227.11
200	Main	Emerald Reservoir - R238	W9021-4	2001	0.55224	Ductile Iron	Emerald Estates Park	407.3	206	733 Emerald Estates	85	2096	\$ 165.67
200	Main	Ancient Cedars Lane	Kadenwood Fold	2002	23.6358	PVC	Whistler Creek Base	517.6	209	913 Upper Talus	85	2096	\$ 7,259.35
200	Main	Ancient Cedars Lane	Kadenwood Fold	2002	98.32507	PVC	Whistler Creek Base	517.6	209	913 Upper Talus	85	2096	\$ 29,497.52
200	Service	2020 London Lar	Evolution	2008	10.6439	Ductile Iron	Whistler Creek Base	1124.9	208	763 Creekside	85	2096	\$ 3,193.16
200	Service	Evolution	2020 London Lar	2008	21.52953	Ductile Iron	Whistler Creek Base	1124.9	208	763 Creekside	85	2096	\$ 6,458.86
150	Service	1216 Alpha Lake Road	1216 Alpha Lake	2001	13.59214	PVC	Function Junction	412.3	205	643 FJ	85	2096	\$ 3,501.92
200	Main	Highway 99 to W212	W1012-1	2001	72.9141	Ductile Iron	Function Junction	422.1	205	643 FJ	85	2096	\$ 21,874.22
150	Main	Cheakamus Way	W2100	2004	5.97587	PVC	Bayshores	640.6	204	735 Whistler South	85	2096	\$ 2,015.96
300	Main	London Lane	W2101	2008	110.17	Ductile Iron	Whistler Creek Base	1124.9	208	763 Creekside	85	2096	\$ 50,362.30
300	Main	London Lane	W2100	2008	66.8956	Ductile Iron	Whistler Creek Base	1120	208	763 Creekside	85	2096	\$ 30,580.26
150	Main	The Grove	6715-6717 Crab	2002	42.17606	PVC	Whistler Cay Estates	490.8	241	675 Tapley Farm	85	2096	\$ 11,176.66
200	Main	The Grove	6715-6717 Crab	2002	70.4468	PVC	Whistler Cay Estates	481.8	241	675 Tapley Farm	85	2096	\$ 23,281.50
50	Main	Balsam Park Washroom	6312 Easy Street	2002	101.318	Polyethylene	Tapley's Farm	528.5	241	675 Tapley Farm	85	2096	\$ 27,999.13
150	Main	Treestop Lane	Nesters Hill Fold	2001	74.9857	PVC	Nesters	402.6	218	735B Nestors	85	2096	\$ 22,472.98
250	Main	Mountain View Drive	W8044-8	2000	185.73	Ductile Iron	Alpine Meadows North	361.5	217	784 Upper Alpine Meadows	85	2096	\$ 83,504.85
200	Main	Emerald Reservoir - R238	W9021-4	2001	322.756	Ductile Iron	Emerald Estates Unserviced	407.3	206	733 Emerald Estates	85	2096	\$ 114,406.92
200	Main	Emerald Reservoir - R238	W9021-4	2001	0.63002	Ductile Iron	Emerald Estates Park	407.3	206	733 Emerald Estates	85	2096	\$ 189.01
200	Main	Emerald Reservoir - R238	W9021-4	2001	35.7752	Ductile Iron	Emerald Estates Park	407.3	206	733 Emerald Estates	85	2096	\$ 10,732.57
200	Main	Emerald Reservoir - R238	W9021-4	2001	1.06979	Ductile Iron	Emerald Estates Park	407.3	206	733 Emerald Estates	85	2096	\$ 320.94
350	Main	Emerald Reservoir - R238	W9021-4	2001	328.57	Ductile Iron	Emerald Estates Unserviced	407.3	206	733 Emerald Estates	85	2096	\$ 169,696.01
350	Main	Emerald Reservoir - R238	W9021-4	2001	8.428	Ductile Iron	Emerald Estates Park	407.3	206	733 Emerald Estates	85	2096	\$ 3,893.73
100	Main	Emerald Drive	W9023-3	2002	3.56228	PVC	Emerald Estates Unserviced	457.1	206	733 Emerald Estates	85	2096	\$ 1,084.60
200	Main	Emerald Drive	W9023-10	2002	399.746	Ductile Iron	Emerald Estates Unserviced	457.1	206	733 Emerald Estates	85	2096	\$ 141,697.40
300	Main	Emerald Drive	W9023-3	2002	64.6139	PVC	Emerald Estates Unserviced	457.1	206	733 Emerald Estates	85	2096	\$ 32,595.68
300	Main	Emerald Drive	W9023-3	2002	61.3422	PVC	Emerald Estates Unserviced	457.1	206	733 Emerald Estates	85	2096	\$ 30,945.21
300	Main	Emerald Drive	W9023-2	2002	153.687	PVC	Emerald Estates Unserviced	457.1	206	733 Emerald Estates	85	2096	\$ 77,530.41
300	Main	Emerald Drive	W9023-4	2002	69.8455	PVC	Emerald Estates Unserviced	524.4	206	733 Emerald Estates	85	2096	\$ 35,234.85
300	Main	Emerald Drive	W9023-4	2002	15.6449	PVC	Emerald Estates Unserviced	478.4	206	733 Emerald Estates	85	2096	\$ 7,892.34
300	Main	Emerald Drive	W9023-4	2002	143.55	PVC	Emerald Estates Unserviced	524.4	206	733 Emerald Estates	85	2096	\$ 72,416.27
250	Main	Deerhorn Place	W9023-4	2002	10.2927	PVC	Emerald Estates Unserviced	524.4	206	733 Emerald Estates	85	2096	\$ 4,420.40
150	Main	Bishop Way to/from Palmer Drive	W6014a	2003	101.835	PVC	Whistler Cay Heights	607	229	760 Whistler Cay	85	2096	\$ 32,522.92
150	Main	Alta Lake Road	W5022	2008	228.67	Ductile Iron	Rainbow Park	1076.9	237	715 Westside	85	2097	\$ 63,700.65
200	Main	P282 Alta lake Road	W5017	2010	29.5804	Ductile Iron	Stonebridge	1298.8	210	Supply	85	2097	\$ 8,910.24
200	Main	P282 Alta lake Road	W5017	2010	34.0167	Ductile Iron	Stonebridge	1298.8	210	Supply	85	2097	\$ 10,246.53
150	Service	1045 Millar Creek Road	1025 Millar Cree	2002	13.54657	PVC	Function Junction	422.1	205	643 FJ	85	2097	\$ 3,589.84
100	Main	Stonebridge Drive - P274/P275 connector	Stonebridge - 30	2001	345.89	PVC	Stonebridge	346.4	210	Supply	85	2097	\$ 86,894.83
200	Main	Stonebridge Drive	Stonebridge - 30	2001	28.2174	PVC	Stonebridge	346.4	210	Supply	85	2097	\$ 8,499.65
200	Main	Trail's End Lane	Design Drawings	2002	27.42144	PVC	Whistler Creek Base	380.6	209	913 Upper Talus	85	2097	\$ 8,226.43
200	Main	Trail's End Lane	Design Drawings	2002	34.42689	PVC	Whistler Creek Base	380.6	209	913 Upper Talus	85	2097	\$ 10,328.07
200	Main	Trail's End Lane	Design Drawings	2002	38.12658	PVC	Whistler Creek Base	380.6	209	913 Upper Talus	85	2097	\$ 11,437.97
200	Main	Trail's End Lane	Design Drawings	2002	63.10285	PVC	Whistler Creek Base	380.6	209	913 Upper Talus	85	2097	\$ 18,930.85
250	Main	Kadenwood to/from Taluswood	W2106-4	2001	169.628	PVC	Whistler Mountain	351.3	209	913 Upper Talus	85	2097	\$ 63,610.55
250	Main	Kadenwood to/from Taluswood	W2106-3	2001	369.446	PVC	Whistler Mountain	351.3	209	913 Upper Talus	85	2097	\$ 138,542.51
300	Main	Lake Placid Road Connector	Design Drawings	2004	7.99914	PVC	Whistler Creek Centre	614.8	222	702 Whistler Creek	85	2097	\$ 3,812.20
350	Main	Nita Lake Lodge/Lake Placid Road Connector	W2103-2	2004	63.9504	PVC	Whistler Creek Centre	614.8	222	702 Whistler Creek	85	2097	\$ 31,244.67
200	Service	S405 Stonebridge Drive	Stonebridge - 29	2001	18.2955	PVC	Stonebridge	346.4	210	Supply	85	2097	\$ 5,468.65
200	Service	S405 Stonebridge Drive	Stonebridge - 29	2001	14.1946	PVC	Stonebridge	346.4	210	Supply	85	2097	\$ 4,258.46
200	Service	S408 Stonebridge Drive	Stonebridge - 30	2001	19.6166	PVC	Stonebridge	346.4	210	Supply	85	2097	\$ 5,894.92
200	Service	S408 Stonebridge Drive	Stonebridge - 30	2001	4.92483	PVC	Stonebridge	346.4	210	Supply	85	2097	\$ 1,477.45
250	Main	Stonebridge Drive	Stonebridge - 29	2001	92.3313	PVC	Stonebridge	346.4	210	Supply	85	2097	\$ 34,796.96
250	Main	Stonebridge Drive	Stonebridge - 29	2001	136.236	PVC	Stonebridge	346.4	210	Supply	85	2097	\$ 51,255.00
250	Main	Stonebridge Drive	Stonebridge - 29	2001	6.22301	PVC	Stonebridge	346.4	210	Supply	85	2097	\$ 2,341.23
150	Service	1045 Millar Creek Road	1025 Millar Cree	2002	13.21	PVC	Function Junction	422.1	205	643 FJ	85	2097	\$ 3,500.65
400	Main	Relocation around Fitzsimmons Chair Tower #5	W4020(AV)	1999	18.4	Ductile Iron	Whistler Mountain	244	210	Supply	85	2097	\$ 9,108.00
300	Main	Emerald Drive	W9023-2	2002	10.6881	PVC	Emerald Estates Unserviced	416.9	206	733 Emerald Estates	85	2097	\$ 5,391.83
300	Main	Emerald Drive	W9023-3	2002	35.3386	PVC	Emerald Estates Unserviced	416.9	206	733 Emerald Estates	85	2097	\$ 17,827.19
300	Main	Emerald Drive	W9023-2	2002	221.553	PVC	Emerald Estates Unserviced	407.3	206	733 Emerald Estates	85	2097	\$ 111,766.42
200	Main	High Point Drive	Kadenwood Fold	2002	124.24	PVC	Whistler Creek Base	390.4	209	913 Upper Talus	85	2097	\$ 38,158.41
150	Service	Transit Facility	8011 Highway 99	2009	53	PVC	Spruce Grove	1026.8	218	735B Nestors	85	2098	\$ 14,045.00

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
75	Service	Transit Facility	8011 Highway 99	2009	5	PVC	Spruce Grove	1026.8	218	735B Nestors	85	2098	\$ 1,200.00
150	Service	Transit Facility	8011 Highway 99	2009	47	PVC	Spruce Grove	1019	218	735B Nestors	85	2098	\$ 12,455.00
200	Main	Nesters Road	W8050	2009	5	PVC	Spruce Grove	1019	218	735B Nestors	85	2098	\$ 1,606.05
150	Service	Transit Facility	8011 Highway 99	2009	83.25	PVC	Spruce Grove	1026.8	218	735B Nestors	85	2098	\$ 22,061.25
200	Service	Transit Facility	8011 Highway 99	2009	119.8704	PVC	Spruce Grove	1026.8	218	735B Nestors	85	2098	\$ 35,961.12
200	Main	Nesters Road	W8050	2009	93.5	PVC	Spruce Grove	1019	218	735B Nestors	85	2098	\$ 30,033.09
150	Main	Le Scandinave Spa	Design Drawings	2009	11.88122	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2098	\$ 3,148.52
150	Main	Le Scandinave Spa	Design Drawings	2009	180.427	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2098	\$ 47,813.17
150	Main	Le Scandinave Spa	Design Drawings	2009	25.36698	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2098	\$ 6,722.25
200	Main	Le Scandinave Spa	Design Drawings	2009	123.4927	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2098	\$ 37,047.81
200	Main	Le Scandinave Spa	Design Drawings	2009	103.9297	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2098	\$ 31,178.92
100	Main	Le Scandinave Spa	Design Drawings	2009	3.045003	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2098	\$ 761.25
200	Main	Le Scandinave Spa	Design Drawings	2009	247.0734	PVC	Spruce Grove	1026.8	218	735B Nestors	85	2098	\$ 74,122.02
200	Main	Le Scandinave Spa	DA97-6	2009	163.0083	Polyethylene	Spruce Grove	1026.8	218	735B Nestors	85	2098	\$ 48,902.50
200	Service	Le Scandinave Spa	Design Drawings	2009	27.28354	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2098	\$ 8,185.06
150	Main	Le Scandinave Spa	Design Drawings	2009	108.3843	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2098	\$ 28,721.85
150	Main	Le Scandinave Spa	8010 Mons Road	2009	57.99688	PVC	Spruce Grove	1026.8	218	735B Nestors	85	2098	\$ 15,369.17
200	Main	High Point Drive	Kadenwood Fold	2002	13.0174	PVC	Whistler Creek Base	351.3	209	913 Upper Talus	85	2098	\$ 3,998.08
300	Main	Boyd Creek Watermain Relocation	W2099-2	2008	59.1715	PVC	Whistler Mountain	909.2	209	913 Upper Talus	85	2098	\$ 26,627.17
150	Main	R237	W2094-4	2000	24.7233	Ductile Iron	Wildlife Reserve	246.5	0		85	2098	\$ 6,551.67
150	Main	1224 Nordic Drive	W2094	2005	6.67384	PVC	Whistler Highlands	5.47	213	775	85	2098	\$ 1,865.21
300	Main	P270	W2076-11	1999	4.88198	PVC	Whistler Highlands	198	210	Supply	85	2098	\$ 2,340.82
300	Main	P270	W2076-11	1999	51.5851	Ductile Iron	Whistler Highlands	198	210	Supply	85	2098	\$ 24,734.10
300	Main	P270	W2076-11	1999	39.8782	PVC	Whistler Highlands	198	210	Supply	85	2098	\$ 19,120.85
100	Main	The Bluffs	2301-2323 Talus	1999	5.161712	PVC	Whistler Highlands	198	210	Supply	85	2098	\$ 1,290.43
200	Main	Saint Anton Way	Design Drawing	2006	147.272	PVC	Alta Vista	635.2	240	723 Alta Vista	85	2098	\$ 50,391.51
200	Main	R237	W8044-2	2000	9.84857	Ductile Iron	Wildlife Reserve	246.5	0		85	2098	\$ 2,954.57
200	Main	R237	W8044-2	2000	23.1851	Ductile Iron	Wildlife Reserve	246.5	0		85	2098	\$ 6,955.54
250	Main	R237	W8044-4	2000	8.22093	Ductile Iron	Wildlife Reserve	246.5	0		85	2098	\$ 3,082.85
250	Main	R237	W8044-4	2000	103.675	Ductile Iron	Wildlife Reserve	246.5	0		85	2098	\$ 38,878.06
250	Main	R237	W8044-4	2000	10.4941	Ductile Iron	Wildlife Reserve	246.5	0		85	2098	\$ 3,935.27
250	Main	Mountain View Drive	W8044-8	2000	112.648	Ductile Iron	Wildlife Reserve	246.5	0		85	2098	\$ 42,242.94
250	Main	1410 Alpha Lake Road	1410 Alpha Lake	2002	27.4	PVC	Function Junction	363.4	205	643 FJ	85	2098	\$ 10,275.00
150	Main	1410 Alpha Lake Road	1410 Alpha Lake	2002	66.82638	PVC	Function Junction	363.4	205	643 FJ	85	2098	\$ 17,708.99
250	Main	1410 Alpha Lake Road	1410 Alpha Lake	2002	35.2192	PVC	Function Junction	363.4	205	643 FJ	85	2098	\$ 13,207.20
200	Service	7226 Fitzsimmons Road North	7226 Fitzsimmons	2003	9.99585	PVC	White Gold	421.8	231	716 White Gold	85	2098	\$ 2,998.75
200	Service	7226 Fitzsimmons Road North	7226 Fitzsimmons	2003	80.57457	PVC	White Gold	421.8	231	716 White Gold	85	2098	\$ 24,172.37
250	Main	High Point Drive	Kadenwood Fold	2002	93.9116	PVC	Whistler Creek Base	370.8	209	913 Upper Talus	85	2098	\$ 35,886.82
200	Main	Le Scandinave Spa	Design Drawings	2009	108.5199	PVC	Spruce Grove	1077.7	218	735B Nestors	85	2098	\$ 32,555.97
400	Main	21 Mile Creek UV Facility	W5018	2009	34.865	Ductile Iron	Rainbow Park	965.1	210	Supply	85	2099	\$ 17,731.31
400	Main	21 Mile Creek UV Facility	W5018	2009	11.2735	Ductile Iron	Rainbow Park	965.1	210	Supply	85	2099	\$ 5,733.37
200	Service	Nita Lake Lodge	W2102	2006	13.0173	PVC	Whistler Creek Centre	595.4	222	702 Whistler Creek	85	2099	\$ 3,905.19
200	Main	W212	W1016	2004	3.69716	PVC	Function Junction	412.3	205	643 FJ	85	2099	\$ 1,109.15
200	Main	W212	W1016-2	2004	19.2782	PVC	Function Junction	412.3	205	643 FJ	85	2099	\$ 5,783.45
300	Main	R222	W8041	2000	21.0774	Ductile Iron	Wildlife Reserve	175.6	210	Supply	85	2099	\$ 9,484.81
250	Main	R222	W8041	2000	78.7202	Ductile Iron	Wildlife Reserve	175.6	210	Supply	85	2099	\$ 29,520.09
250	Main	R222	W8041	2000	87.0709	Ductile Iron	Wildlife Reserve	175.6	210	Supply	85	2099	\$ 32,651.59
350	Main	R233	W4022-3(B)	1989	343.043	Ductile Iron	Blackcomb Benchlands North	44	210	Supply	85	2099	\$ 159,002.89
300	Main	Whistler Road	W2017	2011	1.99923	PVC	Nordic Estates	987.8	208	763 Creekside	85	2100	\$ 974.72
300	Main	Highland Lodge	W2017	2011	9.50665	PVC	Nordic Estates	1007.4	208	763 Creekside	85	2100	\$ 4,634.96
150	Service	Highland Lodge	W2017	2011	53.43959	PVC	Nordic Estates	1007.4	208	763 Creekside	85	2100	\$ 14,161.49
300	Main	Highland Lodge	W2017	2011	126.816	PVC	Nordic Estates	1007.4	208	763 Creekside	85	2100	\$ 61,829.06
150	Main	Whistler Road	W2017	2011	101.538	PVC	Nordic Estates	987.8	208	763 Creekside	85	2100	\$ 30,720.37
200	Main	Cypress Place	W8052	2011	171.0801	PVC	Nicklaus North Estates	1077.6	218	735B Nestors	85	2100	\$ 51,324.02
200	Main	Cypress Place	W8051	2011	261.6434	PVC	Nicklaus North Estates	1095.2	218	735B Nestors	85	2100	\$ 78,493.03
300	Main	Cheakamus North (Southlands)	W1017	2010	152.413	PVC	Spring Creek	905.6	204	735 Whistler South	85	2100	\$ 70,614.44
300	Main	Cheakamus North (Southlands)	W1017	2010	0.72054	PVC	Spring Creek	905.6	204	735 Whistler South	85	2100	\$ 333.83
200	Main	Cheakamus North (Southlands)	1600 Southlands	2010	232.6099	PVC	Spring Creek	905.6	204	735 Whistler South	85	2100	\$ 69,782.97
200	Main	Cheakamus North (Southlands)	W1017	2010	12.5158	PVC	Spring Creek	905.6	204	735 Whistler South	85	2100	\$ 3,921.34
250	Main	Whistler Sliding Centre	4910 Glacier Lan	2006	712.6462	Ductile Iron	Whistler Mountain	502.3	211	815 Upper Blackcomb	85	2100	\$ 267,242.32
200	Main	Whistler Sliding Centre	4910 Glacier Lan	2006	930.5966	Ductile Iron	Whistler Mountain	502.3	211	815 Upper Blackcomb	85	2100	\$ 279,178.98
200	Main	Whistler Sliding Centre	4910 Glacier Lan	2006	288.0141	Ductile Iron	Whistler Mountain	512.1	211	815 Upper Blackcomb	85	2100	\$ 86,404.23
250	Main	Whistler Sliding Centre	4910 Glacier Lan	2006	798.1094	Ductile Iron	Whistler Mountain	502.3	211	815 Upper Blackcomb	85	2100	\$ 299,291.02
100	Main	Whistler Sliding Centre	4910 Glacier Lan	2006	477.1711	Polyethylene	Whistler Mountain	512.1	211	815 Upper Blackcomb	85	2100	\$ 119,292.77
250	Main	Nita Lake Drive	W5014-1	2004	142.909	PVC	Old Gravel Road	330.9	222	702 Whistler Creek	85	2100	\$ 55,748.98
250	Main	Nita Lake Drive	W5014-1	2004	10.0434	PVC	Old Gravel Road	330.9	222	702 Whistler Creek	85	2100	\$ 3,917.94
250	Main	Nita Lake Drive	W5014-1	2004	26.7401	PVC	Old Gravel Road	330.9	222	702 Whistler Creek	85	2100	\$ 10,431.34
100	Main	Nita Lake Resident Housing	5151 Nita Lake D	2004	33.3684	PVC	Old Gravel Road	330.9	222	702 Whistler Creek	85	2100	\$ 8,845.99
200	Main	Nita Lake Resident Housing	5151 Nita Lake D	2004	69.5199	PVC	Old Gravel Road	330.9	222	702 Whistler Creek	85	2100	\$ 21,905.82
250	Main	Nita Lake Drive	W5014-2	2004	15.9431	PVC	Old Gravel Road	330.9	222	702 Whistler Creek	85	2100	\$ 5,023.70
250	Service	Nordic Drive	W2092-2	2005	20	PVC	Old Gravel Road	330.9	222	702 Whistler Creek	85	2100	\$ 7,802.03
250	Service	2257-2263 Nordic Drive	W2092-2	2005	8.44843	PVC	Whistler Highlands	384.4	215	819 Lower Taluswood	85	2100	\$ 3,168.16
250	Service	2257-2263 Nordic Drive	W2092-2	2005	3.07923	PVC	Whistler Highlands	384.4	215	819 Lower Taluswood	85	2100	\$ 1,154.71
250	Service	2257-2263 Nordic Drive	W2092-2	2005	14.2381	PVC	Whistler Highlands	384.4	215	819 Lower Taluswood	85	2100	\$ 5,338.29
250	Main	Nordic Drive	W2092-2	2005	136.25	PVC	Whistler Highlands	384.4	215	819 Lower Taluswood	85	2100	\$ 56,110.43
150	Main	Buckhorn Drive	W8007	2011	184.838	PVC	Alpine Meadows South	987.5	216	748 Lower Alpine Meadows	85	2100	\$ 61,777.65
250	Main	Black Bear Ridge	W8007	2009	20.4682	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2101	\$ 7,684.27
250	Main	Valley Trail - Rainbow	W8007	2009	156.956	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2101	\$ 58,925.03
250	Main	Rope Tow Way	W8007	2009	199.958	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2101	\$ 75,069.04
250	Main	Crazy Canuck Drive	W8007	2009	525.801	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2101	\$ 197,398.39
250	Main	Bear Paw Trail	W8007	2009	641.234	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2101	\$ 240,734.95
250	Main	Read Alley	W8007	2009	74.9808	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2101	\$ 28,149.61

