South Slocan Water Open House

Pre-Treatment Install Water Quality

REGIONAL DISTRICT OF CENTRAL KOOTENAY
202 Lakeside Drive, Box 590, Nelson, B.C. V1L 5R4
Phone 250-352-6665 Fax 250-352-9300
Toll Free in B.C. 1-800-268-7325

South Slocan Water System
2009 Water sample results to date

Water System	Sampling Date	Sampling Location	Parameter Exceeded	Pass Fail	Details
South Slocan	Jan 29, 2009	Smoky Creek	N/A	N/A	No Results Received
South Slocan	Jan 29, 2009	Smokey Creek	N/A	N/A	No Results Received
South Slocan	**Feb 26, 2009**	**Old School House (raw)**	**Coliform E Coli**	**Fail**	**2/100ml 1/100ml**
South Slocan	**Feb 26, 2009**	**Smokey Creek**	**Coliform**	**Fail**	**1/100ml**
South Slocan	**March 24, 2009**	**Old School House (raw)**	**N/A**	**Fail**	**Too long in transit**
South Slocan	**March 25, 2009**	**Smokey Creek**	**Coliform**	**Fail**	**42/100ml**
South Slocan	April 16, 2009	Old School House (raw)	0	Pass	-
South Slocan	April 16, 2009	Smokey Creek	0	Pass	-

South Slocan Water Open House

Pre-Treatment Install Water Quality

Site Information----------
Code/Name :04V9883 - 04V9883
Site Desc :SOUTH SLOCAN WATER SPECIFIED AREA, SOUTH SLOCAN LOOP ROAD, SOUTH SLOCAN BC, RAW WATER SAMPLE -WTP SOUTH SLOCAN
City/Area : Type :
Source :
Specimen----------
Treatment: Ph Level: Free Chlorine Level: ppm
Nature :WATER Exams Req :Total Coliform

EHO :ANSEL, RENEE :Escherichia coli

Collected:2019 OCT 15
Received :2019 OCT 16
RESULTS==========

Reported on 2019 OCT 17

	Test	Result	Units	
1.	Total Coliform (Colilert Quanti-Tray)	325.5		TC Count/100ml
2.	Escherichia coli (Colilert Quanti-Tray)	137.4		EC Count/100ml

Site Information----------
Code/Name :04V7646 - 04V7646
Site Desc :SOUTH SLOCAN WATER SPECIFIED AREA, SOUTH SLOCAN LOOP ROAD, SOUTH SLOCAN BC V0G 2G0, RAW WATER SAMPLE - WTP SOUTH SLOCAN
City/Area : Type :
Source :
Specimen----------
Treatment: Ph Level: Free Chlorine Level: ppm
Nature :WATER Exams Req :Total Coliform

EHO :ANSEL, RENEE :Escherichia coli

Collected:2019 SEP 3
Received :2019 SEP 4
RESULTS==========

Reported on 2019 SEP 5

	Test	Result	Units	
1.	Total Coliform (MF-Chromocult)	130		TC Count/100ml
2.	Escherichia coli (MF-Chromocult)	L1		EC Count/100ml

L:LESS THAN

October 21, 2019

South Slocan Water Open House

Interior Health 43210

Interior Health

Health Protection **Drinking Water Program**

4-3-2-1-0 Drinking Water Objective

Water suppliers are required to provide potable water to all users on their systems. The 4-3-2-1-0 drinking water objective provides a performance target for water suppliers to ensure the provision of microbiological safe drinking water. Interior Health supports water suppliers to meet this objective. All water suppliers serving populations greater than 500 people should have an implementation plan to meet this as a standard.
This objective will be applied as a performance standard for all new water systems. Many existing water systems already meet most of the standard. Risk to human health is substantially reduced when water suppliers meet this objective.

Water suppliers will be required to provide long term plans to reach the goals of:

- 4 log inactivation of viruses
- 3 log removal or inactivation of Giardia Lamblia and Cryptosporidium
- 2 refers to two treatment processes for all surface drinking water systems
- 1 for less than 1 NTU of turbidity with a target of 0.1 NTU
- 0 total and fecal coliforms and E. Coli

Definitions:

4 log inactivation of viruses:

Viruses are easily inactivated by the use of chlorine. The common practice of maintaining 0.5 mg/L of free chlorine for 20 minutes is adequate in most cases.

3 log removal or inactivation of giardia lamblia and cryptosporidium protozoa

The 3 log removal or inactivation of these protozoa is the minimum level required of water systems that have a source that is considered "low risk" by Interior Health and have not had an outbreak of either disease. **Giardia** may be inactivated by large doses of free chlorine, ultraviolet light, ozone and chlorine dioxide, or removed by filtration. The US EPA has developed design guidelines to determine that the proposed treatment will provide the inactivation desired. For example, chemically assisted rapid sand filtration with sedimentation is given a credit of 3.0 log inactivation. Log inactivation credits of 3.0 for slow sand filtration and 2.5 for direct filtration are given The remaining credit must be accomplished by another means such as ultraviolet disinfection or free chlorine with a long contact time. The Guidelines for Canadian Drinking Water Quality for **Cryptosporidium** have developed design guidelines to determine that the proposed treatment will provide the inactivation desired. Systems with optimized conventional rapid sand filtration are given a credit of 3.0 logs. Membrane filtration may be required to demonstrate removal efficiency through challenge testing and verified by direct integrity testing. Ultraviolet disinfection is given a credit of 3.0 logs if the dose is a minimum of 40mj/sq. cm.

2 treatment barriers are a minimum for all surface water sources. A multiple barrier approach to water treatment is associated with providing potable water:

The main risk to water quality is from microbiological agents. Some of these microbial risks are more resistant to some forms of treatment than others. It is recognized that effective treatment for all microbial risks by a single treatment barrier is not effective. A minimum dual barrier of treatment is required for all surface water to reduce the risk of microbial or health threats to drinking water. Water filtration and disinfection will become the norm for surface water supplies in order to meet the 4-3-2-1-0 performance objectives. For other sources where the turbidity standard can be met without filtration (for example, a well beside a lake), dual treatment may mean chlorination and UV light disinfection. Ground water sources that are not under the influence of surface water will be given credit for filtration.

<1 NTU of turbidity (less than)

The Guidelines for Canadian Drinking Water Quality currently specify that the filtered treated water turbidity should have a target of less than 0.1 NTU at all times. Specific filtration technologies may have target turbidity ranges from 0.1 to 1.0 NTU. Exemptions for filtration may be considered for those systems that use two disinfectants plus maintain chlorine residual in the distribution system and can demonstrate compliance with the GCDWQ for exemption for filtration..

0 Fecal coliform or E. coli bacteria

The Drinking Water Protection Act requires water suppliers to provide water with 0 E.Coli sample results. Coliform bacteria are easily controlled with chlorine, UV light and can be reduced by filtration.

HPF9040 January 2006

South Slocan Water Open House

Direct Filtration

Comprehensive Surface Water Treatment Rules Quick Reference Guide: Systems Using Conventional or Direct Filtration

Overview of the Rules	
Title	**Surface Water Treatment Rule** (SWTR) - 40 CFR 141.70-141.75 **Interim Enhanced Surface Water Treatment Rule** (IESWTR) - 40 CFR 141.170-141.175 **Filter Backwash Recycling Rule** (FBRR) - 40 CFR 141.76 **Long Term 1 Enhanced Surface Water Treatment Rule** (LT1ESWTR) - 40 CFR 141.500-141.571
Purpose	Improve public health protection through the control of microbial contaminants, particularly viruses, *Giardia*, and *Cryptosporidium*.
General Description	The **Surface Water Treatment Rules**: ▸ Applies to all public water systems (PWSs) using surface water or ground water under the direct influence of surface water (GWUDI), otherwise known as **"Subpart H systems."** ▸ Requires all Subpart H systems to disinfect. ▸ Requires Subpart H systems to filter unless specific filter avoidance criteria are met. ▸ Requires individual filter monitoring and establishes combined filter effluent (CFE) limits. ▸ Applies a treatment technique requirement for control of microbials.

Turbidity

There are two ways turbidity is measured: **Combined Filter Effluent (CFE)** and **Individual Filter Effluent (IFE)**.

Turbidity: Monitoring and Reporting Requirements				
Turbidity Reporting Requirements *(Reports due by the 10th day of the following month the system serves water to the public.)*	**Monitoring/ Recording Frequency**	**SWTR As of June 29, 1993**	**IESWTR ≥ 10,000 people As of January 1, 2002**	**LT1ESWTR < 10,000 people As of January 1, 2005**
CFE 95% Value Report total number of CFE measurements and number and percentage of CFE measurements ≤ 95th % limit.	At least every 4 hours*	≤ 0.5 NTU	≤ 0.3 NTU	≤ 0.3 NTU
CFE Maximum Value Report date and value of any CFE measurement that exceeded CFE maximum limit.	At least every 4 hours*	5 NTU Contact state within 24 hours	1 NTU Contact state within 24 hours	1 NTU Contact state within 24 hours
IFE Monitoring Report IFE monitoring conducted and any follow-up actions.	Monitor continuously every 15 minutes	None	Monitor–exceedances require follow-up action	Monitor–exceedances require follow-up action. Systems with 2 or fewer filters may monitor CFE continuously in lieu of IFE.

*Monitoring frequency may be reduced by the state to once per day for systems serving 500 or fewer people.

