

Rural Budgets Administration Committee Meeting Revised Agenda

December 17, 2020, Immediately Following EADC 1981 Alaska Avenue, Dawson Creek, BC

Pages

1.	Call to	o Order	
	1.1.	Meeting Chair - Director Hiebert	
2.	Direct	cors' Notice of New Business	
3.	Adopt	tion of Agenda	
4.	Galler	y Comments or Questions	
5.	Adopt	tion of Minutes	
	5.1.	Rural Budgets Administration Committee Draft Meeting Minutes of November 19, 2020	3
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10.	Discuss	ion Items	
	10.1.	Permissive Tax	
	10.2.	FSJ Library	
11.	New Bu	usiness	
	*11.1.	COVID- 19 Safe Restart Funds	
	*11.2.	Synergy Group	
12.	Diary		
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RURAL BUDGETS ADMINISTRATION COMMITTEE MEETING MINUTES

THURSDAY, NOVEMBER 19, 2020

LOCATION Peace River Regional District Office, Dawson Creek, BC

ATTENDANCE Directors Director Sperling, Meeting Chair Director Goodings Director Hiebert Director Rose

Staff

Shawn Dahlen, Chief Administrative Officer Crystal Brown, Electoral Area Manager Teri Vetter, Chief Financial Officer Paulo Eichelberger, GM of Environmental Services Kari Bondaroff, Environmental Services Manager Hunter Rainwater, Recorder

1. CALL TO ORDER

The Chair called the meeting to order at 1:40 pm.

2. DIRECTORS' NOTICE OF NEW BUSINESS

3. ADOPTION OF AGENDA

Adoption of Agenda

MOVED Director Hiebert, SECONDED Director Rose,

That the Rural Budgets Administration Committee adopt the November 19, 2020 Meeting Agenda.

- 1. Call to Order
 - 1.1. Meeting Chair Director Sperling
- 2. Directors' Notice of New Business
- 3. Adoption of Agenda
- 4. Gallery Comments or Questions
- 5. Adoption of Minutes

5.1. Rural Budgets Administration Committee Draft Meeting Minutes of October 15, 2020

- 6. Business Arising from the Minutes
- 7. Delegations
- 8. Correspondence
 - 8.1. BC Natural Resources Forum 2021
 - 8.2. LGLA Leadership Forum 2021
 - 8.3. DC Charity Society Letter
 - 8.4. North Peace Secondary School 2021 Area B Scholarship
 - 8.5. North Peace Secondary School 2021 Area C Scholarship
- 9. Reports
 - 9.1. Grant Request Montney Cemetery Committee, FN-RBAC-037
 - 9.2. Grant Request Fort St. John Minor Hockey Association, FN-RBAC-038
 - 9.3. Rolla Sewer Request for Funding, ENV-RBAC-005
 - 9.4. Kelly Lake Sewer Condition Assessment Request for Funds, ENV-RBAC-006

9.5. Sub-Regional Rec and Cultural Grants-in-Aid – Unspent Prior Year Allocations, ADM-RBAC-009

9.6. October 2020 Financial Report, FN-RBAC-036

(Continued on next page)



Adoption of Agenda (continued)

10. Discussion Items 10.1. Swan Lake Weir 11. New Business 12. Diary 12.1. Diary Items 13. Item(s) for Information 13.1. RBAC Establishing Bylaw 14. Adjournment

CARRIED

4. GALLERY COMMENTS OR QUESTIONS

5. ADOPTION OF MINUTES

5.1

MOVED Director Rose, SECONDED Director Hiebert, Oct. 15/20 RBAC Minutes That the Rural Budgets Administration Committee adopt the October 15, 2020 Meeting Minutes as amended to include the following corrections noted by the Chair, Item 9.5 – Original allocation was \$18,347 not \$7,621.50 Item 9.6 – Approved in 2018 not 2019 Item 9.7 - \$21,000 approved in 2017 not 2018 and \$20,838 in 2018 not 2019

CARRIED

6. BUSINESS ARISING FROM THE MINUTES

Director Goodings asked for an update on how the changes to the Grants-in-Aid application payment process is going. The CFO noted that by paying the grant out right after it gets approved has been more efficient for staff. All societies have to report back on how the funding was spent on January 31st of the following year.

7. DELEGATIONS

8.	CORRESPONDENCE 8.1 BC Natural Resources	Director Sperling and Director Hiebert will be attending.
	Forum - 2021	Director Goodings and Director Rose will not be attending.
	8.2 I GLA Leadershin Forum -	Director Goodings will be attending.
	2021	Director Sperling would like to see an agenda first.
		Director Goodings would like to see the following two topics put forward:1. Agricultural Land Commission2. Provincial Rules on Enforcing Fire Protection Across the Whole Region
	8.3	MOVED Director Hiebert, SECONDED Director Rose,
	DC Charity Society - Letter	That the Electoral Area Directors Committee receive the DC Charity Society Letter for information.
		CARRIED
	8.4	MOVED Director Goodings, SECONDED Director Rose,
	North Peace Secondary School – 2021 Area B	That the Rural Budgets Administration Committee authorize the continuance of one Area B Scholarship for the North Peace Secondary School in the amount of \$2,000.
	Scholarship	CARRIED



8.5 North Peace Secondary School – 2021 Area C Scholarship MOVED Director Sperling, SECONDED Director Rose,

That the Rural Budgets Administration Committee authorize the continuance of the Area C Scholarship for the North Peace Secondary School, with the change of reducing the number of awards from 5 to 2 at the value of \$1,000 each.

CARRIED

9. REPORTS

9.1

Grant Request – Montney Cemetery Committee, FN-RBAC-037 MOVED Director Goodings, SECONDED Director Hiebert, That the Rural Budgets Administration Committee authorize a grant in the amount of \$30,000, payable from Electoral Area B Fair Share, to be issued to the Montney Cemetery Committee for the purchase and installation of a columbarium at the Montney Cemetery. CARRIED

9.2

Grant Request – Fort St. John Minor Hockey Association, FN-RBAC-038 MOVED Director Goodings, SECONDED Director Sperling, That the Rural Budgets Administration Committee authorize a grant in the amount of \$2,500, payable from Electoral Area B Fair Share, to be issued to Fort St. John Minor Hockey Association for the purchase of a "fogger" applicator.

DELT WITH BY THE FOLLOWING

MOVED Director Sperling, SECONDED Director Goodings,

That the Rural Budgets Administration Committee authorize a grant in the amount of \$2,400, payable in equal amounts of \$1,200 from both Electoral Area B Fair Share and Electoral Area C Fair Share, to be issued to Fort St. John Minor Hockey Association for the purchase of a "fogger" applicator.

CARRIED

9.3 Rolla Sewer Request for Funding, ENV-RBAC-005

MOVED Director Hiebert, SECONDED Director Rose,

That the Rural Budgets Administration Committee approve a funding commitment in the amount of 50,000, payable from Electoral Area D Peace River Agreement Funds, Spending Item #9 – PRRD Sewer Services Assistance, to be issued to the Rolla sewer function – 607, to complete a condition assessment of the sewer collection system within the Hamlet of Rolla.

CARRIED

MOVED Director Hiebert, SECONDED Director Rose,

That the Rural Budgets Administration Committee approve a funding commitment of \$587,200, payable from the Area D Community Works Gas Tax fund, to be issued to the Rolla sewer function – 607, for the Rolla Sewer Treatment Facility capital work which include safety upgrades, road improvements, aeration system replacement, piping repairs, and upgrades to the outflow system.

CARRIED

9.4

Kelly Lake Sewer Condition Assessment Request for Funds, ENV-RBAC-006

MOVED Director Hiebert, SECONDED Director Rose,

That the Rural Budgets Administration Committee approve a funding commitment in the amount of \$100,000, payable from Electoral Area D Community Works Gas Tax, to be issued to the Kelly Lake sewer function – 606, for funding a 2021 condition assessment for the Kelly Lake Wastewater System infrastructure, including but not limited to the collection works, the lift station, and the treatment facility.



		amend the Rural Budgets Administration Committee Bylaw No. 1166, 1988 to establish that the persons elected as Chair and Vice-Chair of the Electoral Area Directors Committee become the Chair and Vice-Chair for the Rural Budgets Administration Committee as well.
		MOVED Director Sperling, SECONDED Director Hiebert, That the Rural Budgets Administration Committee recommend that the Regional Board
	RBAC Establishing Bylaw	That the Rural Budgets Administration Committee receive the RBAC Establishing Bylaw for discussion.
13.	ITEMS FOR INFORMATION	MOVED Director Goodings, SECONDED Director Rose
12.	DIARY 12.1 Diary Items	No changes were made to the Diary.
11.	NEW BUSINESS	
	10.1 Swan Lake Weir	MOVED Director Hiebert, SECONDED Director Rose, That the Rural Budgets Administration Committee approve a funding commitment in the amount of \$50,000, payable from Electoral Area D Fair Share, to be issued to the Regional Parks function – 200, for funding any emergency works that may be required for repairs and maintenance of the Swan Lake Weir. CARRIED
10.	DISCUSSION ITEM(S)	Director Goodings noted that the Wonowon Horse Club recived their legal opinonand that Director Goodings has forwarded the grant application on to them in the case that they would like to claim their grant for the legal opinion they received.
	9.6 October 2020 Financial Report, FN-RBAC-036	MOVED Director Rose, SECONDED Director Hiebert, That the Rural Budgets Administration Committee receive the report titled "October 2020 Financial Report – FN-RBAC-036", for discussion.
	Sub-Regional Rec and Culture Grants-in-Aid – Unspent Prior Year Allocations, FN-RBAC-009	MOVED Director Hiebert, SECONDED Director Rose, That the Rural Budgets Administration Committee authorize the unclaimed 2019 Sub- Regional Recreational and Cultural Grants-in-Aid South Peace Trades Bursary, in the amount of \$1,500, be returned to the funding area, F221 – Sub Regional Recreation, and used to reduce tax requisition in 2021, since the recipient did not claim within one year as required for bursaries.
	0.5	

Sunrise Valley Mountain View Cemetery Located at 5995 247 Road Mailing address: Site 5 Comp 2 RR1 Dawson Creek, BC V1G 4E7



RBACISEIN

November 17, 2020

Peace River Regional District PO Box 810 [1981 Alaska Avenue] Dawson Creek, BC V1G 4H8

To: Jill Rickert | Grant Coordinator

Dear Ms. Rickert

On behalf of the Sunrise Valley Mountain View Cemetery, I am writing to thank the PRRD very much for the Grant we received this summer.

We were able to proceed with the removal of our old windbreak and cleanup and plant grass. Next spring we will be choosing shrubs and trees to replace the old caragana windbreak that was there.

This was a large job that was beyond the scope of our volunteers, so being able to hire a professional to come in and get all the heavy lifting done was wonderful!

We very much appreciate the grant and the timely manner it was issued. Please pass along our sincere appreciation. We will be putting a small plaque on our columbarium to acknowledge the grant.

Sincerely

Ginny Simlik, President



Renew your FCM membership. We're all in this together.

Dear Shawn Dahlen,

Local leaders are working hard on the front lines of COVID-19. The Federation of Canadian Municipalities has been there for its members every step of the way—from coordinating frontline efforts to securing up to \$8.6 billion in emergency funding for municipalities facing financial crisis.

FCM gets results because we bring thousands of municipalities together as one strong and united national voice. Now we need to grow our voice—to keep cities and communities supported today, and to position them at the heart of tomorrow's nationwide recovery.

The Regional District of Peace River will have a critical role to play.

Renew your FCM membership today to ensure your priorities continue to be heard at the federal level. We've gone digital this year, so attached you will find your member invoice for 2021-2022.

There's strength in numbers, and every FCM member is key to forming the strong and united voice that drives our federal influence. Ottawa is where this country's pandemic plan is being shaped, and so Ottawa is where we need to ramp up our advocacy.

I'm excited to represent our province as FCM President this year, and I'm looking to all my fellow B.C. municipal leaders to join me. We need a full slate of B.C. members at FCM to bring our province's perspectives to the federal table—and I'm asking the Regional District of Peace River to be part of it.

I know times are tough, but I also know how important it is to stick together. As local leaders, we've shown we can rise to any challenge. Together we can keep our cities and communities supported through this pandemic, and we can build a better Canada.

So let's continue working together-because we're all in this together.

To learn how FCM is helping communities through COVID-19, visit http://together2021.fcm.ca

Sincerely,

Garth Frizzell FCM President Councillor, City of Prince George, B.C.

Membership / Adhésion

The Member Relations Team | Policy and Public Affairs L'équipe de relations avec les membres | Politiques et affaires publiques T. 613-241-5221



Membership Invoice 2021-2022 **Facture d'adhésion**

24, rue Clarence Street Ottawa, Ontario K1N 5P3 T. 613-241-5221					\sim
Shawn Dahlen					
Regional District of Peace River			INVOI	CE / FACTURE: IN	V-25890-H7M6B9
PO Box 810 1981 Alaska Avenue				DATE:	10/27/2020
Dawson Creek, BC, V1G 4H8			ACCOU	NT / COMPTE:	17798
Attn: Chief Administrative Officer			DUE DATE /	DATE LIMITE:	04/01/2021
			SUB-TOTAL /	NY	
ITEM / DESCRIPTION	QTY / QTE	RATE / TAUX	SOUS-TOTAL	GST / TPS	TOTAL
Base fee per your population/ Taux de base selon votre population	1	\$520.00	\$520.00	\$26.00	\$546.00
Per capita dues calculated per your population/Frais de cotisation calculés selon votre population	21,269	\$0.1972	\$4,194.25	\$209.71	\$4,403.96
		TOTAL	\$4,714.25	\$235.71	\$4,949.96
		PAID	AMOUNT / MO	ONTANT PAYÉ:	\$0.00
	\sim	BA		IONTANT DÛ:	\$4,949.96
PAYMENT / PAIEMENT By cheque payable to / Par chèque à l'ordre de	$\langle \langle \rangle$	By Elect	tronic Funds Tra	nsfer /	
Federation of Canadian Municipalities		Par trar	nsfert électronic	ue de fonds	
Fédération canadienne des municipalités		Ro	yal Bank of Cana	ada (RBC)	
		90 Trr	Sparks St, Ottav	va, ON K1P 517	006
			ew) Acct Number/N	er/(Nouveau) No. de	e compte: 1113307
To learn more about how FCM is helping of	ommunities				
through COVID-19, visit http://together20)21.fcm.ca.	а	ccountsreceivab	ele@fcm.ca/comptes	srecevables@fcm.ca
			Ref No. / No	o. de référence :	17798
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REPORT

To: Rural Budgets Administration Committee

From: Teri Vetter, Chief Financial Officer

Report Number: FN-RBAC-043

Date: December 17, 2020

Subject: Grant Request – Chetwynd Public Library

RECOMMENDATION:

That the Rural Budgets Administration Committee authorize a grant in the amount of \$3,000, payable from Electoral Area E Fair Share, to be issued to the Chetwynd Public Library in support of the Elders/Seniors Christmas Pen Pals project.

BACKGROUND/RATIONALE:

Chetwynd Public Library (CPL) has come up with a creative way to honor Elders and seniors this Christmas, in lieu of the Annual Community Christmas Dinner, which cannot take place due to the situation with COVID-19. The CPL, in collaboration with local schools, Saulteau First Nations and West Moberly First Nations are launching a pen pal project that involves linking students to Elders and seniors through the writing of Christmas cards and/or letters. This project fosters and supports education and cultural awareness for the students, Elders and seniors throughout the community. A total of 225 cards will be distributed along with a small gift to seniors in the community. The total cost of this project is \$5,500.

In 2019, Electoral Area E provided a grant in the amount of \$3,000 to assist with the Annual Community Christmas Dinner. For more information on this grant request, please see the attached grant application.

ALTERNATIVE OPTIONS:

- 1. That the Rural Budgets Administration Committee respectfully deny the grant application from the Chetwynd Public Library and provide no grant funding to assist with the Elders/Seniors Christmas Pen Pals project.
- 2. That the Rural Budgets Administration Committee provide further direction.

STRATEGIC PLAN RELEVANCE:

Not Applicable to Strategic Plan.

FINANCIAL CONSIDERATION(S):

As of November 3, 2020 the balancing after remaining commitments for Electoral Area E Fair Share was \$2,140,134.19.

Dept. Head: Teri Vetter

CAO: Shawn Dahlen

COMMUNICATIONS CONSIDERATION(S):

The applicant will be advised in writing of the Rural Budgets Administration Committee's decision and if approve, will be asked to recognize the Regional District for its contribution.

OTHER CONSIDERATION(S):

None

Attachments:

1. Grant Application – Chetwynd Public Library

PEACE RIVER REGIONAL DISTRICT



Society #: 106	912439		
Name: Che	etwynd Public Library		
Civic Address:	5012 46th Street		
Mailing Address:	PO Box 1420		
City: Chetw	ynd	Pos	tal Code: VOC 1J0
Contact Person:	Melissa Millsap	Alternate Person: Joce	elyn Disher
Tel: 250-78	8-2559	Tel: 250-788-2559)
Email: libraryd	lirector@chetwynd.bclibrary.ca	Email: jdisher@chet	wynd.bclibrary.ca
SOCIETY EXECUTI	VES	PROJECT COSTS	
President:	Dana Bergen	Total Cost of Project:	5500
Vice President:	Sara Hoehn	Amount Requested per	3000
Treasurer:		For how many years?	1 yr 💿 2 yrs 🔿 3 yrs 🔿
Have you applied	to a municipality for funding? Yes	No 🜒 If so, how r	nuch did you apply for?
		-	

Describe the project for which your organization is requesting a grant and the reason for your request. *If more space is needed, please add it as an attachment to your application.*

The Chetwynd Public Library usually hosts an Annual Community Christmas Dinner for our Elders and seniors. This is a heartfelt event where our Elders and seniors come together to enjoy a turkey dinner with all of the fixings. Even though we are unable to have them all join together for fun Christmas songs, games and the turkey dinner this year, we still want to do something to let them know they are thought of during this time of Covid. We came up with the idea of Elder/Senior Christmas Pen Pals. We have partnered with our local schools and will drop 225 Christmas cards off at the schools with a little note telling a bit about each Elder/Senior for the students to write them a Christmas letter. The library staff will collect the letters and cards and would like to put a gift card in each one before mailing them out. Saulteau First Nations has 114 Elders and West Moberly First Nations has 13 Elders. We would like to decorate some Christmas tea box's to take out to them. We have a few seniors that are residents at the Chetwynd General Hospital and would like to deliver to them some Poinsettias. Although this is not the social atmosphere they typically look forward to, we are still reaching all our Elders and seniors and trying to keep it heartfelt by including our students to write the personalized Christmas letters wishing them a Merry Christmas during this very unique time. Your consideration in contributing to the spread of Christmas cheer for our Elders and seniors is greatly appreciated. Thank you and please feel free to contact me if you require any further information. Sincerely, Melissa

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- Project budget, including all sources of funding
- · Current financial statements showing expenses, revenues & savings

Signature of Applicant						Date: DEC 07/20
For Office L	lse O	nly				
Fair Share:	В	С	D	E	Gas Tax:	
PRA:	В	С	D	E	Other:	
BCR/PRA:	В	С	D	E		

Senior/Elder Christmas Pen Pals 2020 December 07, 2020

Chetwynd Public Library PO Box 1420 Chetwynd, BC VOC 1J0

EXPENSES

Christmas Cards and Postage	\$ 450.00
Gift Cards	\$ 4,500.00
Tea for the Elders	\$ 500.00
Poinsettia's for the hospital residents	\$ 50.00
TOTAL	\$ 5,500.00

Chetwynd Public Library Trial Balance As at 10/31/19

Ac	Account Description	Debits	Credits
1010	Cash to be deposited	57.50	-
1040	Equity Shares	56.09	-
1045	HISA 48121	449,122.36	-
1050	Petty Cash	-	3,097.53
1055	HISA Fundraising	67,426.32	-
1056	HISA Contingency Fund	506,366.39	-
1060	Chequing Account - Operating	63,642.22	-
1200	Accounts Receivable	8,900.90	-
1220	Payroll Advances	500.00	-
1300	Purchase Prepayments	6,357.74	-
1320	Prepaid Expenses	14,803.77	-
1810	Leasehold Improvements	809,261.30	-
1811	Accum. Amort - Leasehold improvemen	, _	319,047.74
1820	1820 Office Furniture & Equipment	204,847,47	-
1825	Accum. AmortFurn. & Equip.	-	171,810.52
1840	Computer Equipment	235,712,31	-
1845	Accum, Amort Computer Equipment	, –	215,419.06
1851	Equipment-Bistro	3.704.28	, _
2010	Accounts Pavable - Trade	-, -	4,750.00
2100	Accounts Pavable	-	1,337.31
2105	Damage Deposit Pavable	-	250.00
2110	Credit Union Mastercard DO NOT USE	-	14.81
2112	Credit Union Mastercard 0081	-	3.608.31
2170	Vacation pavable	-	471.17
2180	FI Pavable	-	841.32
2185	CPP Pavable	-	1.947.40
2190	Federal Income Tax Pavable	-	2 869 76
2234	Municipal Pension Payable - CPI	-	3 093 94
2235	Pacific Blue Cross Pavable	-	4 379 93
2236	MSP Pavable	-	75.00
2240	Municipal Pension Pavable	-	2,719.63
2250	Dental FHB	-	825.78
2310	GST Charged on Sales	-	1.005.05
2315	GST Paid on Purchases	8 583 03	-
3400	Equity in Assets	-	571 273.42
3560	Retained Earnings - Previous Year	-	1.020.091.16
4020	Peace River Regional District	-	344,886,48
4030	Province of BC - Operating Grant	-	16.720.00
4040	Province of BC - Resource Sharing	_	1.958.00
4050	Province of BC Literacy Equity	_	9.680.00
4060	BC One Card Grant	-	7,400.00
4071	Province of BC Early Years Service	-	6.650.00
4305	BC Courthouse Library Grant	-	2,500.00
4322	United Way	-	1 666 64
4325	Other Grants	-	500.00
4330	CALP Fund	-	10.450.00
4360	Decoda Fund	-	18,865,20
4370	Arts Council Grant	_	1.670.20
4405	Book Sales	_	170.05
4410	Lost & Damaged Books	_	136 24
4420	Donations	-	2 438 50
7720			2, 100.00

Printed On: 11/01/19

Chetwynd Public Library Trial Balance As at 10/31/19

Ac	Account Description	Debits	Credits
4425	Overdue Fees		3.50
4430	Photocopies	-	4.481.60
4435	Fundraising	-	5,371.50
4440	Interest Revenue	-	5,840.52
4445	Bistro Rent	-	9,000.00
4450	Exam Revenue	-	145.00
4455	3-D Printing Revenue	-	28.80
4460	Misc Revenue	-	339.25
4705	Community Room Rental	-	1.672.50
5030	Capital purchases: Technical	13,186,40	, –
5070	Imagination Library	5,770.12	-
5130	Adjustment Write-off	0.50	-
5200	Books	17.899.19	-
5206	Digital Subsciptions & Databases	6.571.74	-
5209	Books - Processing	918.79	-
5215	Audiobook & Visual	107.60	-
5410	Wages	-	6.38
5415	Municipal Pension Expense	14.150.66	_
5420	El Expense	4,785,11	-
5430	CPP Expense	9.143.54	-
5451	Assistant Library Director	45,256,83	-
5452	Community Librarian: Cataloging	14,733,47	-
5453	Community Librarian: Circulation	32,604,88	-
5455	Summer Students	3 630 90	-
5457	Library Clerk I	17.526.89	-
5458	Resource Corner Coordinator	11.973.17	-
5459	Library Director	49,420.00	-
5461	Library Clerk II	6.973.64	-
5463	Children's Coordinator	28,525,39	-
5464	Bookkeeper	1.748.30	_
5470	Medical Service Plan	1.050.00	_
5471	Pacific Blue Cross Extended Health	10,739,92	-
5485	Professional Development	615.00	-
5510	Bistro Equipment	2.275.62	-
5610	Accounting & Legal	6,040.54	-
5615	Advertising & Promotions	4,494.62	-
5625	Memberships	761.40	-
5630	Cash Short/Over	-	81.50
5640	Postage & Freight	1,509,46	-
5685	Insurance - Directors	225.00	-
5690	Interest & Bank Charges	388.05	-
5695	Penalties & Interest	37.10	-
5700	Office Administration	448.47	-
5701	Internet Access	741.51	-
5702	Office Supplies	1,963.56	-
5703	IT Support	18,634.83	-
5706	Security	1,049.33	-
5745	Meals & Gifts	381.74	-
5750	Photocopier	7,870.22	-
5765	R & M - Buildings	1,214.05	-
5770	R & M - Equipment	792.95	-

Printed On: 11/01/19

Chetwynd Public Library Trial Balance As at 10/31/19

Account Description	Debits	Credits
Telephone & Fax	2,009.83	-
Training & Conferences	976.43	-
Travel	684.90	-
Sitka, Webpage & Email fees	1,965.92	-
Utilities	10,501.82	-
Janitorial	18,139.41	-
Insurance	3,853.65	-
Program Supplies	14,043.26	-
Contractors	3,734.99	-
Food	178.32	-
	2,781,590.70	2,781,590.70
	Account Description Telephone & Fax Training & Conferences Travel Sitka, Webpage & Email fees Utilities Janitorial Insurance Program Supplies Contractors Food	Account DescriptionDebitsTelephone & Fax2,009.83Training & Conferences976.43Travel684.90Sitka, Webpage & Email fees1,965.92Utilities10,501.82Janitorial18,139.41Insurance3,853.65Program Supplies14,043.26Contractors3,734.99Food178.32



REPORT

To: Rural Budgets Administration Committee

From: Teri Vetter, Chief Financial Officer

Report Number: FN-RBAC-045

Date: December 17, 2020

Subject: Grant Request – Sunset Prairie Cemetery

RECOMMENDATION:

That the Rural Budgets Administration Committee authorize an increase of \$1,260 to the grant contributions for 2020 and 2021 of the multi-year grant approved in the amount of \$1,240 per year on January 17, 2019, for a total amount of \$2,500 payable from Cemetery Grants-in-Aid, Area E to be issued to Sunset Prairie Cemetery Association to support the increase in their cost for lawn maintenance.