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
250	Main	Valley Trail - Rainbow		2009	119.318	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2101	\$ 44,794.69
250	Main	Chalet Drive Tie-in		2009	153.369	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2101	\$ 57,578.49
250	Main	Crazy Canuck Drive		2009	10.5093	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2101	\$ 3,945.44
250	Main	Ski Jump Rise		2009	442.801	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2101	\$ 166,050.38
150	Service	8201 Crazy Canuck Drive		2009	9.74921	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2101	\$ 2,583.54
250	Main	Black Bear Ridge		2009	284.541	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2101	\$ 106,823.43
250	Main	Ski Jump Rise		2009	93.22135	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2101	\$ 34,958.01
150	Main	Crazy Canuck Drive		2009	50.13487	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2101	\$ 13,285.74
250	Main	Indigo Lane		2009	74.94002	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2101	\$ 28,102.51
200	Main	Rainbow to Trudy's Landing	W8048	2009	105.1005	Polyethylene	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2101	\$ 31,530.14
150	Main	Buckhorn Drive	W8007	2011	137.529	PVC	Alpine Meadows South	948.2	216	748 Lower Alpine Meadows	85	2101	\$ 45,965.64
50	Main	Fitzsimmons Road South	W7013	2005	55.7588	PVC	White Gold	332.6	231	716 White Gold	85	2101	\$ 16,656.77
250	Service	8400 Ashleigh Mclvor Drive	W8054	2010	5.8274	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2102	\$ 2,185.28
100	Service	8400 Ashleigh Mclvor Drive	W8054	2010	6.94776	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2102	\$ 1,736.94
600	Main	21-Mile Pump Station - Lorimer Road Connection	W6060	2008	293.993	Ductile Iron	Whistler Cay Estates	505.1	241	675 Tapley Farm	85	2102	\$ 516,099.62
600	Main	21-Mile Pump Station - Lorimer Road Connection	W6058	2008	371.666	Ductile Iron	Whistler Cay Estates	495.4	241	675 Tapley Farm	85	2102	\$ 652,453.04
600	Main	21-Mile Pump Station - Lorimer Road Connection	W6057	2008	372.493	Ductile Iron	Whistler Cay Estates	497.4	241	675 Tapley Farm	85	2102	\$ 653,905.30
250	Main	Ashleigh Mclvor Drive	W8054	2010	265.368	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2102	\$ 99,625.48
250	Main	Crazy Canuck Drive	W8053	2010	10.6207	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2102	\$ 3,987.26
250	Main	Crazy Canuck Drive	W8053	2010	91.1421	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2102	\$ 34,216.94
200	Main	Mountain View Reservoir to Baxter Creek	W8059	2010	280.957	PVC	Wildlife Reserve	675.8	216	748 Lower Alpine Meadows	85	2102	\$ 87,287.14
200	Service	8110 Crazy Canuck Drive		2010	9.59662	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2102	\$ 2,878.99
200	Main	Ashleigh Mclvor Drive	W8055	2010	192.8532	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2102	\$ 57,855.96
100	Main	Lauren Woolstencroft Way	W8057	2010	94.99322	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2102	\$ 23,748.30
100	Main	Jon Montgomery Stroll	W8058	2010	21.54628	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2102	\$ 5,386.57
200	Service	8350 Bear Paw Trail		2010	9.978035	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2102	\$ 2,993.41
200	Service	8251 Crazy Canuck Drive		2010	9.843412	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2102	\$ 2,953.02
200	Main	Big Sky Terrace		2010	161.3416	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2102	\$ 48,402.49
200	Service	8300 Bear Paw Trail		2010	45.99211	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2102	\$ 13,797.63
400	Main	Cheakamus Lake Road	W1020	2007	105.06	PVC	Cheakamus	412.3	205	643 FJ	85	2102	\$ 52,134.22
250	Main	Cheakamus Lake Road	W1020	2007	105.804	PVC	Cheakamus	412.3	205	643 FJ	85	2102	\$ 39,806.66
350	Main	Cheakamus Lake Road	W1020	2007	106.512	PVC	Cheakamus	412.3	205	643 FJ	85	2102	\$ 49,339.54
200	Main	Valley Drive	W8003	2012	59.3643	PVC	Alpine Meadows South	908.4	216	748 Lower Alpine Meadows	85	2102	\$ 21,918.82
250	Service	Red Sky	Red Sky	2011	30.99764	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2103	\$ 11,624.12
50	Service	Red Sky	Red Sky	2011	5.918455	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2103	\$ 1,331.65
100	Service	Red Sky	Red Sky	2011	156.2663	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2103	\$ 39,066.59
250	Service	Red Sky	Red Sky	2011	3.098477	PVC	Rainbow	675.8	216	748 Lower Alpine Meadows	85	2103	\$ 1,161.93
250	Main	P279/W217	W1027	2008	16.6969	Ductile Iron	Cheakamus	402.5	205	643 FJ	85	2103	\$ 6,281.88
200	Main	Valley Drive		2010	49.5541	PVC	Alpine Meadows North	550.5	2984	747 Rainbow	85	2103	\$ 18,563.19
200	Main	Jon Montgomery Stroll	W8058	2010	147.7078	PVC	Rainbow	550.5	2984	747 Rainbow	85	2103	\$ 44,312.35
200	Main	Mountain View Reservoir to Baxter Creek	W8060	2010	381.041	PVC	Wildlife Reserve	550.5	2984	747 Rainbow	85	2103	\$ 114,312.43
200	Main	Ashleigh Mclvor Drive	W8056	2010	311.234	PVC	Rainbow	550.5	2984	747 Rainbow	85	2103	\$ 93,502.24
200	Main	Ashleigh Mclvor Drive	W8055	2010	166.886	PVC	Rainbow	550.5	2984	747 Rainbow	85	2103	\$ 50,136.56
200	Main	Maele Ricker Lane	W8058	2010	40.89671	PVC	Rainbow	550.5	2984	747 Rainbow	85	2103	\$ 12,699.01
100	Main	Maele Ricker Lane	W8058	2010	57.49401	PVC	Rainbow	550.5	2984	747 Rainbow	85	2103	\$ 14,373.50
250	Main	Cheakamus Lake Road	W1021	2008	118.115	Ductile Iron	Cheakamus	412.3	205	643 FJ	85	2103	\$ 44,438.35
200	Main	WWTP	1135 Cheakamus	2008	117.99	Ductile Iron	Cheakamus	422.1	205	643 FJ	85	2103	\$ 35,542.21
150	Service	5476 Stonebridge Place	Design only	2001	60.11941	PVC	Stonebridge	106.8	210	Supply	85	2103	\$ 15,931.64
150	Service	5480 Stonebridge Place	Design only	2001	73.42231	PVC	Stonebridge	106.8	210	Supply	85	2103	\$ 19,456.91
100	Main	R240	Stonebridge - 45	2001	3.24132	PVC	Stonebridge	106.8	210	Supply	85	2103	\$ 814.29
200	Main	R240	Stonebridge - 45	2001	4.3033	PVC	Stonebridge	106.8	210	Supply	85	2103	\$ 1,296.24
200	Main	R240	Stonebridge - 45	2001	1.62466	PVC	Stonebridge	106.8	210	Supply	85	2103	\$ 489.38
200	Main	R240	Stonebridge - 45	2001	0.76873	PVC	Stonebridge	106.8	210	Supply	85	2103	\$ 231.56
250	Main	Stonebridge Place	Stonebridge - 39	2001	62.6934	PVC	Stonebridge	106.8	210	Supply	85	2103	\$ 23,586.58
250	Main	Stonebridge Place	Stonebridge - 39	2001	133.207	PVC	Stonebridge	106.8	210	Supply	85	2103	\$ 50,115.42
250	Main	Stonebridge Place	Stonebridge - 39	2001	6.04985	PVC	Stonebridge	106.8	210	Supply	85	2103	\$ 2,276.08
100	Main	Idylwood Place	W8001	2010	253.915	PVC	Alpine Meadows South	559.3	216	748 Lower Alpine Meadows	85	2103	\$ 81,056.20
200	Main	Valley Drive	W8010	2012	52.5505	PVC	Alpine Meadows South	820.6	216	748 Lower Alpine Meadows	85	2103	\$ 19,403.00
200	Main	Valley Drive	W8010	2012	126.645	PVC	Alpine Meadows South	820.6	216	748 Lower Alpine Meadows	85	2103	\$ 46,760.78
200	Main	Valley Drive	W8010	2012	149.341	PVC	Alpine Meadows North	744.7	216	748 Lower Alpine Meadows	85	2103	\$ 55,943.91
200	Main	Valley Drive	W8013	2012	6.85663	PVC	Alpine Meadows North	672.8	216	748 Lower Alpine Meadows	85	2104	\$ 2,568.52
200	Main	Valley Drive	W8011	2012	102.566	PVC	Alpine Meadows North	720	216	748 Lower Alpine Meadows	85	2104	\$ 38,421.55
200	Main	Valley Drive	W8013	2012	129.27	PVC	Alpine Meadows North	719.8	216	748 Lower Alpine Meadows	85	2104	\$ 48,425.03
200	Main	Valley Drive	W8011	2012	96.7561	PVC	Alpine Meadows North	719.8	216	748 Lower Alpine Meadows	85	2104	\$ 36,245.24
200	Main	Valley Drive	W8011	2012	148.038	PVC	Alpine Meadows North	719.8	216	748 Lower Alpine Meadows	85	2104	\$ 55,455.60
200	Main	Valley Drive	W8030	2012	266.194	PVC	Alpine Meadows North	719.8	216	748 Lower Alpine Meadows	85	2104	\$ 99,717.48
200	Main	Valley Drive	W8013	2012	163.112	PVC	Alpine Meadows North	664	216	748 Lower Alpine Meadows	85	2104	\$ 61,102.56
200	Main	Nancy Greene Drive	W7014	2010	77.1043	Ductile Iron	White Gold	406.3	231	716 White Gold	85	2105	\$ 28,816.13
200	Main	Nancy Greene Drive	W7014	2010	50.5166	Ductile Iron	White Gold	425.4	231	716 White Gold	85	2105	\$ 18,879.51
200	Main	Nancy Greene Drive	W7014	2010	7.13286	Ductile Iron	White Gold	368.7	231	716 White Gold	85	2106	\$ 2,665.79
300	Main	Nancy Greene Drive	W7014	2010	84.6277	Ductile Iron	White Gold	360.2	231	716 White Gold	85	2106	\$ 31,627.51
200	Main	Mountain View Reservoir to Baxter Creek	W8061	2010	336.097	PVC	Wildlife Reserve	246.5	0		85	2108	\$ 100,829.18
350	Main	Cheakamus Reservoir	W1029	2008	8.4196	Ductile Iron	Cheakamus	48	0		85	2114	\$ 2,973.76
250	Main	Cheakamus Reservoir	W1029	2008	3.43069	Ductile Iron	Cheakamus	48	0		85	2114	\$ 1,290.73
250	Main	Cheakamus Reservoir	W1029	2008	22.5238	Ductile Iron	Cheakamus	48	0		85	2114	\$ 8,474.14
250	Main	Cheakamus Reservoir/Function Junction Tie-in Location	W1022	2008	3.5	PVC	Cheakamus	-1833.4	210	Supply	85	2114	\$ 1,316.81
250	Main	Cheakamus Reservoir/Function Junction Tie-in Location	W1022	2008	1.2	PVC	Cheakamus	-1833.4	210	Supply	85	2114	\$ 451.48
150	Main	Mount Fee Road Extension		2008	118.484	PVC	Cheakamus	-48	0		85	2114	\$ 31,544.12
250	Main	Rainbow Reservoir		2009	544.462	PVC	Wildlife Reserve	54.3	0		85	2114	\$ 204,173.21
400	Main	WWTP Access Road	W1027	2008	83.6159	Ductile Iron	Cheakamus	-1833.4	210	Supply	85	2114	\$ 41,492.80
250	Main	to Cheakamus Reservoir	W1023	2008	379.179	Ductile Iron	Cheakamus	-1833.4	210	Supply	85	2114	\$ 142,658.77
250	Main	to Cheakamus Reservoir	W1024	2008	345.324	Ductile Iron	Cheakamus	-1833.4	210	Supply	85	2114	\$ 129,921.67