Overview of Requirements					
The purpose of this table is show how the requirements for the IESWTR and LT1ESWTR build on the existing requirements established in the original SWTR.					
APPLICABILITY: PWSs that use surface water or ground water under the direct influence of surface water (Subpart H) that practice conventional or direct filtration.		**Final Rule Dates**			
		SWTR 1989	**IESWTR 1998**	**LT1ESWTR 2002**	**FBRR 2001**
Population Served	≥10,000	✓	✓		✓
	< 10,000	✓	N/A (except for sanitary survey provisions)	✓	✓
Regulated Pathogens	99.99% (4-log) removal/inactivation of viruses	✓	Regulated under SWTR	Regulated under SWTR	Regulated under SWTR
	99.9% (3-log) removal/inactivation of *Giardia lamblia*	✓	Regulated under SWTR	Regulated under SWTR	Regulated under SWTR
	99% (2-log) removal of Cryptosporidium		✓	✓	Regulated under IESWTR & LT1ESWTR
Residual Disinfectant Requirements	Entrance to distribution system (≥0.2 mg/L)	✓	Regulated under SWTR	Regulated under SWTR	
	Detectable in the distribution system	✓	Regulated under SWTR	Regulated under SWTR	
Turbidity Performance Standards	Combined Filter Effluent	✓	✓	✓	
	Individual Filter Effluent		✓	✓	
Disinfection Profiling & Benchmarking	Systems must profile inactivation levels and generate benchmark, if required		✓	✓	
Sanitary Surveys (state requirement)	CWS: Every 3 years NCWS: Every 5 years		✓	Regulated under IESWTR	
Covered Finished Reservoirs/Water Storage Facilities (new construction only)			✓	✓	
Operated by Qualified Personnel as Specified by State		✓	Regulated under SWTR	Regulated under SWTR	Regulated under SWTR

(CWS) Community Water System (NCWS) Non-community Water System

IFE Follow-Up and Reporting Requirements						
	IESWTR (≥ 10,000)			**LT1ESWTR (< 10,000) ****		
Condition	**Action**	**Report**	**By**	**Action**	**Report**	**By**
2 consecutive recordings >0.5 NTU taken 15 minutes apart at the end of the first 4 hours of continuous filter operation after backwash/offline:	Produce filter profile within 7 days (if cause not known)	▸ Filter # ▸ Turbidity value ▸ Date ▸ Cause (if known) or report profile was produced	10th of the following month			
2 consecutive recordings > 1.0 NTU taken 15 minutes apart:	Produce filter profile within 7 days (if cause not known)	▸ Filter # ▸ Turbidity value ▸ Date ▸ Cause (if known) or report profile was produced	10th of the following month		▸ Filter # ▸ Turbidity value ▸ Date ▸ Cause (if known)	10th of the following month
2 consecutive recordings > 1.0 NTU taken 15 minutes apart at the same filter for **3 months in a row**:	Conduct filter self-assessment within 14 days	▸ Filter # ▸ Turbidity value ▸ Date ▸ Report filter self-assessment produced	10th of the following month	Conduct a filter self-assessment within 14 days. Systems with 2 filters that monitor CFE in lieu of IFE must do both filters.	▸ Date filter self-assessment triggered & completed	10th of the following month (or within 14 days of filter self-assessment being triggered if triggered in last 4 days of the month)
2 consecutive recordings > 2.0 NTU taken 15 minutes apart at the same filter for 2 months in a row:	Arrange for CPE within 30 days & submit report within 90 days	▸ Filter # ▸ Turbidity value ▸ Date	10th of the following month	Arrange for CPE within 60 days & submit CPE report within 120 days	▸ Date CPE triggered	10th of the following month
		Submit CPE report	90 days after exceedance		Submit CPE report	120 days after exceedance

** Systems serving fewer than 10,000 people must begin complying with these requirements beginning January 4, 2005

Disinfection

Disinfection must be sufficient to ensure that the total treatment process (disinfection plus filtration) of the system achieves at least:

- 99.9% (3-log) inactivation and/or removal of *Giardia lamblia*.
- 99.99% (4-log) inactivation and/or removal of viruses.

Cryptosporidium must be removed by filtration and no inactivation credits are currently given for disinfection. Systems must also comply with the maximum residual disinfectant level (MRDL) requirements specified in the Stage 1 Disinfectants/ Disinfection Byproducts Rule (Stage 1 DBPR).

Conventional Treatment

Overview | Contaminants | References

Conventional treatment consists of the following unit processes: coagulation, flocculation, clarification, and filtration, and is typically followed by disinfection at full-scale. Figure 1 describes conventional treatment. Conventional treatment is often preceded by pre-sedimentation, may be accompanied by powdered activated carbon (PAC) addition, utilize granular activated carbon (GAC) as a filter media, and in some cases be followed by GAC adsorption. Conventional treatment is often preceded by pre-oxidation, or oxidation takes place concurrently. Oxidants common to conventional treatment are chlorine, chloramine, chlorine dioxide or permanganate. Occasionally membrane processes, either membrane filtration or ultrafiltration, accompany conventional treatment.

In coagulation, a positively charged coagulant (usually an aluminum or iron salt) is added to raw water and mixed in the rapid mix chamber. The coagulant alters or destabilizes negatively charged particulate, dissolved, and colloidal contaminants. Coagulant aid polymers and/or acid may also be added to enhance the coagulation process. Turbidity and total organic carbon (TOC) are measures of particulates and dissolved organics impacting coagulation.

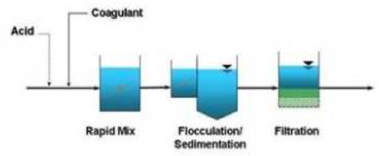


Figure 1: Conventional treatment.

Direct Filtration

Overview | Contaminants | Referenc

Direct filtration is a used for the treatment of good quality water supplies. It involves the addition of coagulant, rapid mix, flocculation and filtration. The major difference relative to conventional treatment is the absence of a separation process, such as sedimentation or flotation, between coagulant addition and filtration. Direct filtration can be preceded by pre-oxidation, may be accompanied by powdered activated carbon (PAC) addition, and in some cases followed by granular activated carbon (GAC) adsorption. Thus, it may be concurrent with other processes.

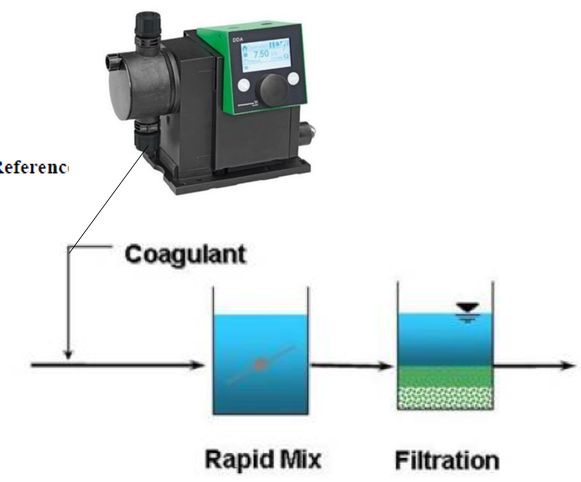
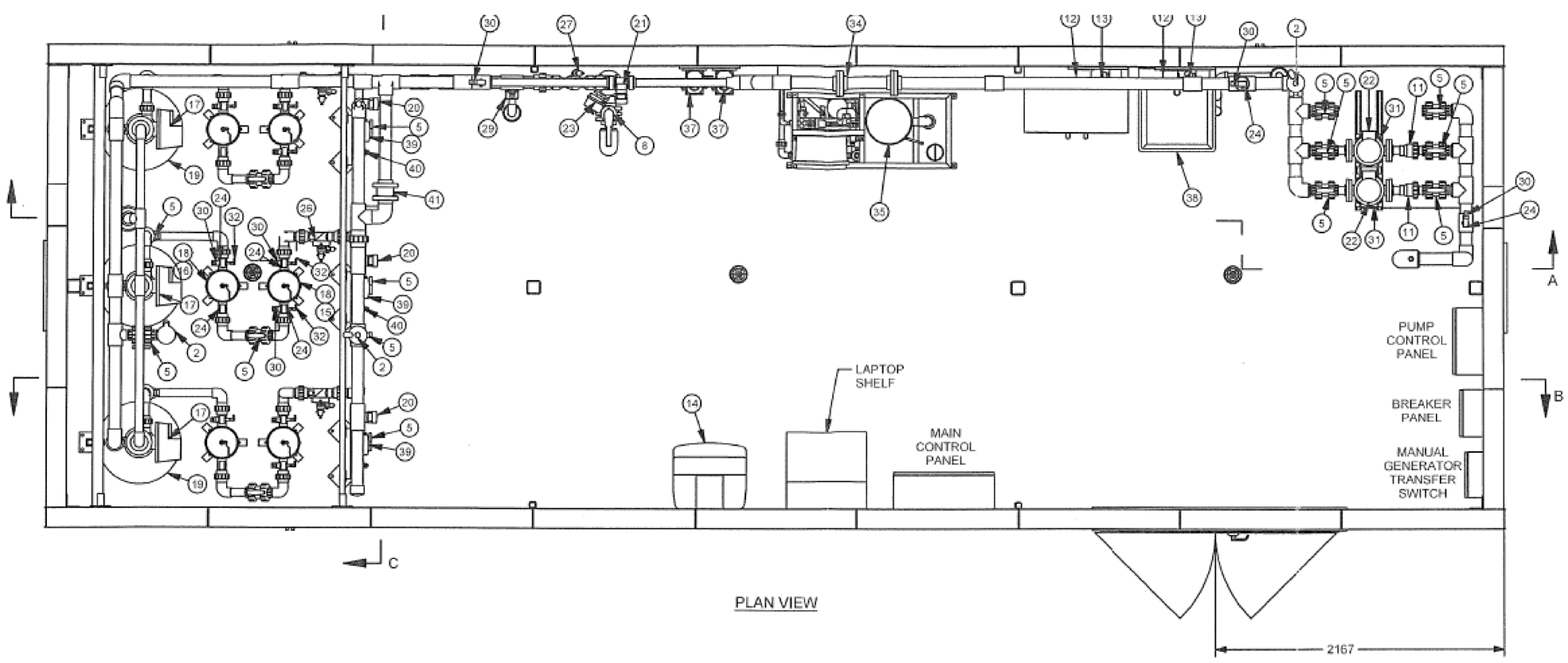