BACKGROUND/RATIONALE:

Sunset Prairie Cemetery Association was approved for multi-year grant funding in the amount of \$1,240 per year, to assist with the cost of the annual lawn maintenance at the cemetery. On January 17, 2019, the Rural Budgets Administration Committee passed the following resolution:

MOVED, SECONDED and CARRIED

That the Rural Budgets Administration Committee authorize a multi-year grant in the amount of \$1,240 to the Sunset Prairie Cemetery, for three years beginning in 2019, payable from, Electoral Area E, Cemetery Grants.

The Association states the cost for lawn maintenance has more than doubled since 2019 and now costs \$2,500 per season resulting in the current grant contribution of \$1,240 being insufficient. Sunset Prairie Cemetery Association would like an additional \$1,300 to bring the 2020 and 2021 grant contributions up to \$2,500; however that amount would increase the payments to \$2,540. Staff identified an error in the amount requested that has resulted in an increase of only \$1,260 rather than \$1,300 in order to top up the current grant contribution to equal per year to \$2,500.

Sunset Prairie Cemetery Association has reached out to the Electoral Area Director to discuss options going forward and is aware that the Regional District has been considering the possibility of providing rural cemetery maintenance to local communities. Until such time the Regional District makes a decision, the Association would like the Rural Budgets Administration Committee to consider authorizing an increase to their contribution.

Sunset Prairie Cemetery Association is a registered not-for-profit society in good standing with the *Societies Act of BC*. The Regional District has provided grant funding to Sunset Prairie Cemetery Association for these purposes since 2005.

Please see the attached grant application for further details.

Dept. Head: Terri Vetter

CAO: Shawn Dahlen

ALTERNATIVE OPTIONS:

- 1. That the Rural Budgets Administration Committee respectfully deny the request from Sunset Prairie Cemetery Association and provide no increase to the amount of the 2020 and 2021 grant payments of the multi-year grant contributions of \$1,240 per year.
- 2. That the Rural Budgets Administration Committee provide further direction.

STRATEGIC PLAN RELEVANCE:

Not Applicable to Strategic Plan.

FINANCIAL CONSIDERATION(S):

- 1. The 2020 budget commitment for Cemetery Grants-in-Aid, Area E is \$36,740 and the available balance is \$32,000. Note, that \$30,000 is earmarked for the District of Chetwynd pending the signing of a funding agreement.
- 2. A total of \$4,740 has been paid from Cemetery Grants-in-Aid, Area E in 2020 as per the following grants:
 - \$1,000 paid to Groundbirch Cemetery Committee
 - \$1,200 paid to Willow Valley Cemetery Committee
 - \$1,240 paid to Sunset Prairie Cemetery Association
- 3. A total of amount of \$2,500 would need to be included as part of the 2021 budget commitment for Cemetery Grants-in-Aid, if this request is approved.
- 4. If approved, this increase would result in Sunset Prairie Cemetery Association receiving an overall grant contribution of \$6,240 to support lawn maintenance for the period of 2019 to 2021.

COMMUNICATIONS CONSIDERATION(S):

The applicant will be notified in writing of the Committee's decision and, if approved, will be asked to recognize the Regional District for its contribution.

OTHER CONSIDERATION(S):

None

Attachments:

- 1. Grant Application Sunset Prairie Cemetery Association
- 2. Cemetery Grant Policy

GRANT APPLICATION FORM



Received by email on November 5, 2020

Society #: S-0	051417		
Name: Sun	set Prairie Cemetery Association		
Civic Address:	6016-261 Road		· · · ·
Mailing Address:	Box 289		
City: Sunse	t Prairie, B.C.	Postal	Code: VOC 2J0
Contact Person:	Shirley Smithard	Alternate Person: Mary	Ann Smithard
Tel: 250-84	3-7222	Tel: 250-843-7242	St. 1
Email: tri-s4@	hotmail.com	Email:	
SOCIETY EXECUTI	VES	PROJECT COSTS	
President:	James Niel	Total Cost of Project:	2500.00 \$5,000
Vice President	Many Ann Smithard		
vice i resident.	Mary Ann Smithard	Amount Requested per	year \$2,500
Treasurer:	Shirley Smithard	Amount Requested per For how many years?	year \$2,500 1 yr 2 yrs 3 yrs
Treasurer: Have you applied	to a municipality for funding? Yes	Amount Requested per For how many years?	year \$2,500 1 yr 2 yrs 3 yrs ch did you apply for?

Describe the project for which your organization is requesting a grant and the reason for your request. *If more space is needed, please add it as an attachment to your application.*

We have been receiving a yearly grant of \$1240 from Regional district to pay for the mowing and maintenance of our cemetery. Last year our contractor resigned mid-season and we hired an interim mower. This person informed us that the amount was sorely inadequate and would require \$2500 per season per cemetery to continue. We have been in contact with our Director on our options going forward. The Regional district is undergoing research as to the future of rural cemetery maintenance etc. Until a conclusion is determined we continue to hire a contractor to fulfill the mowing and maintenance obligations. The contractor has determined the minimum to be \$2500. As we have already received \$1240 from Regional district as per our pervious 3 year grant application, we are requesting an additional \$1300 to cover the balance of our cost for the 2020 season.

Just a note to let you know that the 2021 maintenance season will also be \$2500, so we hope to receive and additional \$1300 in addition to our persent grant of \$1240 that will be in the last year of that 3 year grant application.

ATTACHM	ENTS	S REQU	JIRED:				
 Project be Current fi 	udge nanc	t, inclu cial sta	iding a temen	Il sources of f ts showing ex	unding penses, revenues & savings		
Signature o	f Ap	plicant	:			Date:	
For Office U	lse O	nly					
Fair Share:	В	С	D	E	Gas Tax:		
PRA:	В	С	D	E	Other:		
BCR/PRA:	В	С	D	E	Page 19 of 406		

CE RIVER REGIONAL DISTRIC

Received by email November 5, 2020

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DATE NOV	4 2020
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rural cemetery maintenance etc. Until a conclusion is determined we continue to hire a contractor to fulfil the mowing and maintenance obligations. The contractor has determined the minimum to be \$2500c. As we have already received \$1240 from Regional district as per our pervious 3 year grant application, we are requesting an additional \$1300 to cover the balance of our cost for the 2020 season.

Just a note to let you know that the 2021 maintenance season will also be \$2500, so we hope to receive and additional \$1300 in addition to our persent grant of \$1240 that will be in the last year of that 3 year grant application.

· Project budget, including all sources of funding

Current financial statements showing expenses, revenues & savings

Signature of Applicovt:





Sunset Prairie Cemetery

2020 Financial Statement

As	S	e	t	
	-	-	-	

Total Assets	\$2457.80
Savings	47.63
Chequing	\$2410.17

Expenses

Total Expenses	\$2576.00	
Bank Service Charges	36.00	
Filing Fees	40.00 (AGM Filing Fe	e)
Keeper)		
Stan Smithard/Laura Joyce	e \$2500.00 (Grounds	



Cemetery Grants

Department	Finance	Policy No.	0340-59
Section	RBAC	Date Approved by Board	
Repeals		Board Resolution #	

Amended	Board Resolution #	
Amended	Board Resolution #	
Amended	Board Resolution #	

Repealed	Board Resolution #	
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1. Purpose

- 1.1 This policy provides the guidelines and administrative procedures for the approval and disbursement of grant funds, from the Cemetery Function, to not-for-profit societies or community organizations who maintain rural cemeteries located in Electoral Areas B, C, D and E of the Peace River Regional District.
- 1.2 Grant funding may assist local groups with improvements to rural cemeteries and may be issued to support capital projects and/or expenses related to the operation, development and maintenance of the cemetery as set forth in Bylaw No. 839, 1993.

2. Definitions

- 2.1 *Rural Budgets Administration Committee:* refers to a Standing Committee of the Regional Board comprised of each Electoral Director from each Electoral Area in the Peace River Regional District who has the authority, by delegation of the Regional Board, to administer the rural budgets as identified in the Annual Financial Plan of the Peace River Regional District and in accordance with the "Rural Budgets Administration Bylaw No. 116, 1998".
- 2.2 *Not-for-Profit Society:* refers to an organization which is not driven by profit, who is registered and in good standing with the *Societies Act of BC*.
- 2.3 *Volunteer Community Organization*: refers to a group consisting of volunteer community members who is financially and administratively sound which can be demonstrated by providing meeting minutes, financial statements and/or proof of a bank account.
- 2.4 *Operational Costs:* refers to expenses incurred for the day-to-day operating, developing and maintaining of a cemetery and its grounds.
- 2.5 *Minor Improvements* refers to smaller projects costing less than \$5,000 such as the purchase and installation of commemorative monuments, benches, or signage that are shorter in duration to complete.



3. Policy

- 3.1 Applicant Eligibility
 - a. The Rural Budgets Administration Committee recognizes that community groups who care for cemeteries are often very small and operate with a very limited number of volunteers; therefore the Committee is willing to wave the eligibility criteria that all applicants must be a registered Not-for-Profit society in good standing with the *Societies Act of BC*. In order to apply for grant funding under this policy, the applicant must meet one of the following criteria:
 - i. registered Not-for-Profit society in good standing with the Society Act of BC; or
 - ii. a volunteer organization consisting of community members who is financially and administratively sound which can be demonstrated by providing meeting minutes, financial statements and/or proof of bank account; and
 - iii. must operate in the Peace River Regional District.
 - b. Applicants must submit a completed grant application that outlines the details for the intended use of the funds, the amount requested and all necessary supporting documentation as indicated on the application form.

3.2 Eligible Expenses

- a. The information below provides examples of eligible expenses or projects costs that may be considered for funding:
 - i. Operational Costs
 - ii. Minor cemetery improvement project costs
 - iii. Capital improvement project costs
- 3.3 <u>Grant Authorization</u>
 - a. The Rural Budgets Administration Committee has the sole discretion to approve or reject applications.
- 3.4 Disbursement of Funds
 - a. Upon approval of the grant, funds will be paid directly to the applicant for all grants in the amount of \$1,500 or less.
 - b. Grant funding in excess of \$1,500 will be paid to the applicant through claim reimbursement.



3.5 <u>Allocation of Funds</u>

Grant funding may be budgeted for annually by each Electoral Area Director as part of the PRRD Annual Financial plan, to be ratified by the Board of Directors.

3.6 Acknowledgement of Grant Funding

The Rural Budgets Administration Committee asks all grant recipients to recognize their contribution by use of the Peace River Regional District logo through written, virtual or verbal acknowledgement.

Bylaw Reference	Peace River Regional District Cemetery Services Establishment Bylaw No. 839, 1993
Bylaw Reference	Peace River Regional District Rural Budgets Administration Bylaw No. 116, 1998



REPORT

To: Rural Budgets Administration Committee

Report Number: FN-RBAC-046

From: Teri Vetter, Chief Financial Officer

Date: December 17, 2020

Subject: Release of Funds - Jackfish Community Association unclaimed 2020 Recreational and Cultural Grants-in-Aid

RECOMMENDATION:

That the Rural Budgets Administration Committee authorize the release of the remaining \$15,631.22 unclaimed Area E Recreational and Cultural Grants-in-Aid allocation of \$17,580.56 approved in 2020 to Jackfish Community Association, in accordance with the policy change approved May 28, 2020 authorizing immediate release of funds upon grant approval without submission of reimbursement claim, and issue a grant payment in the amount of \$15,631.22 to assist with operational costs.

BACKGROUND/RATIONALE:

The intent of this report is to provide information to RBAC regarding the status of Jackfish Community Association with the *Societies Act of BC* so that consideration can be given to the payment of their unclaimed 2020 grant allocation. On October 15, 2020, the Rural Budgets Committee passed the following resolution:

MOVED, SECONDED and CARRIED

That the Rural Budgets Administration Committee authorize all unspent Area E Recreational and Cultural Grants-in-Aid allocated Jackfish Community Association in the amount of \$17,580.56 remain in the allocations until the society is in compliance with the Societies Act of BC.

Staff have verified the Association's status and found that on October 21, 2020 the necessary paperwork was filed and they are now in good standing and compliant with the *Societies Act of BC* as per the attached annual report.

This allocation of unclaimed funds available to the Association as a result of a funding amendment approval that authorized the reallocation of their 2016 and 2017 grant allocations. On May 21, 2020, the Rural Budgets Administration Committee approved the following resolution:

MOVED, SECONDED and CARRIED

That the Rural Budgets Administration Committee authorize Jackfish Community Association to reallocate the unused portions of their 2016 GIA in the amount of \$2,080.56 and 2017 GIA in the amount of \$15,500 for a total reallocation of \$17,580.56 to support their 2020 operational costs, general upkeep and maintenance upgrades at the Jackfish Community Hall.

Dept. Head: Teri Vetter

Should RBAC opt to keep the funds as a 2020 allocation for Jackfish Community Association, it should be noted that in accordance with the Rural Recreational and Cultural Grants-in-Aid (GIA) policy any funding not reimbursed to the Association for 2020 expenditures would be returned to the funding area. As of the May 28, 2020 approval by the Regional Board to amend the policy, grant recipients are no longer able to reallocate unclaimed grant funds approved for 2019 or any years thereafter and the three year timeframe for recipients to claim their allocations no longer exists.

ALTERNATIVE OPTIONS:

- 1. That the Rural Budgets Administration Committee deny the release of the remaining \$15,631.22 unclaimed Area E Recreational and Cultural Grants-in-Aid and have the funds remain as a 2020 allocation for Jackfish Community Association to be payable by claim reimbursement by January 31, 2021.
- 2. That the Rural Budgets Administration Committee provide further direction.

STRATEGIC PLAN RELEVANCE:

☑ Organizational Effectiveness

FINANCIAL CONSIDERATION(S):

The current balance in the 2020 allocation is \$15,631.22 for Jackfish Community Association due to a claim reimbursement payment in the amount of \$1,949.34 processed on December 3, 2020.

COMMUNICATIONS CONSIDERATION(S):

Written correspondence will be sent to Jackfish Community Association to inform them of the Committee's decision.

OTHER CONSIDERATION(S):

None.

Attachments:

- 1. 2020 BC Society Annual Report Jackfish Community Association, dated October 21, 2020
- 2. Rural Recreational and Cultural GIA policy statement

External Links:

1. Area E Recreational and Cultural GIA, Unspent Prior Year Allocations – See Item# 9.7



2020 BC SOCIETY ANNUAL REPORT

BC Society • Societies Act

NAME OF SOCIETY: JACKFISH COMMUNITY ASSOCIATION

Incorporation Number: Business Number: Filed Date and Time: Annual General Meeting (AGM) Date: S0050304 80492 1070 BC0001 October 21, 2020 09:29 PM Pacific Time February 9, 2020

REGISTERED OFFICE ADDRESS INFORMATION

Delivery Address:

1515 OLD JACKFISH ROAD PO BOX 1469 CHETWYND BC V0C 1J0 Mailing Address: 1515 OLD JACKFISH ROAD PO BOX 1469 CHETWYND BC V0C 1J0

DIRECTOR INFORMATION AS OF February 9, 2020

Last Name, First Name Middle Name: ANDERSON, JAI-LENE

Delivery Address:

Last Name, First Name Middle Name: DECK, BETTY J

Delivery Address:

Last Name, First Name Middle Name: KOLOSKY, CHERYL

Delivery Address:

Last Name, First Name Middle Name: KOLOSKY, KATHY

Delivery Address:

BC REGISTRIES AND ONLINE SERVICES

Last Name, First Name Middle Name: PILON, ROBERT

Delivery Address:

CERTIFICATION

I, Kathy Kolosky, certify that I have relevant knowledge of the society, and that I am authorized to make this filing.



Incorporation Number S0050304



RURAL RECREATIONAL AND CULTURAL GRANTS-IN-AID

Department	Finance	Policy No.	0340-61
Section	Rural Budgets Administration Committee	Date Approved by Board	Unknown
Repeals		Board Resolution #	Unknown

Amended	May 28, 2020	Board Resolution #	RD/20/05/24 (28)
Amended		Board Resolution #	
Amended		Board Resolution #	

Repealed Board Resolution #

1. Purpose

1.1 This policy is intended to supplement the operating and/or capital funds of not-for-profit rural organizations that provide recreation, arts, sports, and/or social activities to the communities within the Peace River Regional District (PRRD). Groups are expected to fundraise for alternate sources of funds.

2. Scope

3. Definitions

- 3.1 *Capital Equipment*: Equipment valued at over \$5,000 and has an extended lifetime over more than one year.
- 3.2 *Capital Improvement*: Refers to the addition of a permanent structural improvement or the restoration of some aspect of a property that will either enhance the property's overall value or increase its useful life.
- 3.3 *Debt*: An amount owed to a person or organization for services, products or loans not yet paid for.
- 3.4 *New Applicant Organizations*: Refers to organizations that have not received PRRD Recreational and Cultural Grants-in-Aid prior to 2012.
- 3.5 *Operational Expenses*: The day-to-day costs to operate a facility such as insurance, utilities, maintenance and upkeep, and general supplies.
- 3.6 *Rural Organization*: Any not-for-profit group located within the boundaries of Electoral Areas B, C, E, and Sub-Regional that provides recreation, arts, sports and/or social activities to communities at large.

- 3.7 *Sub-Regional*: A defined portion of Electoral Area E and D which is combined with a service area including the City of Dawson Creek and the Village of Pouce Coupe, shown on Schedule L to this policy.
- 3.8 *Wages*: Any payment, stipend or honorarium made for labour or services to an employee or volunteer under the direction of an employer or organization.

4. Policy

- 4.1 Eligibility Criteria
 - a. Applicants must be a rural not-for-profit registered society which provide recreation, arts, sports, and/or social activities for the community at large; and
 - b. At least 75% of the applicants' membership must come from the rural areas which they serve.
 - c. New applicant organizations located or operating within a municipality must provide proof that at least 75% of their membership comes from the electoral areas of the PRRD.
 - d. Organizations who have received Recreational and Cultural Grants-in-Aid prior to 2012 will be grandfathered into the policy and will not be required to maintain a 75% rural membership.
- 4.2 Application Process
 - a. Applicants must submit a formal application to the PRRD once per year on or before January 31st of each year; said application to be substantially completed in the form attached hereto as Schedule A.
 - b. Applications must be submitted directly by the recreation organization or community association/club.
 - c. Applicants must provide year-end financial statements including an income statement and a balance sheet, plus project and operational budgets and a minimum of one quote for any individual items valued at over \$3,000.
 - d. New applicants must provide proof in the form of a membership list that at least 75% of their membership resides in the rural areas which they serve.
 - e. At the discretion of the Electoral Area Directors, organizations may apply to more than one funding area if their recreation and/or community association services are provided to residents in more than one community and that their membership is reflective of this.
 - f. Failure to provide adequate documentation during the application process and/or comply with the eligibility requirements for funding assistance may jeopardize funding eligibility.



- g. Late applications will not be accepted without the express written permission of the Electoral Area Director for the area in which the organization is making application to.
- h. Applications from new organizations will be accepted by the PRRD for consideration providing they meet the eligibility requirements as set forth in this policy.
- 4.3 Eligible Expenses
 - a. In Electoral Areas B and C expenses for capital improvements and insurance (for the protection of the public) are permitted.
 - b. In Electoral Area E West and the Sub-Regional funding areas, expenses for operations and capital improvements are permitted.
 - c. Payment of debt and employee wages are not an eligible expense.
 - d. A minimum of one (1) quote must be provided for all eligible expenses valued at over \$3,000.
- 4.4 Annual Grant Allocations
 - a. At the discretion of the Electoral Area Directors, grant allocations for each area may be budgeted and provided for youth travel to which the guidelines are attached hereto as Schedule E.
 - b. At the Electoral Area B and C Directors' discretion, grant allocations from Area B and C may be budgeted and provided for the North Peace Regional Grad Fest Society for the purpose of hosting safe graduation related events, to which the guidelines are attached hereto as Schedule F.
 - c. At the Electoral Area B Director's discretion grant allocations from Area B may be budgeted and provided for the North Peace 4-H District Council for the purpose of conducting 4-H activities to which the guidelines are attached hereto as Schedule G.
 - d. At the discretion of the Electoral Area Directors, funding allocations for each area may be budgeted and provided for post-secondary scholarships and bursaries to which the guidelines are attached hereto as Schedules H, I, J and M.
 - e. At the Directors' discretion, grant allocations for each area may be budgeted to provide for Awards Recognition to which the guidelines are attached hereto as Schedule K.

4.5 <u>Approval Process</u>

- a. The Electoral Area Directors have the sole discretion to accept or reject any application. Applications may be rejected for the following reasons:
 - i. Incomplete or late applications; or
 - ii. Failure to maintain society status; or



- iii. Failure to rationalize the need for funding; or
- iv. Failure to prove the project supports the community at large.
- b. Upon approval of the Rural Budgets Administration Committee (RBAC), eligible applicants along with their Electoral Area Director will meet in the spring of each year to allocate the budgeted amount as set in the current Financial Plan.
- c. At least one representative from each applicant organization must be in attendance at the allocation meetings to receive a grant allocation.
- d. If the total application amount exceeds the annual budget, then the annual budget will be distributed based on consensus of the eligible recreational and community organizations and the Electoral Area Director(s) in attendance at the adjudication meetings.
- e. All organizations that have made an application and have been approved to receive funding by the PRRD will be notified of the meeting date, time and location prior to the meeting.
- f. All applications will be adjudicated based on need and availability of funds in the fiscal year of the established service.
- g. All funding allocation recommendations must be ratified by the RBAC. The RBAC reserves the right to accept, reject or amend any application at its sole discretion.
- 4.6 <u>Recreational and Cultural Grants-in-Aid Budgets</u>
 - a. On an annual basis the Electoral Area Directors shall determine the annual budget amount for their area(s) to be included in the PRRD Financial Plan. This budget amount will be subject to Board approval and must be in accordance with tax limitations set forth by bylaw or supplementary letters patent. These areas are indicated below:
 - i. Electoral Area B
 - ii. Electoral Area C
 - iii. Electoral Area E West
 - iv. South Peace Sub-Regional a defined portion of Electoral Area E and D which is combined with a service area including the City of Dawson Creek and the Village of Pouce Coupe, shown on Schedule L to this policy.

4.7 <u>Unallocated Funds</u>

- a. Any funds that are not allocated from the annual requisition for a funding area shall be utilized to reduce the tax requisition in the next calendar year.
- 4.8 Payment of Funds
 - a. Grant funds will be payable to the recipients upon ratification by the RBAC.



4.9 <u>Sources of Revenue</u>

- a. Organizations shall be responsible to raise supplementary funds for major capital projects and operations by seeking other funding sources including but not limited to donations, corporate sponsorships, applications to other government agencies or general fundraising.
- b. The PRRD shall not be a sole source of revenue for any recreation or community association.
- c. Organizations must show in their application all sources of revenue.

4.10 <u>Reporting Requirements</u>

- a. All organizations that receive Recreational and Cultural Grants-in-Aid must complete an Annual Report, as attached hereto as Schedule C, by the last calendar day in January.
- b. Photos must be provided showing capital projects completed with Recreational and Cultural Grants-in-Aid funds.
- c. That failure to abide by the conditions of the grant and/or reporting requirements may result in one or more of the following:
 - i. Organizations being required to repay grant funds.
 - ii. Not being considered for future grant funding.

4.11 Funding Amendments

- a. *Effective January 1, 2019* Organizations will no longer be authorized to reallocate unclaimed grant funds allocated in 2019 or any years thereafter. Those grant allocations that remain unclaimed upon the completion of projects will be identified as surplus to the function and used to reduce the following year's tax requisition.
- b. In the event of an emergency situation where failure to remediate the problem will result in the organizations ability to operate, recipients may apply to the PRRD for support through other grant funding options.
- c. All unclaimed grant allocations from years prior to 2019, will be grandfathered and organizations may apply for a Funding Amendment to reallocate those funds under the following circumstances:
 - i. If a balance remains in the grant allocation and all projects have been completed; or,
 - ii. If an emergency has arisen and failure to remediate the problem will result in an inability to operate.
- d. The RBAC will have the sole discretion on whether to approve or deny any funding amendments.



e. Funds cannot be amended to pay off debt.

4.12 <u>General</u>

- a. Recreational and Cultural Grants-in-Aid policies can only be made by the RBAC and are subject to Board approval as set forth in Bylaw No. 1166, 1998.
- b. Organizations hosting annual spring allocation meetings will be paid a hosting stipend.

4.13 Limitations

a. Tower Lake Community Association is not eligible to receive Recreational and Cultural Grants-in-Aid as they are outside of the existing service area.

4.14 <u>Recognition</u>

- a. Grant recipients will recognize the financial contributions of the PRRD by prominently displaying a certificate or plaque.
- b. Associations that maintain websites, social media sites and/or membership newsletters will provide the PRRD with recognition in the form of prominently displaying a note of thanks next to the PRRD's logo.
- c. Grant recipients may be requested to issue a joint press release and photo with the PRRD from time to time.