Diameter	Type	Location	Index	Year Installed	Length	Material	Neighbourhood	Pressure (kPa)	ZONEID	ZONE	ESL	Intervention Year	Replacement Cost
250	Main	to Cheakamus Reservoir	W1025	2008	333.482	Ductile Iron	Cheakamus	48	0		85	2114	\$ 125,466.37
250	Main	Cheakamus Reservoir	W1029	2008	37.7563	Ductile Iron	Cheakamus	48	0		85	2114	\$ 14,205.07
350	Main	Cheakamus Lake Road	W1021	2008	118.425	Ductile Iron	Cheakamus	-1833.4	210	Supply	85	2114	\$ 54,858.13
350	Main	from Cheakamus Reservoir	W1023	2008	377.054	Ductile Iron	Cheakamus	-1833.4	210	Supply	85	2114	\$ 174,662.96
350	Main	from Cheakamus Reservoir	W1024	2008	344.847	Ductile Iron	Cheakamus	-1833.4	210	Supply	85	2114	\$ 159,743.54
350	Main	from Cheakamus Reservoir	W1025	2008	332.09	Ductile Iron	Cheakamus	48	0		85	2114	\$ 153,834.53
350	Main	Cheakamus Reservoir	W1029	2008	75.9855	Ductile Iron	Cheakamus	48	0		85	2114	\$ 35,198.82
150	Main	R13	W1004	1981	15.5	PVC	Function Junction	30.6	210	Supply	85	2114	\$ 4,107.50
250	Main	R13	W1004	1981	165.8567	PVC	Function Junction	30.6	210	Supply	85	2114	\$ 62,196.27
300	Main	Baxter Reservoir Millars Pond connector	W2069-2	1993	315.068	Ductile Iron	Whistler Mountain	13.7	210	Supply	85	2114	\$ 141,780.68
300	Main	R228	W2086-4	2000	7.24993	PVC	Whistler Creek Base	13.7	210	Supply	85	2114	\$ 3,314.19
300	Main	R228	W2086-4	2000	10.7561	PVC	Whistler Creek Base	13.7	210	Supply	85	2114	\$ 4,916.98
300	Main	R228	W2086-4	2000	12.1351	PVC	Whistler Creek Base	13.7	210	Supply	85	2114	\$ 5,547.39
300	Main	R232 to R233	W4022-3(B)	1989	613.184	Ductile Iron	Blackcomb Benchlands North	-4.6	210	Supply	85	2114	\$ 276,857.00
200	Main	R228 to/from Heritage Peaks Trail	Kadenwood Fold	2002	165.401	PVC	Whistler Creek Base	13.7	210	Supply	85	2114	\$ 50,800.28

Asset Group	Asset Name	Asset Number	Asset Component	Quantity or Length in m	2013 Value (Unit Cost in CAD)	Date in Service	Expected Service Life (yrs)	Expected Replacement Year	% of Expected Service Life Used	Remaining service life (yrs)	Condition Rating (1=good, 5=poor)	Tributary Population	Condition adjustment factor	Condition Adjusted Remaining Service Life	Condition adjusted replacement year	Criticality adjustment factor	Criticality & Condition Adjusted Remaining Service Life	Condition and Criticality Adjusted Replacement Year	2013 Replacement Value
Water - Wells	Emerald Well 1	W201-1	Building / Structural	1	\$ 115,000	1979	50	2029	68%	16	2	N/A	0.7	35	2048	6%	38	2051	\$ 23,000
Water - Wells	Emerald Well 1	W201-1	Site Works	1	\$ 30,000	1979	50	2029	68%	16	2	N/A	0.7	35	2048	6%	38	2051	\$ 30,000
Water - Wells	Emerald Well 1	W201-1	Electrical/Controls/SCADA	1	\$ 55,000	2003	40	2043	25%	30	1	N/A	0.9	36	2049	6%	38	2051	\$ 55,000
Water - Wells	Emerald Well 1	W201-1	Process Mechanical	1	\$ 50,000	1979	40	2019	85%	6	3	N/A	0.5	20	2033	6%	22	2035	\$ 50,000
Water - Wells	Emerald Well 1	W201-1	Pumping Equipment	1	\$ 120,000	1979	40	2019	85%	6	3	N/A	0.5	20	2033	6%	22	2035	\$ 120,000
Water - Wells	Emerald Well 1	W201-1	Disinfection Equipment	1	\$ 31,000	2002	40	2042	28%	29	4	N/A	0.3	12	2025	6%	14	2027	\$ 31,000
Water - Wells	Emerald Well 1	W201-1	Well Bore	1	\$ 10,000	1979	50	2029	68%	16	3	N/A	0.5	25	2038	6%	28	2041	\$ 10,000
Water - Wells	Emerald Well 2	W201-2	Site Works	1	\$ 30,000	1999	50	2049	28%	36	2	N/A	0.7	35	2048	9%	39	2052	\$ 30,000
Water - Wells	Emerald Well 2	W201-2	Electrical/Controls/SCADA	1	\$ 55,000	2003	40	2043	25%	30	1	N/A	0.9	36	2049	9%	39	2052	\$ 55,000
Water - Wells	Emerald Well 2	W201-2	Process Mechanical	1	\$ 50,000	1999	40	2039	35%	26	3	N/A	0.5	20	2033	9%	23	2036	\$ 50,000
Water - Wells	Emerald Well 2	W201-2	Pumping Equipment	1	\$ 120,000	1999	40	2039	35%	26	3	N/A	0.5	20	2033	9%	23	2036	\$ 120,000
Water - Wells	Emerald Well 2	W201-2	Well Bore	1	\$ 10,000	1999	50	2049	28%	36	3	N/A	0.5	25	2038	9%	29	2042	\$ 10,000
Water - Wells	Emerald Well 3	W201-3	Site Works	1	\$ 30,000	2000	50	2050	26%	37	2	N/A	0.7	35	2048	-1%	34	2047	\$ 30,000
Water - Wells	Emerald Well 3	W201-3	Electrical/Controls/SCADA	1	\$ 55,000	2003	40	2043	25%	30	1	N/A	0.9	36	2049	-1%	35	2048	\$ 55,000
Water - Wells	Emerald Well 3	W201-3	Process Mechanical	1	\$ 50,000	2000	40	2040	33%	27	3	N/A	0.5	20	2033	-1%	19	2032	\$ 50,000
Water - Wells	Emerald Well 3	W201-3	Pumping Equipment	1	\$ 120,000	2000	40	2040	33%	27	3	N/A	0.5	20	2033	-1%	19	2032	\$ 120,000
Water - Wells	Emerald Well 3	W201-3	Well Bore	1	\$ 10,000	2000	50	2050	26%	37	3	N/A	0.5	25	2038	-1%	24	2037	\$ 10,000
Water - Wells	Parkwood Drive/Hwy 99	W202	Building / Structural	1	\$ 115,000	1979	50	2029	68%	16	2	N/A	0.7	35	2048	-2%	34	2047	\$ 23,000
Water - Wells	Parkwood Drive/Hwy 99	W202	Site Works	1	\$ 30,000	1979	50	2029	68%	16	2	N/A	0.7	35	2048	-2%	34	2047	\$ 30,000
Water - Wells	Parkwood Drive/Hwy 99	W202	Electrical/Controls/SCADA	1	\$ 55,000	2002	40	2042	28%	29	2	N/A	0.7	28	2041	-2%	27	2040	\$ 55,000
Water - Wells	Parkwood Drive/Hwy 99	W202	Process Mechanical	1	\$ 50,000	1979	40	2019	85%	6	3	N/A	0.5	20	2033	-2%	19	2032	\$ 50,000
Water - Wells	Parkwood Drive/Hwy 99	W202	Pumping Equipment	1	\$ 120,000	1979	40	2019	85%	6	3	N/A	0.5	20	2033	-2%	19	2032	\$ 120,000
Water - Wells	Parkwood Drive/Hwy 99	W202	Disinfection Equipment	1	\$ 31,000	2004	40	2044	23%	31	3	N/A	0.5	20	2033	-2%	19	2032	\$ 31,000
Water - Wells	Parkwood Drive/Hwy 99	W202	Well Bore	1	\$ 10,000	1979	50	2029	68%	16	3	N/A	0.5	25	2038	-2%	24	2037	\$ 10,000
Water - Wells	Community Well 1	W205-1	Site Works	1	\$ 30,000	1978	50	2028	70%	15	2	N/A	0.7	35	2048	0%	35	2048	\$ 30,000
Water - Wells	Community Well 1	W205-1	Electrical/Controls/SCADA	1	\$ 55,000	2006	40	2046	18%	33	2	N/A	0.7	28	2041	0%	28	2041	\$ 55,000
Water - Wells	Community Well 1	W205-1	Process Mechanical	1	\$ 50,000	1978	40	2018	88%	5	3	N/A	0.5	20	2033	0%	20	2033	\$ 50,000
Water - Wells	Community Well 1	W205-1	Pumping Equipment	1	\$ 120,000	1978	40	2018	88%	5	3	N/A	0.5	20	2033	0%	20	2033	\$ 120,000
Water - Wells	Community Well 1	W205-1	Well Bore	1	\$ 10,000	1978	50	2028	70%	15	3	N/A	0.5	25	2038	0%	25	2038	\$ 10,000
Water - Wells	Community Well 2	W205-2	Site Works	1	\$ 30,000	1980	50	2030	66%	17	2	N/A	0.7	35	2048	-3%	34	2047	\$ 30,000
Water - Wells	Community Well 2	W205-2	Electrical/Controls/SCADA	1	\$ 55,000	2006	40	2046	18%	33	2	N/A	0.7	28	2041	-3%	27	2040	\$ 55,000
Water - Wells	Community Well 2	W205-2	Process Mechanical	1	\$ 50,000	1980	40	2020	83%	7	3	N/A	0.5	20	2033	-3%	19	2032	\$ 50,000
Water - Wells	Community Well 2	W205-2	Pumping Equipment	1	\$ 120,000	1980	40	2020	83%	7	3	N/A	0.5	20	2033	-3%	19	2032	\$ 120,000
Water - Wells	Community Well 2	W205-2	Well Bore	1	\$ 10,000	1980	50	2030	66%	17	3	N/A	0.5	25	2038	-3%	24	2037	\$ 10,000
Water - Wells	Community Well 3	W205-3	Site Works	1	\$ 30,000	1982	50	2032	62%	19	2	N/A	0.7	35	2048	3%	36	2049	\$ 30,000
Water - Wells	Community Well 3	W205-3	Electrical/Controls/SCADA	1	\$ 55,000	2006	40	2046	18%	33	2	N/A	0.7	28	2041	3%	29	2042	\$ 55,000
Water - Wells	Community Well 3	W205-3	Process Mechanical	1	\$ 50,000	1982	40	2022	78%	9	3	N/A	0.5	20	2033	3%	21	2034	\$ 50,000
Water - Wells	Community Well 3	W205-3	Pumping Equipment	1	\$ 120,000	1982	40	2022	78%	9	3	N/A	0.5	20	2033	3%	21	2034	\$ 120,000
Water - Wells	Community Well 3	W205-3	Well Bore	1	\$ 10,000	1982	50	2032	62%	19	3	N/A	0.5	25	2038	3%	26	2039	\$ 10,000

Asset Group	Asset Name	Asset Number	Asset Component	Quantity or Length in m	2013 Value (Unit Cost in CAD)	Date in Service	Expected Service Life (yrs)	Expected Replacement Year	% of Expected Service Life Used	Remaining service life (yrs)	Condition Rating (1=good, 5=poor)	Tributary Population	Condition adjustment factor	Condition Adjusted Remaining Service Life	Condition adjusted replacement year	Criticality adjustment factor	Criticality & Condition Adjusted Remaining Service Life	Condition and Criticality Adjusted Replacement Year	2013 Replacement Value
Water - Wells	High School Well	W210	Building / Structural	1	\$ 115,000	1994	50	2044	38%	31	2	N/A	0.7	35	2048	2%	36	2049	\$ 23,000
Water - Wells	High School Well	W210	Site Works	1	\$ 30,000	1994	50	2044	38%	31	2	N/A	0.7	35	2048	2%	36	2049	\$ 30,000
Water - Wells	High School Well	W210	Electrical/Controls/SCADA	1	\$ 55,000	2002	40	2042	28%	29	2	N/A	0.7	28	2041	2%	29	2042	\$ 55,000
Water - Wells	High School Well	W210	Process Mechanical	1	\$ 50,000	1994	40	2034	48%	21	4	N/A	0.3	12	2025	2%	13	2026	\$ 50,000
Water - Wells	High School Well	W210	Pumping Equipment	1	\$ 120,000	1994	40	2034	48%	21	3	N/A	0.5	20	2033	2%	21	2034	\$ 120,000
Water - Wells	High School Well	W210	Disinfection Equipment	1	\$ 31,000	2004	40	2044	23%	31	3	N/A	0.5	20	2033	2%	21	2034	\$ 31,000
Water - Wells	High School Well	W210	Well Bore	1	\$ 10,000	1994	50	2044	38%	31	3	N/A	0.5	25	2038	2%	26	2039	\$ 10,000
Water - Wells	Village Well	W211	Site Works	1	\$ 30,000	2000	50	2050	26%	37	2	N/A	0.7	35	2048	4%	37	2050	\$ 30,000
Water - Wells	Village Well	W211	Electrical/Controls/SCADA	1	\$ 55,000	2006	40	2046	18%	33	2	N/A	0.7	28	2041	4%	30	2043	\$ 55,000
Water - Wells	Village Well	W211	Process Mechanical	1	\$ 50,000	2000	40	2040	33%	27	3	N/A	0.5	20	2033	4%	22	2035	\$ 50,000
Water - Wells	Village Well	W211	Pumping Equipment	1	\$ 120,000	2000	40	2040	33%	27	3	N/A	0.5	20	2033	4%	22	2035	\$ 120,000
Water - Wells	Village Well	W211	Well Bore	1	\$ 10,000	2000	50	2050	26%	37	3	N/A	0.5	25	2038	4%	27	2040	\$ 10,000
Water - Wells	Function Junction Well 1 & 2	W212	Building / Structural	1	\$ 115,000	2000	50	2050	26%	37	2	N/A	0.7	35	2048	-4%	33	2046	\$ 23,000
Water - Wells	Function Junction Well 1 & 2	W212	Site Works	1	\$ 30,000	2000	50	2050	26%	37	2	N/A	0.7	35	2048	-4%	33	2046	\$ 30,000
Water - Wells	Function Junction Well 1 & 2	W212	Electrical/Controls/SCADA	1	\$ 55,000	2003	40	2043	25%	30	2	N/A	0.7	28	2041	-4%	27	2040	\$ 55,000
Water - Wells	Function Junction Well 1 & 2	W212	Process Mechanical	1	\$ 50,000	2000	40	2040	33%	27	2	N/A	0.7	28	2041	-4%	27	2040	\$ 50,000
Water - Wells	Function Junction Well 1 & 2	W212	Pumping Equipment	1	\$ 120,000	2000	40	2040	33%	27	2	N/A	0.7	28	2041	-4%	27	2040	\$ 120,000
Water - Wells	Function Junction Well 1 & 2	W212	Disinfection Equipment	1	\$ 31,000	2002	40	2042	28%	29	2	N/A	0.7	28	2041	-4%	27	2040	\$ 31,000
Water - Wells	Function Junction Well 1 & 2	W212	Well Bore	1	\$ 10,000	2000	50	2050	26%	37	2	N/A	0.7	35	2048	-4%	33	2046	\$ 10,000
Water - Wells	Meadow Park Well	W213	Building / Structural	1	\$ 115,000	1999	50	2049	28%	36	1	N/A	0.9	45	2058	3%	47	2060	\$ 23,000
Water - Wells	Meadow Park Well	W213	Site Works	1	\$ 30,000	1999	50	2049	28%	36	2	N/A	0.7	35	2048	3%	37	2050	\$ 30,000
Water - Wells	Meadow Park Well	W213	Electrical/Controls/SCADA	1	\$ 55,000	2007	40	2047	15%	34	1	N/A	0.9	36	2049	3%	37	2050	\$ 55,000
Water - Wells	Meadow Park Well	W213	Process Mechanical	1	\$ 50,000	1999	40	2039	35%	26	3	N/A	0.5	20	2033	3%	21	2034	\$ 50,000
Water - Wells	Meadow Park Well	W213	Pumping Equipment	1	\$ 120,000	1999	40	2039	35%	26	3	N/A	0.5	20	2033	3%	21	2034	\$ 120,000
Water - Wells	Meadow Park Well	W213	Disinfection Equipment	1	\$ 31,000	2002	40	2042	28%	29	3	N/A	0.5	20	2033	3%	21	2034	\$ 31,000
Water - Wells	Meadow Park Well	W213	Well Bore	1	\$ 10,000	1999	50	2049	28%	36	3	N/A	0.5	25	2038	3%	27	2040	\$ 10,000
Water - Wells	Cheakamus Crossing Well	W217	Site Works	1	\$ 30,000	2010	50	2060	6%	47	2	N/A	0.7	35	2048	-10%	30	2043	\$ 30,000
Water - Wells	Cheakamus Crossing Well	W217	Electrical/Controls/SCADA	1	\$ 55,000	2009	40	2049	10%	36	2	N/A	0.7	28	2041	-10%	24	2037	\$ 55,000
Water - Wells	Cheakamus Crossing Well	W217	Pumping Equipment	1	\$ 120,000	2010	40	2050	8%	37	2	N/A	0.7	28	2041	-10%	24	2037	\$ 120,000
Water - Wells	Cheakamus Crossing Well	W217	Well Bore	1	\$ 10,000	2010	50	2060	6%	47	2	N/A	0.7	35	2048	-10%	30	2043	\$ 10,000
Water - Wells	21 Mile Well	W218	Site Works	1	\$ 30,000	2008	50	2058	10%	45	2	N/A	0.7	35	2048	0%	35	2048	\$ 30,000
Water - Wells	21 Mile Well	W218	Electrical/Controls/SCADA	1	\$ 55,000	2009	40	2049	10%	36	2	N/A	0.7	28	2041	0%	28	2041	\$ 55,000
Water - Wells	21 Mile Well	W218	Pumping Equipment	1	\$ 120,000	2008	40	2048	13%	35	2	N/A	0.7	28	2041	0%	28	2041	\$ 120,000
Water - Wells	21 Mile Well	W218	Well Bore	1	\$ 10,000	2008	50	2058	10%	45	2	N/A	0.7	35	2048	0%	35	2048	\$ 10,000
Water - Wells	Balsam Park	PW400	Irrigation Well	1	\$ 325,000	2003	50	2053	10%	45	2	N/A	0.7	45	2058	0%	45	2058	\$ 325,000
Water - Wells	Rainbow Park	PW401	Irrigation Well	1	\$ 325,000	2003	50	2053	10%	45	2	N/A	0.7	45	2058	0%	45	2058	\$ 325,000
Water - Wells	Spruce Grove Park	PW402	Irrigation Well	1	\$ 325,000	2003	50	2053	10%	45	2	N/A	0.7	45	2058	0%	45	2058	\$ 325,000