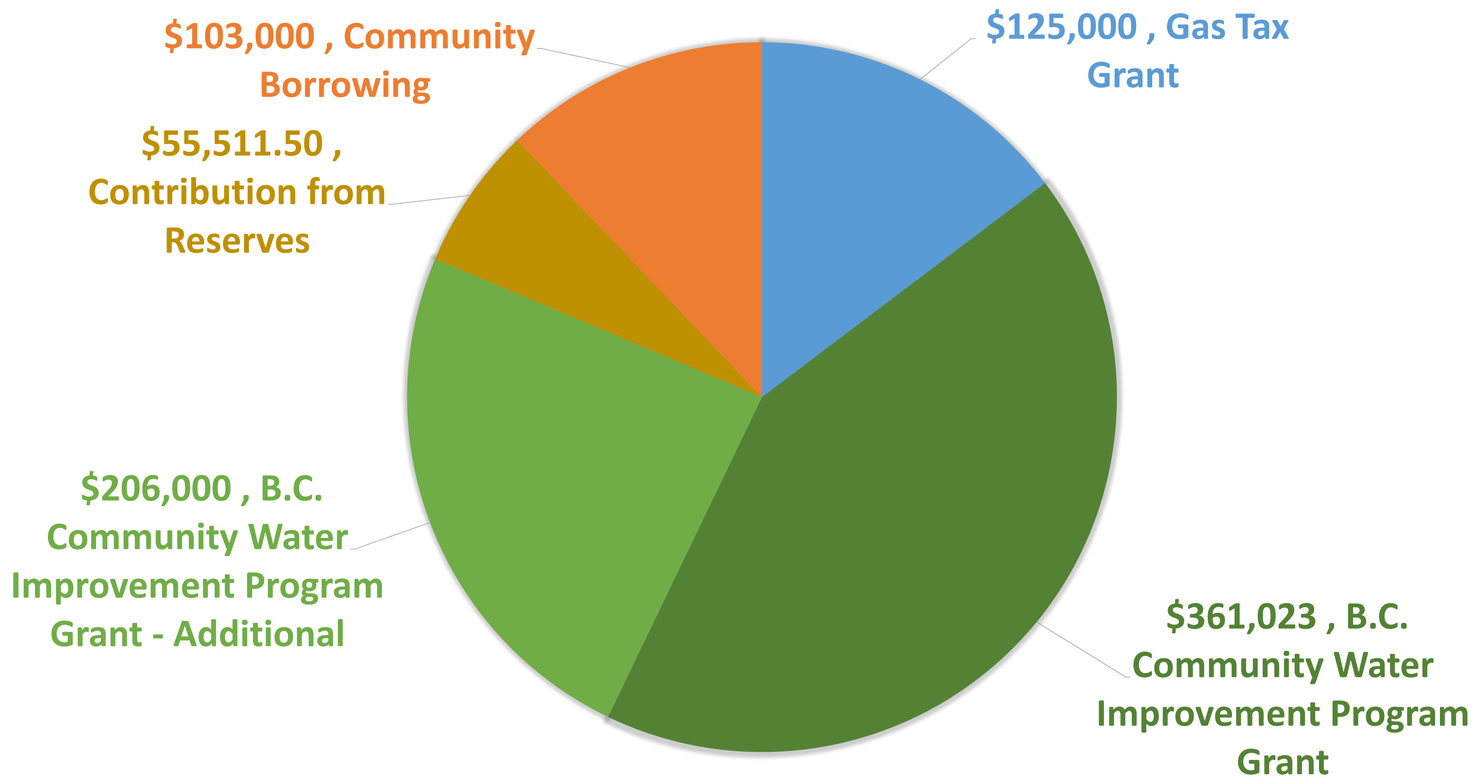
Figure 1: Direct filtration.

South Slocan Water Open House

System Components WTP



WATER TREATMENT PLANT & RESERVOIR $850,834.50 FUNDING



REGIONAL DISTRICT OF CENTRAL KOOTENAY

Legend

- Blow Off
- Hydrant
- Stand Pipe
- Main Valve
- Curb Stop
- Isolation valve
- Blow Off Valve
- Drain Valve
- PRV
- Mainline
- Untreated Main
- Service Connection
- Creek
- Structure
- Water System Boundary
- Property Boundary

N
W E
S

Map Projection: UTM Zone 11
Map Datum: NAD83

0 100 200
Meters

DATA SOURCES

The following sources of data are updated as changes occur:

Cadastral Lot - Surveyed lots/parcels of land; Sources: Crown Land Registry Services and RDCK

District Lot; Source: Crown Land Registry Services, Integrated Cadastral Initiative (ICI) and RDCK

TRIM Data - Planimetry, Unsurveyed Roads, and Contours; Source: Ministry of Water, Land and Air Protection

ALR - Agricultural Land Reserve; Source: BC Land Reserve Commission

Zoning - Rural Land Use, Land Use and Zoning Bylaws, where bylaws are in place; Source: RDCK

Roads - Road centerline compiled 2003; Source: RDCK

Regional District of Central Kootenay
Box 590, 202 Lakeside Drive, Nelson,
BC V1L 5R4
Phone: (250) 352-6665
Toll-Free 1-800-268-7325 (BC)
Fax: (250) 352-9300 Internet: www.rdck.bc.ca

South Slocan Water Distribution System

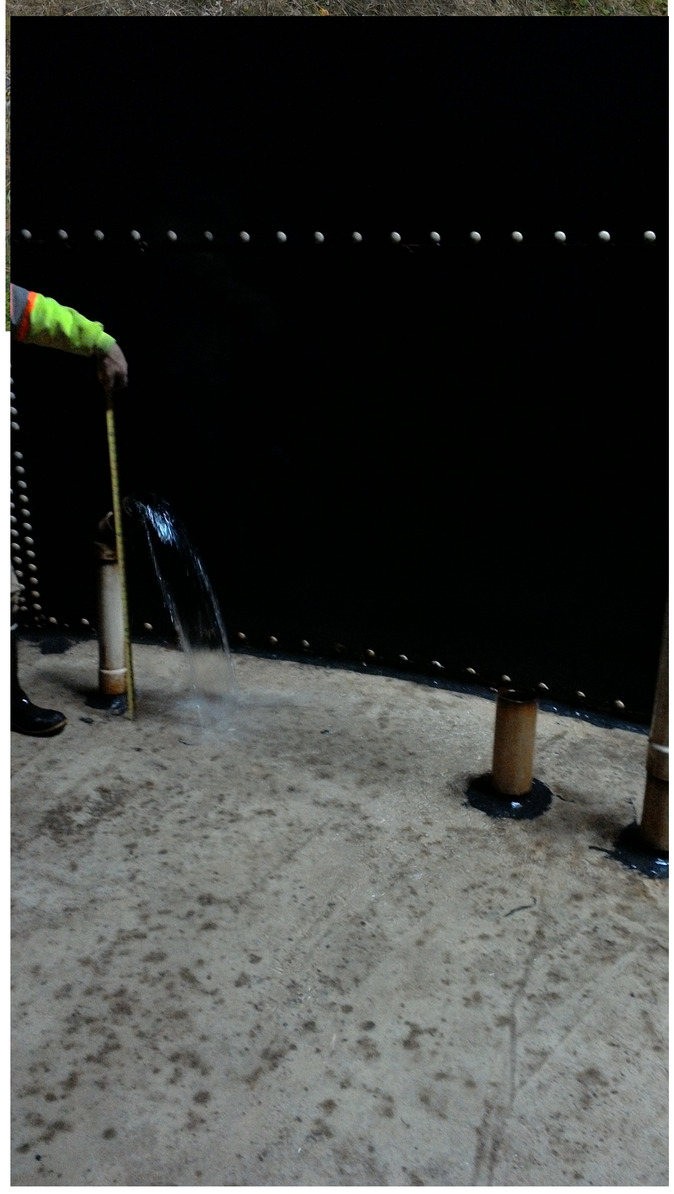
Date: 10/17/2019

South Slocan Water Open House

System Components Reservoirs

Smoky Creek Dam

Watts Brooks Springs



Raw Water Reservoir

Treated Reservoir

South Slocan Water Open House

System Components Distribution

REGIONAL DISTRICT OF CENTRAL KOOTENAY

Distribution Repair Card

Date: Dec 23/ 2016 Operator: Al

Water System: South Slocan

Street and Closest Cross Street or Residential Address:

REGIONAL DISTRICT OF CENTRAL KOOTENAY

Distribution Repair Card

Date: March 14/17 Operator: Dave/Al

Water System: SSL

Street and Closest Cross Street or Residential Address:

REGIONAL DISTRICT OF CENTRAL KOOTENAY

Distribution Repair Card

Date: Oct 23/2017 Operator: Dave

Water System: SSL

Street and Closest Cross Street or Residential Address:

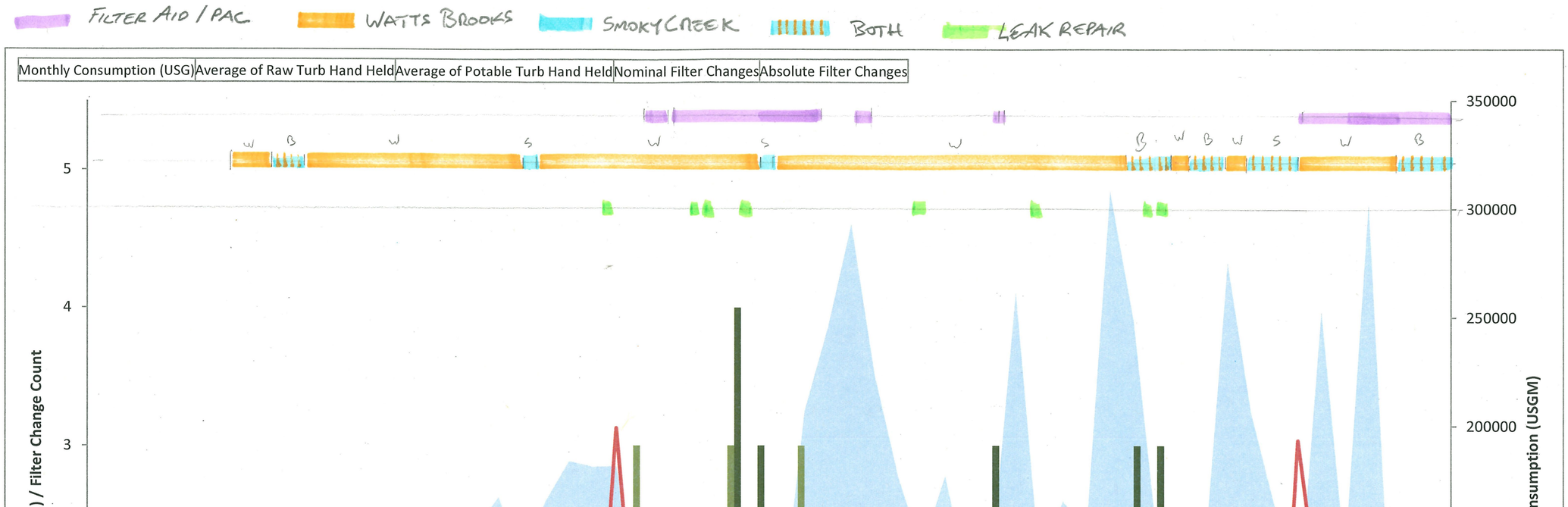
Dam Inn

Scan into system specific Maps and Drawings folder then submit a copy to Mapping for updating.