Affiliated Procedure



RURAL RECREATION & CULTURAL GRANT-IN-AID APPLICATION

SCHEDULE A

	Date:		Society Number:				
	Applicant Information	n					
1.	Name of Organizatio	n:					
	Contact Perso						
	Mailing Addre	ss:					
	Phor	le:	Fax:				
	Fm	Email.					
2.	If applicable, does your organization own any facilities or properties? \Box Yes \Box No <i>(please check one)</i> Please give the <u>9-1-1 address and legal description</u> of the property that your organization either leases or owns.						
3.	Organization Execut	ves:					
	President						
	Name:	Phone:	Email:				
	Vice President						
	Name:	Phone:	Email:				
	Treasurer						
	Name:	Phone:	Email:				
	Secretary Name:	Phone:	Email:				
4.	Purpose of Organiza	urpose of Organization:					
5.	Please describe the programs and activities that your organization sponsored in the last year:						
	Qty per year	Activity/Progr	am	Dates			


6. Please provide a 5 year action plan for your organization.

Year 1:	
Year 2:	
Year 3:	
Year 4:	
Year 5:	

Project Information

7. Describe the Year 1 project or general operations for which your organization is requesting funding.

- 8. How essential is the project to the community?
- 9. What is the degree of support from the community at large?
- 10. Approximately how many volunteer hours does your membership contribute each year?
- 11. How do you plan to maintain any future ongoing costs associated with this project?
- 12. What is the total cost of insurance(s) your organization pays each year?
- 13. What is the total amount requested from the Regional District?

Application Submission & Authorization:

Please submit applications to prrd.dc@prrd.bc.ca on or before January 31 and include the following:

- Year-end financial statements (Income statement and/or balance sheet).
- Detailed project and operations budget (list 'In-Kind' contributions).
- 1 quote for labour, equipment or material costs valued at over \$3,000
- Annual Report(s), Schedule C



I confirm that the information in this application is accurate and complete and that the project proposal, including plans and budgets, is fairly presented. I understand that the information provided in this application may be accessible under the Freedom of Information (FOI) Act and may be shared with the Board of Directors, Committee(s) and staff of the Regional District.

Signature of Applicant:

PRRU	PEACE RIVER REGIONAL DISTRICT Recreation and Cultural Grants-in-Aid Schedule "B" - Claim Form

Organization Name:			Date:	
Mailing Address:				
	Address	City	Postal Code	
Contact Person:		Phone Number:		

Please attach **COPIES ONLY** *of invoices you are claiming reimbursement for.* **LIST ALL INVOICES BELOW** *and include the name of the supplier, the project they are for (i.e., playground, fence, insurance, etc.), year the fund were provided, invoice number and amount. If you have any questions about your claim please call (250) 784-3200.*

Supplier	Project	Year Funds Granted for this Project	Invoice No.	\$ Amount
	т	otal Amau	at of Invoice	

Total Amount of Invoice

Amount You Are Claiming

Please deliver your claim via mail, in person or by fax to:

Peace River Regional District PO Box 810, 1981 Alaska Avenue Dawson Creek, BC V1G 4H8 Fax: (250) 784-3201

ding	Year	Amount	
			Approved
	Total	Claim	
YEAR		YEAR	
Grant Amount		Grant Amount	
Previous Claims from this Grant	Previou	us Claims from this Grant	
Current Claim		Current Claim	
Balance on this Grant		Balance on this Grant	



Who must complete an Annual Report?

• All organizations who have received Grant-in-Aid (GIA) funding from the Peace River Regional District are required to complete an **Annual Report(s)** effective April 2009.

What must be included in your Annual Report?

- Your Annual Report(s) must detail how and /or if your organization has spent your Grant-in-Aid funding. This should include information on capital costs and/or operational costs and may include a variety of activities in accordance with the projects, events or operational costs for which your funding was <u>approved</u> for that particular year.
- Photos must be provided showing projects, including capital projects, completed with Grants-In-Aid funding.

When?

- All Annual Reports are <u>due by the last calendar day in January each year</u> regardless of whether your organization is submitting a new application for GIA.
- Funds for the upcoming year will not be reimbursed until Annual Reports are received.

Why?

• This procedure has been implemented in an effort to ensure more accountability to tax payers and other organizations receiving Grant-in-Aid funding. By doing so the Peace River Regional District will be following best practices employed by other municipalities and regional districts. This information will also assist the Rural Directors in making fair and equitable decisions on future Grant-in-Aid funding applications for all organizations.

We're here to help!

• Contact the Community Services Department at 250 784-3200 or prrd.dc@prrd.bc.ca *We will do our best to answer any questions you may have!*



PEACE RIVER REGIONAL DISTRICT Recreation and Cultural Grants-in-Aid Schedule "C" – Annual Report

Date of Report:	
Name of Organization:	
Mailing Address:	

Project Summary

- 1) For what Grant-in-Aid funding year does this report refer to? (i.e., when were funds approved)
- 2) What activities did your organization complete or start in the last year for which you received Grants-in-Aid funding? (this may include capital projects, events or general operations)
- 3) Please describe the progress you made on your capital projects, events or general operations for which you applied for Grants-in-Aid funding.
 - a. What was accomplished or completed with assistance from Grants-in-Aid funding?
 - b. What projects or events were not accomplished that you had applied for funding for? OR what operational costs have not been incurred that you had applied for funding for? Please state why any projects or events were not completed or costs were not incurred.

c. What is your plan to complete your projects and/or events or utilize your operational cost funding?

d. What is your timeframe for completing your projects, events or utilizing your operational cost funding?

Expense Summary

Please provide a summary of costs that have been submitted for reimbursement for the project year for which this report refers to (i.e., 2013 or 2012).

Amount of Approved GIA Funding in <u>year</u> .	
Less TOTAL Operational Costs paid for by GIA	
Less TOTAL Capital Costs paid for by GIA	
Total GIA Funds Remaining for <u>year</u> .	

Please describe your plan for the funds remaining. (i.e., timeline for completing your projects or events or utilizing your operational cost funding, requesting a funding amendment to apply unused funds to another project or can the funds be reallocated to next year's GIA budget?)

Authorization

We, the undersigned BOARD MEMBERS, certify on behalf of the organization that all of the information stated is correct and that the Board of Directors has approved the submission of this report.

Board Member (Treasurer)	Board Member
Name (print)	Name (print)
Position:	Position:
Business phone:	Business phone:
Residence phone:	Residence phone:
Fax:	Fax:
E-mail:	E-mail:
Signature:	Signature:
THIS REPORT WAS PREPARED BY:	
Name (print):	E-mail:
Business phone:	Residence phone:
Fax:	Signature:

Retain a copy of this report for your organization's records.



PEACE RIVER REGIONAL DISTRICT Recreation and Cultural Grants-in-Aid Schedule "D" – Funding Amendment

Instructions for Submitting a Funding Amendment

Organizations may apply to the Rural Budgets Administration Committee for a funding amendment only in such circumstances that:

- a) they have completed their project with the funds allocated and they have outstanding funds remaining; or
- b) an emergency has arisen and failure to remediate the problem will result in an inability to operate.

The Rural Budgets Administration Committee will have the sole discretion on whether to approve or deny any funding amendments. Organizations will be limited to a maximum of one funding amendment per year. Funds cannot be amended to pay off debt incurred, <u>therefore organizations must apply for an amendment before</u> any work is completed to which they may want to apply the funds.

EXAMPLE:

PROJECT TO PROVIDE FUNDS		
Year Funds Granted: 2010	Have you completed this project? Yes	
Current Project Description: (project for which funds were originally applied for) In 2010 we applied for funding for hall maintenance and to update our heating and water system. We have completed this project and have \$2,000 remaining.		
Amount Granted: \$15,000	Amount to Reallocate: \$2,000	
PROJECT TO RECEIVE	REALLOCATED FUNDS	
TOTAL Cost of New Project: \$2,500 Proposed New Project/Operational Expense: (reason for request and proposed changes to original project, cost of new project) In 2009 we applied for funding to paint our hall, replace the flooring and purchase new tables and chairs. With the funds received in 2009 we were able to replace the flooring and purchase tables and chairs, however, we did not have enough funds to do the painting. We would like to use the remaining funds from 2010 to paint the hall. The quote that we received from Home Hardware was for \$2,500 for all paint and supplies. The remaining \$500 will come from our general revenue.		

Questions? Contact the Community Services Department at 250 784-3200 Please send your completed form and any additional information to: Peace River Regional District Box 810, 1981 Alaska Avenue, Dawson Creek, BC V1G 4H8 fax 250 784-3201 email prrd.dc@prrd.bc.ca



PEACE RIVER REGIONAL DISTRICT

Recreation and Cultural Grants-in-Aid

Schedule "D" – Funding Amendment

APPLICANT INFORMATION			
Name of Organization:		Date:	
Contact:		Phone:	
Mailing Addres	s:		
Email:			Fax:
	PROJECT TO F	ROVIDE FUNDS	
Year Funds Gra	nted:	Have you completed this project	t?
Current Project	Description: (project for which funds were origi	nally applied for)	
Amount Grante	ed:	Amount to Reallocate:	
		REALLOCATED FUNDS	
TOTAL Cost of	New Project:		
Proposed New	Project/Operational Expense: (reason for reque	st and description of project, proje	ct budget)
Funds	Current Project Name:	Amount	Available =
Remaining: (showing last	Proiect Name:	Amount	Available =
3 years)	Project Name:	Amount	Available =
Total Unused Funds =			
Notes:			



The Electoral Area Directors may authorize grant allocation up to \$375 for youth travel associated with team or individual travel to sporting competitions.

1. Applicant Eligibility

- a. Youth sports team(s) or individual player(s) must have qualified to compete at a provincial, national, or international competition and will be representing the PRRD during the competition.
- b. The team (minimum of one (1) player) or individual player must reside in one of the four Electoral Areas of the PRRD.
- c. Funds may be applied for by both school teams and community club organizations.
- d. Community club teams must operate under a not-for-profit society to be eligible for funding.

2. Application Process

- Requests may be made year round and must be received in writing to the Rural Budgets Administration Committee, prior to attending the competition.
- b. Funding may be requested to assist with the following:
 - registration/entry fees;
 - transportation expenses fuel, airfare, bus, ferry transport, or other means of transportation; and/or,
 - accommodation expenses.
- c. All requests must include the following information:
 - description of the event and anticipated costs;
 - number of players and coaches that will attend; and,
 - names and 911 addresses of the players and coaches who reside in an Electoral Area (for verification of residency).

3. Approval Process

- a. Grant funding will be calculated on the basis of \$75/Electoral Area player to a maximum grant of \$375.
- b. Once an application is reviewed by the Rural Budgets Administration Committee, the applicant will be notified in writing regarding the results of their request.
- c. All funds will be made payable to the organization or school only.
- d. Requests received after the competition has taken place will not be considered for funding.

4. Reporting

Within thirty (30) days of the competition, grant recipients are required to:

- report back on the results of their competition;
- provide a photo for use by the Regional District; and



• describe how the funds were spent.



Schedule F – North Peace Gradfest Society

Rural Recreational & Cultural Grants-in-Aid

The Electoral Area B and C Directors may authorize grant allocation for the North Peace Regional Grad Fest Society (NPRGFS) to host safe graduation-related events.

1) Release of Funds

- a) The NPRGFS may make a written request for grant funding to the General Manager of Community Services after May 31st of each year.
- b) As part of the application, the NPRGFS must provide current contact information, including mailing address, prior to the release of funds.

2) Recognition & Reporting

- a) The Society must recognize the Regional District for their contribution through display of the Regional District's logo and a note of thanks in any promotional materials.
- b) Within 30 days of the event(s), the Society must:
 - a. provide a report of the event;
 - b. provide a photo for use by the Regional District; and
 - c. describe how the funds were spent.



PEACE RIVER REGIONAL DISTRICT Recreation and Cultural Grants-in-Aid Schedule "G" – 4-H North Peace District Council

The Electoral Area B Director may authorize grant allocation for the North peace 4-H District Council to host 4-H-related activities.

1) Release of Funds

- a) The Council may make a written request for grant funding to the General Manager of Community Services after May 31st of each year.
- b) The Council must provide the PRRD with their current contact information and mailing address prior to any release of funds.

2) Reporting

a) The Council must provide a letter describing how the funds were spent within ninety (90) days of receiving the funding.



PEACE RIVER REGIONAL DISTRICT Recreation and Cultural Grants-in-Aid Schedule "H" – Electoral Area B Bursary

In accordance with Section 6(d) of the Rural Recreational & Cultural Grants-in-Aid Policy, at the Directors' discretion, grant allocations for each area may be budgeted and provided for post-secondary scholarships and bursaries. The guidelines for the Electoral Area B bursary are as follows.

1) Bursary Amount

There is one bursary of \$1,000 annually. The bursary will be awarded to a graduating student residing in Electoral Area 'B' of the Peace River Regional District.

2) Bursary Application

- a) All applicants must complete the Peace River Regional District Bursary Application in full and should include a cover letter explaining the applicant's qualifications and ambitions.
- b) Completed applications are to be submitted directly to the school's Academic Advisor.

3) Residency Requirement

- a) Applicants must have resided in Electoral Area 'B' a minimum of 12 consecutive months prior to bursary application to be eligible.
- b) Applicants must be currently enrolled as a grade 12 student with School District No. 60 Peace River North.

4) Registration

Applicants must show proof of acceptance/or application to a post-secondary educational institute to be eligible to apply for the bursary.

5) Adjudication Process

- a) Bursary applications will be adjudicated by a selection committee appointed by School District No. 60.
- b) Bursary applications will be adjudicated on the basis of residency, academic standing, community involvement, financial need and acceptance at a post-secondary institution.

6) Notification of Award Recipients

Prior to June 30th of each year, North Peace Secondary School must advise the Peace River Regional District of the award recipient's name, address, Social Insurance Number and telephone number.

7) Bursary Award

- a) The Bursary will be awarded at either the annual North Peace Secondary or Prespatou Secondary School Graduation Ceremonies.
- b) Recipients may claim their scholarship in writing from the Peace River Regional District at:

Box 810

Dawson Creek, BC V1G 4H8

Email: prrd.dc@prrd.bc.ca

- c) The written request must include the following information:
 - Full Name, mailing address and Social Insurance Number (to issue T4A Statement)
 - Confirmation of registration at a post-secondary institute;

• Proof of payment for eligible expenses (tuition, text books and/or course materials)

- d) Once registration and eligible expenses are confirmed by the Regional District, a cheque will be mailed to the student for the amount of the scholarship.
- e) By the end of February, the Peace River Regional District will mail scholarship recipients a T4A Statement (in accordance of the Income Tax Act) required for filing an income tax return.
- f) Scholarship winners may apply to defer or carry over their awards for a period of up to one year in writing to the Chief Financial Officer.



PEACE RIVER REGIONAL DISTRICT Recreation and Cultural Grants-in-Aid Schedule "H" – Electoral Area B Bursary

Electoral Area B - Bursary Application

Name:	Social Insurance Number:	
Street Address:	Phone:	
Mailing Address (if different than above):		
What career do you intend to pursue?		
Why?		
What post-secondary school(s) do you hope to atte	end? Do you plan to attend full-time or part-time studies?	
How will this bursary assist you?		
Please describe your community involvement:		
Signature:	Date:	
* This application must include a proof of acceptai institutions and a copy of your last semester or ter	nce or application to one or more post-secondary rm grades.	
* A Social Insurance Number and permanent mail Statement.	ing address are required for the issuance of the T4A	



In accordance with Section 6(d) of the Rural Recreational & Cultural Grants-in-Aid Policy, at the Directors' discretion, grant allocations for each area may be budgeted and provided for post-secondary scholarships and bursaries. The guidelines for the Electoral Area C Scholarship are as follows:

1) Scholarship Amount

There is one scholarship of \$1,000 annually. The scholarship will be awarded to a graduating student residing in Electoral Area 'C' of the Peace River Regional District.

2) Scholarship Application

- a) All applicants must complete the Peace River Regional District Scholarship Application in full and should include a cover letter explaining the applicant's qualifications and ambitions.
- b) Completed applications are to be submitted directly to the school's Academic Advisor.

3) Residency Requirement

- a) Applicants must have resided in Electoral Area 'C' a minimum of 12 consecutive months prior to scholarship application to be eligible.
- b) Applicants must be currently enrolled as a grade 12 student with School District No. 60 Peace River North.

4) Registration

Applicants must show proof of acceptance/or application to a post-secondary educational institute to be eligible to apply for the scholarship.

5) Adjudication Process

- a) Scholarship applications will be adjudicated by a selection committee appointed by School District No. 60.
- b) Scholarship applications will be adjudicated on the basis of residency, academic standing, community involvement and acceptance at a post-secondary institution.

6) Notification of Award Recipients

Prior to June 30th of each year, North Peace Secondary School must advise the Peace River Regional District of the award recipient's name, address, Social Insurance Number and telephone number.

7) Scholarship Award

- a) The Scholarship will be awarded at the annual North Peace Secondary School graduation ceremonies.
- b) Recipients may claim their scholarship in writing from the Peace River Regional District at:

Box 810

Dawson Creek, BC V1G 4H8

Email: prrd.dc@prrd.bc.ca

- c) The written request must include the following information:
 - Full Name, mailing address and Social Insurance Number (to issue T4A Statement)
 - Confirmation of registration at a post-secondary institute;
 - Proof of payment for eligible expenses (tuition, text books and/or course materials)
- d) Once registration and eligible expenses are confirmed by the Regional District, a cheque will be mailed to the student for the amount of the scholarship.
- e) By the end of February, the Peace River Regional District will mail scholarship recipients a T4A Statement (in accordance of the Income Tax Act) required for filing an income tax return.
- f) Scholarship winners may apply to defer or carry over their awards for a period of up to one year in writing to the Chief Financial Officer.



PEACE RIVER REGIONAL DISTRICT Recreation and Cultural Grants-in-Aid Schedule "I" – Electoral Area C Scholarship

Electoral Area C – Scholarship Application

Name:	Social Insurance Number:
Street Address:	Phone:
Mailing Address (if different than above):	
What career do you intend to pursue?	
Why?	
What post-secondary school(s) do you hope to atte	nd? Do you plan to attend full-time or part-time studies?
How will this scholarship assist you?	
Please describe your community involvement:	
	<u> </u>
Signature	Date:
* This application must include a proof of acceptar institutions and a copy of your last semester or ter	nce or application to one or more post-secondary m grades.
* A Social Insurance Number and permanent maili Statement.	ing address are required for the issuance of the T4A



PEACE RIVER REGIONAL DISTRICT Recreation and Cultural Grants-in-Aid Schedule "J" – South Peace Sub-Regional Bursary & Scholarship

In accordance with Section 6(d) of the Rural Recreational & Cultural Grants-in-Aid Policy, at the Directors' discretion, grant allocations for each area may be budgeted and provided for post-secondary scholarships and bursaries. The guidelines for the Sub-Regional Bursary and Scholarship are as follows:

1) Award Amount

There are two scholastic awards, one a \$1,500 Trades Bursary and one a \$1,500 Academic Scholarship, presented annually to graduating students who reside in a defined portion of Electoral Areas 'D' and 'E', referred to as South Peace Sub-Regional.

2) Award Application

- a) All applicants must complete the Peace River Regional District Bursary Application in full and should include a cover letter explaining the applicant's qualifications and ambitions.
- b) Completed applications are to be submitted directly to the school's Academic Advisor.

3) Residency Requirement

- a) Applicants must have resided in the South Peace Sub-Regional Area a minimum of 12 consecutive months prior to submitting an application to be eligible.
- b) Applicants must be currently enrolled as a grade 12 student at Dawson Creek Secondary School.

4) Registration

Applicants must show proof of acceptance or application to a post-secondary educational institute to be eligible to apply for the bursary.

5) Adjudication Process

- a) All applications will be adjudicated by a selection committee appointed by School District No. 59.
- b) All applications will be adjudicated on the basis of residency, academic standing, community involvement, financial need and acceptance at a post-secondary institution.

6) Notification of Award Recipients

a) Prior to June 30th of each year, Dawson Creek Secondary School must advise the Peace River Regional District of the award recipient's name, address, Social Insurance Number and telephone number.

7) Bursary/Scholarship Award

- a) The bursary/scholarship will be awarded at the annual Dawson Creek Secondary School graduation ceremonies.
- b) Recipients may claim their award in writing from the Peace River Regional District at:

PO Box 810

Dawson Creek, BC V1G 4H8

Email: prrd.dc@prrd.bc.ca

- c) The written request must include the following information:
 - Full Name, mailing address and Social Insurance Number (to issue T4A Statement)
 - Confirmation of registration at a post-secondary institute;
 - Proof of payment for eligible expenses (tuition, text books and/or course materials)
- d) Once registration and eligible expenses are confirmed by the Regional District, a cheque will be mailed to the student for the amount of the award.
- e) By the end of February, the Peace River Regional District will mail scholarship recipients a T4A Statement (in accordance of the Income Tax Act) required for filing an income tax return.
- f) Recipients may apply to defer or carry over their award for a period of up to one year in writing to the Chief Financial Officer.



PEACE RIVER REGIONAL DISTRICT Recreation and Cultural Grants-in-Aid Schedule "J" – South Peace Sub-Regional Bursary & Scholarship

South Peace Sub-Regional – Bursary/Scholarship Application

Name:	Social Insurance Number:
Street Address:	Phone:
Mailing Address (if different than above):	
What career do you intend to pursue?	
Why?	
What post-secondary school(s) do you hope to attend?	Do you plan to attend full-time or part-time studies?
How will this award assist you?	
Please describe your community involvement:	
Signature:	Date:
* This application must include a proof of acceptance of institutions and a copy of your last semester or term gi	er application to one or more post-secondary rades.
* A Social Insurance Number and permanent mailing a	ddress are required for the issuance of the T4A

Statement.



PEACE RIVER REGIONAL DISTRICT Recreation and Cultural Grants-in-Aid Schedule "K" – Awards Recognition

In accordance with section 6(e) of the Rural Recreation and Cultural Grants-in-Aid policy, at the Directors' discretion, grant allocations for each electoral or funding area may be budgeted and provided for Awards Recognition.

1) Introduction

The intent of the Awards Recognition component is to celebrate rural volunteers who support and/or provide recreational, cultural or social activities and services throughout Electoral Areas B, C, D and E of the Peace River Regional District.

2) Frequency

Organizations will have the opportunity, once per calendar year, to submit nominations as part of the Awards Recognition component of Recreational and Cultural Grants-in-Aid.

3) Budget

An annual budget of \$1,000 will be provided from Electoral Areas B, C, and E and the South-Peace Sub-Regional funding areas as per adoption of the Financial Plan. The amount of this budget allocation, may be changed at the sole discretion of the Rural Budgets Administration Committee.

4) Awards Nomination Process

- a. Organizations will have the opportunity to nominate rural residents, facilities and organizations for achievement awards.
- b. Nominations for awards must be received by June 30th each year.
- c. The Electoral Area Directors will adjudicate applications and determine award recipients.
- d. Nominations must address the nomination criteria as per Section 5 (A), (B) or (C) and must provide a description of the nominee's background, experience and achievements and any further information to support the application.
- e. Nominations must include at least two letters of support.

5) Award Categories

A. Individual Volunteer Achievement:

- i. Awarded for outstanding contributions to rural recreation and/or culture within the Peace River Regional District;
- ii. Nominees must have a significant history of volunteering for rural programs or organizations.

B. Rural Facility Excellence:

- i. Awarded for excellence in facility concept, design, development, maintenance or operation. The facility shall have demonstrated outstanding and/or innovative aspects which have made or could make significant impact in the recreation or cultural field.
- ii. The facility must be accessible to all patron groups, unique to the northern lifestyle, multipurpose and located in the rural area.

C. Rural organization:

i. Awarded for outstanding achievement to rural recreation and/or culture. The achievement shall involve a significant contribution to the enhancement of some aspects of local recreation, culture or to a specific interest area.



- ii. The organization must demonstrate a significant contribution to a broad range of recreation or cultural services in a community or region.
- iii. The organization must demonstrate uniqueness and innovation in planning, problem solving and recruitment of members.

Updated April 12, 2019





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This map is to be used for general reference only. It must not be used for any purposes where legal implications may apply. Please notify the Regional District on omissions and errors. The Peace Revected by RestRegional RestRe and up-to-date as possible May 28, 2020 SP_SubRegion_PRRD_11x17_mxd_11x17 _______RD/20/05/24 (2

page 2 of 2



PEACE RIVER REGIONAL DISTRICT Recreation and Cultural Grants-in-Aid Schedule "M" – Electoral Area E West Bursary

In accordance with Section 6(d) of the Rural Recreational & Cultural Grants-in-Aid Policy, at the Directors' discretion, grant allocations for each area may be budgeted and provided for post-secondary scholarships and bursaries. The guidelines for the Electoral Area E West bursary are as follows.

1) Bursary Amount

There are two bursaries of \$ 500.00 annually. The bursaries will be awarded to two graduating students residing in Electoral Area E West (west of the Pine River in Area E) of the Peace River Regional District.

2) Bursary Application

- a) All applicants must complete the Peace River Regional District Bursary Application in full and should include a cover letter explaining the applicant's qualifications and ambitions
- b) Completed applications are to be submitted directly to the school's Academic Advisor.

3) Residency Requirement

- a) Applicants must have resided in Electoral Area E West a minimum of 12 consecutive months prior to bursary application to be eligible.
- b) Applicants must be currently enrolled as a grade 12 student with School District No. 59 Peace River South.

4) Registration

Applicants must show proof of acceptance/or application to a post-secondary educational institute to be eligible to apply for the bursary.

5) Adjudication Process

- a) Bursary applications will be adjudicated by a selection committee appointed by School District No. 59.
- b) Bursary applications will be adjudicated on the basis of residency, academic standing, community involvement, financial need and acceptance at a post-secondary institution.