Asset Group	Asset Name	Asset Number	Asset Component	Quantity or Length in m	2013 Value (Unit Cost in CAD)	Date in Service	Expected Service Life (yrs)	Expected Replacement Year	% of Expected Service Life Used	Remaining service life (yrs)	Condition Rating (1=good, 5=poor)	Tributary Population	Condition adjustment factor	Condition Adjusted Remaining Service Life	Condition adjusted replacement year	Criticality adjustment factor	Criticality & Condition Adjusted Remaining Service Life	Condition and Criticality Adjusted Replacement Year	2013 Replacement Value
Reservoirs	Alpine South Reservoir A (Square)	R222 A	Reservoir	1	\$ 465,000	1986	75	2061	36%	● 48	3	N/A	0.5	38	2051	3%	40	2053	\$ 93,000
Reservoirs	Alpine South Reservoir A (Square)	R222 A	Fixtures & Fittings	1	\$ 20,000	1986	25	2011	108%	● -2	2	N/A	0.7	18	2031	3%	18	2031	\$ 20,000
Reservoirs	Alpine South Reservoir B (Circular)	R222 B	Reservoir	1	\$ 695,000	1986	75	2061	36%	● 48	3	N/A	0.5	38	2051	1%	38	2051	\$ 139,000
Reservoirs	Alpine South Reservoir B (Circular)	R222 B	Fixtures & Fittings	1	\$ 20,000	1986	25	2011	108%	● -2	3	N/A	0.5	13	2026	1%	13	2026	\$ 20,000
Reservoirs	Alpha Creek Reservoir & Controls	R224	Reservoir	1	\$ 685,000	1981	75	2056	43%	● 43	2	N/A	0.7	53	2066	1%	53	2066	\$ 137,000
Reservoirs	Alpha Creek Reservoir & Controls	R224	Fixtures & Fittings	1	\$ 20,000	1981	25	2006	128%	● -7	2	N/A	0.7	18	2031	1%	18	2031	\$ 20,000
Reservoirs	Alpha Creek Reservoir & Controls	R224	Electrical/Controls/SCADA	1	\$ 10,000	2009	40	2049	10%	● 36	2	N/A	0.7	28	2041	1%	28	2041	\$ 10,000
Reservoirs	Olympic Reservoir	R225	NOT INCLUDED IN STUDY	1								N/A					0	2013	
Reservoirs	Cheakamus Crossing Reservoir	R226	Reservoir	1	\$ 1,035,000	2011	75	2086	3%	● 73	3	N/A	0.5	38	2051	-5%	34	2047	\$ 207,000
Reservoirs	Cheakamus Crossing Reservoir	R226	Fixtures & Fittings	1	\$ 20,000	2011	25	2036	8%	● 23	2	N/A	0.7	18	2031	-5%	16	2029	\$ 20,000
Reservoirs	Rainbow Reservoir	R227	Reservoir	1	\$ 630,000	2009	75	2084	5%	● 71	3	N/A	0.5	38	2051	2%	39	2052	\$ 126,000
Reservoirs	Rainbow Reservoir	R227	Fixtures & Fittings	1	\$ 15,000	2009	25	2034	16%	● 21	1	N/A	0.9	23	2036	2%	23	2036	\$ 15,000
Reservoirs	Baxter's Reservoir	R228	Reservoir	1	\$ 2,400,000	1982	75	2057	41%	● 44	3	N/A	0.5	38	2051	-2%	36	2049	\$ 480,000
Reservoirs	Baxter's Reservoir	R228	Fixtures & Fittings	1	\$ 30,000	1982	25	2007	124%	● -6	3	N/A	0.5	13	2026	-2%	12	2025	\$ 30,000
Intake	21 Mile Creek Intake	R231	Gallery	1	\$ 300,000	1989	75	2064	32%	● 51	3	N/A	0.5	38	2051	0%	38	2051	\$ 60,000
Intake	21 Mile Creek Intake	R231	Fixtures & Fittings	1	\$ 100,000	1989	25	2014	96%	● 1	2	N/A	0.7	18	2031	0%	18	2031	\$ 100,000
Intake	Blackcomb Creek Intake	R232	Gallery	1	\$ 300,000	1989	75	2064	32%	● 51	2	N/A	0.7	53	2066	0%	53	2066	\$ 60,000
Intake	Blackcomb Creek Intake	R232	Fixtures & Fittings	1	\$ 100,000	1989	25	2014	96%	● 1	2	N/A	0.7	18	2031	0%	18	2031	\$ 100,000
Reservoirs	Blackcomb Reservoir	R233	Reservoir	1	\$ 1,750,000	1989	75	2064	32%	● 51	2	N/A	0.7	53	2066	-10%	45	2058	\$ 350,000
Reservoirs	Blackcomb Reservoir	R233	Fixtures & Fittings	1	\$ 20,000	1989	25	2014	96%	● 1	2	N/A	0.7	18	2031	-10%	15	2028	\$ 20,000
Reservoirs	Blackcomb Reservoir	R233	Disinfection Equipment	1	\$ 10,000	1989	40	2029	60%	● 16	3	N/A	0.5	20	2033	-10%	16	2029	\$ 10,000
Reservoirs	Blackcomb Reservoir	R233	Process Mechanical	1	\$ 30,000	1989	40	2029	60%	● 16	3	N/A	0.5	20	2033	-10%	16	2029	\$ 30,000
Reservoirs	Lost Lake Reservoir	R234	Reservoir	1	\$ 2,280,000	1997	75	2072	21%	● 59	2	N/A	0.7	53	2066	-5%	49	2062	\$ 456,000
Reservoirs	Lost Lake Reservoir	R234	Fixtures & Fittings	1	\$ 20,000	1997	25	2022	64%	● 9	2	N/A	0.7	18	2031	-5%	16	2029	\$ 20,000
Reservoirs	Lost Lake Reservoir	R234	Pumping Equipment	1	\$ 30,000	1997	40	2037	40%	● 24	2	N/A	0.7	28	2041	-5%	26	2039	\$ 30,000
Reservoirs	Lower Taluswood Reservoir	R235	Reservoir	1	\$ 990,000	1995	75	2070	24%	● 57	2	N/A	0.7	53	2066	-2%	51	2064	\$ 198,000
Reservoirs	Lower Taluswood Reservoir	R235	Fixtures & Fittings	1	\$ 20,000	1995	25	2020	72%	● 7	3	N/A	0.5	13	2026	-2%	12	2025	\$ 20,000
Reservoirs	Upper Taluswood (913 m) Reservoir	R236	Reservoir	1	\$ 2,300,000	2000	75	2075	17%	● 62	2	N/A	0.7	53	2066	-5%	49	2062	\$ 460,000
Reservoirs	Upper Taluswood (913 m) Reservoir	R236	Fixtures & Fittings	1	\$ 30,000	2000	25	2025	52%	● 12	3	N/A	0.5	13	2026	-5%	11	2024	\$ 30,000
Reservoirs	Mountain View Drive Reservoir	R237	Reservoir	1	\$ 1,035,000	2001	75	2076	16%	● 63	4	N/A	0.3	23	2036	-2%	21	2034	\$ 207,000
Reservoirs	Mountain View Drive Reservoir	R237	Fixtures & Fittings	1	\$ 20,000	2001	25	2026	48%	● 13	3	N/A	0.5	13	2026	-2%	12	2025	\$ 20,000
Reservoirs	Emerald Estates Reservoir	R238	Reservoir	1	\$ 1,815,000	2001	75	2076	16%	● 63	3	N/A	0.5	38	2051	-4%	34	2047	\$ 363,000
Reservoirs	Emerald Estates Reservoir	R238	Fixtures & Fittings	1	\$ 20,000	2001	25	2026	48%	● 13	2	N/A	0.7	18	2031	-4%	16	2029	\$ 20,000
Reservoirs	Sunridge Plateau Reservoir	R239	Reservoir	1	\$ 1,145,000	2003	75	2078	13%	● 65	3	N/A	0.5	38	2051	-1%	36	2049	\$ 229,000
Reservoirs	Sunridge Plateau Reservoir	R239	Fixtures & Fittings	1	\$ 20,000	2003	25	2028	40%	● 15	2	N/A	0.7	18	2031	-1%	17	2030	\$ 20,000
Reservoirs	Stonebridge Reservoir	R240	Reservoir	1	\$ 630,000	2005	75	2080	11%	● 67	2	N/A	0.7	53	2066	1%	53	2066	\$ 126,000
Reservoirs	Stonebridge Reservoir	R240	Fixtures & Fittings	1	\$ 15,000	2005	25	2030	32%	● 17	3	N/A	0.5	13	2026	1%	13	2026	\$ 15,000

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PRV	7146 Nester's Road	P241	Building / Structural	1	\$ 115,000	1981	50	2031	64%	18	2	2376	0.7	35	2048	5.2%	38	2051	\$ 115,000
PRV	7146 Nester's Road	P241	Site Works	1	\$ 20,000	1981	50	2031	64%	18	2	2376	0.7	35	2048	5.2%	38	2051	\$ 20,000
PRV	7146 Nester's Road	P241	Electrical/Controls/SCADA	1	\$ 50,000	1981	40	2021	80%	8	2	2376	0.7	28	2041	5.2%	30	2043	\$ 50,000
PRV	7146 Nester's Road	P241	Process Mechanical	1	\$ 50,000	1981	40	2021	80%	8	3	2376	0.5	20	2033	5.2%	22	2035	\$ 50,000
PRV	6550 Balsam Way	P242	Building / Structural	1	\$ 115,000	1990	50	2040	46%	27	3	1869	0.5	25	2038	2.0%	26	2039	\$ 23,000
PRV	6550 Balsam Way	P242	Site Works	1	\$ 20,000	1990	50	2040	46%	27	2	1869	0.7	35	2048	2.0%	36	2049	\$ 20,000
PRV	6550 Balsam Way	P242	Process Mechanical	1	\$ 50,000	1990	40	2030	58%	17	3	1869	0.5	20	2033	2.0%	21	2034	\$ 50,000
PRV	Lake Placid East & Highway 99	P243	Building / Structural	1	\$ 115,000	1982	50	2032	62%	19	4	1828	0.3	15	2028	-2.0%	14	2027	\$ 23,000
PRV	Lake Placid East & Highway 99	P243	Site Works	1	\$ 20,000	1982	50	2032	62%	19	2	1828	0.7	35	2048	-2.0%	34	2047	\$ 20,000
PRV	Lake Placid East & Highway 99	P243	Process Mechanical	1	\$ 50,000	1982	40	2022	78%	9	3	1828	0.5	20	2033	-2.0%	19	2032	\$ 50,000
PRV	3021 St. Anton Way	P244	Building / Structural	1	\$ 115,000	1980	50	2030	66%	17	3	1164	0.5	25	2038	2.0%	26	2039	\$ 23,000
PRV	3021 St. Anton Way	P244	Site Works	1	\$ 20,000	1980	50	2030	66%	17	2	1164	0.7	35	2048	2.0%	36	2049	\$ 20,000
PRV	3021 St. Anton Way	P244	Electrical/Controls/SCADA	1	\$ 50,000	1980	40	2020	83%	7	3	1164	0.5	20	2033	2.0%	21	2034	\$ 50,000
PRV	3021 St. Anton Way	P244	Process Mechanical	1	\$ 50,000	1980	40	2020	83%	7	2	1164	0.7	28	2041	2.0%	29	2042	\$ 50,000
PRV	8319 Mountain View (PRV & Pump)	P245	Building / Structural	1	\$ 115,000	2000	50	2050	26%	37	2	4451	0.7	35	2048	3.6%	37	2050	\$ 23,000
PRV	8319 Mountain View (PRV & Pump)	P245	Site Works	1	\$ 20,000	2000	50	2050	26%	37	2	4451	0.7	35	2048	3.6%	37	2050	\$ 20,000
PRV	8319 Mountain View (PRV & Pump)	P245	Electrical/Controls/SCADA	1	\$ 50,000	2002	40	2042	28%	29	2	4451	0.7	28	2041	3.6%	29	2042	\$ 50,000
PRV	8319 Mountain View (PRV & Pump)	P245	Process Mechanical	1	\$ 50,000	2000	40	2040	33%	27	2	4451	0.7	28	2041	3.6%	29	2042	\$ 50,000
PRV	8319 Mountain View (PRV & Pump)	P245	Pumping Equipment	1	\$ 60,000	2000	40	2040	33%	27	2	4451	0.7	28	2041	3.6%	29	2042	\$ 60,000
PRV	4290 Blackcomb Way	P247	Building / Structural	1	\$ 230,000	1997	50	2047	32%	34	2	15475	0.7	35	2048	6.0%	38	2051	\$ 46,000
PRV	4290 Blackcomb Way	P247	Site Works	1	\$ 400,000	1997	50	2047	32%	34	1	15475	0.9	45	2058	6.0%	48	2061	\$ 80,000
PRV	4290 Blackcomb Way	P247	Electrical/Controls/SCADA	1	\$ 400,000	2003	40	2043	25%	30	2	15475	0.7	28	2041	6.0%	30	2043	\$ 80,000
PRV	4290 Blackcomb Way	P247	Process Mechanical	1	\$ 200,000	1997	40	2037	40%	24	3	15475	0.5	20	2033	6.0%	22	2035	\$ 200,000
PRV	4290 Blackcomb Way	P247	Pumping Equipment	1	\$ 110,000	1997	40	2037	40%	24	2	15475	0.7	28	2041	6.0%	30	2043	\$ 110,000
PRV	4290 Blackcomb Way	P247	Disinfection Equipment	1	\$ 70,000	1997	40	2037	40%	24	2	15475	0.7	28	2041	6.0%	30	2043	\$ 70,000