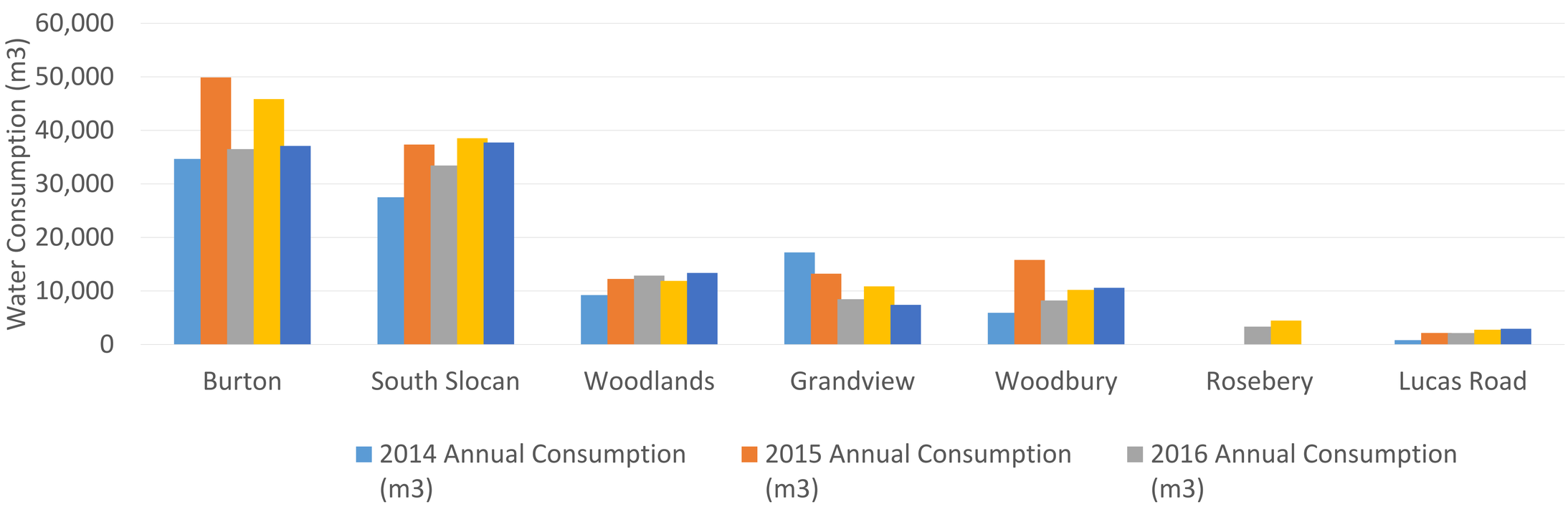
South Slocan Water Open House

South Slocan Consumption

The following chart provides a comparison of filter consumption to water consumption and turbidity.



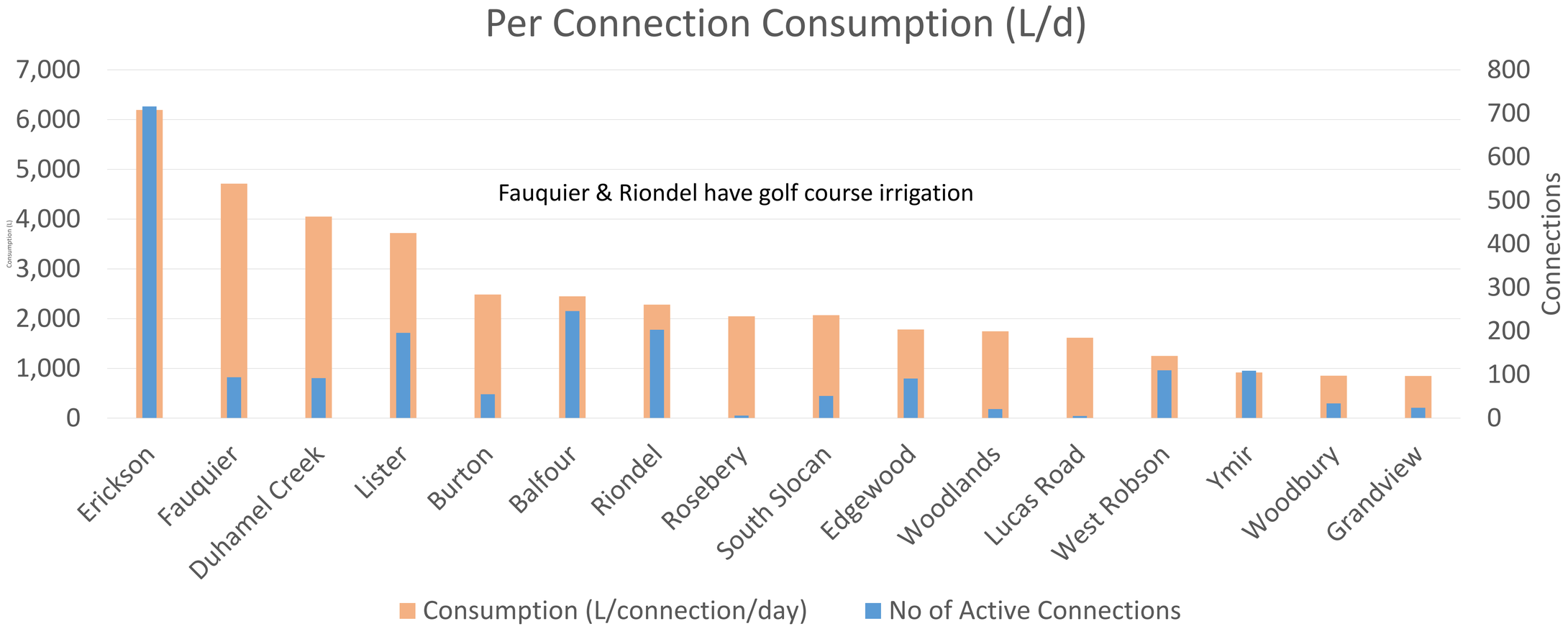
The following chart provides a consumption comparison with other Regional District smaller water systems.



South Slocan Water Open House

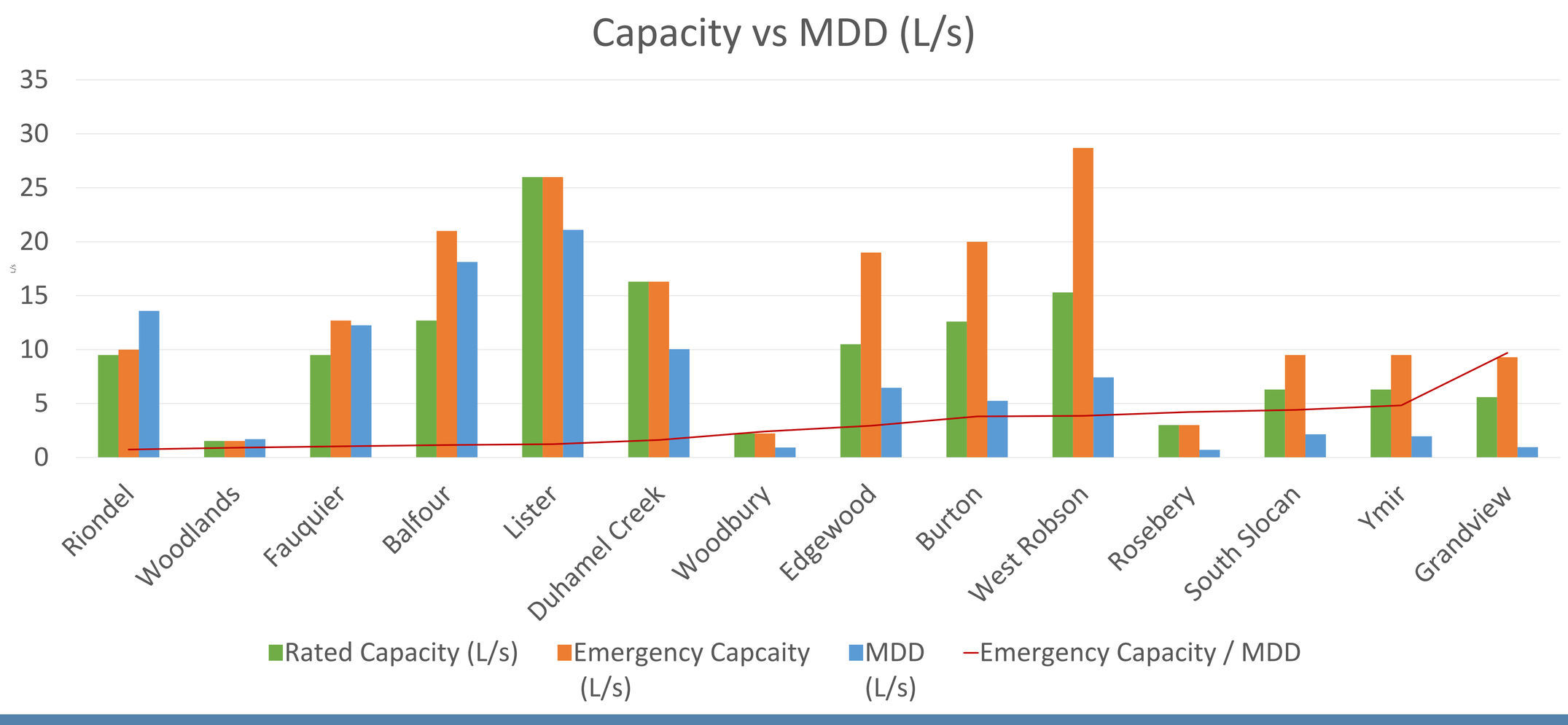
Consumption Comparison

The following chart provides a comparison of per connection consumption per day for Regional District water systems.



System Capacity vs Maximum Day Demand

The following chart provides a comparison of maximum day demand (MDD), expressed in Liters per second vs. pumping/treatment capacity for Regional District water systems. If rated capacity is less than MDD there is a concern.