6) Notification of Award Recipients

Prior to June 30th of each year, Chetwynd Secondary School must advise the Peace River Regional District of the award recipient's name, address, Social Insurance Number and telephone number.

7) Bursary Award

- a) The Bursary will be awarded at the annual Chetwynd Secondary School Graduation Ceremonies.
- b) Recipients may claim their bursary in writing from the Peace River Regional District at:

PO Box 810

Dawson Creek, BC V1G 4H8

Email: prrd.dc@prrd.bc.ca

- c) The written request must include the following information:
 - Full Name, mailing address and Social Insurance Number (to issue T4A Statement)
 - Confirmation of registration at a post-secondary institute;
 - Proof of payment for eligible expenses (tuition, text books and/or course materials)
- d) Once registration and eligible expenses are confirmed by the Regional District, a cheque will be mailed to the student for the amount of the bursary.
- e) Bursary winners may apply to defer or carry over their award for a period up to one year in writing to the Chief Financial Officer.



PEACE RIVER REGIONAL DISTRICT Recreation and Cultural Grants-in-Aid Schedule "M" – Electoral Area E West Bursary

Electoral Area E West - Bursary Application

Name:	Social Insurance Number:	
Street Address:	Phone:	
Mailing Address (if different than above):		
What career do you intend to pursue and why?		
What post-secondary school(s) do you hope to attend?		
Do you plan to attend full-time or part-time studies?		
How will this bursary assist you?		
Please describe your community involvement.		
Please describe what volunteer work you do and why?		
Signature	Date:	
* This application must include a proof of acceptance or applic	ation to one or more post-secondary institutions and a	
copy of your last semester or term grades.		
* A Social Insurance Number and permanent mailing address are required for the issuance of the T4A Statement.		



REPORT

t: Tate Creek Peace River Agreement Commitment	
Trish Morgan, General Manager of Community Services	Date: December 17, 2020
Rural Budgets Administration Committee	Report Number: CS-RBAC-004
	Rural Budgets Administration Committee Trish Morgan, General Manager of Community Services Tate Creek Peace River Agreement Commitment

RECOMMENDATION:

That the Rural Budgets Administration Committee approve that the remaining funding commitment of \$13,828.45 from Area D Peace River Agreement Funds – Spending Item # 8 Year Round Recreation Facilities, from the original commitment in 2018 of \$25,000, for a facility condition assessment and preventative maintenance plan be returned to Area D PRA Reserve, as the project is now complete.

BACKGROUND/RATIONALE:

In 2018 the Peace River Regional District contracted a FCAPX Ltd. to conduct facility condition assessments and develop preventative maintenance plans for the Tate Creek Community Centre, Kelly Lake Community Centre and the Osborn Community Hall. The project was completed in 2019 and the society that operates the Tate Creek Community Centre have a copy of the plan.

ALTERNATIVE OPTIONS:

1. That the Rural Budgets Administration Committee provide further direction.

STRATEGIC PLAN RELEVANCE:

Not Applicable to Strategic Plan.

FINANCIAL CONSIDERATION(S):

In 2018 \$25,000 from Area D Peace River Agreement Funds – Spending Item #8 Year Round Recreational Facilities for the condition assessment and preventative maintenance plan. Upon completion of the project in 2019 \$13,828.45 remains committed. If the Rural Budgets Administration Committee provides approval to end the commitment then the funds could be allocated to other Area D projects.

COMMUNICATIONS CONSIDERATION(S):

None.

OTHER CONSIDERATION(S):

None.

Attachments:

1) November 14, 2019: Facility Condition Assessment Report – Tate Creek Community Centre

Dept. Head:

CAO: Shawn Dahlen



PEACE RIVER REGIONAL DISTRICT



Submission to

Peace River Regional District

Facility Condition Assessment Report Tate Creek Community Centre

Version: Final

November 14, 2019

Prepared by FCAPX Ltd. Project No. 19063 www.fcapx.com



Executive Summary

FCAPX Ltd. (FCAPX) was retained by the Peace River Regional District (PRRD) to conduct a Facility Condition Assessment (FCA) of the Tate Creek Community Centre in Tomslake, British Columbia. The objective of the FCA was to identify, based on current observed conditions, deficiencies and potential lifecycle replacements in the next 20 years.

In addition to the FCA scope of work the following deliverables are included in this report:

- Visual-Only Energy Efficiency Review; and,
- Preventative Maintenance Plan.

Facility Summary

The Tate Creek Community Centre is located at 15439 Old Edmonton Highway in Tomslake, British Columbia. According to information provided the building was constructed in approximately 1975, with additions in 1981 and 2006. Interior renovations are understood to have been completed in 2013. It is a single-storey building with an estimated gross floor area of approximately 1,255 square meters.

System Summaries

Structural and Architectural Summary

The building was built in three stages. Stage 1 - 1975 - The original classroom structure is concrete walls on concrete piles with a crawlspace. The exterior cladding is metal and wood siding. The low slope roof covering is modified bitumen. Interior finishes include vinyl sheet and ceramic tile flooring.

Stage 2 - 1981 - Includes an extension to the original gym. This gym structure is concrete block walls on concrete piles with a crawlspace. The low slope roof covering is modified bitumen. Interior finishes include hardwood flooring.

Stage 3 - 2006 - This addition includes the kitchen / hall. The kitchen / hall is wood frame construction on concrete piles with a crawlspace. The exterior cladding is cementitious panels. The roof covering is standing seam metal. Interior finishes include vinyl sheet flooring. No fire escape plans were observed.

Plumbing and Mechanical Systems Summary

Natural gas is supplied to the building via the meter located on an exterior wall. Heat is provided by a series of gas-fired forced air furnaces. Water is supplied from cisterns located on site. Sanitary waste is discharged to a lagoon located on site. Hot water is provided by two gas-fired tank-type water heaters. At the time of assessment it was observed that the water supply system was turned off for the northern portion of the building.

Electrical Systems Summary

A 110/240 volt, single phase electrical system is delivered to the building via an overhead service drop. The main shut off is rated at 400 amps. The fire alarm system was not operational at the time of assessment.

Site Feature Systems Executive Summary

Site features and structures include a gravel roadway, a gravel parking area, a sports field, exterior ice rink, playground equipment, storage building and an ice rink maintenance garage.

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APPENDIX

- **Appendix 1 Facility Condition Assessment Findings**
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1 INTRODUCTION

FCAPX Ltd. (FCAPX) was contracted by the Peace River Regional District to conduct a Facility Condition Assessment (FCA) of the Tate Creek Community Centre (herein referred to as the "Facility, "Site" or "Property"). We understand the purpose of this report is to assist with the long-term capital planning for the facility. This report summarizes the findings of the FCA for the property.

In addition to the FCA scope of work the following deliverables are included in this report:

- Visual-Only Energy Efficiency Review; and,
- Preventative Maintenance Plan.

1.1 FACILITY

Information on the evaluated facility is provided in Table 1 below:

Table 1		
Building Name	Tate Creek Community Centre	
Address	15439 Old Edmonton Hwy, Tomslake, BC	
Estimated Building Floor Area (sq.m.)	1,255	
Number of Storeys	1 (with crawlspace)	
Date of Construction	1975	

1.2 SITE REVIEW

A site visit was performed on July 9, 2019 by the following FCAPX personnel:

• Alexandre Bouchard, P.Eng.

1.3 OWNER SUPPLIED MATERIAL

In this report, reference is made to the "reported" condition of particular systems and/or components. The reported condition pertains to information provided by the building's operations and maintenance personnel and/or tenants. In some cases, this information was gathered through either an onsite interview process or a formal off-site interview process.

Otherwise, facility condition related documentation was limited to:

• Playground Safety Audit, prepared by Suncorp Valuations, dated Sept 18, 2018.



2 SCOPE OF WORK

The FCA carried out by FCAPX is generally based on the ASTM Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process (E2018-15) and consisted of the following:

- Background Information Request and Review;
- Interview(s) with Knowledgeable Site Staff;
- Walk-through Site Assessment Visit;
- Summary of Opinions of Probable Costs to remedy observed physical deficiencies;
- Summary of Opinions of Probable Costs to replace components which will exceed their expected useful life (EUL) over the evaluation period; and
- Preparation of an FCA Report, including salient findings and supporting photographs.

The ASTM defines a physical deficiency as a conspicuous defect or significant deferred maintenance of a site's material systems, components, or equipment as observed during the site assessor's walk-through site visit. Included within this definition are material systems, components, or equipment that are approaching, have reached, or have exceeded their typical expected useful life (EUL) or whose remaining useful life (RUL) should not be relied upon in view of actual or effective age, abuse, excessive wear and tear, exposure to the elements, lack of proper or routine maintenance, etc. This definition specifically excludes deficiencies that may be remedied with routine maintenance, miscellaneous minor repairs, normal operating maintenance, etc., and excludes conditions that generally do not constitute a material physical deficiency of the site.

The review of the Site was based on a visual walk-through review of the visible and accessible components of the property, building and related structures. The roof surface, interior and exterior wall finishes, and floor and ceiling finishes of the on-site building and related structures were visually assessed to determine their condition and to identify physical deficiencies, where observed. The assessment did not include an intrusive investigation of wall assemblies, ceiling cavities, or any other enclosures/assemblies. No physical tests were conducted, and no samples of building materials were collected to substantiate observations made, or for any other reason.

The review of the mechanical systems, electrical systems, and fire & life safety systems at the property included discussions with the site representative and review of pertinent maintenance records that were made available. A visual walk-through assessment of the mechanical systems, electrical systems, and fire & life safety systems was conducted to determine the type of systems present, age, and aesthetic condition, with considerations of the reported performance. No physical tests were conducted on these systems.



A detailed evaluation of the property development's compliance with applicable national and/or provincial Building Codes and/or Fire Codes is not part of the scope of this assessment. It is assumed that the existing buildings and related structures were reviewed and approved by local authorities at the time of construction. However, applicable codes may be referenced by FCAPX, at their discretion, to identify deficiencies and appropriate recommendations.

Replacement and repair costs are based on unit rates published by Means Publishing and/or Marshall & Swift Valuation Service, combined with local experience gained by FCAPX. The quantities associated with each item have been estimated during a walkthrough site assessment and do not represent exact measurements or quantities. At the time of replacement, specific "scope of work" statements and quotations should be determined, and the budgetary items revised to reflect actual expenditures. Not included are items that would be addressed as routine maintenance. However, the capital costs may include items, which are currently managed under the Operations and Maintenance budget for the site.

Opinions of probable costs for deficiencies that are individually less than the established threshold amount are generally not included in the FCA cost tables. The exception are deficiency costs relating to life, safety or accessibility, these may be included regardless of this cost threshold.

2.1 DEVIATIONS FROM THE GUIDE

The major deviations from ASTM E2018-15 for this project that was not included are as follows:

- A review of municipal/public records for zoning;
- A comprehensive building and/or fire & life safety code/regulatory review for compliance. It is assumed that at the time of building construction/commission and/or subsequent renovation(s), a duty of care was undertaken to ensure the building and related structures were constructed in accordance with the current building and fire code, as well as reviewed and approved by the local authorities having jurisdiction;
- An assessment of the property's compliance with barrier-free accessibility requirements; and
- A review of municipal/regional records to determine if the property resides in a designated flood plain.

Furthermore, the FCA did not include a:

- Verification of the number of parking spaces;
- Verification of gross and net usable areas of the site building(s); and
- Review of as-built construction drawings for the building and site.



2.2 LIMITING CONDITIONS

This report has been prepared for the exclusive and sole use of the Peace River Regional District (PRRD). The report may not be relied upon by any other person or entity without the express written consent of FCAPX and the Peace River Regional District.

Any reliance on this report by a third party, any decisions that a third party makes based on this report, or any use at all of this report by a third party is the responsibility of such third parties. FCAPX accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made, or actions taken, based on this report.

The assessment of the building/site components was performed using methods and procedures that are consistent with standard commercial and customary practice as outlined in ASTM Standard E 2018-15 for facility condition assessments. As per this ASTM Standard, the assessment of the building/site components was based on a visual walk-through site visit, which captured the overall condition of the site at that specific point in time only.

No legal surveys, soil tests, environmental assessments, geotechnical assessments, detailed barrier-free compliance assessments, seismic assessments, detailed engineering calculations, or quantity surveying compilations have been made. No responsibility, therefore, is assumed concerning these matters. FCAPX did not design or construct the building(s) or related structures and therefore will not be held responsible for the impact of any design or construction defects, whether or not described in this report. No guarantee or warranty, expressed or implied, with respect to the property, building components, building systems, property systems, or any other physical aspect of the property is made.

The recommendations and our opinion of probable costs associated with these recommendations, as presented in this report, are based on walk-through non-invasive observations of the parts of the building which were readily accessible during our visual review. Conditions may exist that are not as per the general condition of the system being observed and reported in this report. Opinions of probable costs presented in this report are also based on information received during interviews with operations and maintenance staff. In certain instances, FCAPX has been required to assume that the information provided is accurate and cannot be held responsible for incorrect information received during the interview process. Should additional information become available with respect to the condition of the building and/or site elements, FCAPX requests that this information be brought to our attention so that we may reassess the conclusions presented herein.

The opinions of probable costs are intended for order of magnitude budgeting purposes only. The scope of work and the actual costs of the work recommended can only be determined after a detailed examination of the element/system in question, understanding of the site restrictions, understanding of the effects on the ongoing operations of the site/building, definition of the construction schedule, and preparation of tender



documents. We expressly waive any responsibilities for the effects of any action taken as a result of these endeavors unless we are specifically advised of prior to, and participate in the action, at which time, our responsibility will be negotiated.

Our opinions and recommendations presented in our reports will be rendered in accordance with generally accepted professional standards and are not to be construed as a warranty or guarantee regarding existing or future physical conditions at the Site or regarding compliance of Site systems/components and procedures/operations with the various regulating codes, standards, regulations, ordinances, etc.

3 DEFINITIONS

The following are definitions to aid in the understanding of the assessment.

3.1 EVALUATION PERIOD

For the purpose of this report, the opinions of probable cost to repair major defects in materials or systems that may significantly affect the value of the property or continued operation of the facilities, and to replace base building equipment/systems that have reached, or may reach their expected useful life, will be a twenty (20) year evaluation period.

3.2 OPINIONS OF PROBABLE COSTS

Opinions of probable costs for repair and/or replacement of components and/or additional investigation of the conditions identified in this report are based on the noted method of evaluation. These opinions are not construction costs and are for general budgeting purposes only since they are based on historical costing information and our experience with similar systems in other buildings. A detailed or exhaustive examination of quantities/costs of equipment, materials, or labour required for the remedial work has not been performed. Unless otherwise stated, engineering costs for remedial work have not been included in this report.

Only planned actions with a total cost over \$1,000 have been included in this report. Actions below this cost threshold are assumed to be handled under Operation and Maintenance budgets. Actions relating to life safety may be included in the report, regardless of cost.

3.3 ASSET LIFE EXPECTANCY

The facility systems observed during the assessment were broken down by their major assets and assigned an expected useful life (EUL). This value was used to determine the remaining useful life (RUL) of the asset. The values for EUL are based on information provided in manufacturer's literature, industry standards, our observations of the assets, and our experience with similar materials and systems in similar locales. Based on the asset's overall reported and/or observed physical condition an "Equivalent Age" was



determined that represents the point within the asset's lifecycle based on the EUL. This was then used to determine the RUL.

The EUL of assets is a theoretical number, which is an estimate, that is a function of quality of materials used, manufacturing and installation, as well as frequency and intensity of service, the degree of maintenance afforded to the asset, and local weather conditions.

The realization of an asset's EUL does not necessarily constitutes its replacement. A detailed condition assessment or investigation is recommended as a prudent approach to confirm the component RUL and the need for either a repair (maintenance) or a refurbishment. Risk, including safety or the cost of damage to the facility and its use, was considered in estimating the RUL and the schedule for major repairs or replacements.

3.4 RECOMMENDATION TYPE

Recommendation types in this report indicate the action that is to take place based on the review of the component. The recommendation type categories are shown below.

- **Study:** Includes recommendations for further investigation into the condition or options for determining the appropriate repair/replacement action.
- **Major Repair:** Any component or system in which future major repair is anticipated but not replacement of the entire component.
- **Condition–Based Replacement:** Any component or system in which requires replacement in the near term (within the next 5 years) due to its condition.
- Lifecycle Replacement: Any component or system in which future replacement (5 years or more) is anticipated.

3.5 CONDITION RATINGS AND SITE OBSERVATIONS

ASTM defines "physical deficiencies" as "the presence of conspicuous defects or material deferred maintenance of a subject property's material systems, components, or equipment as observed during the field observer's walk-through survey. Included within this definition are material systems, assets, or equipment that is approaching, has reached, or has exceeded its typical expected useful life (EUL) or whose remaining useful life (RUL) should not be relied upon in view of actual or effective age, abuse, excessive wear and tear, lack of proper maintenance, etc. This specifically excludes deficiencies that may be remediated with routine maintenance or miscellaneous minor repairs and excludes conditions that generally do not constitute a material physical deficiency of the site.

The physical condition of major facility / site systems and assets is dependent on whether a physical deficiency is associated with that asset / system. The physical condition of assets / systems noted in this report have been rated as either "Critical", "Poor", "Fair", "Good", or "Excellent". Definitions for these ratings are provided below.



1- GOOD: No immediate concerns are evident. The components appear to meet all present requirements and to be adequately maintained. Replacement anticipated in 6 years or beyond.

2- FAIR: The medium level condition rating. Generally, components meet present requirements and have been adequately maintained. Some minor deficiencies may be noted. A repair or lifecycle replacement is anticipated within the evaluation period between 3-5 years.

3- POOR: The component is not able to meet current requirements and has significant deficiencies. Generally, components may have failed, may be at or near the end of their service life, or may exhibit evidence of deterioration or insufficient maintenance. Recommendations may include urgent repair, replacement or upgrades within 1-2 years.

4- CRITICAL: Generally, components may have failed resulting in a high risk of injury, health and safety concerns, or critical system failure. Recommendations for urgent repair, replacement or upgrades are anticipated within the year (<12 months).

4 FACILITY CONDITION ASSESSMENT

Herein we present the findings of our assessment, based on the Scope of Work outlined in this report. The Facility Condition Assessment & Opinion of Probable Cost is included in Appendix 1. Appendix 2 contains the Capital Planning Table. Appendix 5 provides a Photo Log with some general photos and deficiency photos.

4.1 FACILITY CONDITION INDEX

The subject building 5-year Facility Condition Index (FCI), calculated based on the 5-Year Renewal Need is 14.20%. Based on the table below, the FCI suggests that the overall building condition is Fair.

A 5-Year FCI is defined as follows:

5-Year FCI = <u>Sum of 5-Year Renewal Need for the Building</u> x 100 Current Replacement Value of the Building

> 5-Year FCI = <u>\$1,154,352</u> x 100 \$8,105,000

5-Year FCI = 14.20%

The building Current Replacement Value (CRV) was calculated at a rate of \$6,458/sq.m (\$600/sq.ft.) as requested by Peace River Regional District. For the subject building the CRV (or Cost of Reproduction New (CRN)) is \$8,105,000.

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The 5-Year Renewal Need is the sum of renewal costs recommended in the next 5 years to keep the building functional, and does not consider soft cost factor, criticality, available budget or capital planning decisions made by the Peace River Regional District. The total 5-Year Renewal Need cost, excluding the renewal costs for the site features (roadways, parking lot, walkways, etc.) for the subject building, as outlined in the OPC table (included in Appendix B), is \$1,154,352.

The overall condition is based on the table below. It should be noted that there is no industry standard for the overall building condition based on a 5-Year FCI. The condition categories are recommendations to be considered by the Peace River Regional District.

Table 2		
5-year Calculated FCI	Condition Category	
0% to 10%	Good	
11% to 20%	Fair	
21% to 50%	Poor	
>50%	Prohibitive to Repair	

5 VISUAL ENERGY EFFICIENCY REVIEW

The findings of the Visual Energy Efficiency Review for this facility are presented in Appendix 3.

In general, the Visual Energy Efficiency Review is considered a preliminary visual-based screening audit based on site walk-through and information provided by PRRD and the site operating personnel. As such, the findings should be considered preliminary and budgetary in nature and should be reviewed in greater detail to consider the feasibility, anticipated energy savings, and anticipated payback for each of the energy efficiency opportunity identified.

6 PREVENTATIVE MAINTENANCE PLAN

The compiled Preventative Maintenance Plan (PMP) for this facility are presented in Appendix 4.

In general the PMP provides a list of industry standard maintenance tasks for pertinent equipment and systems observed at the time of the facility condition assessment. In addition, the task list also includes recommendations on the amount of time that should be budgeted for each task, and the required skill sets and/or recommendations for the staff who should conduct the tasks.


Collaborating to Provide Asset Data You Can Trust

7 CLOSURE

This report has been prepared for the use of the Peace River Regional District as part of the due diligence process regarding the noted property, and no representations are made by FCAPX to any party other than the Peace River Regional District.



APPENDIX 1

Facility Condition Assessment Findings



A Substructure A10 Foundations

Item	Description
Uniformat Code	A1020 - Special Foundations
Installation Year	1975
Condition	1 - Good
Expected Useful Life	75 Years
Remaining Useful Life	31 Years
Quantity / Unit of Measure	35 / Each
Unit Cost	\$10,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$350,000.00

Description The foundation includes concrete piles.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - A1020

Item	Description
Uniformat Code	A1030 - Slab on Grade
Installation Year	2006
Condition	1 - Good
Expected Useful Life	75 Years
Remaining Useful Life	62 Years
Quantity / Unit of Measure	332 / SM Footprint
Unit Cost	\$71.33
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$23,681.56

Description

The crawlspace under the kitchen / hall addition has a concrete slab on grade.

Condition Narrative

The crawlspace under the kitchen addition has a concrete slab on grade. Excess moisture as observed in the crawlspace. Source and significance of moisture should be investigated as repaired, if needed.

Photos



Tate Creek Community Centre - A1030



Tate Creek Community Centre - A1030

Recommendation #1 - Inspect excess moisture in crawlspace		
Туре	Engineering Study	
Year	2020	
Cost	\$10,000.00	

Recommendation #2 - Repair Allowance - Kitchen Addition Crawlspace	
Туре	Major Repair
Year	2020
Cost	\$15,692.60

B ShellB10 Superstructure

Item	Description
Uniformat Code	B1010 - Floor Construction
Installation Year	2006
Condition	1 - Good
Expected Useful Life	75 Years
Remaining Useful Life	62 Years
Quantity / Unit of Measure	332 / SM Building
Unit Cost	\$249.38
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$82,794.16

Description

The floor construction for the kitchen / hall addition includes steel beams, engineered wood joists and wood sheathing.

Condition Narrative

No major deficiencies were observed or reported. Excess moisture and possible related material damage was observed from the crawlspace and should be considered in conjunction with the recommended investigation.

Photos



Tate Creek Community Centre - B1010



Tate Creek Community Centre - B1010



Tate Creek Community Centre - B1010

Item	Description
Uniformat Code	B1010 - Floor Construction
Installation Year	1975
Condition	1 - Good
Expected Useful Life	75 Years
Remaining Useful Life	31 Years
Quantity / Unit of Measure	522 / SM Building
Unit Cost	\$249.38
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$130,176.36

Description Floor construction for the original building is metal joists and a corrugated steel pan.

Condition Narrative



Tate Creek Community Centre - B1010

Item	Description
Uniformat Code	B1010 - Floor Construction
Installation Year	1981
Condition	1 - Good
Expected Useful Life	75 Years
Remaining Useful Life	37 Years
Quantity / Unit of Measure	401 / SM Building
Unit Cost	\$249.38
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$100,001.38

Description B1010 The floor construction for the gym is structural steel trusses and with wood joists.

Condition Narrative



PRRD - Tate Creek Community Centre - B1010



PRRD - Tate Creek Community Centre - B1010

Item	Description
Uniformat Code	B1020 - Roof Construction
Installation Year	2006
Condition	1 - Good
Expected Useful Life	75 Years
Remaining Useful Life	62 Years
Quantity / Unit of Measure	332 / SM Footprint
Unit Cost	\$208.07
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$69,079.24

Description The roof structure over the kitchen / hall addition is understood to be a wood-framed sloped roof.

Condition Narrative

No major deficiencies were observed or reported. It should be noted that the roof framing could not be directly reviewed due to concealment by interior finishes.

Item	Description
Uniformat Code	B1020 - Roof Construction
Installation Year	1975
Condition	1 - Good
Expected Useful Life	75 Years
Remaining Useful Life	31 Years
Quantity / Unit of Measure	522 / SM Footprint
Unit Cost	\$208.07
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$108,612.54

Description The roof structure for the original part of the building is metal trusses with a corrugated metal deck.

Condition Narrative



Tate Creek Community Centre - B1020

Item	Description
Uniformat Code	B1020 - Roof Construction
Installation Year	1981
Condition	1 - Good
Expected Useful Life	75 Years
Remaining Useful Life	37 Years
Quantity / Unit of Measure	401 / SM Footprint
Unit Cost	\$208.07
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$83,436.07

Description The roof construction for the gym is steel trusses with a corrugated metal deck.

Condition Narrative





PRRD - Tate Creek Community Centre - B1020



PRRD - Tate Creek Community Centre - B1020

Item	Description
Uniformat Code	B1030 - Structure
Installation Year	2006
Condition	1 - Good
Expected Useful Life	75 Years
Remaining Useful Life	62 Years
Quantity / Unit of Measure	332 / SM Building
Unit Cost	\$280.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$92,960.00

Description The wall structure for the kitchen / hall addition is understood to be wood frame.