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PRV	Village Gate Boulevard & Highway 99	P248	Building / Structural	1	\$ 115,000	1985	50	2035	56%	22	4	15475	0.3	15	2028	-6.0%	12	2025	\$ 115,000
PRV	Village Gate Boulevard & Highway 99	P248	Site Works	1	\$ 20,000	1985	50	2035	56%	22	2	15475	0.7	35	2048	-6.0%	32	2045	\$ 20,000
PRV	Village Gate Boulevard & Highway 99	P248	Process Mechanical	1	\$ 50,000	1985	40	2025	70%	12	4	15475	0.3	12	2025	-6.0%	10	2023	\$ 50,000
PRV	4001 Highway 99	P249	Building / Structural	1	\$ 115,000	1986	50	2036	54%	23	5	15475	0.1	5	2018	10.0%	10	2023	\$ 7,500
PRV	4001 Highway 99	P249	Site Works	1	\$ 20,000	1986	50	2036	54%	23	5	15475	0.1	5	2018	10.0%	10	2023	\$ -
PRV	4001 Highway 99	P249	Electrical/Controls/SCADA	1	\$ 50,000	1986	40	2026	68%	13	5	15475	0.1	4	2017	10.0%	8	2021	\$ -
PRV	4001 Highway 99	P249	Process Mechanical	1	\$ 50,000	1986	40	2026	68%	13	5	15475	0.1	4	2017	10.0%	8	2021	\$ -
PRV	5758 Alta Lake Road	P251	Building / Structural	1	\$ 115,000	1986	50	2036	54%	23	3	322	0.5	25	2038	10.0%	30	2043	\$ 7,500
PRV	5758 Alta Lake Road	P251	Site Works	1	\$ 20,000	1986	50	2036	54%	23	2	322	0.7	35	2048	10.0%	40	2053	\$ -
PRV	5758 Alta Lake Road	P251	Electrical/Controls/SCADA	1	\$ 50,000	1986	40	2026	68%	13	4	322	0.3	12	2025	10.0%	16	2029	\$ -
PRV	5758 Alta Lake Road	P251	Process Mechanical	1	\$ 50,000	1986	40	2026	68%	13	4	322	0.3	12	2025	10.0%	16	2029	\$ -
PRV	2101 Whistler Road	P252	Building / Structural	1	\$ 115,000	1986	50	2036	54%	23	3	3497	0.5	25	2038	7.2%	29	2042	\$ 115,000
PRV	2101 Whistler Road	P252	Site Works	1	\$ 20,000	2002	50	2052	22%	39	2	3497	0.7	35	2048	7.2%	39	2052	\$ 20,000
PRV	2101 Whistler Road	P252	Electrical/Controls/SCADA	1	\$ 50,000	1986	40	2026	68%	13	3	3497	0.5	20	2033	7.2%	23	2036	\$ 50,000
PRV	2101 Whistler Road	P252	Process Mechanical	1	\$ 50,000	1986	40	2026	68%	13	4	3497	0.3	12	2025	7.2%	15	2028	\$ 50,000
PRV	3001 Brio Entrance	P253	Building / Structural	1	\$ 115,000	1987	50	2037	52%	24	3	15475	0.5	25	2038	-2.0%	24	2037	\$ 7,500
PRV	3001 Brio Entrance	P253	Site Works	1	\$ 20,000	1987	50	2037	52%	24	2	15475	0.7	35	2048	-2.0%	34	2047	\$ -
PRV	3001 Brio Entrance	P253	Electrical/Controls/SCADA	1	\$ 50,000	1987	40	2027	65%	14	4	15475	0.3	12	2025	-2.0%	11	2024	\$ -
PRV	3001 Brio Entrance	P253	Process Mechanical	1	\$ 50,000	1987	40	2027	65%	14	4	15475	0.3	12	2025	-2.0%	11	2024	\$ -
PRV	Altitude valve @ Olympic Dam	P254	NOT INCLUDED IN STUDY	1								#N/A				#N/A	#N/A	#N/A	
PRV	4873 Painted Cliff	P255	Building / Structural	1	\$ 115,000	1988	50	2038	50%	25	3	7174	0.5	25	2038	-4.4%	23	2036	\$ 115,000
PRV	4873 Painted Cliff	P255	Site Works	1	\$ 20,000	2002	50	2052	22%	39	2	7174	0.7	35	2048	-4.4%	33	2046	\$ 20,000
PRV	4873 Painted Cliff	P255	Electrical/Controls/SCADA	1	\$ 50,000	1988	40	2028	63%	15	2	7174	0.7	28	2041	-4.4%	26	2039	\$ 50,000
PRV	4873 Painted Cliff	P255	Process Mechanical	1	\$ 50,000	1988	40	2028	63%	15	3	7174	0.5	20	2033	-4.4%	18	2031	\$ 50,000

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PRV	4700 Glacier Drive	P256	Building / Structural	1	\$ 115,000	1989	50	2039	48%	26	3	7174	0.5	25	2038	-4.4%	23	2036	\$ 115,000
PRV	4700 Glacier Drive	P256	Site Works	1	\$ 20,000	1989	50	2039	48%	26	2	7174	0.7	35	2048	-4.4%	33	2046	\$ 20,000
PRV	4700 Glacier Drive	P256	Electrical/Controls/SCADA	1	\$ 50,000	2002	40	2042	28%	29	3	7174	0.5	20	2033	-4.4%	18	2031	\$ 50,000
PRV	4700 Glacier Drive	P256	Process Mechanical	1	\$ 50,000	1989	40	2029	60%	16	3	7174	0.5	20	2033	-4.4%	18	2031	\$ 50,000
Check Valve & Surge Station	Fitz Creek near Snowy Creek	P257	Building / Structural	1	\$ 60,000	1987	50	2037	52%	24	3	7174	0.5	25	2038	-0.8%	25	2038	\$ 60,000
Check Valve & Surge Station	Fitz Creek near Snowy Creek	P257	Site Works	1	\$ 20,000	1987	50	2037	52%	24	2	7174	0.7	35	2048	-0.8%	35	2048	\$ 20,000
Check Valve & Surge Station	Fitz Creek near Snowy Creek	P257	Electrical/Controls/SCADA	1	\$ 50,000	1987	40	2027	65%	14	2	7174	0.7	28	2041	-0.8%	28	2041	\$ 50,000
Check Valve & Surge Station	Fitz Creek near Snowy Creek	P257	Process Mechanical	1	\$ 50,000	1987	40	2027	65%	14	3	7174	0.5	20	2033	-0.8%	20	2033	\$ 50,000
PRV	6717 Crabapple Drive	P258	Building / Structural	1	\$ 115,000	1996	50	2046	34%	33	2	1767	0.7	35	2048	-6.0%	32	2045	\$ 115,000
PRV	6717 Crabapple Drive	P258	Site Works	1	\$ 20,000	1996	50	2046	34%	33	2	1767	0.7	35	2048	-6.0%	32	2045	\$ 20,000
PRV	6717 Crabapple Drive	P258	Electrical/Controls/SCADA	1	\$ 50,000	1996	40	2036	43%	23	2	1767	0.7	28	2041	-6.0%	26	2039	\$ 50,000
PRV	6717 Crabapple Drive	P258	Process Mechanical	1	\$ 50,000	1996	40	2036	43%	23	2	1767	0.7	28	2041	-6.0%	26	2039	\$ 50,000
Altitude Valve	Baxter's Reservoir	P259	Building / Structural	1	\$ 115,000	2000	50	2050	26%	37	2	3497	0.7	35	2048	-2.0%	34	2047	\$ 115,000
Altitude Valve	Baxter's Reservoir	P259	Site Works	1	\$ 20,000	2000	50	2050	26%	37	2	3497	0.7	35	2048	-2.0%	34	2047	\$ 20,000
Altitude Valve	Baxter's Reservoir	P259	Electrical/Controls/SCADA	1	\$ 50,000	2000	40	2040	33%	27	2	3497	0.7	28	2041	-2.0%	27	2040	\$ 50,000
Altitude Valve	Baxter's Reservoir	P259	Process Mechanical	1	\$ 50,000	2000	40	2040	33%	27	4	3497	0.3	12	2025	-2.0%	11	2024	\$ 50,000
PRV	2025 Karen Crescent	P260	Building / Structural	1	\$ 115,000	1992	50	2042	42%	29	3	1828	0.5	25	2038	-2.0%	24	2037	\$ 115,000
PRV	2025 Karen Crescent	P260	Site Works	1	\$ 20,000	1992	50	2042	42%	29	2	1828	0.7	35	2048	-2.0%	34	2047	\$ 20,000
PRV	2025 Karen Crescent	P260	Electrical/Controls/SCADA	1	\$ 50,000	1992	40	2032	53%	19	3	1828	0.5	20	2033	-2.0%	19	2032	\$ 50,000
PRV	2025 Karen Crescent	P260	Process Mechanical	1	\$ 50,000	1992	40	2032	53%	19	3	1828	0.5	20	2033	-2.0%	19	2032	\$ 50,000
PRV	4450 Blackcomb Way	P261	Building / Structural	1	\$ 115,000	1991	50	2041	44%	28	3	2376	0.5	25	2038	5.2%	28	2041	\$ 115,000
PRV	4450 Blackcomb Way	P261	Site Works	1	\$ 20,000	1991	50	2041	44%	28	2	2376	0.7	35	2048	5.2%	38	2051	\$ 20,000
PRV	4450 Blackcomb Way	P261	Electrical/Controls/SCADA	1	\$ 50,000	1991	40	2031	55%	18	2	2376	0.7	28	2041	5.2%	30	2043	\$ 50,000
PRV	4450 Blackcomb Way	P261	Process Mechanical	1	\$ 50,000	1991	40	2031	55%	18	2	2376	0.7	28	2041	5.2%	30	2043	\$ 50,000

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PRV	4389 Northlands Boulevard	P262	Building / Structural	1	\$ 115,000	1991	50	2041	44%	● 28	3	2376	0.5	25	2038	-2.0%	24	2037	\$ 115,000
PRV	4389 Northlands Boulevard	P262	Site Works	1	\$ 20,000	1991	50	2041	44%	● 28	2	2376	0.7	35	2048	-2.0%	34	2047	\$ 20,000
PRV	4389 Northlands Boulevard	P262	Electrical/Controls/SCADA	1	\$ 50,000	1991	40	2031	55%	● 18	2	2376	0.7	28	2041	-2.0%	27	2040	\$ 50,000
PRV	4389 Northlands Boulevard	P262	Process Mechanical	1	\$ 50,000	1991	40	2031	55%	● 18	3	2376	0.5	20	2033	-2.0%	19	2032	\$ 50,000
PRV	2399 Cheakamus Way	P263	Building / Structural	1	\$ 115,000	1993	50	2043	40%	● 30	3	4516	0.5	25	2038	0.4%	25	2038	\$ 115,000
PRV	2399 Cheakamus Way	P263	Site Works	1	\$ 20,000	1993	50	2043	40%	● 30	2	4516	0.7	35	2048	0.4%	35	2048	\$ 20,000
PRV	2399 Cheakamus Way	P263	Electrical/Controls/SCADA	1	\$ 50,000	1993	40	2033	50%	● 20	2	4516	0.7	28	2041	0.4%	28	2041	\$ 50,000
PRV	2399 Cheakamus Way	P263	Process Mechanical	1	\$ 50,000	1993	40	2033	50%	● 20	3	4516	0.5	20	2033	0.4%	20	2033	\$ 50,000
PRV	Whistler Rd at Nordic	P264	Building / Structural	1	\$ 115,000	1993	50	2043	40%	● 30	2	297	0.7	35	2048	6.0%	38	2051	\$ 23,000
PRV	Whistler Rd at Nordic	P264	Site Works	1	\$ 20,000	1993	50	2043	40%	● 30	1	297	0.9	45	2058	6.0%	48	2061	\$ 20,000
PRV	Whistler Rd at Nordic	P264	Electrical/Controls/SCADA	1	\$ 50,000	2003	40	2043	25%	● 30	1	297	0.9	36	2049	6.0%	38	2051	\$ 50,000
PRV	Whistler Rd at Nordic	P264	Process Mechanical	1	\$ 50,000	1993	40	2033	50%	● 20	2	297	0.7	28	2041	6.0%	30	2043	\$ 50,000
PRV	Whistler Rd at Nordic	P264	Generator	1	\$ 50,000	1993	20	2013	100%	● 0	2	297	0.7	14	2027	6.0%	15	2028	\$ 50,000
PRV	Whistler Rd at Nordic	P264	Pumping Equipment	1	\$ 60,000	1993	40	2033	50%	● 20	2	297	0.7	28	2041	6.0%	30	2043	\$ 60,000
PRV	3840 Sunridge Drive	P265	Building / Structural	1	\$ 115,000	1996	50	2046	34%	● 33	2	15475	0.7	35	2048	-10.0%	30	2043	\$ 23,000
PRV	3840 Sunridge Drive	P265	Site Works	1	\$ 20,000	1996	50	2046	34%	● 33	2	15475	0.7	35	2048	-10.0%	30	2043	\$ 20,000
PRV	3840 Sunridge Drive	P265	Electrical/Controls/SCADA	1	\$ 50,000	2002	40	2042	28%	● 29	1	15475	0.9	36	2049	-10.0%	32	2045	\$ 50,000
PRV	3840 Sunridge Drive	P265	Process Mechanical	1	\$ 50,000	1996	40	2036	43%	● 23	2	15475	0.7	28	2041	-10.0%	24	2037	\$ 50,000
PRV	3840 Sunridge Drive	P265	Pumping Equipment	1	\$ 60,000	1996	40	2036	43%	● 23	2	15475	0.7	28	2041	-10.0%	24	2037	\$ 60,000
PRV	8407 Golden Bear Place	P266	Building / Structural	1	\$ 92,000	1995	50	2045	36%	● 32	2	1232	0.7	35	2048	3.6%	37	2050	\$ 18,400
PRV	8407 Golden Bear Place	P266	Site Works	1	\$ 16,000	1995	50	2045	36%	● 32	2	1232	0.7	35	2048	3.6%	37	2050	\$ 16,000
PRV	8407 Golden Bear Place	P266	Electrical/Controls/SCADA	1	\$ 50,000	2002	40	2042	28%	● 29	2	1232	0.7	28	2041	3.6%	29	2042	\$ 50,000
PRV	8407 Golden Bear Place	P266	Process Mechanical	1	\$ 50,000	1995	40	2035	45%	● 22	2	1232	0.7	28	2041	3.6%	29	2042	\$ 50,000
PRV	7314 Blackcomb Way	P267	Building / Structural	1	\$ 115,000	1997	50	2047	32%	● 34	2	1858	0.7	35	2048	-2.0%	34	2047	\$ 23,000
PRV	7314 Blackcomb Way	P267	Site Works	1	\$ 20,000	1997	50	2047	32%	● 34	2	1858	0.7	35	2048	-2.0%	34	2047	\$ 20,000
PRV	7314 Blackcomb Way	P267	Electrical/Controls/SCADA	1	\$ 50,000	2004	40	2044	23%	● 31	2	1858	0.7	28	2041	-2.0%	27	2040	\$ 50,000
PRV	7314 Blackcomb Way	P267	Process Mechanical	1	\$ 50,000	1997	40	2037	40%	● 24	2	1858	0.7	28	2041	-2.0%	27	2040	\$ 50,000