South Slocan Water Open House

South Slocan 3 Year Revenue & Expenses

S245 - South Slocan Water				
Year		**2016**	**2017**	**2018**
41010	Requisitions	-13,884.00	-14,176.00	-14,176.00
42030	User Fees	-38,536.51	-45,226.10	-51,113.80
43100	Proceeds from Borrowing	-93,060.00	0.00	0.00
45000	Transfer from Reserves	-2,256.34	-4,868.50	-15,000.00
49100	Prior Year Surplus	76,720.62	0.00	17,963.63
Revenue		**-71,016.23**	**-64,270.60**	**-62,326.17**
51010	Salaries	16,566.55	13,720.09	9,738.47
51020	Overtime	1,239.25	1,572.67	1,785.06
51030	Benefits	2,817.93	2,477.08	1,778.28
52010	Travel	16.00	11.43	0.00
53020	Admin, Office Supplies & Postage	41.66	22.50	23.30
53030	Communication	773.40	966.81	743.63
53050	Insurance	1,906.66	1,625.26	1,443.36
53080	Licence & Permits	216.65	359.17	288.73
54020	Professional Fees	0.00	0.00	0.00
54030	Contracted Services	1,775.50	11,701.28	1,117.10
55010	Repairs & Maintenance	1,904.08	1,737.07	6,600.29
55020	Operating Supplies	4,883.72	11,827.05	13,369.04
55025	Chemicals	775.00	147.02	384.15
55040	Utilities	954.55	1,397.32	1,367.03
56010	Debenture Interest	2,988.14	5,432.66	4,962.14
56020	Debenture Principal	1,923.62	4,501.84	4,501.84
59000	Contribution to Reserve	12,618.52	1,397.00	22.00
59500	Transfer to Other Service	1,000.00	11,172.66	7,029.35
59510	Transfer to Other Service - General Admin. Fee	3,505.00	2,535.00	2,760.00
59520	Transfer to Other Service - IT Fee	2,525.00	2,580.00	2,632.00
59550	Transfer to Other Service - Environmental Services Fee	10,400.00	10,610.00	8,488.00
60000	Capital Expenditures	2,185.00	0.00	0.00
42020	Sale of Services	0.00	-2,774.75	0.00
45500	Transfer from Other Service	0.00	-827.00	-827.00
51050	Employee Health & Safety	0.00	13.27	36.99
55050	Vehicles	0.00	28.80	0.00
55030	Equipment	0.00	0.00	340.00
55060	Rentals	0.00	0.00	53.50
41015	Parcel Taxes	0.00	0.00	0.00
43505	External Contributions & Contracts - Specified	0.00	0.00	0.00
Expense		**71,016.23**	**82,234.23**	**68,637.26**
Grand Total		**0.00**	**17,963.63**	**6,311.09**

South Slocan Water Open House

South Slocan 2019 to 2023 Financial Plan

SYSTEM INFORMATION AND RATES										
			No.	2018		2019	2020	2021	2022	2023
		Active Accounts	51							
		Service Charges % Increase		20%		36%	5%	5%	5%	5%
		SSL-COMMERCIAL - RDCK COMMUNITY BLDG	1	993		1,350	1,418	1,488	1,563	1,641
		SSL-COMMERCIAL- BUSINESS	1	993		1,350	1,418	1,488	1,563	1,641
		SSL-COMMERCIAL-FOOD & BEVERAGE SERVICES	1	2,550		3,468	3,641	3,823	4,015	4,215
		SSL-DWELLING-SINGLE FAMILY	48	993		1,350	1,418	1,488	1,563	1,641
		SSL-DWELLING- SINGLE FAMILY- ADDITIONAL	1	993		1,350	1,418	1,488	1,563	1,641
		SSL-DWELLING - SECONDARY SUITE	0	694		944	991	1,041	1,093	1,147
		Parcel Tax % Increase				0%	0%	0%	0%	0%
		Parcel Tax (12 customers pay less)	55	292		292	292	292	292	292
		Total								
REVENUE										
Account			**2018 Budget**	**2018 Est Year End**		**2019 Budget**	**2020 Budget**	**2021 Budget**	**2022 Budget**	**2023 Budget**
41010		Requisitions - Subtotal	14,176	14,176		14,176	14,176	14,176	14,176	14,176
42030		User Fees - Subtotal	54,271	51,114		72,318	75,934	79,731	83,717	87,903
43030		Community Works Grants (Internal) - Subtotal	10,000	0		10,000				
45000		Transfer from Reserves - Subtotal	17,000	15,000		0	0	30,000	0	0
45500		Transfer from Other Service - Subtotal	992	827						
45500		- Community Services BLD Water Bill				1,350	1,418	1,488	1,563	1,641
45500		- Discretion Grant - KWL Filter Rating Work				6,000				
49100		Prior Year Surplus - Subtotal	(14,993)	(17,964)		(5,083)	(0)	(0)	0	(0)
Revenue			81,446	63,153		98,761	91,527	125,395	99,456	103,720
OPERATING EXPENSES										
Account			**2018 Budget**	**2018 Est Year End**		**2019 Budget**	**2020 Budget**	**2021 Budget**	**2022 Budget**	**2023 Budget**
51010		Salaries - Subtotal	13,800	9,738		9,953	10,152	10,355	10,562	10,773
51020		Overtime - Subtotal	660	1,785		1,824	1,861	1,898	1,936	1,975
51030		Benefits - Subtotal	1,840	1,778		2,090	2,132	2,174	2,218	2,262
51050		Employee Health & Safety - Subtotal	0	37		38	38	39	40	41
52010		Travel - Subtotal	50	0		0	0	0	0	0
53020		Admin, Office Supplies & Postage - Subtotal	90	23		24	24	25	25	26
53030		Communication - Subtotal	1,000	744		759	774	789	805	821
53050		Insurance - Subtotal	1,658	1,443		1,472	1,502	1,532	1,562	1,594
53080		Licence & Permits - Subtotal	366	289		295	300	306	313	319
54020		Professional Fees - Subtotal				6,000				
54030		Contracted Services - Subtotal	6,000	1,117		4,000	4,080	4,162	4,245	4,330
55010		Repairs & Maintenance - Subtotal	3,000							
		- Repairs & Maintenance	0	5,523		5,634	5,746	5,861	5,979	6,098
		- Inventory Write-Offs	0	1,077		1,077	1,077	1,077	1,077	0
55020		Operating Supplies - Subtotal	6,000	13,369		13,636	13,909	14,187	14,471	14,761
55025		Chemicals - Subtotal	500	384		500	510	520	531	541
55030		Equipment - Subtotal	0	340		347	354	361	368	375
55040		Utilities - Subtotal	1,425	1,367		1,394	1,422	1,451	1,480	1,509
55060		Rentals - Subtotal	0	54		0	0	0	0	0
Operating Expenses			36,389	39,015		49,042	43,881	44,738	45,611	45,424
CAPITAL EXPENSES										
Account			**2018 Budget**	**2018 Est Year End**		**2019 Budget**	**2020 Budget**	**2021 Budget**	**2022 Budget**	**2023 Budget**
60000		Filtration Deferral or Turbidity Upgrades	10,000	0						
60001	CAP948-100	SSL W - 2019 Raw Water Tank Improvements				10,000				
60000	CAP1007-100	Distribution System Upgrades						30,000		
Capital Expenses			10,000	0		10,000	0	30,000	0	0
NON-OPERATING EXPENSES										
Account	**Work Order**		**2018 Budget**	**2018 Est Year End**		**2019 Budget**	**2020 Budget**	**2021 Budget**	**2022 Budget**	**2023 Budget**
56010		Debenture Interest - Subtotal	4,962	3,788		3,788	3,788	3,788	3,788	3,788
56020		Debenture Principal - Subtotal	4,502	4,502		4,502	4,502	4,502	4,502	4,502
59000		Contribution to Reserve - Subtotal	22	22		2,829	10,184	12,612	15,205	19,048
59500		Transfer to Other Service - Subtotal								
59500	OPR325-112	Fleet	1,071	1,071		1,260	1,285	1,311	1,337	1,364
59500	OPR325-113	WaterSmart Program	1,020	375		510	520	531	541	552
59500	OPR325-117	Operator Admin	9,600	5,583		4,853	4,951	5,050	5,151	5,254
59510		Transfer to Other Service - General Admin. Fee	2,760	2,760		4,154	4,237	4,322	4,408	4,496
59520		Transfer to Other Service - IT Fee - Subtotal	2,632	2,632		4,690	4,784	4,879	4,977	5,077
59550		Transfer to Other Service - Environmental Services Fee - Sub	8,488	8,488		13,133	13,396	13,664	13,937	14,216
Non-Operating Expenses			35,057	29,221		39,719	47,646	50,657	53,846	58,296
Total Service			0	(5,083)		(0)	(0)	0	(0)	(0)
RESERVES										
				2018		**2019**	**2020**	**2021**	**2022**	**2023**
		Balance Previous Year		20,556		5,783	8,670	18,941	1,742	16,965
		Interest (Assumed 1%)		206		58	87	189	17	170
		Contribution		22		2,829	10,184	12,612	15,205	19,048
		Withdrawal		(15,000)		0	0	(30,000)	0	0
				5,783		8,670	18,941	1,742	16,965	36,182
2017Asset Management Plan Identified Contribution to Reserves										
		25 Year	**74,081**	1,453	per account					
		100 Year	**78,958**	1,548	per account					
				2018		**2019**	**2020**	**2021**	**2022**	**2023**
Cumulative Required Contribution to Reserves				74,081		148,162	222,243	296,324	370,405	444,486
Reserves Annual Contribution Deficit				(74,059)		(71,252)	(63,897)	(61,469)	(58,876)	(55,033)
Reserves Cumulative Contribution Deficit				(74,059)		(145,311)	(209,208)	(270,677)	(329,553)	(384,586)

October 21, 2019

South Slocan September 2019 Financial Statement

S245 Water Utility-Area H (South Slocan)

Period: September 2019

REVENUE

Account		Workorder		Current Month	Year To Date Actuals	Total Year Budget	Budget Remaining	Budget Utilization
41015	Parcel Taxes			0	13,884	14,176	292	98%
42030	User Fees			0	75,509	72,318	(3,191)	104%
43030	Community Works Grants (Internal)			0	0	10,000	10,000	0%
43505	External Contributions & Contracts - Specified			0	3,867	0	(3,867)	0%
45500	Transfer from Other Service			0	1,350	7,350	6,000	18%
49100	Prior Year Surplus			0	(6,311)	(5,083)	1,228	124%
Revenue				0	88,299	98,761	10,462	89%