Condition Narrative

Item	Description
Uniformat Code	B1030 - Structure
Installation Year	1975
Condition	1 - Good
Expected Useful Life	75 Years
Remaining Useful Life	31 Years
Quantity / Unit of Measure	522 / SM Building
Unit Cost	\$280.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$146,160.00

Description The wall structure for the original part of the building is assumed to be load-bearing masonry with steel columns.

Condition Narrative

No major deficiencies were observed or reported.



Tate Creek Community Centre - B1030

Item	Description
Uniformat Code	B1030 - Structure
Installation Year	1981
Condition	1 - Good
Expected Useful Life	75 Years
Remaining Useful Life	37 Years
Quantity / Unit of Measure	401 / SM Building
Unit Cost	\$280.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$112,280.00

Description The wall structure for the gym is concrete block.

Condition Narrative

No major deficiencies were observed or reported.

Photos



PRRD - Tate Creek Community Centre - B1030



PRRD - Tate Creek Community Centre - B1030

Item	Description
Uniformat Code	B201024 - Metal Siding
Installation Year	1975
Condition	1 - Good
Expected Useful Life	40 Years
Remaining Useful Life	6 Years
Quantity / Unit of Measure	300 / SM
Unit Cost	\$160.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$48,000.00

Description

Exterior cladding on the original part of the building includes metal siding.

Condition Narrative

Localized damage and unsealed joints were observed and should be addressed as part of maintenance activities.





Tate Creek Community Centre - B201024



PRRD - Tate Creek Community Centre - B201024



PRRD - Tate Creek Community Centre - B201024

Recommendation #1 - Metal Siding	
Туре	Life Cycle Replacement
Year	2025
Cost	\$48,000.00

Item	Description
Uniformat Code	B201026 - Wood Siding
Installation Year	1975
Condition	2 - Fair
Expected Useful Life	20 Years
Remaining Useful Life	3 Years
Quantity / Unit of Measure	141 / SM
Unit Cost	\$200.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$28,200.00

Description

Exterior cladding on the original part of the building includes wood siding.

Condition Narrative

Deterioration and general weathering was observed.





Tate Creek Community Centre - B201026



PRRD - Tate Creek Community Centre - B201026



Tate Creek Community Centre - B201026



PRRD - Tate Creek Community Centre - B201026

Recommendation #1 - Wood Siding	
Туре	Life Cycle Replacement
Year	2022
Cost	\$28,200.00

Item	Description
Uniformat Code	B201030 - Cement Fiberboard
Installation Year	2006
Condition	1 - Good
Expected Useful Life	30 Years
Remaining Useful Life	16 Years
Quantity / Unit of Measure	141 / SM
Unit Cost	\$170.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$23,970.00

Description Exterior cladding includes cementitous wood panels on the kitchen / hall addition.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - B201030

Recommendation #1 - Cement Fiberboard	
Туре	Life Cycle Replacement
Year	2035
Cost	\$23,970.00

Item	Description
Uniformat Code	B202001 - Windows
Installation Year	1981
Condition	2 - Fair
Expected Useful Life	30 Years
Remaining Useful Life	3 Years
Quantity / Unit of Measure	42 / SM
Unit Cost	\$700.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$29,400.00

Description Windows in the original part of the building are aluminum frame, single and double insulated.

Condition Narrative

Deteriorated seals, mechanisms and caulking were observed.



Tate Creek Community Centre - B202001



Tate Creek Community Centre - B202001



Tate Creek Community Centre - B202001

Recommendation #1 - Windows	
Туре	Life Cycle Replacement
Year	2022
Cost	\$29,400.00

Item	Description
Uniformat Code	B202001 - Windows
Installation Year	2006
Condition	1 - Good
Expected Useful Life	30 Years
Remaining Useful Life	16 Years
Quantity / Unit of Measure	20 / SM
Unit Cost	\$700.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$14,000.00

Description Windows in the kitchen / hall addition are aluminum frame double insulated.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - B202001

Recommendation #1 - Windows	
Туре	Life Cycle Replacement
Year	2035
Cost	\$14,000.00

Item	Description
Uniformat Code	B203002 - Solid Doors - Single
Installation Year	1975
Condition	2 - Fair
Expected Useful Life	25 Years
Remaining Useful Life	3 Years
Quantity / Unit of Measure	4 / Each
Unit Cost	\$3,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$12,000.00

Description

Exterior doors include solid, single, some with glazing in the upper half.

Condition Narrative

Door generally appeared weathered with faded finishes. One door had damaged glass and should be repaired/replaced.

Photos



Tate Creek Community Centre - B203002



Tate Creek Community Centre - B203002



Tate Creek Community Centre - B203002

Recommendation #1 - Repair Allowance - Damaged Door	
Туре	Lifecycle Repair
Year	2020
Cost	\$3,000.00

Recommendation #2 - Solid Doors - Single	
Туре	Life Cycle Replacement
Year	2022
Cost	\$12,000.00

Item	Description
Uniformat Code	B203003 - Solid Doors - Double
Installation Year	1975
Condition	2 - Fair
Expected Useful Life	25 Years
Remaining Useful Life	3 Years
Quantity / Unit of Measure	4 / Each
Unit Cost	\$5,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$20,000.00

Description

Main entrances generally include double-wide doors, some with glass insets.

Condition Narrative

Doors generally appeared weathered with faded finishes.

Photos



Tate Creek Community Centre - B203003

PRRD - Tate Creek Community Centre - B203003

Recommendation #1 - Solid Doors - Double	
Туре	Life Cycle Replacement
Year	2022
Cost	\$20,000.00

Item	Description
Uniformat Code	B203006 - Glazed Doors - Double
Installation Year	2006
Condition	1 - Good
Expected Useful Life	25 Years
Remaining Useful Life	12 Years
Quantity / Unit of Measure	1 / Each
Unit Cost	\$10,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$10,000.00

Description Double glazed doors are installed in the kitchen / hall addition.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - B203006

Recommendation #1 - Glazed Doors - Double	
Туре	Life Cycle Replacement
Year	2030
Cost	\$10,000.00

Item	Description
Uniformat Code	B203008 - Overhead Doors
Installation Year	2006
Condition	1 - Good
Expected Useful Life	25 Years
Remaining Useful Life	12 Years
Quantity / Unit of Measure	1 / Each
Unit Cost	\$10,000.00
Difficulty / Regional / Soft Cost Factors	0.50 / 1.00 / 1.00
Element Renewal Cost	\$5,000.00

Description A roll up door is installed at the concession counter.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - B203008

Recommendation #1 - Overhead Doors	
Туре	Life Cycle Replacement
Year	2031
Cost	\$10,000.00

B30 Roofing

Item	Description
Uniformat Code	B301005 - Gutters and Downspouts
Installation Year	2006
Condition	1 - Good
Expected Useful Life	30 Years
Remaining Useful Life	17 Years
Quantity / Unit of Measure	50 / LM
Unit Cost	\$10.00
Difficulty / Regional / Soft Cost Factors	3.00 / 1.00 / 1.00
Element Renewal Cost	\$1,500.00

Description

Gutters and downspouts are installed along the kitchen / hall part of the building.

Condition Narrative

No major deficiencies were observed or reported. Some mechanical damage was observed and should be repaired as part of maintenance.

Photos



Tate Creek Community Centre - B301005



Tate Creek Community Centre - B301005

Recommendation #1 - Gutters and Downspouts	
Туре	Life Cycle Replacement
Year	2036
Cost	\$1,500.00

Item	Description
Uniformat Code	B301022 - Conventional - Modified Bitumen
Installation Year	1981
Condition	3 - Poor
Expected Useful Life	22 Years
Remaining Useful Life	1 Year
Quantity / Unit of Measure	522 / SM
Unit Cost	\$270.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$140,940.00

Description The roof covering over the classroom area is modified bitumen.

Condition Narrative

Defects such as blistering and open seams were observed.

Photos



Tate Creek Community Centre - B301022



PRRD - Tate Creek Community Centre - B301022

Recommendation #1 - Conventional - Modified Bitumen	
Туре	Life Cycle Replacement
Year	2020
Cost	\$140,940.00

Item	Description
Uniformat Code	B301022 - Conventional - Modified Bitumen
Installation Year	2006
Condition	2 - Fair
Expected Useful Life	22 Years
Remaining Useful Life	3 Years
Quantity / Unit of Measure	401 / SM
Unit Cost	\$270.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$108,270.00

Description

The roof covering over the gym is modified bitumen. The western portion of the gymnasium appears to have had a membrane overlay.

Condition Narrative

Loss of granular material was observed. Ridging commonly observed. Ponding water observed in the northwest corner.

Photos



Tate Creek Community Centre - B301022



PRRD - Tate Creek Community Centre - B301022

Recommendation #1 - Conventional - Modified Bitumen	
Туре	Life Cycle Replacement
Year	2022
Cost	\$108,270.00

Item	Description
Uniformat Code	B301028 - Metal Roofing
Installation Year	2006
Condition	1 - Good
Expected Useful Life	35 Years
Remaining Useful Life	22 Years
Quantity / Unit of Measure	404 / SM
Unit Cost	\$280.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$113,120.00

Description The roof covering over the kitchen / hall is standing seam metal.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - B301028

Item	Description
Uniformat Code	B302022 - Hatches
Installation Year	1981
Condition	1 - Good
Expected Useful Life	40 Years
Remaining Useful Life	6 Years
Quantity / Unit of Measure	1 / Each
Unit Cost	\$5,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$5,000.00

Description A roof hatch is accessible from the north service room.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - B302022

Recommendation #1 - Hatches	
Туре	Life Cycle Replacement
Year	2025
Cost	\$5,000.00

C Interiors C10 Interior Construction

Item	Description
Uniformat Code	C101001 - Fixed Partitions
Installation Year	1975
Condition	1 - Good
Expected Useful Life	75 Years
Remaining Useful Life	31 Years
Quantity / Unit of Measure	1255 / SM Building
Unit Cost	\$95.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$119,225.00

Description

Fixed partitions are assumed to be concrete block and wood frame.

Condition Narrative

No major deficiencies were observed or reported.

Photos



PRRD - Tate Creek Community Centre - C101001



PRRD - Tate Creek Community Centre - C101001

Item	Description
Uniformat Code	C101002 - Demountable Partitions
Installation Year	1975
Condition	1 - Good
Expected Useful Life	30 Years
Remaining Useful Life	6 Years
Quantity / Unit of Measure	522 / SM Building
Unit Cost	\$95.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$49,590.00

Description Partitions include pre-finished demountable panel wall assemblies in the northern portion of the building.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - C101002



PRRD - Tate Creek Community Centre - C101002

Recommendation #1 - Demountable Partitions	
Туре	Life Cycle Replacement
Year	2025
Cost	\$49,590.00

Item	Description
Uniformat Code	C101003 - Retractable Partitions
Installation Year	1975
Condition	3 - Poor
Expected Useful Life	25 Years
Remaining Useful Life	1 Year
Quantity / Unit of Measure	1 / Each
Unit Cost	\$15,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$15,000.00

Description Partitions include folding retractable partitions in classrooms.

Condition Narrative

Damage and wear was observed. Partition was not serviceable.

Photos



Tate Creek Community Centre - C101003



Tate Creek Community Centre - C101003

Recommendation #1 - Retractable Partitions	
Туре	Life Cycle Replacement
Year	2020
Cost	\$15,000.00

Item	Description
Uniformat Code	C101006 - Glazed Partitions and Storefronts
Installation Year	1981
Condition	1 - Good
Expected Useful Life	50 Years
Remaining Useful Life	12 Years
Quantity / Unit of Measure	10 / SM
Unit Cost	\$500.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$5,000.00

Description Demountable partitions include glazed sections as seen in the former office area.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - C101006

Recommendation #1 - Glazed Partitions and Storefronts	
Туре	Life Cycle Replacement
Year	2031
Cost	\$5,000.00
Item	Description
---	--
Uniformat Code	C102002 - Solid Interior Door - Single
Installation Year	1975
Condition	1 - Good
Expected Useful Life	40 Years
Remaining Useful Life	6 Years
Quantity / Unit of Measure	25 / Each
Unit Cost	\$2,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$50,000.00

Description Interior doors are generally comprised of wood doors hinge-mounted into metal frames.

Condition Narrative

No major deficiencies were observed or reported.



Tate Creek Community Centre - C102002

Recommendation #1 - Solid Interior Door - Single	
Туре	Life Cycle Replacement
Year	2025
Cost	\$50,000.00

Item	Description
Uniformat Code	C102002 - Solid Interior Door - Single
Installation Year	2006
Condition	1 - Good
Expected Useful Life	40 Years
Remaining Useful Life	27 Years
Quantity / Unit of Measure	6 / Each
Unit Cost	\$2,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$12,000.00

Description Interior doors generally include wood doors hinge-mounted into wood frames.

Condition Narrative

No major deficiencies were observed or reported.



Tate Creek Community Centre - C102002

Item	Description
Uniformat Code	C102003 - Solid Interior Door - Double
Installation Year	1981
Condition	1 - Good
Expected Useful Life	40 Years
Remaining Useful Life	6 Years
Quantity / Unit of Measure	3 / Each
Unit Cost	\$3,500.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$10,500.00

Description Interior doors in the gymnasium are typically double-wide assemblies.

Condition Narrative

No major deficiencies were observed or reported.

Photos



PRRD - Tate Creek Community Centre - C102003

Recommendation #1 - Solid Interior Door - Double	
Туре	Life Cycle Replacement
Year	2025
Cost	\$10,500.00

Item	Description
Uniformat Code	C103001 - Washroom Partitions
Installation Year	1981
Condition	1 - Good
Expected Useful Life	15 Years
Remaining Useful Life	6 Years
Quantity / Unit of Measure	12 / Each
Unit Cost	\$1,500.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$18,000.00

Description Washroom partitions are metal, wall hung, located in multi-occupant washrooms.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - C103001

Recommendation #1 - Washroom Partitions	
Туре	Life Cycle Replacement
Year	2025
Cost	\$18,000.00

Item	Description
Uniformat Code	C103009 - Cabinets - Millwork
Installation Year	1975
Condition	2 - Fair
Expected Useful Life	30 Years
Remaining Useful Life	5 Years
Quantity / Unit of Measure	22 / LM
Unit Cost	\$500.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$11,000.00

Description Cabinets are installed in the former administrative area from the original part of the building.

Condition Narrative

No major deficiencies were observed or reported. Millwork appears outdated.



Tate Creek Community Centre - C103009



Tate Creek Community Centre - C103009

Recommendation #1 - Cabinets - Millwork	
Туре	Life Cycle Replacement
Year	2024
Cost	\$11,000.00

Item	Description
Uniformat Code	C103009 - Cabinets - Millwork
Installation Year	2006
Condition	1 - Good
Expected Useful Life	30 Years
Remaining Useful Life	16 Years
Quantity / Unit of Measure	8 / LM
Unit Cost	\$500.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$4,000.00

Description Millwork includes a trophy case in the front entry.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - C103009

Recommendation #1 - Cabinets - Millwork	
Туре	Life Cycle Replacement
Year	2035
Cost	\$4,000.00

Item	Description
Uniformat Code	C103010 - Cabinets - Kitchen
Installation Year	2006
Condition	1 - Good
Expected Useful Life	30 Years
Remaining Useful Life	17 Years
Quantity / Unit of Measure	20 / LM
Unit Cost	\$1,200.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$24,000.00

Description Kitchen cabinets are plastic laminate faced with plastic laminate counter tops.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - C103010

Recommendations



PRRD - Tate Creek Community Centre - C103010

Recommendation #1 - Cabinets - Kitchen	
Туре	Life Cycle Replacement
Year	2036
Cost	\$24,000.00

Item	Description
Uniformat Code	C103010 - Cabinets - Kitchen
Installation Year	2013
Condition	1 - Good
Expected Useful Life	30 Years
Remaining Useful Life	24 Years
Quantity / Unit of Measure	6 / LM
Unit Cost	\$1,200.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$7,200.00

Description Cabinets in the north staff area wood laminate cabinets with plastic laminate counter tops.

Condition Narrative

No major deficiencies were observed or reported.





Tate Creek Community Centre - C103010

C20 Stairs

Item	Description
Uniformat Code	C201001 - Interior Stair Construction
Installation Year	1981
Condition	1 - Good
Expected Useful Life	75 Years
Remaining Useful Life	37 Years
Quantity / Unit of Measure	1 / Per Floor
Unit Cost	\$15,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$15,000.00

Description Wood stairs are installed from the gym to the mezzanine.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - C201001

Item	Description
Uniformat Code	C201027 - Roof Access Ladders
Installation Year	1981
Condition	1 - Good
Expected Useful Life	40 Years
Remaining Useful Life	6 Years
Quantity / Unit of Measure	6 / LM
Unit Cost	\$1,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$6,000.00

Description A drop-down ladder is installed for roof access.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - C201027

Recommendation #1 - Roof Access Ladders	
Туре	Life Cycle Replacement
Year	2025
Cost	\$6,000.00

C30 Interior Finishes

Item	Description
Uniformat Code	C301005 - Painted Wall Covering
Installation Year	2013
Condition	2 - Fair
Expected Useful Life	10 Years
Remaining Useful Life	4 Years
Quantity / Unit of Measure	1255 / SM Building
Unit Cost	\$40.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$50,200.00

Description

Wall finishes include paint along gypsum board walls and concrete block wall assemblies.

Condition Narrative

No major deficiencies were observed or reported.





PRRD - Tate Creek Community Centre - C301005



PRRD - Tate Creek Community Centre - C301005

Recommendation #1 - Painted Wall Covering	
Туре	Life Cycle Replacement
Year	2023
Cost	\$50,200.00

Item	Description
Uniformat Code	C301007 - Acoustic Panels
Installation Year	2019
Condition	1 - Good
Expected Useful Life	25 Years
Remaining Useful Life	25 Years
Quantity / Unit of Measure	480 / SM
Unit Cost	\$250.00
Difficulty / Regional / Soft Cost Factors	0.25 / 1.00 / 1.00
Element Renewal Cost	\$30,000.00

Description Wall finishes include custom built carpet & wood acoustic wall cover in the gym.

Condition Narrative

No major deficiencies were observed or reported.



Tate Creek Community Centre - C301007

Item	Description
Uniformat Code	C301021 - Wall Paper
Installation Year	1981
Condition	2 - Fair
Expected Useful Life	15 Years
Remaining Useful Life	5 Years
Quantity / Unit of Measure	900 / SM
Unit Cost	\$60.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$54,000.00

Description Demountable partition panels are provided a fabric covering.

Condition Narrative

No major deficiencies were observed or reported. The panels appear to be outdated.





Tate Creek Community Centre - C301021

Recommendation #1 - Wall Paper	
Туре	Life Cycle Replacement
Year	2024
Cost	\$54,000.00

Item	Description
Uniformat Code	C302001 - Ceramic
Installation Year	1975
Condition	1 - Good
Expected Useful Life	30 Years
Remaining Useful Life	6 Years
Quantity / Unit of Measure	144 / SM
Unit Cost	\$130.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$18,720.00

Description Floor finishes include ceramic tile in the classrooms and older washrooms

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - C302001



Tate Creek Community Centre - C302001

Recommendation #1 - Ceramic	
Туре	Life Cycle Replacement
Year	2025
Cost	\$18,720.00

Item	Description
Uniformat Code	C302001 - Ceramic
Installation Year	2006
Condition	1 - Good
Expected Useful Life	30 Years
Remaining Useful Life	17 Years
Quantity / Unit of Measure	80 / SM
Unit Cost	\$130.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$10,400.00

Description Floor finishes include ceramic tile in the kitchen.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - C302001

Recommendation #1 - Ceramic	
Туре	Life Cycle Replacement
Year	2036
Cost	\$10,400.00

Item	Description
Uniformat Code	C302003 - Wood Flooring
Installation Year	1981
Condition	2 - Fair
Expected Useful Life	20 Years
Remaining Useful Life	4 Years
Quantity / Unit of Measure	401 / SM
Unit Cost	\$170.00
Difficulty / Regional / Soft Cost Factors	1.33 / 1.00 / 1.00
Element Renewal Cost	\$90,666.10

Description Floor coverings include wood in the gym.

Condition Narrative

Numerous defects including buckling, shrinkage and wear were observed.





Tate Creek Community Centre - C302003



Tate Creek Community Centre - C302003



Tate Creek Community Centre - C302003

Recommendation #1 - Wood Flooring	
Туре	Life Cycle Replacement
Year	2023
Cost	\$90,666.10

Item	Description
Uniformat Code	C302005 - Carpet
Installation Year	2013
Condition	1 - Good
Expected Useful Life	10 Years
Remaining Useful Life	6 Years
Quantity / Unit of Measure	30 / SM
Unit Cost	\$120.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$3,600.00

Description Carpet is provided in the kitchen addition meeting room.

Condition Narrative

No major issues observed or reported.

Photos



PRRD - Tate Creek Community Centre - C302005

Recommendations



PRRD - Tate Creek Community Centre - C302005

Recommendation #1 - Carpet	
Туре	Life Cycle Replacement
Year	2025
Cost	\$3,600.00

Item	Description
Uniformat Code	C302006 - Vinyl Sheet
Installation Year	2006
Condition	1 - Good
Expected Useful Life	15 Years
Remaining Useful Life	6 Years
Quantity / Unit of Measure	332 / SM
Unit Cost	\$120.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$39,840.00

Description Floor coverings include vinyl sheet in the kitchen / hall addition.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - C302006

Recommendation #1 - Vinyl Sheet	
Туре	Life Cycle Replacement
Year	2025
Cost	\$39,840.00

Item	Description
Uniformat Code	C302006 - Vinyl Sheet
Installation Year	2013
Condition	1 - Good
Expected Useful Life	15 Years
Remaining Useful Life	9 Years
Quantity / Unit of Measure	515 / SM
Unit Cost	\$120.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$61,800.00

Floor finishes include vinyl sheet in the classrooms, offices and hallways in the northern portion of the building.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - C302006



Tate Creek Community Centre - C302006

Recommendation #1 - Vinyl Sheet	
Туре	Life Cycle Replacement
Year	2028
Cost	\$61,800.00

Item	Description
Uniformat Code	C303006 - Painted Ceiling Structures
Installation Year	2013
Condition	1 - Good
Expected Useful Life	15 Years
Remaining Useful Life	9 Years
Quantity / Unit of Measure	420 / SM
Unit Cost	\$25.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$10,500.00

Description Ceiling finishes include paint on exposed roof structure in the gym and service rooms.

Condition Narrative

No major deficiencies were observed or reported.





Tate Creek Community Centre - C303006



PRRD - Tate Creek Community Centre - C303006

Recommendation #1 - Painted Ceiling Structures	
Туре	Life Cycle Replacement
Year	2028
Cost	\$10,500.00

Item	Description
Uniformat Code	C303007 - Suspended Acoustic Ceiling Panels
Installation Year	2006
Condition	1 - Good
Expected Useful Life	20 Years
Remaining Useful Life	7 Years
Quantity / Unit of Measure	332 / SM
Unit Cost	\$80.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$26,560.00

Description Ceiling finishes include acoustic ceiling panels throughout the kitchen addition.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - C303007

Recommendation #1 - Suspended Acoustic Ceiling Panels	
Туре	Life Cycle Replacement
Year	2026
Cost	\$26,560.00

Item	Description
Uniformat Code	C303007 - Suspended Acoustic Ceiling Panels
Installation Year	1975
Condition	2 - Fair
Expected Useful Life	20 Years
Remaining Useful Life	5 Years
Quantity / Unit of Measure	522 / SM
Unit Cost	\$80.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$41,760.00

Description Ceiling finishes include acoustic ceiling panels in the original 1975 part of the building

Condition Narrative

Staining was observed on some ceiling panels and should be replaced as part of maintenance.



Tate Creek Community Centre - C303007



Tate Creek Community Centre - C303007

Recommendation #1 - Suspended Acoustic Ceiling Panels	
Туре	Life Cycle Replacement
Year	2024
Cost	\$41,760.00

D Services D20 Plumbing

Item	Description
Uniformat Code	D201001 - Water Closets
Installation Year	2006
Condition	1 - Good
Expected Useful Life	35 Years
Remaining Useful Life	22 Years
Quantity / Unit of Measure	14 / Each
Unit Cost	\$1,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$14,000.00

Description

Plumbing fixtures include floor mounted toilets with attached water tanks.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - D201001

Item	Description
Uniformat Code	D201002 - Urinals
Installation Year	2006
Condition	1 - Good
Expected Useful Life	35 Years
Remaining Useful Life	22 Years
Quantity / Unit of Measure	4 / Each
Unit Cost	\$1,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$4,000.00

Description Plumbing fixtures include urinals.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - D201002

Item	Description
Uniformat Code	D201003 - Lavatories
Installation Year	1975
Condition	1 - Good
Expected Useful Life	35 Years
Remaining Useful Life	6 Years
Quantity / Unit of Measure	6 / Each
Unit Cost	\$1,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$6,000.00

Description Plumbing fixtures include stainless steel sinks installed in the original washrooms.

Condition Narrative

The sinks were not functional at the time of assessment due to failed water connections. Sinks are understood to be serviceable.