Asset Group	Asset Name	Asset Number	Asset Component	Quantity or Length in m	2013 Value (Unit Cost in CAD)	Date in Service	Expected Service Life (yrs)	Expected Replacement Year	% of Expected Service Life Used	Remaining service life (yrs)	Condition Rating (1=good, 5=poor)	Tributary Population	Condition adjustment factor	Condition Adjusted Remaining Service Life	Condition adjusted replacement year	Criticality adjustment factor	Criticality & Condition Adjusted Remaining Service Life	Condition and Criticality Adjusted Replacement Year	2013 Replacement Value
PRV	4100 Lorimer Road	P268	Building / Structural	1	\$ 115,000	1997	50	2047	32%	● 34	2	15475	0.7	35	2048	10.0%	40	2053	\$ 23,000
PRV	4100 Lorimer Road	P268	Site Works	1	\$ 20,000	1997	50	2047	32%	● 34	2	15475	0.7	35	2048	10.0%	40	2053	\$ 20,000
PRV	4100 Lorimer Road	P268	Electrical/Controls/SCADA	1	\$ 50,000	1997	40	2037	40%	● 24	2	15475	0.7	28	2041	10.0%	32	2045	\$ 50,000
PRV	4100 Lorimer Road	P268	Process Mechanical	1	\$ 50,000	1997	40	2037	40%	● 24	2	15475	0.7	28	2041	10.0%	32	2045	\$ 50,000
PRV	7114 Nancy Green	P269	Building / Structural	1	\$ 115,000	1999	50	2049	28%	● 36	2	1858	0.7	35	2048	0.0%	35	2048	\$ 23,000
PRV	7114 Nancy Green	P269	Site Works	1	\$ 20,000	1999	50	2049	28%	● 36	2	1858	0.7	35	2048	0.0%	35	2048	\$ 20,000
PRV	7114 Nancy Green	P269	Electrical/Controls/SCADA	1	\$ 50,000	2007	40	2047	15%	● 34	2	1858	0.7	28	2041	0.0%	28	2041	\$ 50,000
PRV	7114 Nancy Green	P269	Process Mechanical	1	\$ 50,000	1999	40	2039	35%	● 26	2	1858	0.7	28	2041	0.0%	28	2041	\$ 50,000
PRV	2400 Taluswood Place	P270	Building / Structural	1	\$ 115,000	1999	50	2049	28%	● 36	1	576	0.9	45	2058	-0.8%	45	2058	\$ 23,000
PRV	2400 Taluswood Place	P270	Site Works	1	\$ 20,000	1999	50	2049	28%	● 36	1	576	0.9	45	2058	-0.8%	45	2058	\$ 20,000
PRV	2400 Taluswood Place	P270	Electrical/Controls/SCADA	1	\$ 50,000	2003	40	2043	25%	● 30	1	576	0.9	36	2049	-0.8%	36	2049	\$ 50,000
PRV	2400 Taluswood Place	P270	Process Mechanical	1	\$ 50,000	1999	40	2039	35%	● 26	2	576	0.7	28	2041	-0.8%	28	2041	\$ 50,000
PRV	2400 Taluswood Place	P270	Generator	1	\$ 50,000	1999	20	2019	70%	● 6	2	576	0.7	14	2027	-0.8%	14	2027	\$ 50,000
PRV	2400 Taluswood Place	P270	Pumping Equipment	1	\$ 60,000	1999	40	2039	35%	● 26	2	576	0.7	28	2041	-0.8%	28	2041	\$ 60,000
PRV	2649 Wolverine Crescent	P271	Building / Structural	1	\$ 115,000	2000	50	2050	26%	● 37	2	576	0.7	35	2048	2.8%	36	2049	\$ 23,000
PRV	2649 Wolverine Crescent	P271	Site Works	1	\$ 20,000	2000	50	2050	26%	● 37	2	576	0.7	35	2048	2.8%	36	2049	\$ 20,000
PRV	2649 Wolverine Crescent	P271	Electrical/Controls/SCADA	1	\$ 50,000	2002	40	2042	28%	● 29	2	576	0.7	28	2041	2.8%	29	2042	\$ 50,000
PRV	2649 Wolverine Crescent	P271	Process Mechanical	1	\$ 50,000	2000	40	2040	33%	● 27	2	576	0.7	28	2041	2.8%	29	2042	\$ 50,000
B/V and Flow meter	5801 Alta Lake Road	P272	Building / Structural	1	\$ 60,000	1986	50	2036	54%	● 23	2	4451	0.7	35	2048	0.4%	35	2048	\$ 7,500
B/V and Flow meter	5801 Alta Lake Road	P272	Site Works	1	\$ 20,000	1986	50	2036	54%	● 23	2	4451	0.7	35	2048	0.4%	35	2048	\$ -
B/V and Flow meter	5801 Alta Lake Road	P272	Electrical/Controls/SCADA	1	\$ 50,000	2003	40	2043	25%	● 30	2	4451	0.7	28	2041	0.4%	28	2041	\$ -
B/V and Flow meter	5801 Alta Lake Road	P272	Process Mechanical	1	\$ 50,000	1986	40	2026	68%	● 13	3	4451	0.5	20	2033	0.4%	20	2033	\$ -
B/V and Flow meter	5801 Alta Lake Road	P272	Pumping Equipment	1	\$ 60,000	1986	40	2026	68%	● 13	3	4451	0.5	20	2033	0.4%	20	2033	\$ -
B/V and Flow meter	5801 Alta Lake Road	P272	Disinfection Equipment	1	\$ 31,000	1986	40	2026	68%	● 13	3	4451	0.5	20	2033	0.4%	20	2033	\$ -
PRV	1559 Spring Creek Drive	P273	Building / Structural	1	\$ 115,000	2001	50	2051	24%	● 38	3	4516	0.5	25	2038	0.4%	25	2038	\$ 23,000
PRV	1559 Spring Creek Drive	P273	Site Works	1	\$ 20,000	2001	50	2051	24%	● 38	1	4516	0.9	45	2058	0.4%	45	2058	\$ 20,000
PRV	1559 Spring Creek Drive	P273	Electrical/Controls/SCADA	1	\$ 50,000	2008	40	2048	13%	● 35	2	4516	0.7	28	2041	0.4%	28	2041	\$ 50,000
PRV	1559 Spring Creek Drive	P273	Process Mechanical	1	\$ 50,000	2001	40	2041	30%	● 28	2	4516	0.7	28	2041	0.4%	28	2041	\$ 50,000

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PRV	5406 Stonebridge Drive	P274	Building / Structural	1	\$ 115,000	2001	50	2051	24%	38	2	6	0.7	35	2048	10.0%	40	2053	\$ 23,000
PRV	5406 Stonebridge Drive	P274	Site Works	1	\$ 20,000	2001	50	2051	24%	38	2	6	0.7	35	2048	10.0%	40	2053	\$ 20,000
PRV	5406 Stonebridge Drive	P274	Electrical/Controls/SCADA	1	\$ 50,000	2004	40	2044	23%	31	2	6	0.7	28	2041	10.0%	32	2045	\$ 50,000
PRV	5406 Stonebridge Drive	P274	Process Mechanical	1	\$ 50,000	2001	40	2041	30%	28	2	6	0.7	28	2041	10.0%	32	2045	\$ 50,000
PRV	5438 Stonebridge Drive	P275	Building / Structural	1	\$ 230,000	2001	50	2051	24%	38	1	48	0.9	45	2058	8.8%	49	2062	\$ 46,000
PRV	5438 Stonebridge Drive	P275	Site Works	1	\$ 20,000	2001	50	2051	24%	38	1	48	0.9	45	2058	8.8%	49	2062	\$ 20,000
PRV	5438 Stonebridge Drive	P275	Electrical/Controls/SCADA	1	\$ 50,000	2004	40	2044	23%	31	2	48	0.7	28	2041	8.8%	32	2045	\$ 50,000
PRV	5438 Stonebridge Drive	P275	Process Mechanical	1	\$ 50,000	2001	40	2041	30%	28	2	48	0.7	28	2041	8.8%	32	2045	\$ 50,000
PRV	5310 Alta Lake Road	P276	Building / Structural	1	\$ 115,000	2007	50	2057	12%	44	1	261	0.9	45	2058	7.6%	49	2062	\$ 23,000
PRV	5310 Alta Lake Road	P276	Site Works	1	\$ 20,000	2007	50	2057	12%	44	1	261	0.9	45	2058	7.6%	49	2062	\$ 20,000
PRV	5310 Alta Lake Road	P276	Electrical/Controls/SCADA	1	\$ 50,000	2007	40	2047	15%	34	1	261	0.9	36	2049	7.6%	39	2052	\$ 50,000
PRV	5310 Alta Lake Road	P276	Process Mechanical	1	\$ 50,000	2007	40	2047	15%	34	1	261	0.9	36	2049	7.6%	39	2052	\$ 50,000
PRV	3025 Hillcrest Drive	P277	Building / Structural	1	\$ 115,000	2005	50	2055	16%	42	2	1164	0.7	35	2048	5.2%	38	2051	\$ 23,000
PRV	3025 Hillcrest Drive	P277	Site Works	1	\$ 20,000	2005	50	2055	16%	42	2	1164	0.7	35	2048	5.2%	38	2051	\$ 20,000
PRV	3025 Hillcrest Drive	P277	Electrical/Controls/SCADA	1	\$ 50,000	2008	40	2048	13%	35	1	1164	0.9	36	2049	5.2%	38	2051	\$ 50,000
PRV	3025 Hillcrest Drive	P277	Process Mechanical	1	\$ 50,000	2005	40	2045	20%	32	3	1164	0.5	20	2033	5.2%	22	2035	\$ 50,000
PRV	1010 Janes Lake Road	P278	Building / Structural	1	\$ 115,000	2009	50	2059	8%	46	1	#N/A	0.9	45	2058	0.0%	45	2058	\$ 23,000
PRV	1010 Janes Lake Road	P278	Site Works	1	\$ 20,000	2009	50	2059	8%	46	1	#N/A	0.9	45	2058	0.0%	45	2058	\$ 20,000
PRV	1010 Janes Lake Road	P278	Electrical/Controls/SCADA	1	\$ 50,000	2009	40	2049	10%	36	1	#N/A	0.9	36	2049	0.0%	36	2049	\$ 50,000
PRV	1010 Janes Lake Road	P278	Process Mechanical	1	\$ 50,000	2009	40	2049	10%	36	2	#N/A	0.7	28	2041	0.0%	28	2041	\$ 50,000
Pumping Station	1135 Cheakamus Lake Road	P279	Building / Structural	1	\$ 230,000	2009	50	2059	8%	46	1	#N/A	0.9	45	2058	-5.0%	43	2056	\$ 46,000
Pumping Station	1135 Cheakamus Lake Road	P279	Site Works	1	\$ 400,000	2009	50	2059	8%	46	1	#N/A	0.9	45	2058	-5.0%	43	2056	\$ 80,000
Pumping Station	1135 Cheakamus Lake Road	P279	Electrical/Controls/SCADA	1	\$ 400,000	2009	40	2049	10%	36	1	#N/A	0.9	36	2049	-5.0%	34	2047	\$ 80,000
Pumping Station	1135 Cheakamus Lake Road	P279	Process Mechanical	1	\$ 200,000	2009	40	2049	10%	36	1	#N/A	0.9	36	2049	-5.0%	34	2047	\$ 200,000
Pumping Station	1135 Cheakamus Lake Road	P279	Pumping Equipment	1	\$ 110,000	2009	40	2049	10%	36	1	#N/A	0.9	36	2049	-5.0%	34	2047	\$ 110,000
Pumping Station	1135 Cheakamus Lake Road	P279	Disinfection Equipment	1	\$ 70,000	2009	40	2049	10%	36	1	#N/A	0.9	36	2049	-5.0%	34	2047	\$ 70,000
Pumping Station	1135 Cheakamus Lake Road	P279	Gallery	1	\$ 73,000	2009	75	2084	5%	71	1	#N/A	0.9	68	2081	-5.0%	64	2077	\$ 73,000

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Pumping Station	5785 Alta Lake Road	P280	Building / Structural	1	\$ 800,000	1986	50	2036	54%	23	2	#N/A	0.7	35	2048	-5.0%	33	2046	\$ 160,000
Pumping Station	5785 Alta Lake Road	P280	Site Works	1	\$ 220,000	1986	50	2036	54%	23	1	#N/A	0.9	45	2058	-5.0%	43	2056	\$ 44,000
Pumping Station	5785 Alta Lake Road	P280	Electrical/Controls/SCADA	1	\$ 400,000	2009	40	2049	10%	36	1	#N/A	0.9	36	2049	-5.0%	34	2047	\$ 80,000
Pumping Station	5785 Alta Lake Road	P280	Process Mechanical	1	\$ 680,000	1986	40	2026	68%	13	2	#N/A	0.7	28	2041	-5.0%	26	2039	\$ 680,000
Pumping Station	5785 Alta Lake Road	P280	Pumping Equipment	1	\$ 110,000	1986	40	2026	68%	13	2	#N/A	0.7	28	2041	-5.0%	26	2039	\$ 110,000
Pumping Station	5785 Alta Lake Road	P280	Disinfection Equipment	1	\$ 70,000	1986	40	2026	68%	13	2	#N/A	0.7	28	2041	-5.0%	26	2039	\$ 70,000
Pumping Station	5785 Alta Lake Road	P280	Gallery	1	\$ 115,000	1986	75	2061	36%	48	2	#N/A	0.7	53	2066	-5.0%	49	2062	\$ 115,000
UV Facility	5825 Alta Lake Road	P281	Building / Structural	1	\$ 440,000	2009	50	2059	8%	46	1	#N/A	0.9	45	2058	-10.0%	40	2053	\$ 88,000
UV Facility	5825 Alta Lake Road	P281	Site Works	1	\$ 272,000	2009	50	2059	8%	46	1	#N/A	0.9	45	2058	-10.0%	40	2053	\$ 54,400
UV Facility	5825 Alta Lake Road	P281	Electrical/Controls/SCADA	1	\$ 278,000	2009	40	2049	10%	36	1	#N/A	0.9	36	2049	-10.0%	32	2045	\$ 55,600
UV Facility	5825 Alta Lake Road	P281	Process Mechanical	1	\$ 483,000	2009	40	2049	10%	36	1	#N/A	0.9	36	2049	-10.0%	32	2045	\$ 483,000
UV Facility	5825 Alta Lake Road	P281	Disinfection Equipment	1	\$ 290,000	2009	40	2049	10%	36	1	#N/A	0.9	36	2049	-10.0%	32	2045	\$ 290,000
PRV	5590 Alta Lake Road	P282	Building / Structural	1	\$ 115,000	2010	50	2060	6%	47	1	#N/A	0.9	45	2058	0.0%	45	2058	\$ 23,000
PRV	5590 Alta Lake Road	P282	Site Works	1	\$ 20,000	2010	50	2060	6%	47	1	#N/A	0.9	45	2058	0.0%	45	2058	\$ 20,000
PRV	5590 Alta Lake Road	P282	Electrical/Controls/SCADA	1	\$ 50,000	2010	40	2050	8%	37	1	#N/A	0.9	36	2049	0.0%	36	2049	\$ 50,000
PRV	5590 Alta Lake Road	P282	Process Mechanical	1	\$ 50,000	2010	40	2050	8%	37	1	#N/A	0.9	36	2049	0.0%	36	2049	\$ 50,000
PRV	Baxter's Creek	P283	Building / Structural	1	\$ 115,000	2010	50	2060	6%	47	1	#N/A	0.9	45	2058	-2.0%	44	2057	\$ 23,000
PRV	Baxter's Creek	P283	Site Works	1	\$ 20,000	2010	50	2060	6%	47	1	#N/A	0.9	45	2058	-2.0%	44	2057	\$ 20,000
PRV	Baxter's Creek	P283	Electrical/Controls/SCADA	1	\$ 50,000	2011	40	2051	5%	38	1	#N/A	0.9	36	2049	-2.0%	35	2048	\$ 50,000
PRV	Baxter's Creek	P283	Process Mechanical	1	\$ 50,000	2010	40	2050	8%	37	2	#N/A	0.7	28	2041	-2.0%	27	2040	\$ 50,000
PRV	Temporary PRV	P284	Building / Structural	1	\$ 115,000	2010	50	2060	6%	47	2	#N/A	0.7	35	2048	0.0%	35	2048	\$ 115,000
PRV	Temporary PRV	P284	Site Works	1	\$ 20,000	2010	50	2060	6%	47	2	#N/A	0.7	35	2048	0.0%	35	2048	\$ 20,000
PRV	Temporary PRV	P284	Electrical/Controls/SCADA	1	\$ 50,000	2010	40	2050	8%	37	2	#N/A	0.7	28	2041	0.0%	28	2041	\$ 50,000
PRV	Temporary PRV	P284	Process Mechanical	1	\$ 50,000	2010	40	2050	8%	37	2	#N/A	0.7	28	2041	0.0%	28	2041	\$ 50,000

APPENDIX B

Knowledge Overlay Meeting Minutes

Minutes of Meeting

Date of Meeting	February 13 th , 2013	Start Time	9 AM	Project Number	60284526
Project Name	Water Distribution System Piping Rehabilitation Study				
Location	RMoW Public Works Yard (Decker Room)				
Regarding	Project Kick-off Meeting				
Attendees	RMoW: Paul Bencharski, Chris Wike, Rob Peebles, Scott Morphet, Michael Day AECOM: Nancy Hill, David Main, Will Nash,				
Distribution	As above				
Minutes Prepared By	Will Nash				

PLEASE NOTE: If this report does not agree with your records of the meeting, or if there are any omissions, please advise, otherwise we will assume the contents to be correct.

The record of the workshop results were recorded directly on the water network drawing. This information will be migrated into the database that will be used to project the network renewal requirements. The following notes provide a complementary record and required actions:

	Action
1. Introductions and instructions	
<ul style="list-style-type: none"> • Whistler: <ul style="list-style-type: none"> • Michael Day – responsible for operations, projects, strategic planning for water, sewer, and fleet. • Paul Bencharski – project manager for this study, reports to MD. Responsible for co-ordination and any changes to scope. • Chris Wike (CW) – utilities supervisor, has operating responsibility for water and sewer. Reports to MD. • Rob Peebles (RP) – chief operator (level IV water and sewer). Reports to CW. • Scott Morphet (SM) – lead hand for repairs. • AECOM: <ul style="list-style-type: none"> • DM – project manager, responsible for project direction and reviews. • WN – deputy project manager, responsible for co-ordination and deliverables. • Nancy Hill (NH) – project advisor. 	

<p>2. Confirm pipe materials and fill gaps in information</p> <ul style="list-style-type: none"> • Where pipe materials were unknown in GIS they were marked up on a drawing of the distribution network. <ul style="list-style-type: none"> ○ If pipe materials are still unknown pipe material will be determined from financial system. 	
<p>3. Identify break history and causes of failures</p> <ul style="list-style-type: none"> • Breaks were marked on the distribution network drawing with red dots, date of breaks, and suspected causes. 	
<p>4. Identify problem areas, “hot” soils, and problematic construction practices</p> <ul style="list-style-type: none"> • Problem areas were noted on the distribution network drawing. Specific comments regarding the areas are as follows: <ul style="list-style-type: none"> ○ The cast iron pipe at Alpine Meadows has several breaks. The lower section is flushed weekly with ongoing water quality complaints. ○ The forcemain at Spruce Grove has had breaks that are related to corrosion. The failed pipe is 14 feet deep (~4.25 m). ○ Emerald Drive had several breaks in '89 after it froze, the pipe depth has been increased (>1.8 m) and most has been replaced with PVC, subsequently there have been no problems and the pipe is considered in good condition. ○ Valley Drive had lots of breaks due to poor bedding / being laid on shot rock. The pipe has been replaced with PVC and is subsequently not having any issues. ○ The AC pipe around Nancy Greene Drive was having lots of breaks, but the pressure has been reduced and the breaks have stopped. The pipe is “spongy” and may need bends or fittings replaced due to corrosion. There is a sewer forcemain in the area that will need to be replaced in the near future. ○ The Ductile Iron Cement Lined pipe at Bishops Way failed due to poor bedding. ○ The lake crossing is not on the lake bed or buried, it is in tension and the tie-back restraints are considered likely to fail. ○ Whitegold is all AC. ○ Currently only treat water with disinfection. Iron and magnesium tend to build up in the distribution system. ○ Along Crabapple Drive they have had to reduce the pressure because of the plastic pipe used. Once it is replaced, the pressure should be increased. 	
<p>5. Show general pipe condition</p> <ul style="list-style-type: none"> • Pipe condition was marked up on the distribution network drawing. 	