OPERATING EXPENSES

Account		Workorder		Current Month	Year To Date Actuals	Total Year Budget	Budget Remaining	Budget Utilization
51010	Salaries			663	7,321	9,953	2,632	74%
51020	Overtime			26	527	1,824	1,297	29%
51030	Benefits			75	1,249	2,090	841	60%
51050	Employee Health & Safety			0	8	38	30	22%
52010	Travel			0	5	0	(5)	0%
53020	Admin, Office Supplies & Postage			0	72	24	(48)	301%
53030	Communication			54	482	759	278	63%
53050	Insurance			0	732	1,472	740	50%
53080	Licence & Permits			0	232	295	63	79%
54020	Professional Fees			0	0	6,000	6,000	0%
54030	Contracted Services			0	967	4,000	3,033	24%
55010	Repairs & Maintenance			0	1,077	6,711	5,634	16%
55020	Operating Supplies			0	7,986	13,636	5,650	59%
55025	Chemicals			0	226	500	274	45%
55030	Equipment			0	0	347	347	0%
55040	Utilities			0	1,229	1,394	165	88%
Operating Expenses				818	22,114	49,043	26,929	45%

CAPITAL EXPENSES

Account		Workorder		Current Month	Year To Date Actuals	Total Year Budget	Budget Remaining	Budget Utilization
60000	Capital Expenditures			0	4,919	10,000	5,081	49%
Capital Expenses				0	4,919	10,000	5,081	49%

NON-OPERATING EXPENSES

Account		Workorder		Current Month	Year To Date Actuals	Total Year Budget	Budget Remaining	Budget Utilization
56010	Debenture Interest			0	1,307	3,788	2,482	34%
56020	Debenture Principal			0	0	4,502	4,502	0%
59000	Contribution to Reserve			0	2,828	2,828	0	100%
59500	Transfer to Other Service			0	0	6,623	6,623	0%
59510	Transfer to Other Service - General Admin. Fee			1,039	3,116	4,154	1,039	75%
59520	Transfer to Other Service - IT Fee			1,173	3,518	4,690	1,173	75%
59550	Transfer to Other Service - Environmental Services Fee			3,283	9,850	13,133	3,283	75%
Non-Operating Expenses				5,494	20,617	39,718	19,101	52%

Total Service				(6,312)	40,649	(0)		

South Slocan Water Open House

Asset Management Planning

The following provides the reserves projection from the 2019 Budget

Reserves Budget	2018	2019	2020	2021	2022	2023
Balance Previous Year	20,556	5,783	8,670	18,941	1,742	16,965
Interest (Assumed 1%)	206	58	87	189	17	170
Contribution	22	2,829	10,184	12,612	15,205	19,048
Withdrawal	(15,000)	0	0	(30,000)	0	0
	5,783					

2017 Asset Management Plan Identified Required Contribution to Reserves	
25 Year	74,081
100 Year	78,958

Reserves Deficit	2018	2019	2020	2021	2022	2023
Cumulative Required Contribution to Reserves	74,081	148,162	222,243	296,324	370,405	444,486
Reserves Annual Contribution Deficit	(74,059)	(71,252)	(63,897)	(61,469)	(58,876)	(55,033)
Reserves Cumulative Contribution Deficit	(74,059)	(145,311)	(209,208)	(270,677)	(329,553)	(384,586)

The total value of the infrastructure and the value of each asset category is shown here in 2019 dollars.

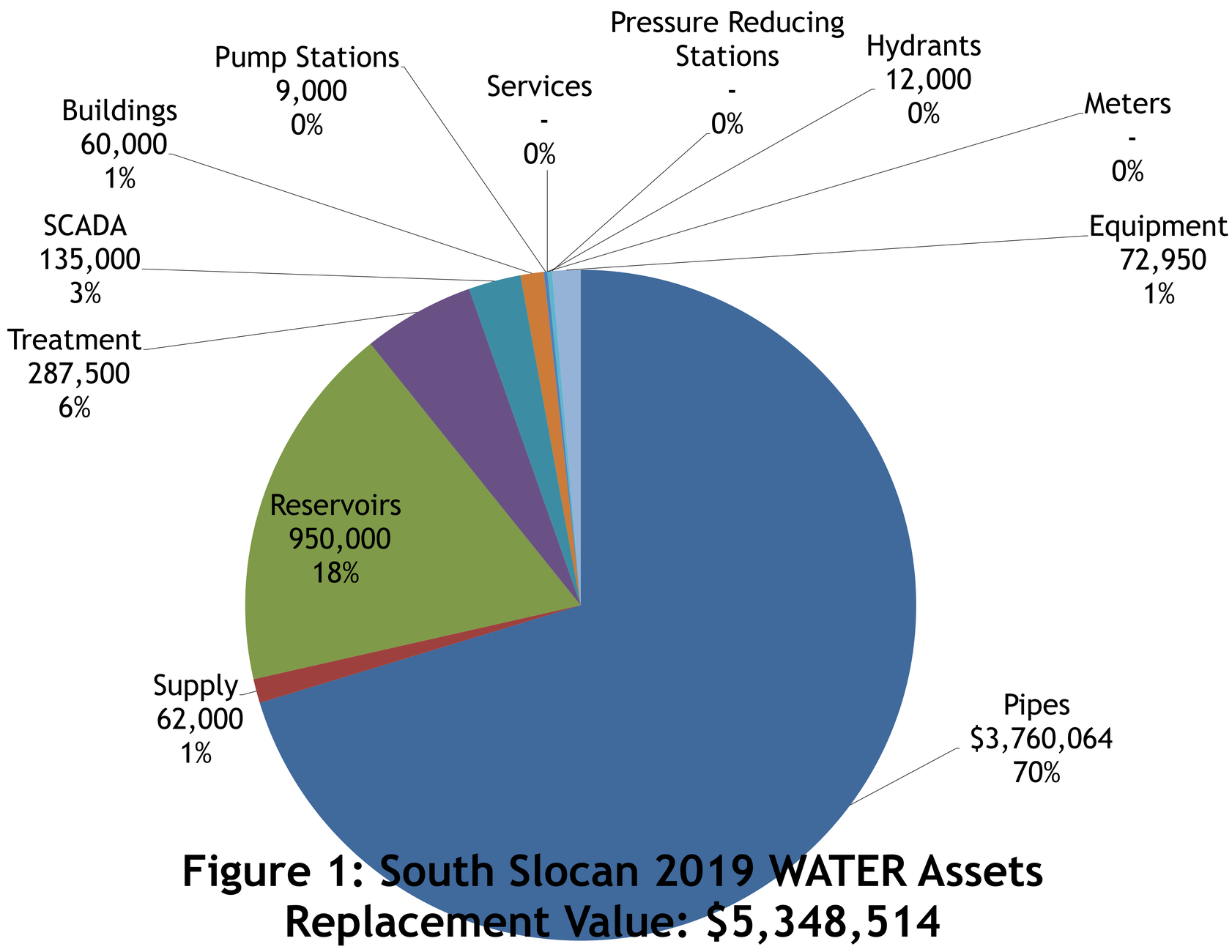
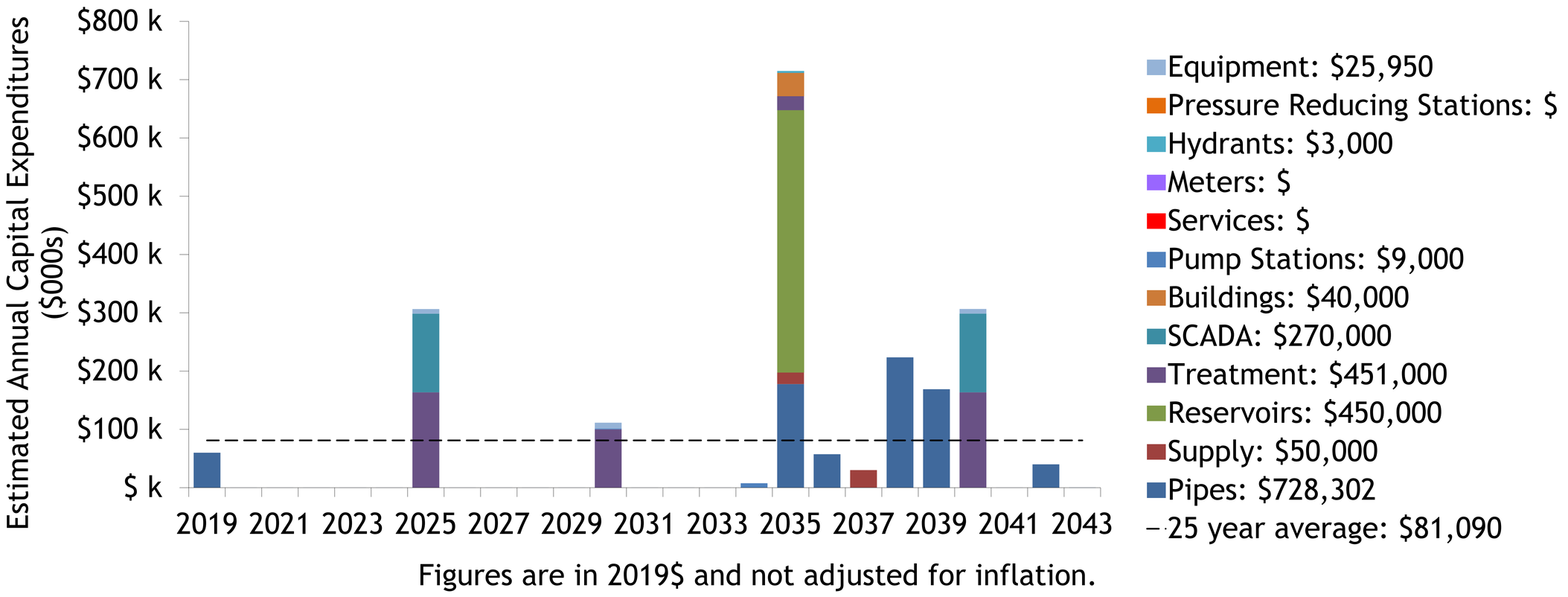