Photos



Tate Creek Community Centre - D201004



Tate Creek Community Centre - D201004

Recommendation #1 - Lavatories	
Туре	Life Cycle Replacement
Year	2025
Cost	\$6,000.00

Item	Description
Uniformat Code	D201003 - Lavatories
Installation Year	2006
Condition	1 - Good
Expected Useful Life	35 Years
Remaining Useful Life	22 Years
Quantity / Unit of Measure	7 / Each
Unit Cost	\$1,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$7,000.00

Description Stainless steel sinks are installed in the washrooms

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - D201003

Item	Description
Uniformat Code	D201004 - Sinks
Installation Year	2006
Condition	1 - Good
Expected Useful Life	35 Years
Remaining Useful Life	22 Years
Quantity / Unit of Measure	4 / Each
Unit Cost	\$1,000.00
Difficulty / Regional / Soft Cost Factors	1.50 / 1.00 / 1.00
Element Renewal Cost	\$6,000.00

Description Stainless steel sinks are installed in the kitchen, one single, two double, and one triple.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - D201004



Tate Creek Community Centre - D201004



Tate Creek Community Centre - D201004



Tate Creek Community Centre - D201004

Item	Description
Uniformat Code	D201004 - Sinks
Installation Year	1975
Condition	3 - Poor
Expected Useful Life	35 Years
Remaining Useful Life	1 Year
Quantity / Unit of Measure	5 / Each
Unit Cost	\$1,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$5,000.00

Description Plumbing fixtures include stainless steel sinks installed in the classrooms.

Condition Narrative

Reportedly water connections failed. Units not anticipated to be reinstated.

Photos



Tate Creek Community Centre - D201004



PRRD - Tate Creek Community Centre - D201004

Recommendation #1 - Sinks	
Туре	Life Cycle Replacement
Year	2020
Cost	\$5,000.00

Item	Description
Uniformat Code	D201024 - Custodial Sinks
Installation Year	1975
Condition	1 - Good
Expected Useful Life	25 Years
Remaining Useful Life	6 Years
Quantity / Unit of Measure	1 / Each
Unit Cost	\$2,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$2,000.00

Description Plumbing fixtures include a custodial sink in the north service room.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - D201024

Recommendation #1 - Custodial Sinks	
Туре	Life Cycle Replacement
Year	2025
Cost	\$2,000.00

Item	Description
Uniformat Code	D202001 - Domestic Water Pipes and Fittings
Installation Year	1975
Condition	3 - Poor
Expected Useful Life	40 Years
Remaining Useful Life	2 Years
Quantity / Unit of Measure	1023 / SM Building
Unit Cost	\$40.00
Difficulty / Regional / Soft Cost Factors	1.50 / 1.00 / 1.00
Element Renewal Cost	\$61,380.00

The building domestic water system includes a main cold water supply line, and domestic hot and cold water copper and plastic piping to plumbing fixtures.

Condition Narrative

The original plumbing system was turned off at the time due to multiple leaks and failures when last pressurized, typically at fixtures and pipes are reportedly OK. Detailed review is recommended to confirm remaining service life.

Photos



PRRD - Tate Creek Community Centre - D202001



PRRD - Tate Creek Community Centre - D202001

Recommendation #1 - Investigate condition of plumbing	
Туре	Engineering Study
Year	2020
Cost	\$8,000.00

Recommendation #2 - Domestic Water Pipes and Fittings	
Туре	Life Cycle Replacement
Year	2021
Cost	\$61,380.00

Item	Description
Uniformat Code	D202001 - Domestic Water Pipes and Fittings
Installation Year	2006
Condition	1 - Good
Expected Useful Life	40 Years
Remaining Useful Life	27 Years
Quantity / Unit of Measure	232 / SM Building
Unit Cost	\$40.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$9,280.00

The building domestic water system includes a main cold water supply line, and domestic hot and cold water copper and plastic piping to plumbing fixtures.

Condition Narrative

No major deficiencies were observed or reported.



Tate Creek Community Centre - D202001

Item	Description
Uniformat Code	D202006 - Domestic Water Equipment - Booster Systems
Installation Year	2006
Condition	1 - Good
Expected Useful Life	20 Years
Remaining Useful Life	7 Years
Quantity / Unit of Measure	2 / Each
Unit Cost	\$10,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$20,000.00

The plumbing system includes distribution pumps in the kitchen / hall addition. Original plumbing had booster pumps that were decommissioned. The original plumbing is now fed from the addition supply & booster pumps.

Condition Narrative

No major deficiencies were observed or reported.



Tate Creek Community Centre - D202006

Recommendation #1 - Domestic Water Equipment - Booster Systems	
Туре	Life Cycle Replacement
Year	2026
Cost	\$20,000.00

Item	Description
Uniformat Code	D202021 - Domestic Water Tank Heaters
Installation Year	2006
Condition	2 - Fair
Expected Useful Life	12 Years
Remaining Useful Life	3 Years
Quantity / Unit of Measure	283 / Liter
Unit Cost	\$45.00
Difficulty / Regional / Soft Cost Factors	1.50 / 1.00 / 1.00
Element Renewal Cost	\$19,102.50

Description Hot water is provided by two gas fired tank heaters.

Condition Narrative

No major deficiencies were observed or reported. Equipment has surpassed its typical useful life.





Tate Creek Community Centre - D202021



Tate Creek Community Centre - D202021

Recommendation #1 - Domestic Water Tank Heaters	
Туре	Life Cycle Replacement
Year	2022
Cost	\$19,102.50

Item	Description
Uniformat Code	D203001 - Sanitary Waste and Vent Piping
Installation Year	1975
Condition	2 - Fair
Expected Useful Life	50 Years
Remaining Useful Life	5 Years
Quantity / Unit of Measure	1023 / SM Bldg
Unit Cost	\$45.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$46,035.00

Waste piping in the original part of the building includes ABS plastic and cast iron.

Condition Narrative

Some corrosion was observed, system understood to be serviceable. System should be considered during plumbing review.

Photos



Tate Creek Community Centre - D203001



PRRD - Tate Creek Community Centre - D203001

Recommendation #1 - Sanitary Waste and Vent Piping	
Туре	Life Cycle Replacement
Year	2024
Cost	\$46,035.00
Item	Description
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Uniformat Code	D203001 - Sanitary Waste and Vent Piping
Installation Year	2006
Condition	1 - Good
Expected Useful Life	50 Years
Remaining Useful Life	37 Years
Quantity / Unit of Measure	232 / SM Bldg
Unit Cost	\$45.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$10,440.00

Description Waste piping in the newer kitchen / hall addition appears to be ABS plastic.

Condition Narrative

No major deficiencies were observed or reported.



Photos

Tate Creek Community Centre - D203001

Item	Description
Uniformat Code	D204001 - Rain Water Drainage Piping and Fittings
Installation Year	1975
Condition	1 - Good
Expected Useful Life	50 Years
Remaining Useful Life	6 Years
Quantity / Unit of Measure	1023 / SM Building
Unit Cost	\$30.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$30,690.00

Roof drains are installed in the low slope roofs and connected to a cement pipe drainage system.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - D204001



PRRD - Tate Creek Community Centre - D204001

Recommendation #1 - Rain Water Drainage Piping and Fittings		
Туре	Life Cycle Replacement	
Year	2025	
Cost	\$30,690.00	

D30 HVAC

Item	Description
Uniformat Code	D301002 - Natural Gas Supply
Installation Year	2006
Condition	1 - Good
Expected Useful Life	40 Years
Remaining Useful Life	27 Years
Quantity / Unit of Measure	1255 / SM Building
Unit Cost	\$20.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$25,100.00

Description

Natural gas is supplied to the building via an outside meter.

Condition Narrative

Corrosion was observed on the gas piping in the kitchen crawlspace. Should be reviewed and repaired.



Tate Creek Community Centre - D301002



Tate Creek Community Centre - D301002

Recommendation #1 - Repair Allowance - Natural Gas Distribution		
Туре	Lifecycle Repair	
Year	2020	
Cost	\$5,000.00	

Item	Description
Uniformat Code	D302008 - Fuel Fired Forced Air Furnace
Installation Year	2006
Condition	1 - Good
Expected Useful Life	18 Years
Remaining Useful Life	6 Years
Quantity / Unit of Measure	120 / MBH
Unit Cost	\$40.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$4,800.00

Description Heat is provided by fuel burning forced air furnaces. Furnace No. 10 was installed in 2006.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - D302008



Tate Creek Community Centre - D302008

Recommendation #1 - Fuel Fired Forced Air Furnace		
Туре	Life Cycle Replacement	
Year	2025	
Cost	\$4,800.00	

Item	Description
Uniformat Code	D302008 - Fuel Fired Forced Air Furnace
Installation Year	2006
Condition	1 - Good
Expected Useful Life	18 Years
Remaining Useful Life	6 Years
Quantity / Unit of Measure	266 / MBH
Unit Cost	\$40.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$10,640.00

Description Heat in the kitchen addition is provided by fuel burning forced air furnaces. The Engineered Air was installed in 2006.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - D302008



PRRD - Tate Creek Community Centre - D302008

Recommendation #1 - Fuel Fired Forced Air Furnace	
Туре	Life Cycle Replacement
Year	2025
Cost	\$10,640.00

Item	Description
Uniformat Code	D302008 - Fuel Fired Forced Air Furnace
Installation Year	2010
Condition	1 - Good
Expected Useful Life	18 Years
Remaining Useful Life	9 Years
Quantity / Unit of Measure	75 / MBH
Unit Cost	\$40.00
Difficulty / Regional / Soft Cost Factors	8.00 / 1.00 / 1.00
Element Renewal Cost	\$24,000.00

Heat in the gymnasium and classrooms is provided by fuel burning forced air furnaces.

Condition Narrative

No major deficiencies were observed or reported. It should be noted that the units have been installed upside down to accommodate existing ducting layout.

Photos



Tate Creek Community Centre - D302008



Tate Creek Community Centre - D302008

Recommendation #1 - Fuel Fired Forced Air Furnace	
Туре	Life Cycle Replacement
Year	2028
Cost	\$3,000.00

Item	Description
Uniformat Code	D303022 - Self Contained Cooling Units
Installation Year	1975
Condition	3 - Poor
Expected Useful Life	25 Years
Remaining Useful Life	1 Year
Quantity / Unit of Measure	2 / Ton
Unit Cost	\$1,500.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$3,000.00

Cooling equipment includes a roof top condensing unit, which is understood to connect to a coil in the furnace servicing the former administrative office.

Condition Narrative

It was reported that this unit is no longer serviceable and will is not anticipated be replaced.



Photos

Tate Creek Community Centre - D303022

Recommendation #1 - Repair Allowance - Decommissioning Equipment		
Туре	Major Repair	
Year	2020	
Cost	\$3,000.00	

Item	Description
Uniformat Code	D304001 - Air Distribution Systems
Installation Year	1975
Condition	1 - Good
Expected Useful Life	40 Years
Remaining Useful Life	6 Years
Quantity / Unit of Measure	1023 / SM Building
Unit Cost	\$120.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$122,760.00

Description Heat is distributed by a system of ducts and vents.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - D304001

Recommendation #1 - Air Distribution Systems	
Туре	Life Cycle Replacement
Year	2025
Cost	\$122,760.00

Item	Description
Uniformat Code	D304001 - Air Distribution Systems
Installation Year	2006
Condition	1 - Good
Expected Useful Life	40 Years
Remaining Useful Life	26 Years
Quantity / Unit of Measure	232 / SM Building
Unit Cost	\$120.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$27,840.00

Description Heat is distributed by a system of ducts and vents.

Condition Narrative

No major deficiencies were observed or reported.

Photos



PRRD - Tate Creek Community Centre - D304001



PRRD - Tate Creek Community Centre - D304001

Item	Description
Uniformat Code	D304007 - Exhaust Fans
Installation Year	2006
Condition	1 - Good
Expected Useful Life	25 Years
Remaining Useful Life	12 Years
Quantity / Unit of Measure	6 / Each
Unit Cost	\$3,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$18,000.00

Description Exhaust fans are installed on the roof

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - D304007

Recommendation #1 - Exhaust Fans	
Туре	Life Cycle Replacement
Year	2031
Cost	\$18,000.00

Item	Description
Uniformat Code	D304026 - Kitchen Exhaust Systems
Installation Year	2006
Condition	1 - Good
Expected Useful Life	20 Years
Remaining Useful Life	11 Years
Quantity / Unit of Measure	1 / Each
Unit Cost	\$30,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$30,000.00

Description An commercial grade exhaust fan is installed in the kitchen.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - D304026



Tate Creek Community Centre - D304026

Recommendation #1 - Kitchen Exhaust Systems	
Туре	Life Cycle Replacement
Year	2030
Cost	\$30,000.00

D40 Fire Protection

Item	Description
Uniformat Code	D409021 - Kitchen Suppression Systems
Installation Year	2006
Condition	1 - Good
Expected Useful Life	20 Years
Remaining Useful Life	7 Years
Quantity / Unit of Measure	1 / Each
Unit Cost	\$15,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$15,000.00

Description

A fire suppression system is installed within the commercial range hood in the kitchen.

Condition Narrative

It was observed that the system has not been inspected since 2018.

Photos



Tate Creek Community Centre - D409021



Tate Creek Community Centre - D409021

Recommendation #1 - Inspect kitchen fire suppression system		
Туре	Engineering Study	
Year	2020	
Cost	\$2,000.00	

Recommendation #2 - Kitchen Suppression Systems	
Туре	Life Cycle Replacement
Year	2026
Cost	\$15,000.00

Item	Description
Uniformat Code	D409099 - Other Fire Protection Systems
Installation Year	2006
Condition	4 - Critical
Expected Useful Life	10 Years
Remaining Useful Life	1 Year
Quantity / Unit of Measure	10 / Each
Unit Cost	\$200.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$2,000.00

Fire protection systems include ABC type fire extinguishers. A type K fire extinguisher is recommended for the kitchen.

Condition Narrative

It was observed that the fire extinguishers have not been inspected since 2018. Annual inspection is recommended. Remaining service life to be confirmed by inspection.

Photos



Tate Creek Community Centre - D409099

Recommendation #1 - Annual Inspection - Fire Extinguisers		
Туре	Engineering Study	
Year	2019	
Cost	\$1,000.00	

Recommendation #2 - Other Fire Protection Systems	
Туре	Life Cycle Replacement
Year	2020
Cost	\$2,000.00

D50 Electrical

Item	Description
Uniformat Code	D501022 - Low Voltage Electrical Service
Installation Year	2018
Condition	1 - Good
Expected Useful Life	40 Years
Remaining Useful Life	39 Years
Quantity / Unit of Measure	1255 / SM Building
Unit Cost	\$30.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$37,650.00

Description

A 110/240 volt, single phase electrical service is supplied to the building via and overhead service drop. The main shut off is rated at 400 amps. The service connection is understood to have been upgraded

Condition Narrative

No major deficiencies were observed or reported. An old service mast on the gym roof was observed to be corroded and damaged. A repair to address the deficiencies is recommended.





Tate Creek Community Centre - D501022



Tate Creek Community Centre - D501022



Tate Creek Community Centre - D501022

Recommendation #1 - Repair or replace old service mast		
Туре	Failure Replacement	
Year	2019	
Cost	\$10,500.00	

Item	Description
Uniformat Code	D501022 - Low Voltage Electrical Service
Installation Year	1975
Condition	2 - Fair
Expected Useful Life	40 Years
Remaining Useful Life	5 Years
Quantity / Unit of Measure	900 / SM Building
Unit Cost	\$30.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$27,000.00

Electrical distribution is provided by a distribution panel redirecting the service throughout the building each with a dedicated breaker switch. The panel is located in the north service room.

Condition Narrative

No major issues were observed or reported; however, the equipment has surpassed its typical useful life.





PRRD - Tate Creek Community Centre - D501022

Recommendation #1 - Low Voltage Electrical Service	
Туре	Life Cycle Replacement
Year	2024
Cost	\$27,000.00

Item	Description
Uniformat Code	D501023 - Electrical Panels
Installation Year	1981
Condition	1 - Good
Expected Useful Life	40 Years
Remaining Useful Life	6 Years
Quantity / Unit of Measure	7 / Each
Unit Cost	\$4,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$28,000.00

The electrical system includes seven conventional breaker panels varying in age located throughout the building.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - D501023

Recommendation #1 - Electrical Panels	
Туре	Life Cycle Replacement
Year	2025
Cost	\$28,000.00

Item	Description
Uniformat Code	D502001 - Branch Wiring and Devices
Installation Year	1975
Condition	2 - Fair
Expected Useful Life	40 Years
Remaining Useful Life	5 Years
Quantity / Unit of Measure	622 / SM Building
Unit Cost	\$95.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$59,090.00

Description The branch wiring is assumed to be commercial wire in rigid metal conduit and BX cable.

Condition Narrative

No major deficiencies were observed or reported. Wiring has surpassed its typical useful life.

Recommendation #1 - Branch Wiring and Devices	
Туре	Life Cycle Replacement
Year	2024
Cost	\$59,090.00

Item	Description
Uniformat Code	D502001 - Branch Wiring and Devices
Installation Year	2006
Condition	1 - Good
Expected Useful Life	40 Years
Remaining Useful Life	27 Years
Quantity / Unit of Measure	232 / SM Building
Unit Cost	\$95.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$22,040.00

Description The branch wiring is assumed to be commercial wire in rigid metal conduit and BX cable

Condition Narrative

No major deficiencies were observed or reported.

Item	Description
Uniformat Code	D502001 - Branch Wiring and Devices
Installation Year	1981
Condition	1 - Good
Expected Useful Life	40 Years
Remaining Useful Life	6 Years
Quantity / Unit of Measure	401 / SM Building
Unit Cost	\$95.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$38,095.00

Description The branch wiring is assumed to be commercial wire in rigid metal conduit and BX cable.

Condition Narrative

No major deficiencies were observed or reported.

Recommendation #1 - Branch Wiring and Devices	
Туре	Life Cycle Replacement
Year	2025
Cost	\$38,095.00

Item	Description
Uniformat Code	D502002 - Interior Lighting
Installation Year	1975
Condition	2 - Fair
Expected Useful Life	30 Years
Remaining Useful Life	5 Years
Quantity / Unit of Measure	622 / SM Building
Unit Cost	\$85.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$52,870.00

Description Interior lighting includes T12 fluorescent fixtures.

Condition Narrative

Lighting is functional but past its typical useful life with poor energy performance.





Tate Creek Community Centre - D502002

Recommendation #1 - Interior Lighting	
Туре	Life Cycle Replacement
Year	2024
Cost	\$52,870.00

Item	Description
Uniformat Code	D502002 - Interior Lighting
Installation Year	2006
Condition	1 - Good
Expected Useful Life	30 Years
Remaining Useful Life	17 Years
Quantity / Unit of Measure	232 / SM Building
Unit Cost	\$85.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$19,720.00

Description Interior lighting includes T8 linear fluorescent fixtures.

Condition Narrative

No major deficiencies were observed or reported. An upgrade to LED is recommended.





Tate Creek Community Centre - D502002

Recommendation #1 - Interior Lighting	
Туре	Life Cycle Replacement
Year	2036
Cost	\$19,720.00

Item	Description
Uniformat Code	D502002 - Interior Lighting
Installation Year	1981
Condition	2 - Fair
Expected Useful Life	30 Years
Remaining Useful Life	3 Years
Quantity / Unit of Measure	401 / SM Building
Unit Cost	\$85.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$34,085.00

Description Interior lighting includes T12 linear fluorescent fixtures in the gym.

Condition Narrative

Fixtures are functional but obsolete with poor overall energy efficiency.

Photos



Tate Creek Community Centre - D502002

Recommendation #1 - Interior Lighting	
Туре	Life Cycle Replacement
Year	2022
Cost	\$34,085.00

Item	Description
Uniformat Code	D502021 - Exterior Lighting
Installation Year	2006
Condition	1 - Good
Expected Useful Life	20 Years
Remaining Useful Life	7 Years
Quantity / Unit of Measure	10 / Each
Unit Cost	\$1,200.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$12,000.00

Description Exterior lighting includes wall mounted wallpacks and soffit-mounted fixtures.

Condition Narrative

No major deficiencies were observed or reported.



Tate Creek Community Centre - D502021

Recommendation #1 - Exterior Lighting	
Туре	Life Cycle Replacement
Year	2026
Cost	\$12,000.00

Item	Description
Uniformat Code	D502022 - Exit Lighting
Installation Year	1975
Condition	2 - Fair
Expected Useful Life	35 Years
Remaining Useful Life	3 Years
Quantity / Unit of Measure	522 / SM Building
Unit Cost	\$3.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$1,566.00

Description Illuminated exit lighting is installed.

Condition Narrative

Fixtures are functional but outdated. Fixtures do not display current "running man" standard signage.





Tate Creek Community Centre - D502022

Recommendation #1 - Exit Lighting	
Туре	Life Cycle Replacement
Year	2022
Cost	\$1,566.00

Item	Description
Uniformat Code	D502022 - Exit Lighting
Installation Year	2006
Condition	1 - Good
Expected Useful Life	35 Years
Remaining Useful Life	21 Years
Quantity / Unit of Measure	332 / SM Building
Unit Cost	\$3.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$996.00

Description Illuminated exit lighting is installed

Condition Narrative

Fixtures do not display current "running man" standard signage.





PRRD - Tate Creek Community Centre - D502022

Item	Description
Uniformat Code	D503001 - Fire Alarm Systems
Installation Year	1975
Condition	4 - Critical
Expected Useful Life	20 Years
Remaining Useful Life	1 Year
Quantity / Unit of Measure	1255 / SM Building
Unit Cost	\$50.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$62,750.00

A fire alarm system components are present but the system was understood to be partially dismantled by the former owner.

Condition Narrative

It was reported that he fire alarm system has been decommissioned in place. Replacement is recommended in the short term.

Photos



Tate Creek Community Centre - D503001

Recommendation #1 - Fire Alarm Systems	
Туре	Life Cycle Replacement
Year	2019
Cost	\$62,750.00

Item	Description
Uniformat Code	D509003 - Emergency Lighting Systems
Installation Year	2006
Condition	1 - Good
Expected Useful Life	20 Years
Remaining Useful Life	7 Years
Quantity / Unit of Measure	1255 / SM Building
Unit Cost	\$5.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$6,275.00

Description Emergency lighting is provided by individual battery operated fixtures with remote lighting heads.

Condition Narrative

No major deficiencies were observed or reported.



Tate Creek Community Centre - D509003

Recommendations



Tate Creek Community Centre - D509003

Recommendation #1 - Emergency Lighting Systems	
Туре	Life Cycle Replacement
Year	2026
Cost	\$6,275.00

Photos

F Special Construction and DemolitionF10 Special Construction

Item	Description
Uniformat Code	F101001 - Playground Equipment
Installation Year	1989
Condition	2 - Fair
Expected Useful Life	20 Years
Remaining Useful Life	3 Years
Quantity / Unit of Measure	3 / Each
Unit Cost	\$10,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$30,000.00

Description

Wood and steel frame structures and games east of building.

Condition Narrative

Wear and corrosion were observed.

Photos



Tate Creek Community Centre - F101001



Tate Creek Community Centre - F101001

Recommendation #1 - Playground Equipment	
Туре	Life Cycle Replacement
Year	2022
Cost	\$30,000.00

Item	Description
Uniformat Code	F101001 - Playground Equipment
Installation Year	2011
Condition	1 - Good
Expected Useful Life	20 Years
Remaining Useful Life	12 Years
Quantity / Unit of Measure	4 / Each
Unit Cost	\$10,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$40,000.00

Description North playground and accessories.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - F101001



PRRD - Tate Creek Community Centre - F101001

Recommendation #1 - Playground Equipment	
Туре	Life Cycle Replacement
Year	2031
Cost	\$40,000.00

Item	Description
Uniformat Code	F101004 - Chain Link Fence Enclosure
Installation Year	1975
Condition	2 - Fair
Expected Useful Life	25 Years
Remaining Useful Life	3 Years
Quantity / Unit of Measure	2 / EA
Unit Cost	\$8,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$16,000.00

Description Former propane tank enclosure and current garbage enclosure.

Condition Narrative

Settlement and localized damage was observed.

Photos



Tate Creek Community Centre - F101004



PRRD - Tate Creek Community Centre - F101004

Recommendation #1 - Chain Link Fence Enclosure	
Туре	Life Cycle Replacement
Year	2022
Cost	\$16,000.00

Item	Description
Uniformat Code	F101005 - Arena/Race Track
Installation Year	1975
Condition	3 - Poor
Expected Useful Life	50 Years
Remaining Useful Life	1 Year
Quantity / Unit of Measure	1 / EA
Unit Cost	\$40,000.00
Difficulty / Regional / Soft Cost Factors	5.00 / 1.00 / 1.00
Element Renewal Cost	\$200,000.00

Description Site features include an outdoor rink.

Condition Narrative

Significant deterioration of the wood guard / wall was observed.

Photos



Tate Creek Community Centre - F101005



Tate Creek Community Centre - F101005

Recommendation #1 - Arena/Race Track	
Туре	Life Cycle Replacement
Year	2020
Cost	\$200,000.00

G Sitework G20 Site Improvements

Item	Description
Uniformat Code	G201024 - Gravel Paved Surface - Roadway
Installation Year	2006
Condition	1 - Good
Expected Useful Life	25 Years
Remaining Useful Life	12 Years
Quantity / Unit of Measure	1000 / SM
Unit Cost	\$50.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$50,000.00

Description

Site features include a gravel paved roadway.

Condition Narrative

No major deficiencies were observed or reported.





Tate Creek Community Centre - G201024

Recommendation #1 - Gravel Paved Surface - Roadway		
Туре	Life Cycle Replacement	
Year	2031	
Cost	\$50,000.00	

Item	Description
Uniformat Code	G202024 - Gravel Paved Surface - Parking Area
Installation Year	2006
Condition	1 - Good
Expected Useful Life	25 Years
Remaining Useful Life	12 Years
Quantity / Unit of Measure	725 / SM
Unit Cost	\$20.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$14,500.00

Description Parking area south of building

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - G202024

Recommendations



PRRD - Tate Creek Community Centre - G202024

Recommendation #1 - Gravel Paved Surface - Parking Area		
Туре	Life Cycle Replacement	
Year	2031	
Cost	\$14,500.00	
Item	Description	
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Uniformat Code	G203022 - Concrete Paved Surfaces	
Installation Year	1975	
Condition	3 - Poor	
Expected Useful Life	30 Years	
Remaining Useful Life	2 Years	
Quantity / Unit of Measure	200 / SM	
Unit Cost	\$150.00	
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00	
Element Renewal Cost	\$30,000.00	

Description Concrete walkways are installed at the front of the building.