<p>6. Discuss currently used condition assessment techniques and previous experience</p> <ul style="list-style-type: none"> • There is no formal condition assessment program in place. <ul style="list-style-type: none"> ○ Coupons are cut out of problem pipes. ○ RMoW measures turbidity and time taken to flush the pipes, this can be used as a proxy for condition for ferrous mains. ○ Information on failures is recorded by Scott Morphet on a standard form, including date, location, material, diameter, age, type of failure. Photo records are also collected and retained. AECOM requested the breaks records. 	<p>PB to send breaks history record by 22/2/2013</p>
<p>7. Discuss currently used rehabilitation technologies and previous experience</p> <ul style="list-style-type: none"> • Repairs are all open trench. <ul style="list-style-type: none"> ○ Clamps are used for pinhole leaks. ○ Repair couplings are used where needed, e.g., for bursts. • Minor works are undertaken by RMoW staff, long lengths are subcontracted as the RMoW is not set up for that. • New pipe is generally PVC (Blue Brute) for low pressure, and Ductile Iron Cement Lined for high pressure or crossings. 	
<p>8. Review renewal unit cost estimations</p> <ul style="list-style-type: none"> • Paul is gathering information and will send cost estimate table by Friday. • Note that where rock blasting is required costs will increase and this is a separate item for contractors. 	<p>PB to send table by 15/2/2013</p>
<p>9. Identify critical pipes</p> <ul style="list-style-type: none"> • Critical pipes were marked up on the distribution network drawing, the main drivers for criticality were: <ul style="list-style-type: none"> ○ Lack of redundancy, generally reservoir connections. ○ High cost of maintenance, Alpine Meadows, Crabapple Drive. ○ High likelihood of failure, Alpine Meadows, AC pipe generally. • Generally blue polybutylene services pipe should be replaced as it is prone to brittle failure. • The environmentally sensitive areas are already contained within GIS, this layer will be used to identify pipes that may impact on these areas if they fail. 	<p>PB to send environmental GIS shapefiles by 18/2/2013</p>
<p>10. Identify pipes where access is difficult</p> <ul style="list-style-type: none"> • Areas where access to pipes is difficult were marked up on the distribution network drawing, the main areas were: <ul style="list-style-type: none"> ○ The village, access is difficult due to congestion, and underground parking. ○ The crossing under the railway. 	

11. Other Items

- A long term water supply study is currently under way and will be provided in mid-March. This will be used to inform where pipe may not meet capacity requirements. The main driver for capacity is fire flow.
- The RMoW does not currently have an inspector on staff that can monitor third party construction.
- These minutes should be accompanied by a record of the marked up water distribution network drawing. (S:\EO\Projects\2012\E055-WAT Watermain Rehabilitation Study\Project\Scan of Workshop Breaks 20130219-115942.pdf)
- A layer could be added in GIS to incorporate the mark up that could be updated to keep a living record.

MD to provide
supply study
15/3/2013

APPENDIX C

Weibull Probability Distribution

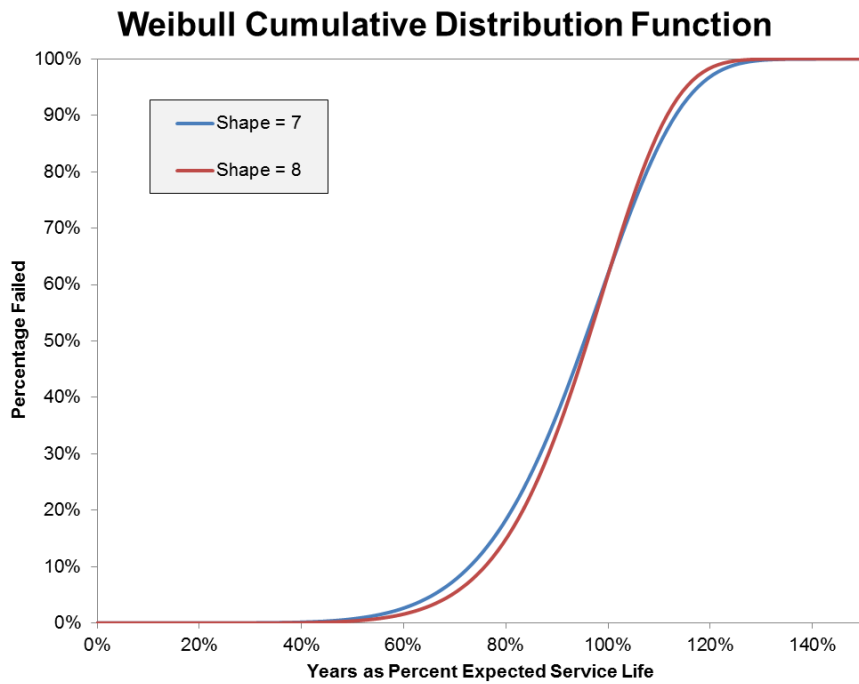
A Weibull variable is one which has a cumulative distribution function $F(s_R)$ written as

$$F(s_R) = 1 - \exp\{-(s_R/\alpha)^\eta\}$$

$F(s_R)$ is the cumulative probability that the pipeline has failed at a particular year value s_R . An empirical estimate of $F(s_R)$ can be obtained from the degradation rate data. α is the scale parameter of the Weibull probability distribution function (PDF) and η is the shape parameter.

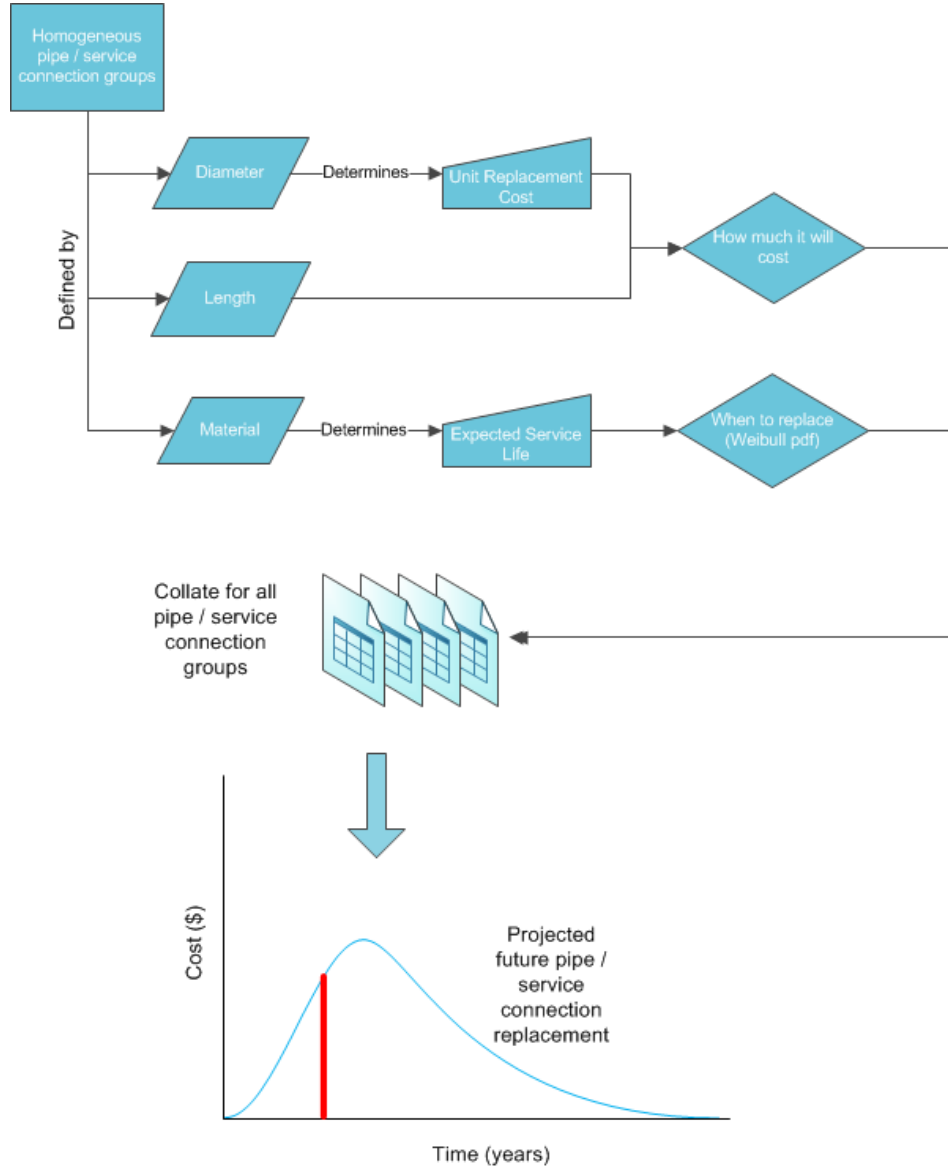
The scale parameter is related to the expected life of the pipeline, and the shape parameter is related to the rate of deterioration. If we substitute years with percent expected service life, altering the scale parameter will not alter the form of the curve. Based on published data for Weibull PDFs of pipeline deterioration, the shape factor tends to fall between 7 and 8, the cumulative distribution function can then be plotted as in **Figure C - 1**.

Figure C - 1 Cumulative Distribution Function with Varying Shape Parameters



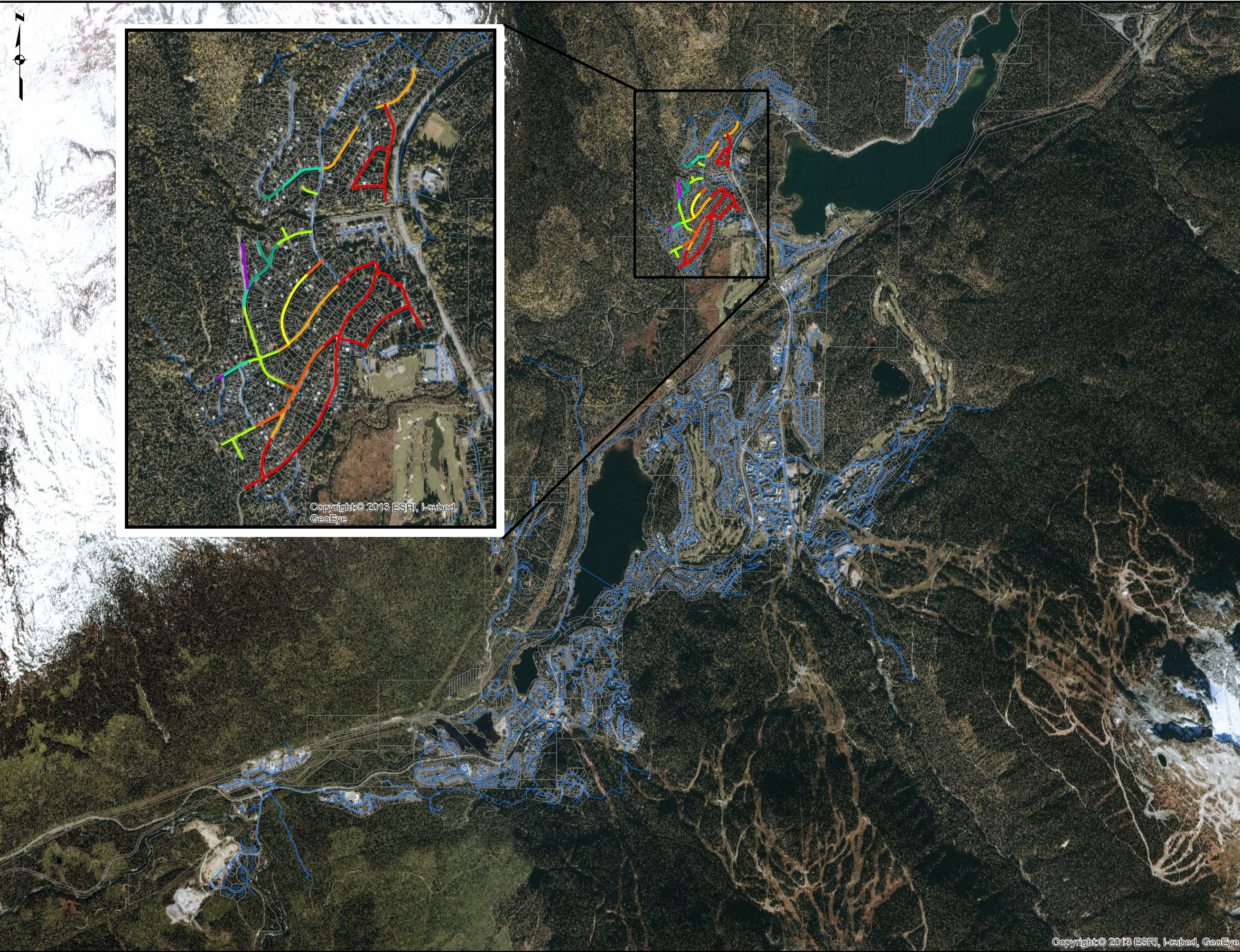
In order to forecast the costs for main and service rehabilitation, the top-down analysis multiplies the expected length requiring replacement by the estimated renewal costs. This process is summarised by the flow diagram presented in **Figure C - 2**.