Figure 1: South Slocan 2019 WATER Assets
Replacement Value: $5,348,514

South Slocan Water Open House

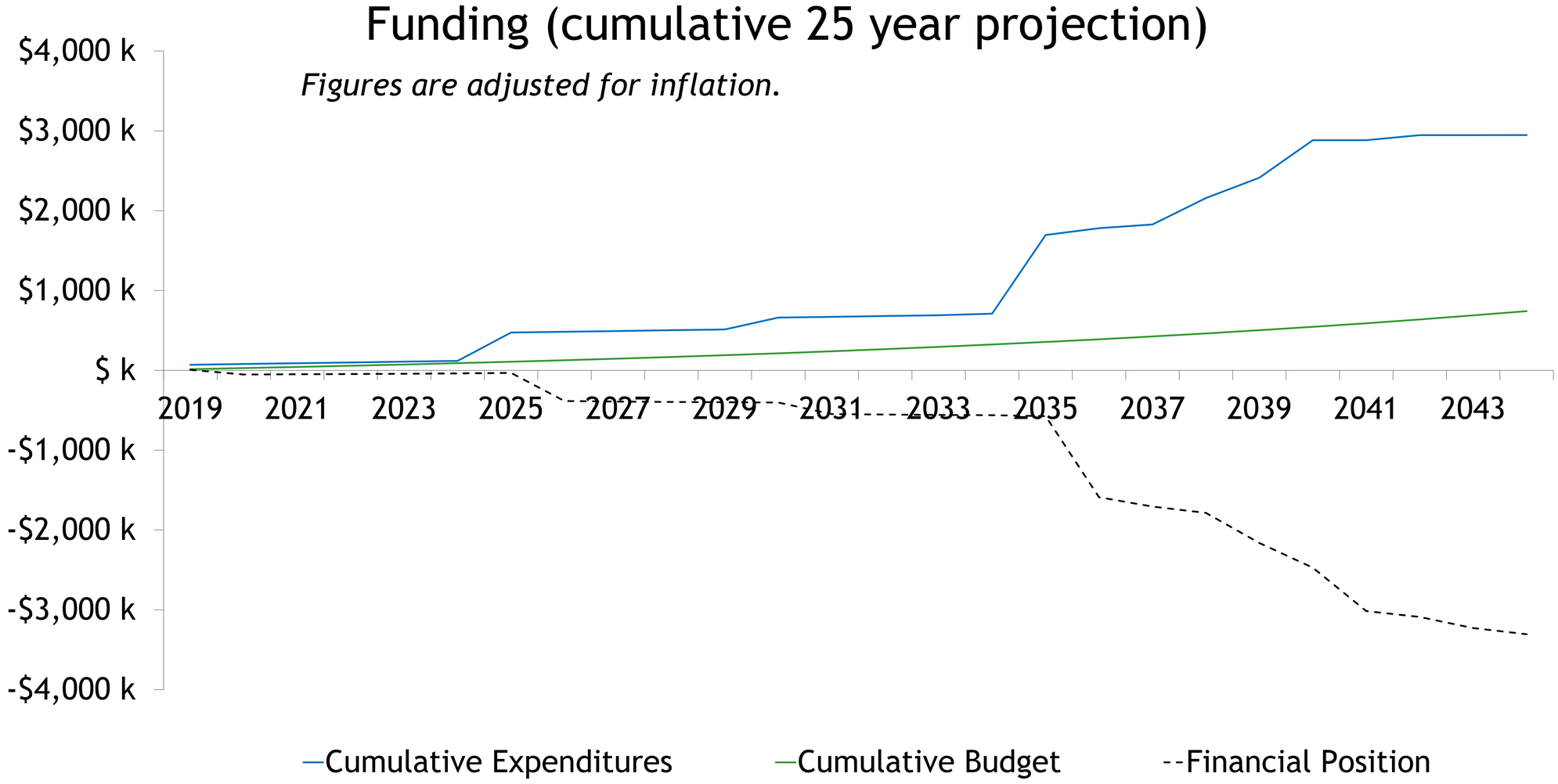
Asset Management Planning

Figure 3: South Slocan 25 Year Asset Replacement Schedule



Figures are in 2019$ and not adjusted for inflation.

Figure 7: South Slocan WATER Comparing Expenditures and Funding (cumulative 25 year projection)



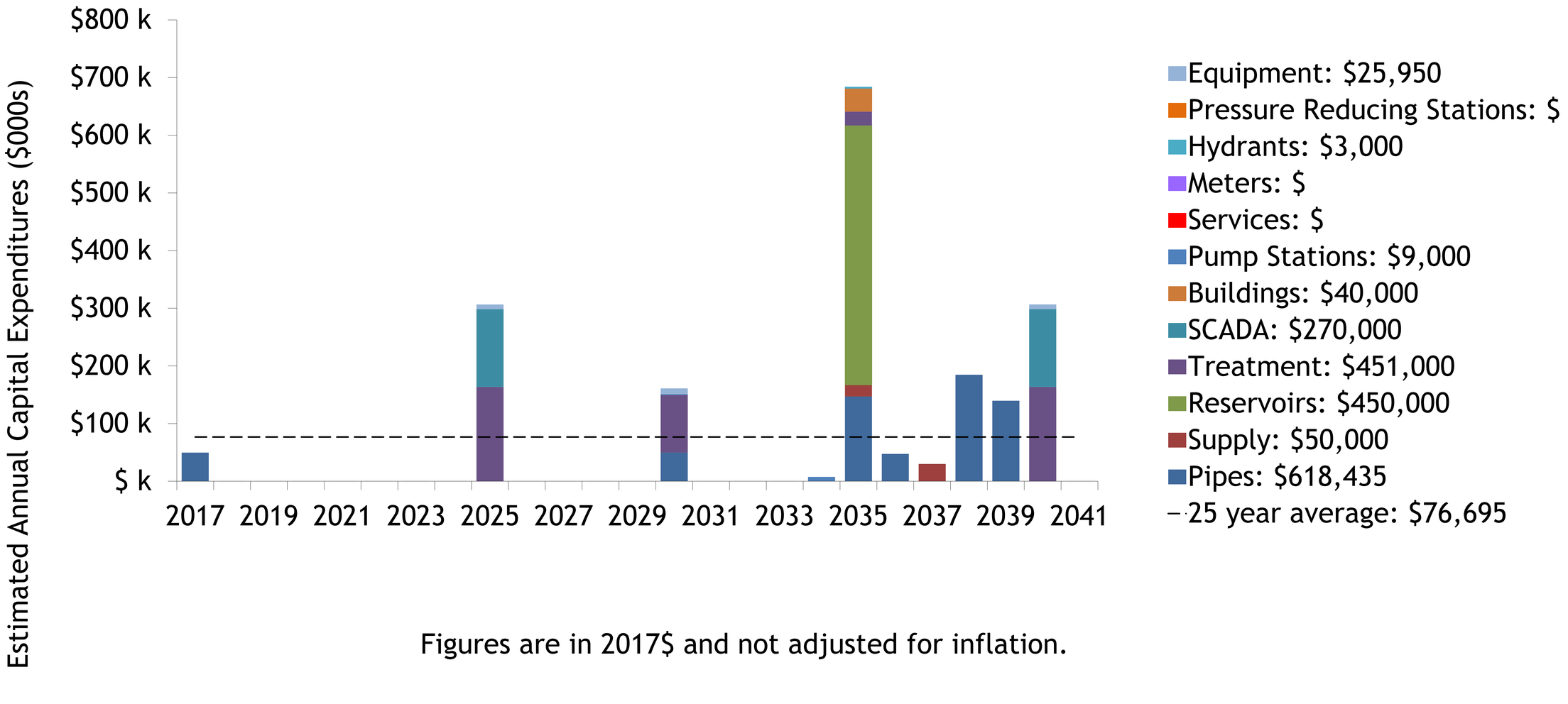
Figures are adjusted for inflation.

Financial position assumed $14,176 annual contribution to reserves for 5 years then increased 3.0 % annually each year