Condition Narrative

Settlement and cracked concrete was commonly observed.

Photos



Tate Creek Community Centre - G203022

Recommendation #1 - Concrete Paved Surfaces	
Туре	Life Cycle Replacement
Year	2021
Cost	\$30,000.00

Item	Description
Uniformat Code	G203023 - Precast Paved Surfaces
Installation Year	1975
Condition	4 - Critical
Expected Useful Life	25 Years
Remaining Useful Life	1 Year
Quantity / Unit of Measure	10 / SM
Unit Cost	\$150.00
Difficulty / Regional / Soft Cost Factors	1.50 / 1.00 / 1.00
Element Renewal Cost	\$2,250.00

Description A pre-cast walkway is installed adjacent to the east entrance.

Condition Narrative

Settled creating tripping hazards was observed.





Tate Creek Community Centre - G203023



PRRD - Tate Creek Community Centre - G203023

Recommendation #1 - Precast Paved Surfaces	
Туре	Life Cycle Replacement
Year	2019
Cost	\$1,500.00

Item	Description
Uniformat Code	G203025 - Exterior Stairs (Site)
Installation Year	1975
Condition	4 - Critical
Expected Useful Life	30 Years
Remaining Useful Life	1 Year
Quantity / Unit of Measure	8 / Riser
Unit Cost	\$1,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$8,000.00

Description Concrete stairs are installed at the east entrance.

Condition Narrative

Cracking and displacement resulting in tripping hazards was observed and should be repaired in the short term to mitigate potential safety concerns.

Photos



Tate Creek Community Centre - G203025

Tate Creek Community Centre - G203025

Recommendation #1 - Exterior Stairs (Site)	
Туре	Life Cycle Replacement
Year	2019
Cost	\$8,000.00

Item	Description
Uniformat Code	G204007 - Playing Fields
Installation Year	1975
Condition	1 - Good
Expected Useful Life	30 Years
Remaining Useful Life	6 Years
Quantity / Unit of Measure	8000 / SM
Unit Cost	\$50.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$400,000.00

Description Site features include a multi-use sports field.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - G204007

Recommendation #1 - Playing Fields	
Туре	Life Cycle Replacement
Year	2025
Cost	\$400,000.00

Item	Description
Uniformat Code	G204009 - Flagpoles
Installation Year	1975
Condition	1 - Good
Expected Useful Life	25 Years
Remaining Useful Life	6 Years
Quantity / Unit of Measure	1 / Each
Unit Cost	\$5,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$5,000.00

Description Site features include flagpoles.

Condition Narrative

No major deficiencies were observed or reported. Surficial corrosion was observed and should be addressed as part of maintenance.

Photos



Tate Creek Community Centre - G204009

Recommendation #1 - Flagpoles	
Туре	Life Cycle Replacement
Year	2025
Cost	\$5,000.00

Item	Description
Uniformat Code	G204021 - Fencing and Gates - Chain Link Fence
Installation Year	2006
Condition	1 - Good
Expected Useful Life	20 Years
Remaining Useful Life	7 Years
Quantity / Unit of Measure	300 / LM
Unit Cost	\$250.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$75,000.00

Description A chain link fence is installed around the perimeter of the lagoon and rink ponds.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - G204021



PRRD - Tate Creek Community Centre - G204021

Recommendation #1 - Fencing and Gates - Chain Link Fence	
Туре	Life Cycle Replacement
Year	2026
Cost	\$75,000.00

Item	Description
Uniformat Code	G204031 - Retaining Walls - Cast-in-place
Installation Year	1975
Condition	3 - Poor
Expected Useful Life	50 Years
Remaining Useful Life	2 Years
Quantity / Unit of Measure	50 / SM
Unit Cost	\$1,500.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$75,000.00

Description Site features include concrete retaining walls to the east of the building.

Condition Narrative

Cracks, displacement, and deterioration were observed.



Tate Creek Community Centre - G204031



Tate Creek Community Centre - G204031



Tate Creek Community Centre - G204031

Recommendation #1 - Retaining Walls - Cast-in-place	
Туре	Life Cycle Replacement
Year	2021
Cost	\$75,000.00

Item	Description
Uniformat Code	G204040 - Miscellaneous Structures
Installation Year	1975
Condition	3 - Poor
Expected Useful Life	20 Years
Remaining Useful Life	2 Years
Quantity / Unit of Measure	1 / Each
Unit Cost	\$10,000.00
Difficulty / Regional / Soft Cost Factors	6.00 / 1.00 / 1.00
Element Renewal Cost	\$60,000.00

Description

Site structures include a storage building.

Condition Narrative

Numerous defects were observed in all building systems. The building is considered to be in poor condition overall and not reliable for long-term use.

Photos



Tate Creek Community Centre - G204040



PRRD - Tate Creek Community Centre - G204040



PRRD - Tate Creek Community Centre - G204040



PRRD - Tate Creek Community Centre - G204040



PRRD - Tate Creek Community Centre - G204040



PRRD - Tate Creek Community Centre - G204040

Recommendation #1 - Miscellaneous Structures	
Туре	Life Cycle Replacement
Year	2021
Cost	\$60,000.00

Item	Description
Uniformat Code	G204040 - Miscellaneous Structures
Installation Year	2011
Condition	1 - Good
Expected Useful Life	20 Years
Remaining Useful Life	12 Years
Quantity / Unit of Measure	1 / Each
Unit Cost	\$10,000.00
Difficulty / Regional / Soft Cost Factors	8.00 / 1.00 / 1.00
Element Renewal Cost	\$80,000.00

Description

Site structures include a rink maintenance building, generally built of woof-framing, metal panel roof and metal cladding. The building includes a storage area / workshop, and a change room.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - G204040



PRRD - Tate Creek Community Centre - G204040



PRRD - Tate Creek Community Centre - G204040



PRRD - Tate Creek Community Centre - G204040

Recommendation #1 - Miscellaneous Structures	
Туре	Life Cycle Replacement
Year	2031
Cost	\$80,000.00

G30 Site Civil / Mechanical Utilities

Item	Description
Uniformat Code	G3010 - Water Supply
Installation Year	2006
Condition	1 - Good
Expected Useful Life	40 Years
Remaining Useful Life	27 Years
Quantity / Unit of Measure	200 / SM Building
Unit Cost	\$150.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$30,000.00

Description

The building domestic water system includes a main cold water supply line from the on site underground cistern to the building.

Condition Narrative

No major deficiencies were observed or reported.

Item	Description
Uniformat Code	G301001 - Domestic Water Storage Tank - Underground
Installation Year	2006
Condition	1 - Good
Expected Useful Life	30 Years
Remaining Useful Life	17 Years
Quantity / Unit of Measure	2 / Each
Unit Cost	\$40,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$80,000.00

Description

Water is supplied by two cistern tanks located on site.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - G301001

Recommendation #1 - Domestic Water Storage Tank - Underground	
Туре	Life Cycle Replacement
Year	2036
Cost	\$80,000.00

Item	Description
Uniformat Code	G3020 - Sanitary Sewer
Installation Year	1975
Condition	1 - Good
Expected Useful Life	50 Years
Remaining Useful Life	6 Years
Quantity / Unit of Measure	1255 / SM Building
Unit Cost	\$160.00
Difficulty / Regional / Soft Cost Factors	0.40 / 1.00 / 1.00
Element Renewal Cost	\$80,320.00

Description

A sanitary sewer connects from the building to a lagoon.

Condition Narrative

No major deficiencies were observed or reported. Due to the system's age and limited information available, video scope investigation should be considered.

Recommendation #1 - Investigation - Sanitary Sewer Drainage	
Туре	Engineering Study
Year	2020
Cost	\$8,000.00

Recommendation #2 - Sanitary Sewer	
Туре	Life Cycle Replacement
Year	2025
Cost	\$200,800.00

Item	Description
Uniformat Code	G302001 - Sanitary Waste Lagoon
Installation Year	1975
Condition	1 - Good
Expected Useful Life	40 Years
Remaining Useful Life	6 Years
Quantity / Unit of Measure	650 / SM
Unit Cost	\$10.00
Difficulty / Regional / Soft Cost Factors	6.00 / 1.00 / 1.00
Element Renewal Cost	\$39,000.00

Description Sanitary waste is discharged to a lagoon on site, northwest of the building.

Condition Narrative

No major deficiencies were observed or reported.

Photos



Tate Creek Community Centre - G302001

Recommendation #1 - Sanitary Waste Lagoon								
Туре	pe Life Cycle Replacement							
Year	2025							
Cost \$39,000.00								

Item	Description
Uniformat Code	G306099 - Other Fuel Distribution
Installation Year	1975
Condition	3 - Poor
Expected Useful Life	40 Years
Remaining Useful Life	1 Year
Quantity / Unit of Measure	1 / Each
Unit Cost	\$10,000.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1.00 / 1.00
Element Renewal Cost	\$10,000.00

Description

There is an underground propane distribution system between the building and former tanks. It is assumed to be decommissioned but still in place. Removal is recommended.

Condition Narrative

The propane distribution system is no longer in use. Removal is recommended.





PRRD - Tate Creek Community Centre - G306099



PRRD - Tate Creek Community Centre - G306099

Recommendation #1 - Repair Allowance - System Removal								
Туре	Condition-Based							
Year	2020							
Cost	\$20,000.00							

G40 Site Electrical Utilities

Item	Description
Uniformat Code	G402011 - Light poles - 20' high
Installation Year	1975
Condition	2 - Fair
Expected Useful Life	25 Years
Remaining Useful Life	4 Years
Quantity / Unit of Measure	3 / Each
Unit Cost	\$2,800.00
Difficulty / Regional / Soft Cost Factors	1.50 / 1.00 / 1.00
Element Renewal Cost	\$12,600.00

Description

Site lighting includes 20 foot utility poles near the ice rink.

Condition Narrative

No major deficiencies were observed or reported, with the exception of 1 pole that was observed to be leaning and should be repaired.

Photos



Tate Creek Community Centre - G402011



PRRD - Tate Creek Community Centre - G402011

Recommendation #1 - Repair Allowance - Leaning Standard							
Туре	Lifecycle Repair						
Year	2020						
Cost	\$3,500.00						

Recommendation #2 - Light poles - 20' high								
Туре	Life Cycle Replacement							
Year	2023							
Cost \$12,600.00								

APPENDIX 2

20-Year Capital Plan Renewal and Repair Summary



Peace River Regional District - Facility Condition Assessment Report Tate Creek Community Centre 20-Year Capital Plan Summary

Element Name	Element Year	Element	Recommendation Type	Recommendation Year	Recommendation	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
A1030 Slah on Grade	2005	1. Good	Engineering Study	2020	S 10.000.00	5 -	5 10.000	< .	s .	s .	s .	< .	s .	s .	5 .	s .	s .	5 .	S .	s .	5 .	5	5 .	5	5
A1030 Slab on Grade	2006	1 - Good	Major Benair	2020	\$ 15,692,60	5 -	\$ 15,693	š -	5 -	s -	s -	š -	5 .	5 -	5 -	5 -	s .	5 -	5 -	5 -	5 .	5 -	5 -	5 -	5 -
8201024 Metal Siding	1975	1 - Good	Life Evrie Replacement	2025	\$ 48,000,00	\$ -	\$	5 -	5 -	\$.	\$.	\$ 48,000	5 .	5 -	s .	5 -	\$.	5 -	5 .	5 -	5 .	5 .	s .	5 .	5 -
B201026 Wood Siding	1975	2 · Fair	Life Cycle Replacement	2022	\$ 28,200.00	s -	s -	\$ -	\$ 28,200	s -	s .	s .	\$.	s .	s -	s .	s .	s -	s .	s .	s .	s -	s -	s -	5 -
B201030 Cement Fiberboard Panels	2006	1 - Good	Life Cycle Replacement	2035	\$ 23,970.00	5 -	s -	s -	\$.	s -	s -	s -	s .	s -	s -	s -	s .	s -	s -	s -	š .	\$ 23.970	s -	5 -	5 -
8202001 Windows - 1970s & 1980s	1981	2 - Fair	Life Cycle Replacement	2022	\$ 29,400.00	5 -	5 -	5 -	\$ 29.400	\$ -	\$.	\$	\$	5 -	5 .	5 -	5 .	5 -	5 -	\$ -	5 -	5 -	5 -	5 .	5 -
B202001 Windows - 2005	2006	1 · Good	Life Cycle Replacement	2035	\$ 14,000,00	5 -	s -	\$ -	\$.	s -	\$ -	\$ -	\$.	s -	\$ -	s -	s .	s -	s -	s -	s -	\$ 14,000	s -	5 -	5 -
B203002 Solid Doors - Single	1975	2 · Fair	Lifecycle Repair	2020	\$ 3,000.00	\$ -	\$ 3.000	\$.	\$.	\$.	s ·	\$.	\$.	s .	s -	s .	s .	s -	s .	\$.	s .	\$.	s -	5 .	5 -
B203002 Solid Doors - Single	1975	2 - Fair	Life Cycle Replacement	2022	\$ 12,000.00	5 -	s -	s -	\$ 12,000	s -	s -	s -	\$.	5 -	s -	s -	s -	s -	5 -	s -	5 -	5 -	s -	5 -	s -
8203003 Solid Doors - Double	1975	2 - Fair	Life Cycle Replacement	2022	\$ 20.000.00	5 -	5 -	5 -	\$ 20,000	\$ -	s -	\$.	\$.	5 -	5 -	5 -	s -	5 -	5 -	\$ -	5 -	5 -	5 -	5 .	5 -
8203006 Glazed Doors - Double	2006	1 - Good	Life Cycle Replacement	2030	\$ 10,000,00	5 -	s -	\$ -	\$.	\$ -	\$ -	\$ -	\$.	5 -	\$ -	5 -	s 10.000	s -	s -	s -	s -	5 .	s -	5 -	5 -
8203008 Roll up concession door	2006	1 - Good	Life Cycle Replacement	2031	\$ 10,000,00	5 -	s -	\$ -	\$.	s -	s .	\$.	\$.	5 .	s .	5 -	s .	\$ 10,000	s .	s -	s .	s -	s -	s -	5
B301005 Gutters and Downspouts	2006	1 - Good	Life Cycle Replacement	2036	\$ 1,500.00	5 -	s -	s -	s -	s -	s -	s -	\$.	5 -	s -	s -	s -	s -	5 -	s -	s -	5 -	\$ 1.500	15 -	S -
B301022 Conventional - Modified Bitumen - Classrooms	1981	3 - Poor	Life Cycle Replacement	2020	\$ 140,940.00	5 -	\$ 140,940	\$ -	5 -	5 -	\$ -	\$ -	\$.	5 -	5 -	5 -	s .	5 -	5 -	\$ -	5 -	5 -	5 -	5 -	5 -
8301022 Conventional - Modified Bitumen - Gym	2006	2 - Fair	Life Cycle Replacement	2022	\$ 108,270,00	5 -	s -	s -	\$ 108,270	\$ -	s -	\$ -	\$.	5 -	\$ -	5 -	s .	5 -	5 -	s -	5 -	5 -	5 -	5 -	5 -
B302022 Hatches	1981	1 · Good	Life Cycle Replacement	2025	\$ 5,000.00	5 -	s -	s -	\$ -	s -	s .	\$ 5,000	\$.	5 -	s -	5 -	s .	s -	5 .	s -	s .	s -	s -	s -	5 -
C1010006 Glazed partitions	1981	1 - Good	Life Cycle Replacement	2031	\$ 5,000.00	5 -	s -	\$ -	\$ -	s -	\$ -	\$ -	\$.	\$ -	s -	\$ -	s -	\$ 5,000	s -	\$ -	s -	5 -	s -	5 -	5 -
C101002 Demountable Partitions	1975	1 - Good	Life Cycle Replacement	2025	\$ 49,590.00	5 -	s -	s -	5 -	s -	s -	5 49,590	\$.	5 -	5 -	5 -	s -	5 -	5 -	s -	5 -	5 -	5 -	5 .	5 -
C101003 Retractable Partitions	1975	3 - Poor	Life Cycle Replacement	2020	\$ 15,000.00	5 -	\$ 15,000	s -	5 -	s -	s -	\$ -	\$.	5 -	5 -	5 -	s -	5 -	5 -	s -	5 -	5 -	5 -	5 -	5 -
C102002 Solid interior doors - single	1975	1 - Good	Life Cycle Replacement	2025	\$ 50,000,00	5 -	s -	s -	s -	s -	s -	\$ 50,000	\$.	5 -	s -	5 -	s -	s -	5 -	s -	5 -	5 -	s -	5 -	5 -
C102003 Solid interior door - double	1981	1 - Good	Life Cycle Replacement	2025	\$ 10,500.00	5 -	s -	s -	ś -	s -	s -	S 10,500	\$.	5 -	s -	s -	s .	s -	s -	Ś -	s -	s -	s -	S -	5 -
C103001 Washroom Partitions	1981	1 - Good	Life Cycle Replacement	2025	\$ 18,000.00	s -	s -	\$ -	s -	s -	\$ -	\$ 18,000	\$ -	\$ -	s -	\$ -	s -	s -	5 -	s -	5 -	s -	s -	5 -	5 -
C103009 Built in cabinets and millwork	1975	2 - Fair	Life Cycle Replacement	2024	\$ 11,000.00	s -	s -	\$ -	s -	s -	\$ 11,000	s -	\$ -	\$ -	s -	\$ -	s -	s -	5 -	\$ -	5 -	5 -	5 -	5 -	5 -
C103009 Millwork - trophy case	2006	1 - Good	Life Cycle Replacement	2035	\$ 4,000.00	s -	s -	\$ -	s -	s -	\$ -	\$ -	\$.	\$ -	s -	\$ -	s -	s -	5 -	\$ -	\$ -	\$ 4,000	s -	5 -	5 -
C103010 Cabinets - Kitchen	2006	1 - Good	Life Cycle Replacement	2036	\$ 24,000.00	\$ -	ş -	\$ -	s -	s -	\$ -	s -	\$.	\$ -	ş -	\$ -	ş -	s -	s -	\$ -	\$ -	s -	\$ 24,000	5 .	5 -
C201027 Roof Access Ladders	1981	1 - Good	Life Cycle Replacement	2025	\$ 6,000.00	s -	s -	\$ -	s -	s -	\$ -	\$ 6,000	\$ -	\$ -	s -	\$ -	s -	s -	5 -	s -	\$ -	s -	s -	5 -	5 -
C301005 Painted Wall Covering	2013	2 - Fair	Life Cycle Replacement	2023	\$ 50,200.00	5 -	s -	5 -	5 -	\$ 50,200	s -	s -	\$.	5 -	5 -	5 -	s -	5 -	5 -	s -	5 -	5 -	5 -	5 -	5 -
C301021 Fabric wall covering	1981	2 · Fair	Life Cycle Replacement	2024	\$ 54,000.00	s -	s -	s -	s -	s -	\$ 54,000	s -	\$.	\$ -	s -	\$ -	s -	s -	s -	\$ -	5 -	s -	s -	s -	5 -
C302001 Ceramic - Classrooms	1975	1 - Good	Life Cycle Replacement	2025	\$ 18,720.00	s -	s -	\$ -	\$ -	s .	ş .	\$ 18,720	\$.	\$ -	s .	\$ -	ş .	s -	s -	\$ -	s -	s -	s -	s -	5 -
C302001 Ceramic - Kitchen	2006	1 - Good	Life Cycle Replacement	2036	\$ 10,400.00	5 -	s -	\$ -	\$ -	s -	ş -	\$ -	\$.	\$ -	s -	\$ -	s -	s -	s -	\$ -	5 -	s -	\$ 10,400	5 -	5 -
C302003 Wood Flooring	1981	2 - Fair	Life Cycle Replacement	2023	\$ 90,666.10	5 -	s -	s -	s -	\$ 90,666	s -	s -	s -	\$ -	5 -	\$ -	s -	s -	5 -	s -	s -	5 -	5 -	5 -	5 -
C302005 Carpet - Meeting Room	2013	1 · Good	Life Cycle Replacement	2025	\$ 3,600.00	5 -	s -	\$ -	s -	s -	\$ -	\$ 3,600	\$.	\$ -	s -	5 -	s -	s -	s -	s -	5 -	s -	s -	5 -	5 -
C302005 Vinyl Sheet - 2005	2005	1 - Good	Life Cycle Replacement	2025	\$ 39,840.00	5 -	s -	\$ -	\$ -	s .	ş .	\$ 39,840	\$.	\$ -	s .	\$ -	s .	s -	s -	\$ -	s -	s -	s -	s -	5 -
C302006 Vinyl Sheet - 2013	2013	1 - Good	Life Cycle Replacement	2028	\$ 61,800.00	5 -	s -	\$ -	\$ -	s -	\$ -	s -	\$.	\$ -	\$ 61,800	\$ -	ş .	s -	s -	\$ -	s -	s -	s -	s -	s -
C303006 Painted Ceiling Structures	2013	1 - Good	Life Cycle Replacement	2028	\$ 10,500.00	5 -	s -	\$ -	5 -	5 -	s -	s -	\$.	\$ -	\$ 10,500	5 -	s -	5 -	5 -	s -	5 -	5 -	5 -	5 -	5 -
C303007 Suspended Acoustic Ceiling Panels	2006	1 - Good	Life Cycle Replacement	2026	\$ 26,560.00	5 -	s -	\$ -	s -	s -	\$ -	s -	\$ 26,560	\$ -	s -	\$ -	s -	s -	s -	\$ -	\$ -	s -	s -	s -	5 -
C303007 Suspended Acoustic ceiling panels	1975	2 - Fair	Life Cycle Replacement	2024	\$ 41,760.00	5 -	ş -	\$ -	\$ -	s -	\$ 41,760	\$ -	\$.	\$ -	ş .	\$ -	ş .	s -	s -	\$ -	ş .	s -	s -	ş .	5 -
D201004 Sinks	1975	1 - Good	Life Cycle Replacement	2025	\$ 6,000.00	s -	ş -	\$ -	\$ -	S -	\$ -	\$ 6,000	\$ -	\$ -	s -	\$ -	ş -	s -	ş .	\$ -	\$ -	s -	s -	s -	S -
D201004 Sinks	1975	3 - Poor	Life Cycle Replacement	2020	\$ 5,000.00	5 -	\$ 5,000	s -	s -	s -	s -	s -	S -	\$ -	5 -	s -	s -	s -	s -	s -	5 -	s -	5 -	5 -	S -
D201024 Custodial Sink	1975	1 - Good	Life Cycle Replacement	2025	\$ 2,000.00	5 -	s -	s -	s -	s -	s -	\$ 2,000	s -	5 -	s -	s -	s -	s -	s -	s -	5 -	s -	5 -	5 -	S -
D202001 Domestic Water Pipes and Fittings - 1970s	1975	3 - Poor	Engineering Study	2020	\$ 8,000.00	s -	\$ 8,000	\$ -	s -	s -	\$ -	\$ -	\$.	\$ -	s -	\$ -	s .	s -	\$ ·	\$ -	\$ ·	s -	s -	s -	s -
D202001 Domestic Water Pipes and Fittings - 1970s	1975	3 - Poor	Life Cycle Replacement	2021	\$ 61,380.00	\$ -	ş -	\$ 61,380	\$ -	s -	\$ -	\$ -	\$ -	\$ -	s -	\$ -	s -	S -	S -	\$ -	S -	s -	s -	S -	\$ -
D202006 Domestic Water Equipment - Booster Systems	2006	1 - Good	Life Cycle Replacement	2026	\$ 20,000.00	5 -	s -	\$ -	\$ -	s -	s -	s -	\$ 20,000	\$ -	s -	\$ -	s -	5 -	5 -	\$ -	S -	5 -	s -	s -	s -
D202021 Domestic Water Tank Heaters	2006	2 - Fair	Life Cycle Replacement	2022	\$ 19,102.50	5 -	s -	\$ -	\$ 19,103	s -	\$ -	s -	\$ -	\$ -	s -	s -	s -	5 -	5 -	s -	5 -	5 -	5 -	5 -	5 -
D203001 Sanitary Waste and Vent Piping - 1970s	1975	2 · Fair	Life Cycle Replacement	2024	\$ 46,035.00	\$ -	s -	\$ -	\$ -	s -	\$ 46,035	\$ -	\$.	\$ -	ş -	\$ -	s -	s -	\$ ·	\$ -	\$ -	s -	s -	ş -	5 -
D204001 Rain Water Drainage Piping and Fittings - 1970s	1975	1 - Good	Life Cycle Replacement	2025	\$ 30,690.00	s -	s -	\$ -	\$ -	s -	s -	\$ 30,690	\$.	\$ -	s -	\$ -	s -	s -	s -	\$ -	S -	s -	s -	S -	s -
D301002 Natural Gas Supply	2006	1 - Good	Lifecycle Repair	2020	\$ 5,000.00	\$ -	\$ 5,000	\$ -	s -	s -	\$ -	s -	\$ -	\$ -	s -	s -	s -	s -	s -	\$ -	\$ -	s -	s -	S -	s -
D302008 Fuel Fired Forced Air Furnace - 1980	2006	1 - Good	Life Cycle Replacement	2025	\$ 4,800.00	s -	s -	s -	s -	s -	s -	\$ 4,800	s -	s -	s -	s -	s -	5 -	s -	s -	5 -	s -	5 -	5 -	S -
D302008 Fuel Fired Forced Air Furnace - 2005	2006	1 · Good	Life Cycle Replacement	2025	\$ 10,640.00	s -	s -	\$ -	s -	s -	\$ -	\$ 10,640	\$ -	\$ -	s -	\$ -	s -	s -	S -	\$ -	\$ -	s -	s -	s -	5 -
D302008 Fuel Fired Forced Air Furnace - 2010	2010	1 - Good	Life Cycle Replacement	2028	\$ 3,000.00	s -	s -	\$ -	s -	s -	\$ -	\$ -	\$.	\$ -	\$ 3,000	\$ -	s -	s -	s -	\$ -	\$ -	s -	s -	S -	s -
D303022 Self Contained Cooling Units	1975	3 - Poor	Major Repair	2020	\$ 3,000.00	s -	\$ 3,000	\$ -	ş -	s -	ş -	ş -	\$ -	\$ -	ş -	ş -	ş -	s -	ş -	ş -	ş .	s -	s -	5 -	5 -
D304001 Air Distribution Systems - 1970s	1975	1 - Good	Life Cycle Replacement	2025	\$ 122,760.00	s -	s -	s -	s -	s -	s -	\$ 122,760	s -	S -	5 -	s -	s .	5 -	5 -	s -	5 -	5 -	s -	5 -	s -
D304007 Exhaust Fans	2006	1 · Good	ure Cycle Replacement	2031	5 18,000.00	s -	5 -	5 -	5 -	5 -	5 -	3 -	> ·	5 -	5 -	3 -	5 .	> 18,000	5 -	s -	3 -	5 -	5 -	5 -	3 -
D304026 Kitchen Exhaust Systems	2006	1-Good	Life Lytie Keplacement	2030	5 30,000.00	s -	\$.	> -	5 .	5 .	\$ ·	· ·	· ·	2 .	5 .	> -	\$ 30,000	5 -	5 .	> -	3 .	5 -	5 -	5 .	2 .
D409021 Kitchen Suppression Systems	2005	1-9000	Engineering Study	2020	\$ 2,000.00	5 -	\$ 2,000	5 -	5 -	5 -	5 -	5 -	\$.	\$ ·	5 -	5 -	5 .	5 -	5 -	5 -	5 -	5 -	5 -	5 -	3 ·
DAUGULZ LINICOLD Suppression Systems	2006	1 - Good	ure Cycle Replacement	2026	5 15,000.00	> -	5 -	5 -	2 .	5 ·	5 ·	3 -	5 15,000	5 -	o -	3 -	5 ·	3 -	3 .	5 -	3 .	5 -	· ·	5 -	12 -
D409099 Fire extinguisners	2006	4 - Critical	Engineering study	2019	5 1,000.00	\$ 1,000	5 -	5 -	5 -	5 -	5 -	3 -	5 .	5 -	5 -	5 -	5 .	5 -	5 -	5 -	5 -	5 -	5 -	5 -	13 · ·
D409099 Fire extinguisners	2006	4 - Critical	Life Cycle Replacement	2020	\$ 2,000.00	5 -	\$ 2,000	s .	5 .	5 .	\$.	s .	> ·	> .	5 .	5 -	5 .	5 -	5 .	\$ ·	5 .	5 .	5 .	5 .	S .
p501022 - Electrical Distribution	1975	2 - Fair	Life Cycle Replacement	2024	\$ 27,000.00	5 -	5 -	5 -	5 -	5 -	\$ 27,000	5 -	\$ ·	> -	5 -	5 -	5 -	5 -	5 -	5 -	5 -	5 -	5 -	5 -	S -
0501022 Low Voltage Electrical Service	2018	1-Good	Failure Replacement	2019	\$ 10,500,00	5 10,500	5 -	5 -	5 -	5 -	5 -	5 -	5 -	5 -	5 -	5 -	5 .	5 -	5 -	5 -	5 -	5 -	5 -	5 -	5 -
D501023 Electrical Panels	1981	1 - Good	Life Cycle Replacement	2025	5 28,000.00	5 -	5 -	5 -	5 -	5 -	5 -	5 28,000	5 -	5 -	5 -	5 -	5 -	5 -	5 -	5 -	5 -	5 -	5 -	5 -	5 -
DS02001 Branch Wiring and Devices - 1970s	1975	Z - Fair	Life Cycle Replacement	2024	5 59,090.00	5 -	5 -	s .	5 .	5 .	2 29,040	\$ ·	> .	> .	5 .	5 -	5 .	5 -	5 .	5 .	5 .	5 .	5 -	5 .	S .
Douzoos branch wining and devices 1981	1981	1-0000	Line Lycle Replacement	2025	5 38,095.00	a -	ə -		a -	a .	3 ·	38,095	- ·	2 .	· ·	2 -	· ·		o -	ə -	3 .	o -	· ·	3 .	12 - 1
Douzooz Intenor Lighting - 1970s	1975	z - Fair	ure Cycle Replacement	2024	5 52,870.00	s -	o -	· ·	> ·	· ·	5 52,870	3 .	- ·	5 -	· ·	2 -	o .	3 -	3 ·	5 -	1 .	5 -	· ·	5 .	12
DS02002 Interior lighting - 1981	1981	Z - Fair	Life Cycle Replacement	2022	5 54,085.00	5 -	5 -	3 -	5 34,085	5 -	5 ·	3 -	3 .	2 .	5 -	3 -	5 .	5 -	5 -	5 -	3 .	5 -	· ·	13 .	3 -
DS02002 Interior Lighting - 2005	2006	1-Good	Life Cycle Replacement	20.55	5 19,720.00	5 -	5 -	> -	5 .	5 .	\$ ·	· ·	S	2 .	5 -	3 -	s .	5 -	5 .	5 -	3 .	5 -	5 19,720	5 .	3 -
DSUZU21 Exterior Lighting	2006	1-Good	Life Cycle Replacement	2026	5 12,000.00	5 -	5 -	> -	\$ ·	5 -	S -	· ·	5 12,000	2 -	5 -	3 -	s .	5 -	5 -	s -	S -	5 -	5 -	5 -	<u>}</u>
1502022 cut Lighting - 1970s	1975	z - Fair	ure Cycle Replacement	2322	5 1,565.00	3	o -	· ·	o 1,566	· ·	o -	· ·	- ·	5 -	2 .	2 -	· ·	· ·	3 .	5 -	12 .	o -	· ·	5 .	2 - 1
USU3UU1 Fire Alarm Systems	1975	4 - Critical	ure Cycle Replacement	2019	5 62,750.00	5 62,750	5 -	5 -	2 -	5 -	5 -	3 -	3 .	5 -	5 -	3 -	5 -	5 -	5 -	5 -	3 -	5 -	5 -	5 -	2 -
USUBUUS Emergency Lighting Systems	2006	1 - Good	ure Cycle Replacement	2J25	5 6,275.00	5 -	5 -	5 -	5 -	5 -	5 -	3 .	5 6,275	5 -	5 -	> -	5 -	5 -	5 -	5 -	15 -	5 -	5 -	15 -	3 -
F101001 Playground Equipment - 1989	1989	z - Fair	Life Cycle Replacement	//J22	5 30,000.00	s -	5 -	> -	5 30,000	5 -	» ·	· ·	> ·	\$ ·	5 -	> -	5 -	5 -	5 -	> -	15 -	5 -	5 -	15 -	3 ·
F101001 Playground Equipment - 2011	2011	1-Good	Life Cycle Replacement	2031	5 40,000.00	5 -	5 -	5 -	5 -	5 -	5 -	S .	5 -	5 -	5 -	5 -	5 .	5 40,000	5 -	5 -	5 -	5 -	5 -	5 -	5 -
F101004 Chain Link Fence Enclosure	1975	2 - Fair	Life Cycle Replacement	2022	5 16,000.00	5 -	5 -	5 -	5 16,000	5 -	5 -	5 -	5 -	5 -	5 -	5 -	5 -	5 -	5 -	5 -	5 -	5 -	5 -	5 -	5 -
FIULUUS Arena/kace Irack	1975	3 - POOT	Life Lycle Keplacement	2020	\$ 200,000.00	5 -	> 200,000	> -	5 -	5 -	5 -	12 -	12 .	> -	5 -	> -	5 -	5 -	12 - 1	s -	12 -	5 -	5 -	12 -	12 - 1