Figure C - 2 Top-down Costs Forecasting Process Diagram



APPENDIX D

Pipe Replacement Program Maps



WHISTLER

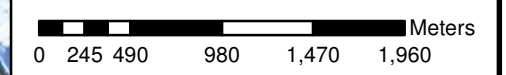
Resort Municipality
of Whistler

Water Utility Infrastructure
Rehabilitation Study

Legend

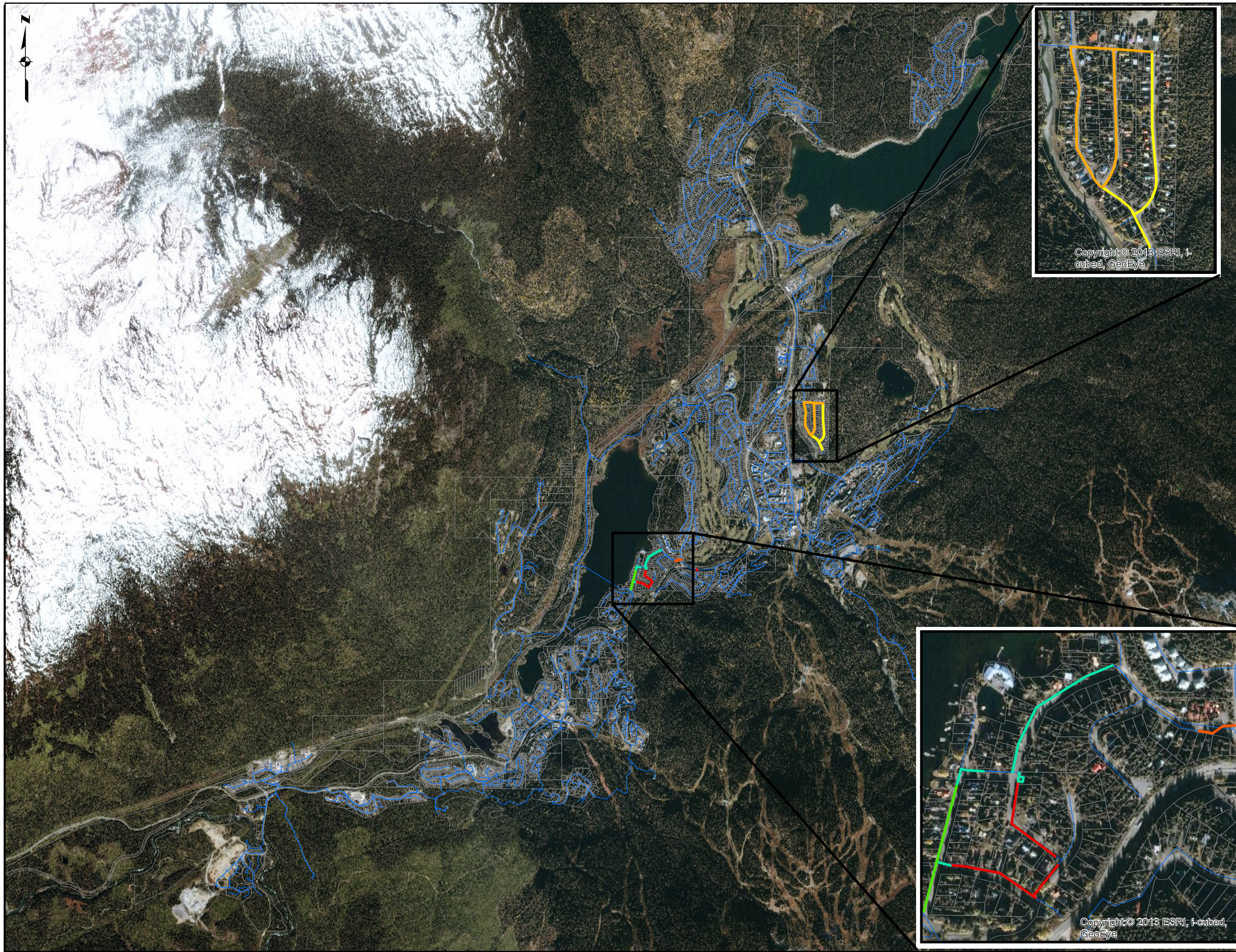
CI Replacement Year

- 2014
- 2017
- 2018
- 2019
- 2020
- 2021
- 2022
- 2023
- Watermain



Project No.	Date
60284526	June 2013

**Cast Iron
Watermain
Replacement Program**



WHISTLER

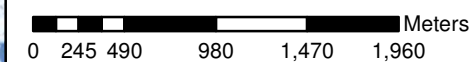
Resort Municipality
of Whistler

Water Utility Infrastructure
Rehabilitation Study

Legend

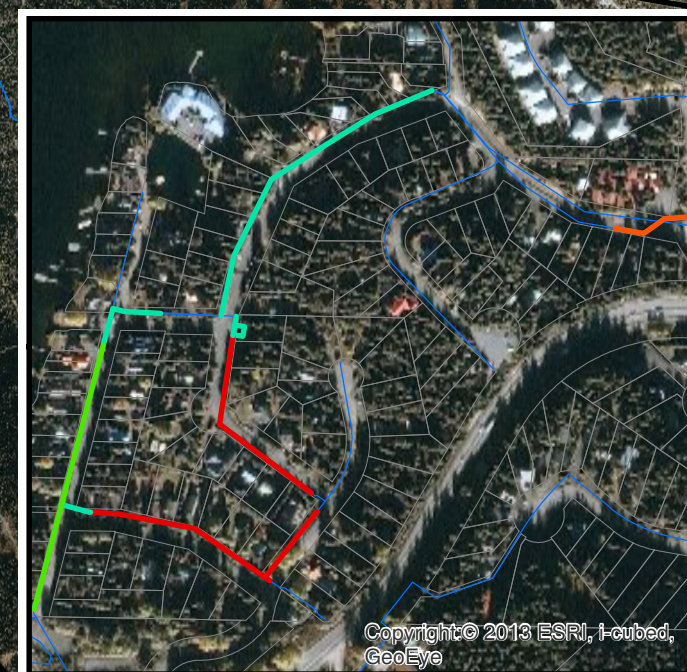
AC Replacement Year

- 2014
- 2015
- 2016
- 2017
- 2021
- 2024
- Watermain



Project No.	Date
60284526	June 2013

**Asbestos Cement
Watermain
Replacement Program**



APPENDIX E

Condition Assessment and Rehabilitation/Renewal Methods

CONDITION ASSESSMENT TECHNIQUES

Condition assessment techniques should be reproducible, objective, and able to provide meaningful information regarding the likelihood of the failure for risk analysis. Assessment techniques for pipes can be specific to material type, or are able to provide information on condition regardless of material, i.e., general assessment techniques. Based on the inventory of pipe at RMoW this appendix discusses general condition assessment techniques and ferrous pipe condition assessment techniques. There is currently no available technology for assessing the condition of polymeric pipes other than the general techniques.

General Pipe Condition Assessment Techniques

Soil monitoring

Measures soil pressure changes; these are often caused by temperature and/or wet/dry cycles. The change in pipe support and loading can be inferred, which indicates areas likely to fail. Changes in moisture/temperature may also be indicative of leaks. These systems can be set up using low cost off the shelf soil sensors, and can be installed without disturbing or de-watering the pipe. However, the system requires a detailed understanding of the relationship between changes in surrounding soil environment and the loads imposed on buried pipelines. The system is tailored to inferring changes in flexural stresses in buried pipes, which are important for small diameter pipes, but less so for larger diameter. The area of detection is also limited to the immediate location of the soil sensors.

Fibre optic sensors

Fibre optic sensors (FOS) can be used to measure strain, acoustic emissions, and temperature. To measure strain the FOS must be bonded to the pipe. Acoustic and temperature sensors may be installed adjacent to pipes. Trends in a variety of pipeline properties such as strain and wall thickness can be detected using real-time monitoring. The continuous and remote monitoring technique is more cost-effective than traditional monitoring techniques and allows intervention before catastrophic failure. This method has been used successfully on AC mains in Canada, (see Chaudry, T.S., Gheorghiu, C. and Hu, Y., *Field Condition Monitoring of Water Mains in the Canadian Prairies*, NRCC-50254, 2007). However, initial setup, validation and interpretation of the real-time monitoring system requires highly skilled operators. Retro-fitting to existing buried pipelines is requires disturbing soil embedment, potentially increasing the likelihood of failure.

Pressure transients

This condition assessment method measures the wave speed of an induced pressure transient in pipe section. Wave speed varies based on diameter, and wall stiffness, by which the method infers wall thickness. Relatively long sections of pipe, up to thousands of meters, may be analyzed in a single test. A clear indication of the condition along lengths of pipeline to approximately 20 m resolution is obtained. The technique has a clear advantage of being non-invasive as it requires access only to scour valves, air valves, fire hydrants and the like for connection of test and measurement equipment. Pipeline system does not have to be de-watered. The technique provides a relatively rapid means for assessing overall pipe condition. The method is time and cost-effective to implement. Resolution is adequate to effectively focus on where checks with ultrasonic probes should be made. However, it currently requires skilled operators for planning and executing a test and data interpretation. The characteristics of pressure signals can be different depending on the pipe material, which results in more complex data interpretation. The approach is not a pinpoint detection technique, but can find problematic pipe sections in 10 – 20 m resolution, rather than resolving individual pits and defects. Currently this method is not commercially available and is only being trialled by research organizations.

Statistical inference monitoring

Software interrogates existing SCADA data to identify inconsistencies and anomalies, which may be indicative of system deficiencies or impending failure. Other data such as customer billing, flow and pressure monitoring and asset management systems can also be interrogated. This method works with data already collected by the Water Authority and so adds value to data already stored. However, RMoW must provide data feeds directly to the contractor in order for interrogation to be conducted. Additionally, the polling frequency of SCADA sites and monitoring tolerances may need to be modified in order to optimise benefits of the system. The supplier of this technology is TaKaDu (www.takadu.com/)

Infra-Red (IR) Thermography

IT thermography can show temperature maps of the ground, indicating the presence of voids and leaks. The method is surface based, non-invasive, and no interruption to service required; and a resolution of 0.01°C is achievable. However, a temperature differential must exist between the feature observed and its surroundings. Additionally the method may be shielded by insulating material, such as snow which could impact the applicability for RMoW.

Acoustic Leak Detection – in pipe

An acoustic sensor is passed through the pipe while in service and detects noise generated by leaks. The system can be tethered (http://www.puretechltd.com/products/sahara/sahara_leak_gas_pocket.shtml) or untethered (http://www.puretechltd.com/products/smartball/smartball_leak_detection.shtml). This technology is currently provided by Pure Technology in Calgary AB. The technique is currently limited to pipes greater than 150 mm diameter. The leak detection can detect leaks down to 20 mL/min and the tethered system can pinpoint leaks within 50 mm. Very long lengths of pipe are able to be surveyed, e.g., the free swimming Smart-Ball that can cover 25 km in 12 hours. However, the technique requires insertion into the mains that may require tapping, and can sometime be obstructed by valves or other appurtenances.

Acoustic Leak Detection – noise correlator

Acoustic sensors are attached to contact points, such as fire hydrants, and a correlator pinpoints leaks based on time lag and sensor spacing. This technology is provided by Echologics, Mississauga, ON. (<http://echologics.com/services/transmission-main-leak-detection/>) The method is non-intrusive and no excavation is required. However, multiple leaks between sensors, changes in pipe diameter, and air pockets can confuse correlation. Attenuation in large diameter pipes and non-metallic pipes can reduce accuracy. Background noise can also swamp detectors and affect the accuracy of the method.

Closed Circuit Television (CCTV)

Visual inspection of the inside of the pipe using a video camera mounted on a rig. The rig can be a robot, a tethered platform, a pig, or similar. This is a common method for wastewater pipes. It is simple, relatively inexpensive, and suitable for small and large pipes. New systems with multi-camera and/or fish-eye technology can record a full view of a pipe and allow relatively high scanning speed as well as full off-line inspection. Digital recording is convenient for data storage, as well as future developments in automatic data interpretation. However, it provides information only on defects that are manifested on the pipe inner surface. Inspection results are qualitative and need interpretation; therefore quantitative rating requires trained inspectors. Limitations of traditional CCTV inspection include the need to pan and tilt to see sides and laterals, the camera has to stop at each defect's location for a closer look and identification, and to ensure an acceptable video quality; the carrier's speed is limited to 150 mm/s (5.9 in./s). Tuberculated pipes may need to be scrubbed and cleaned prior to inspection. The method is currently available for in-service water main inspection (Genivar). The method can be launched through a fire hydrant.

Laser Scanning

Laser scanning provides the topography of the pipe surface and can detect changes in pipe shape due to deformation and sedimentation, etc. Laser Technology can be used to make a 3D model and give a better QA/QC than CCTV alone. Information from the lasers is readily recorded and analyzed in the computer, reducing operator errors. There is potential to show the early signs of pipe degradation. The method provides exact geometric dimensions for rehabilitation options; enables inspection with minimum lighting requirements and measures cross-sectional area. However, visual technologies can only give information about the condition of the pipe that is visible from inside. Tuberculated pipes need to be scrubbed and cleaned prior to inspection. The pipeline needs to be de-watered. Data analysis combines measurements with software and automated processes. No documentation is currently available on the method's capability to detect cracks.

Ferrous Pipe Assessment Techniques

Rapid Transit Soil resistivity (OhmMapper)

This method uses capacitatively-coupled resistivity meter that measures the electrical properties of rock and soil. A simple co-axial cable array with transmitter and receiver sections is pulled along the ground either by an operator or attached to a small all-terrain vehicle. The receiver is coupled to the transmitter and reports the measured voltage, from which the apparent resistivity is calculated. Rapid Transit Resistivity Surveying provides an effective means of identifying areas of low resistivity. This is a surface-based test and is non-invasive and non-destructive. The method provides a useful "screening" test that can be conducted before more detailed condition assessments. The operating range from 1 Ohm-meters to 100 000 Ohm-meters. Surveys must be conducted parallel to the pipeline but not directly over the pipe. Converting raw data to calculate resistivity values requires a skilled operator. It should be noted that the test method indicates the corrosivity of the soil environment and not the level of corrosion that a ferrous pipe has experienced and care must be taken in the interpretation of results in terms of pipe condition.

Soil linear polarization resistance

Electrochemical measurement provides an instantaneous estimation of the corrosion rate of a surrogate probe. Can be performed in the lab, or on site. Can provide a quantitative estimate of corrosion rate (i.e. mm/year). The test is taken in-situ and substantial amount of data can be gathered at relatively low cost. However, currently there are very few suppliers of the technique. There is a strong tendency to treat solutions as "black box" technology. The method cannot be used to infer condition of externally coated pipelines. It should be noted that the test method indicates the corrosivity of the soil environment and not the level of corrosion that a ferrous pipe has experienced. In-situ LPR probes are currently hand-held probes that are not yet set up as continuous monitoring devices. Further development is required to fully commercialise this technology.

Remote Field Eddy Current

RFEC is one of the most developed water main inspection technologies available, and the closest to a true continuous measurement tool that exists. The detector senses variations in field strength that occur when an electromagnetic field travels through a ferrous medium. For in-line pipe inspection, a tool containing both emitter and detector coils is inserted in the pipe. The field generated passes through the pipe wall before being sensed by the detector coil, which is capable of detecting minor variations in signal strength induced by the pipe wall. However, the method is expensive, particularly for pipe smaller than 450 mm. The in-line pipe measurement tool See Snake was developed by Russell Technology, Edmonton AB.

Half-cell Soil Potential Mapping

This method measures the potential difference between the pipe and the surrounding soil, thus determining the ferrous pipe's current ability to oxidize (corrode) in its environment. Field-measured potentials can be compared with historic data to provide an assessment of the pipe's most probably state of corrosion activity. Close-interval potential surveys performed along a pipe length will identify cathodic and anodic sites, and pinpoint locations where the pipe is actively corroding. This method also identifies the presence of stray currents that may be corroding the pipe.

TRENCHLESS REHABILITATION/RENEWAL METHODS

Close-fit Pipe (CFP) (Swagelining)

This type of trenchless pipeline renewal temporarily reduces the diameter by 5-15% of the new pipe before it is installed. After placement, the liner relaxes and reverts to its original size and shape in order to provide a close fit with the existing pipe. This method is commonly used for pressure pipe and can be used for both structural or non-structural purposes. Lining pipe can also be reduced on-site and reformed by heat and/or pressure or may reinforce thin polyethylene pipe.

Cured-in-place Pipe (CIPP)

Cured-in-place pipe (CIPP) installation is one of the most widely used methods of trenchless pipeline renewal. The cured-in-place pipe (CIPP) process involves the insertion of a resin-impregnated fabric tube into an old pipe by use of water inversion or winching. Usually the fabric is polyester material, reinforced fibreglass, or similar. The fabric is impregnated in a process called “wet-in”, this normally occurs off-site, but for larger pipes transport restrictions limit the “wet-in” to be undertaken on-site. Usually hot water or steam is used for the inversion process. The pliable nature of the resin-saturated fabric prior to curing allows installation around curves, filling of cracks, bridging of gaps, and maneuvering through pipe defects. CIPP can be applied for structural or non-structural purposes.

CIPP has been used since 1971 extensively in sewer repairs. When used for pressure mains that carry potable water, higher cost epoxy resins are required to meet strength and water quality requirements.

Sliplining

Sliplining (SL) is mainly used for structural applications when the existing pipe does not have joint settlements or misalignments. In this method, a new pipeline of smaller diameter is inserted into the existing pipe and usually the annular space between the existing pipe and new pipe is grouted. This installation method has the merit of simplicity and is relatively inexpensive. However, there can be a loss of hydraulic capacity.

Sliplining can be categorized into two main categories: continuous and segmental. The continuous sliplining method involves accessing the deteriorated pipe at strategic points and inserting high-density polyethylene (HDPE) or polyvinyl chloride (PVC) pipe, joined into a continuous pipe string. The segmental sliplining method involves the use of short sections of pipe that incorporate a flush sleeve joint commonly used in microtunneling and pipe-jacking processes.

Thermoformed Pipe

Thermoformed pipe is reduced in cross-section in a factory by folding. After the pipe is transported and installed, it is heated and unfolds to revert to its original dimensions, providing a close fit. Both PVC and PE can be used in this method, but PVC is more common.

Spray in Place Pipe

Cement Mortar Lining

Centrifugal lining machines are divided into large, medium and small diameter types. Larger diameter lining machines are used to line pipes that are greater than 24 in. diameter. Before the lining process is started, the pipe must be cleaned, dried and inspected to ensure that any remaining encrustation and water are removed. Commonly, 1:1 sand: mortar mix lining is applied by a lining machine, the construction of which depends on the pipe diameter.

Epoxy Lining

The primary reason for using epoxy lining is to overcome water quality issues that arise from internal corrosion of ferrous pipes and epoxy linings are usually non-structural. The lining is applied to the interior surface of host pipes with a smooth surface finish that helps prevent further corrosion and tuberculation. Epoxy can effectively halt the recurrence of turbidity problems if the host pipe is properly cleaned and lining is adequately applied according to specifications and manufacturer's guidelines. Epoxy lining requires the use of a specialized machine and spray head.

Polyurea Lining

Polyurea is formed from reaction of two components, isocyanate and amine resin. These components, unlike those created by the crystalline nature of some polyurethane hard segments, form a urea linkage, which is highly flexible. The material is moisture tolerant and has low viscosity, thus it can be easily pumped to remote spray head locations. It provides high build slump resistant linings, and dependent on manufacturer and class of material (structural or non-structural) excellent adhesion characteristics. Finished linings are hard, glossy, and free of surface tack or greasiness. Polyurea linings provide long-term corrosion protection and have excellent abrasion resistance.

Polyurethane Lining

High strength polyurethane coatings were first used in North America to protect underground steel fuel storage tanks from corrosion in the mid-1970s. The materials were also used to protect oil and gas pipelines in Europe at approximately the same time. Because of further development of the technology during the 1980s, the coating system was used successfully in water and wastewater pipelines and tanks.

Pipe Bursting

Pipe bursting is a method of structural replacement performed by shattering the existing pipe and dislodging its fragments to create a void that will be filled with a new pipe. The method is applicable to non-ductile types of pipes with diameters ranging from 50 mm to 1200 mm. The new pipe is usually HDPE, supplied in sections and butt fused. All service connections must be excavated and uncovered before pipe bursting commences. The shattering is performed using pneumatic, hydraulic or static bursting head that is inserted through an excavation pit. The shattered pipe fragments are compressed into the surrounding soil creating the void for the new pipe, which is simultaneously pulled through behind the bursting head. It is possible to increase the existing pipe diameter by about 30%.

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