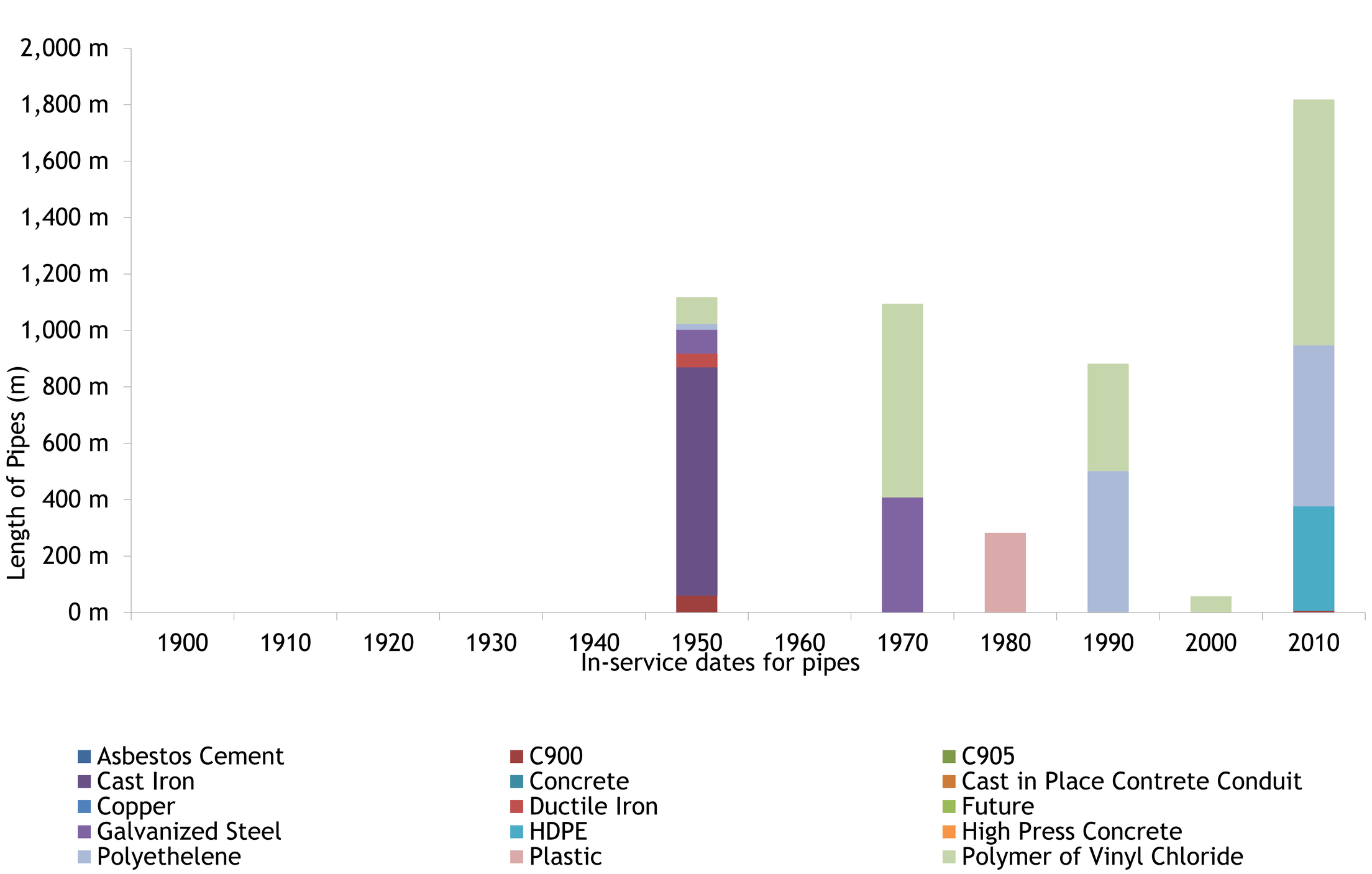
South Slocan Water Open House

Asset Management Planning

Figure 3: South Slocan 25 Year Asset Replacement Schedule



Figures are in 2017$ and not adjusted for inflation.

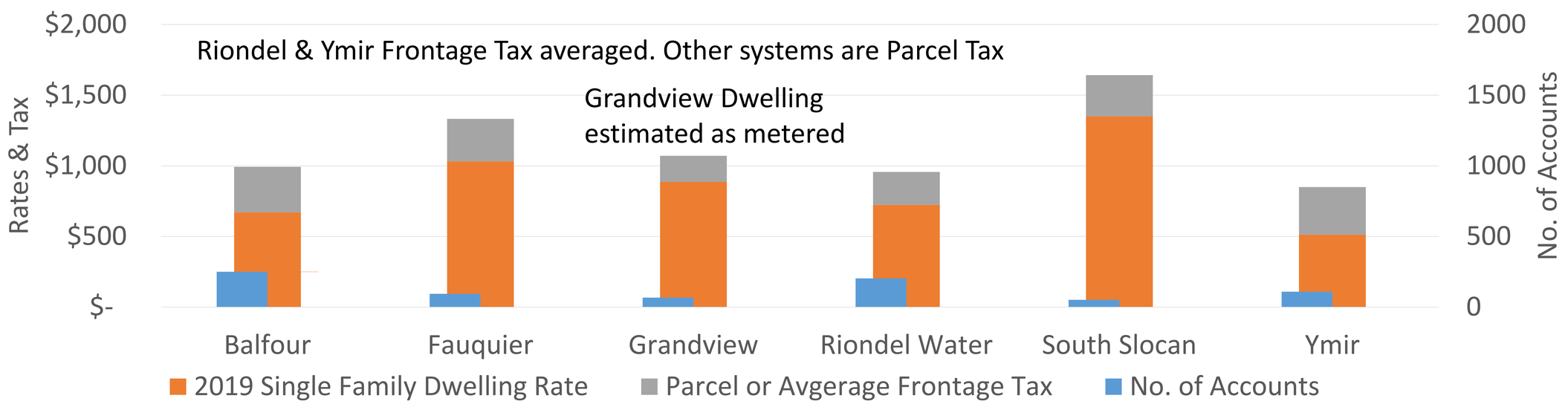


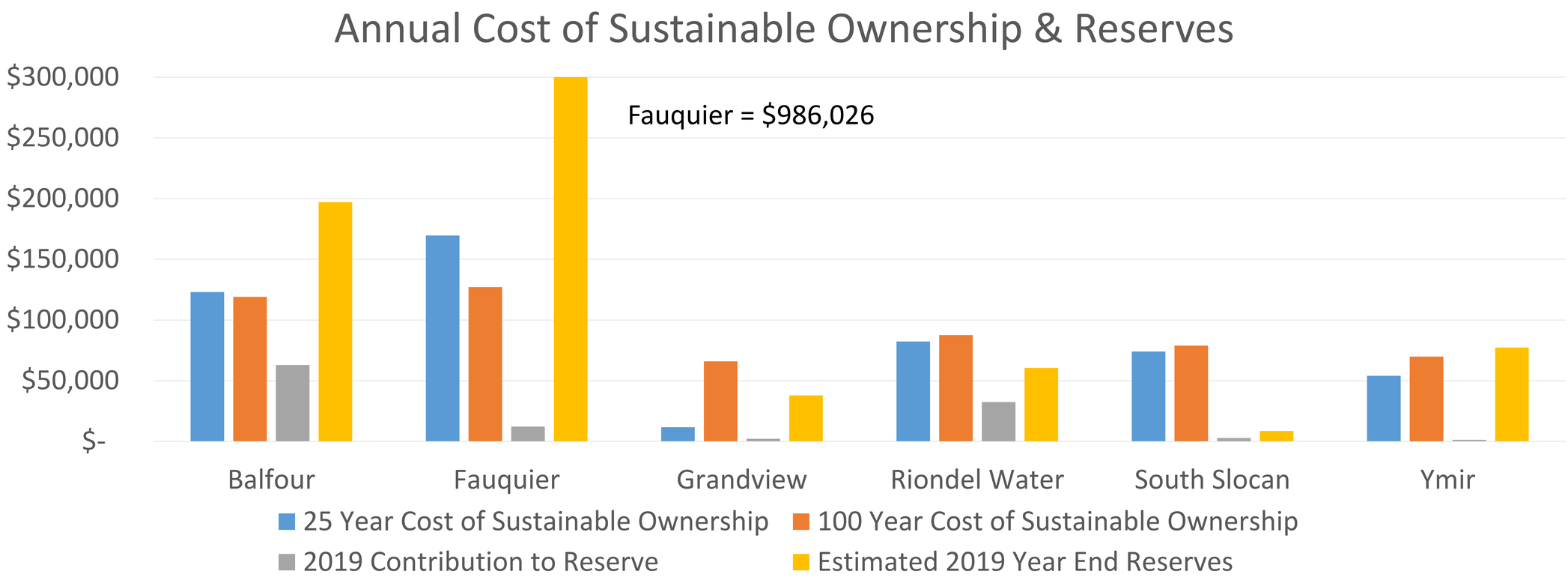
South Slocan Water Open House

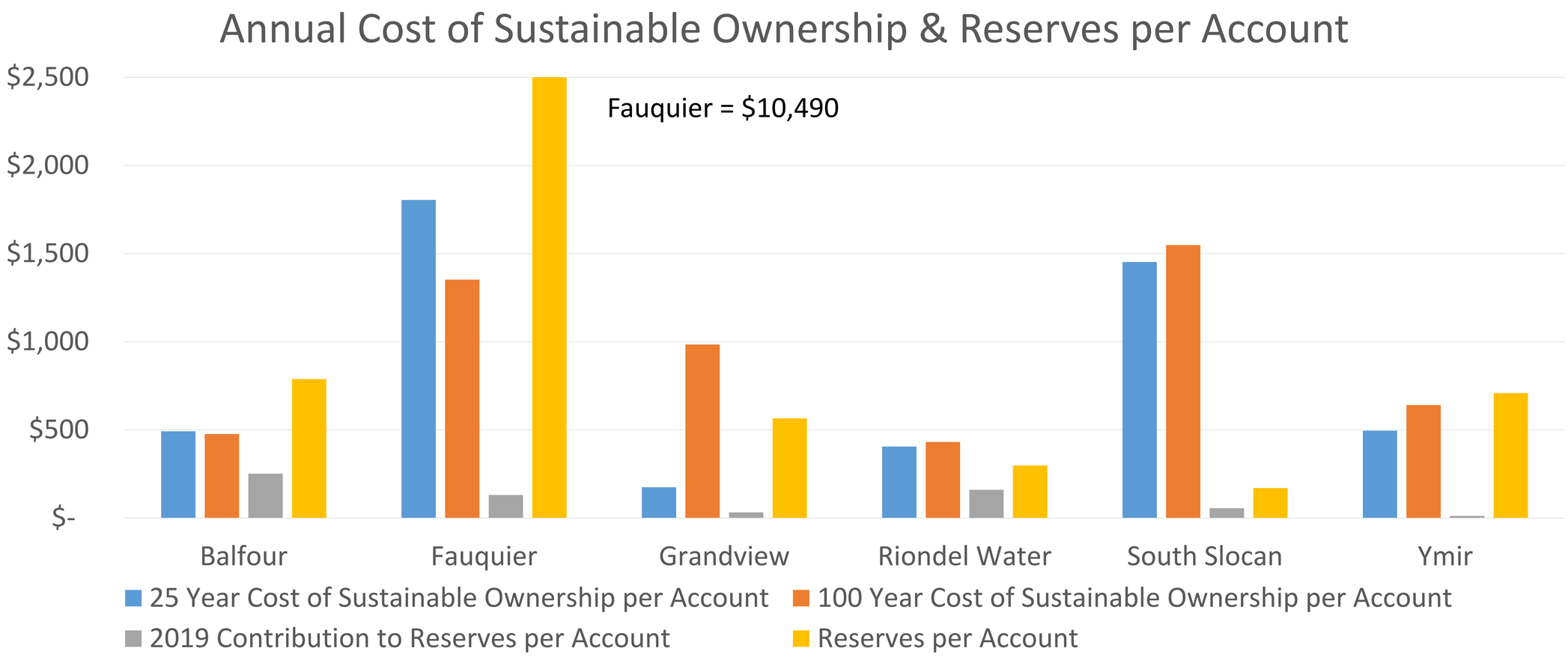
Asset Management Planning

Annual Cost of Sustainable Ownership & Reserves

Water Systems No of Accounts, Single Family Dwelling Rate & Water Tax







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