Project No. 19063 1 of 2 Peace River Regional District - Facility Condition Assessment Report

Tate Creek Community Centre 20-Year Capital Plan Summary

Element Name	Element Year Installed	Element Condition	Recommendation Type	Recommendation	n Recommendation Cost	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	. 2	2037	2038
G201024 Gravel Paved Surface - Roadway	2006	1 - Good	Life Cycle Replacement	2031	\$ 50,000.00	\$ -	ş -	\$ -	\$ -	S -	\$ -	\$ -	\$.	\$ -	ş -	\$ -	ş .	\$ 50,000	\$.	\$ -	\$.	s -	\$	- \$	- \$	
G202024 Gravel Paved Surface - Parking Area	2006	1 - Good	Life Cycle Replacement	2031	\$ 14,500.00	s -	s -	\$-	\$ -	5 -	\$ -	\$ -	\$ -	\$ -	ş -	\$ -	s -	\$ 14,500	s -	\$ -	\$.	s -	\$	- \$	· \$	
G203022 Concrete Paved Surfaces	1975	3 - Poor	Life Cycle Replacement	2021	\$ 30,000.00	s -	\$ - :	30,000	\$ -	5 -	\$ -	\$ -	\$.	\$ -	s -	\$ -	s -	s -	S -	\$ -	5 -	s -	5	- \$	- S	
G203023 Precast Paved Surfaces	1975	4 - Critical	Life Cycle Replacement	2019	\$ 1,500.00	\$ 1,500	s -	s -	\$ -	s -	\$ -	5 -	\$.	\$ -	s -	\$ -	s -	s -	\$ -	\$ -	\$.	s -	\$	- \$	- S	
G203025 Exterior Stairs (Site)	1975	4 - Critical	Life Cycle Replacement	2019	\$ 8,000.00	\$ 8,000	s -	\$-	\$.	s -	\$.	\$ -	\$.	\$ -	ş -	\$.	\$.	s -	\$.	\$ -	ş .	s -	\$	- \$	· \$	
G204007 Playing Fields	1975	1 - Good	Life Cycle Replacement	2025	\$ 400,000.00	s -	s -	\$-	\$ -	s -	\$.	\$ 400,000	\$.	\$ -	s -	\$ -	ş -	s -	5 -	\$ -	\$.	s -	s	- 5	· \$	
G204009 Flagpoles	1975	1 - Good	Life Cycle Replacement	2025	\$ 5,000.00	5 -	s -	s -	\$ -	5 -	\$ -	\$ 5,000	\$.	\$ -	s -	\$ -	s -	5 -	5 .	\$ -	5 .	5 -	s	- 5	· \$	
G204021 Fencing and Gates - Chain Link Fence	2006	1 - Good	Life Cycle Replacement	2026	\$ 75,000.00	s -	s -	s -	\$ -	s -	\$ -	5 -	\$ 75,000	\$ -	s -	\$ -	s -	s -	s -	5 -	\$.	s -	\$	- \$	- s	
G204031 Retaining Walls - Cast-in-place	1975	3 - Poor	Life Cycle Replacement	2021	\$ 75,000.00	s -	s - :	75,000	\$.	s -	\$.	\$ -	\$.	\$ -	ş -	\$ -	\$.	s -	\$.	\$ -	ş .	s -	\$	- \$	· \$	
G204040 Miscellaneous Structures - Rink Bldg	2011	1 - Good	Life Cycle Replacement	2031	\$ 80,000.00	s -	s -	ş -	\$ -	s -	\$.	\$ -	\$.	\$ -	s -	\$ -	ş -	\$ 80,000	5 .	\$ -	ş .	s -	s	- 5	- S	
G204040 Miscellaneous Structures - Storage Barn	1975	3 - Poor	Life Cycle Replacement	2021	\$ 60,000.00	5 -	5 - 1	60,000	\$ -	5 -	\$.	\$.	\$.	\$ -	s -	\$ -	s -	5 -	5 .	\$ -	5 .	5 -	s	- 5	· \$	
G301001 Domestic Water Storage Tank - Underground	2006	1 - Good	Life Cycle Replacement	2036	\$ 80,000.00	s -	s -	s -	s -	s -	\$ -	5 -	\$ -	\$ -	s -	\$ -	s -	s -	s -	5 -	\$.	s -	\$ 8	3,000 \$	- s	
G3020 Sanitary Sewer	1975	1 - Good	Engineering Study	2020	\$ 8,000.00	s -	\$ 8,000	\$-	\$.	s -	\$.	\$ -	\$.	\$ -	ş -	\$ -	\$.	s -	\$.	\$ -	ş .	s -	\$	- \$	· \$	
G3020 Sanitary Sewer	1975	1 - Good	Life Cycle Replacement	2025	\$ 200,800.00	s -	s -	ş -	\$ -	s -	\$ -	\$ 200,800	\$.	\$ -	s -	\$ -	ş -	s -	5 .	\$ -	ş .	s -	\$	- \$	- \$	
G302001 Sanitary Waste Lagoon	1975	1 - Good	Life Cycle Replacement	2025	\$ 39,000.00	s -	s -	\$ -	\$ -	5 -	\$ -	\$ 39,000	\$ -	\$ -	s -	\$ -	s -	s -	s -	5 -	\$.	s -	5	- \$	· \$	
G306099 Other Fuel Distribution - Propane Distribution	1975	3 - Poor	Condition-Based	2020	\$ 20,000.00	s -	\$ 20,000	s -	\$ -	s -	\$ -	5 -	\$.	\$ -	s -	\$ -	s -	s -	s -	\$ -	\$.	s -	5	- \$	- \$	
G402011 Light poles - 20' high	1975	2 - Fair	Lifecycle Repair	2020	\$ 3,500.00	s -	\$ 3,500	\$ -	\$.	s -	\$ -	\$ -	\$.	\$ -	ş -	\$.	ş .	s -	\$.	5 -	\$.	s -	\$	- \$. \$	
G402011 Light poles - 20' high	1975	2 - Fair	Life Cycle Replacement	2023	\$ 12,600.00	s -	s -	\$ -	\$ -	\$ 12,600	\$.	\$ -	\$.	\$ -	ş -	\$ -	ş .	s -	s .	\$ -	s .	s -	\$	- S	· \$	
				Totals	\$ 3,297,367	\$ 83,750	\$ 441.133	226.380	\$ 298.624	\$ 153,466	\$ 291.755	\$ 1.137.035	\$ 154.835	s -	\$ 75,300	\$ -	\$ 40,00	0 \$ 217,500	\$ ·	\$ -	ş.,	\$ 41,97	0 \$ 13	5.620 S	· 5	

Project No. 19063 2 of 2 **F·CAP·X**

APPENDIX 3

Energy Efficiency Review Findings



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Visual-only Energy Efficiency Review

The following outlines the Energy Efficiency Opportunities (EEOs) identified at the time of the field review.

It should be noted that the scope of work was limited to a visual review of existing site conditions in conjunction with the Facility Condition Assessment (FCA) site assessment; as such, detailed site investigations, engineering calculations, nor computer modeling were not undertaken as part of the assignment.

The following opportunities should be considered for implementation in conjunction with the findings and recommendations of the FCA. Should any of the EEOs be considered for implementation as a stand-along project, it is recommended that further study be undertaken to confirm the savings assumptions and overall project feasibility.

Energy Efficiency Opportunities – Tate Creek Community Centre								
B20 – Exterior Enclosure								
B2.1	Insulate along exposed concrete block wall elevations. Improved insulation helps reduce heat loss from the building and can result in energy savings. Depending on the current insulation values there are some energy saving gains that can be had however these projects are often very expensive and do not result in a payback period less than 50 years. The exception is when there is next to no insulation existing. This is best done during a lifecycle renewal.							
B2.2	Replace window assemblies with thermally broken frames. Thermally broken windows include an insulating gasket within the window frame to mitigate heat loss.							
B2.3	Reinstate weather stripping along access doors, operable window panes, and roof hatches. Caulking and weather stripping are two of the easiest and most cost-effective ways to reduce leaks and drafts due to small cracks and gaps around window frames. This will help reduce drafts and maintain comfort conditions. Savings could equate to 1-5% of the buildings energy usage for heating and cooling.							

Tate Creek Community Centre



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Energy Efficiency O	pportunities – Tate Creek Community Centre
B30 – Roofing	
B3.1	Improve rigid roof insulation along with the upcoming roof renewals. Improved insulation helps reduce heat loss from the building and can result in energy savings. Depending on the current insulation values there are some energy saving gains that can be had however these projects are often very expensive and do not result in a payback period less than 50 years. The exception is when there is next to no insulation existing. This is best done during a lifecycle renewal.
D20 – Plumbing	
D2.1	Ensure domestic hot water distribution pipes are properly insulated. Uninsulated hot water piping loses energy through heat loss from the piping which results in the hot water system to cycle to maintain water temperature even though there may be no demand. The loss can be around 30 btu/hr/m. Insulating the piping can help reduce this loss however with low usage this can result in a long payback.
D2.2	Installation of strategic on-demand water heaters by fixture or area. The use of instantaneous domestic water heaters is intended to save on the heat loss from piping and storage tanks. In a facility where the demand is low the savings is low and this is an option to consider at the time of capital renewal and would reduce the need for insulating the piping.
D30 – HVAC	
D3.1	Replacement of manual analogue thermostat for digital programmable or Smart thermostats with appropriate scheduling features. Savings is achieved through a reduction in the space temperature maintained by the heating/cooling systems. This has the potential to save 10-20% of heating/cooling energy for the building. The implementation cost can range from \$100-\$200.



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Energy Efficiency O	pportunities – Tate Creek Community Centre
D50 – Electrical	
D5.1	Replace current fluorescent and incandescent lighting fixtures with energy efficient LED lamps and fixtures. By switching to either LED screw-in lamps, complete LED fixtures or retrofit kits it will allow you to achieve the maximum of energy efficiency from your lighting systems. The savings is dependent on the length of time the lighting is on for and can result in a payback between 5-15 years. It is important to note that full fixture replacement is recommended for linear fluorescent fixtures to make sure you get the most out of the LED lamps.
D5.2	Replace current incandescent emergency exit signage with energy efficient LED fixtures. The opportunity should be considered in conjunction with replacing existing fixtures to current regulatory requirements (e.g. running man signage). A typical incandescent exit sign consumes 60W versus an LED exit sign that consumes 3-6W. The retrofit cost can be around \$500 and typically has about a 10 year payback.
D5.3	Replacement of manual low-tension light switches for automated occupancy sensors and/or time-restricted controls. Occupancy sensors typically save 20% of the amount of time lighting is on resulting in energy savings. It is recommended these be installed in areas with intermittent occupancy such as washrooms.



APPENDIX 4

Preventative Maintenance Plan



		rivir Tasking - T	ale creek cc		-	1			r
Uniformat 4-Asset Functional Name	PMP Task	Frequency	Estimate Time	Resource/Craft	Failure Risk	Materials/Consumables	LOTO (Y/N)	Completed By	Date
A1010 - Standard Foundations	Inspection through Building Condition Assessment	5 years	greater than 1 day	Consultant	Major	NA	N		
A1010 - Standard Foundations	Inspection through Building Condition Assessment	5 years	greater than 1 day	Consultant	Major	NA	N		
A1010 - Structural Interior Walls & Structural Steel Columns	Inspection through Building Condition Assessment	5 years	greater than 1 day	Consultant	Major	NA	N		
A1030 - Standard Slab on Grade	Inspection through Building Condition Assessment	5 years	greater than 1 day	Consultant	Major	NA	N		
A1030 - Standard Slab on Grade	Inspection through Building Condition Assessment	5 years	greater than 1 day	Consultant	Major	NA	N		
B1020 - Roof Deck	Inspection through Building Condition Assessment	5 years	greater than 1 day	Consultant	Major	NA	N		
B1020 - Roof Drain	Roof Drain	semi-annually	4 hours	Building Operator	Minor	Drain Snake, Stiff Brush	N		
	Inspect and clean out any debris as needed, check all seals where drain penetrates roof								
B1020 - Roof Drain	structure, ensure flashing, if any, is in good repair	semi-annually	4 hours	Building Operator	Minor	Drain Snake, Stiff Brush	N		
						Lubricate, Tool Set, wire			
B1020 - Roof Hatch	Roof Hatch	semi-annually	4 hours	Building Operator	Minor	brush, Paint(as required)	N		
	have a first for the					Lubricate, Tool Set, wire			
B1020 - Roof Hatch	Inspect roof seals	semi-annually	4 hours	Building Operator	Minor	brush, Paint(as required)	N		
						Laboration Tradicities			
B1020 Beef Heteb	Tast and inspect door scale	comi oppuoltu	4 hours	Building Operator	Minor	Lubricate, 100i Set, wire	N		
B1020 - Roof Hatch	Test and inspect door seals	semi-annually	4 nours	Building Operator	Minor	brush, Pain(as required)	N		
						Lubricate Tool Set wire			
B1020 - Roof Hatch	Test and inspect door latch	semi-annually	4 hours	Building Operator	Minor	brush Paint(as required)	N		
51020 1100111001		donin drinddily	4 Houro	Building Operator		brabil, Fam(ab required)			
						Lubricate Tool Set wire			
B1020 - Boof Hatch	Lubricate joints and moving parts	semi-annually	4 hours	Building Operator	Minor	brush. Paint(as required)	N		
51025 1100111401		donin drinddily	4 Houro	Dullaring Operator					
						Lubricate, Tool Set, wire			
B1020 - Roof Hatch	Paint and patch door, as needed.	semi-annually	4 hours	Building Operator	Minor	brush, Paint(as required)	N		
	Check where the stack/vent connects to roof surface for cracks, as well as checking for cracked								
B1020 - Roof Stacks/Vents	sealants and missing rain collars or vent caps.	semi-annually	4 hours	Building Operator	Minor	NA	N		
B1020 - Roof Systems	Inspection through Building Condition Assessment	5 years	greater than 1 day	Consultant	Major	NA	N		
						Specialized Equipment			
B1020 - Roof Systems	Comprehensive roof inspection should be completed by a qualified roof inspector. Looking for/at:	annually	8 hours	Vendor	Major	Provided by Vendor	N		
						Specialized Equipment			
B1020 - Roof Systems	Blistering	annually	8 hours	Vendor	Major	Provided by Vendor	N		
						Specialized Equipment			
B1020 - Roof Systems	Pressure ridges/cracks	annually	8 hours	Vendor	Major	Provided by Vendor	N		
	Plate as well been					Specialized Equipment			
B1020 - Roof Systems	Fish-mouthing	annually	8 hours	Vendor	Major	Provided by Vendor	N		
Brand Brand Brand	Dunaturaa		0.1	1 d		Specialized Equipment			
B 1020 - Roof Systems	Functures	annually	8 nours	vendor	Major	Provided by Vendor	N		
DADOD Devilorment	Construction of automotion		0.1	V d		Specialized Equipment			
B 1020 - Rooi Systems	opoligy tool surfaces	annuany	o nours	Vendor	IVIAJOI	Specialized Equipment	IN		
P1020 - Poof Susteme	Ponding	annually	8 hours	Vender	Major	Provided by Vendor	N		
		unnouny	0 Hodro	Vendor	major	Specialized Equipment			
B1020 - Boof Systems	Drains	annually	8 hours	Vendor	Major	Provided by Vendor	N		
						Specialized Equipment			
B1020 - Roof Systems	Eavestroughs and Downspouts	annually	8 hours	Vendor	Maior	Provided by Vendor	N		
						Specialized Equipment			
B1020 - Roof Systems	Skylights	annually	8 hours	Vendor	Major	Provided by Vendor	N		
						Specialized Equipment			
B1020 - Roof Systems	Hatches	annually	8 hours	Vendor	Major	Provided by Vendor	N		
						Specialized Equipment			
B1020 - Roof Systems	Roof walls/Cap Flashings/Base flashings	annually	8 hours	Vendor	Major	Provided by Vendor	N		
						Specialized Equipment			
B1020 - Roof Systems	Invasive plant growth	annually	8 hours	Vendor	Major	Provided by Vendor	N		
						Specialized Equipment			
B1020 - Roof Systems	Stacks and Vents	annually	8 hours	Vendor	Major	Provided by Vendor	N		
			L.	L	l	Specialized Equipment			
B1020 - Roof Systems	Chimneys	annually	8 hours	Vendor	Major	Provided by Vendor	N		

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Peace River Regional District PMP Tasking - Tate Creek CC										
Uniformat 4-Asset Functional Name	PMP Task	Frequency	Estimate Time	Resource/Craft	Failure Risk	Materials/Consumables	LOTO (Y/N)	Completed By	Date	
						Specialized Equipment				
B1020 - Roof Systems	Flashing	annually	8 hours	Vendor	Major	Provided by Vendor	N			
						Specialized Equipment				
B1020 - Roof Systems	Masonry	annually	8 hours	Vendor	Major	Provided by Vendor	N			
B2010 - Exterior Walls	Inspection through Building Condition Assessment	5 years	greater than 1 day	Consultant	Major	NA	N			
B2020 - Exterior Windows	Inspection through Building Condition Assessment	5 years	greater than 1 day	Consultant	Moderate	NA	N			
B203001 - Exterior Door Hardware	Visual Inspection of all components, grease hinges and inspect door closers for proper operation	quarterly	10-20 minutes	Building Operator	Minor	Lubricant, toolset	N			
B203001 - Exterior Doors	Visual Inspection of all components, grease hinges and inspect door closers for proper operation	quarterly	5-10 minutes	Building Operator	Minor	Lubricant, toolset	N			
B203001 - Exterior Doors	Adjust door speed as needed	quarterly	5-10 minutes	Building Operator	Minor	Lubricant, toolset	N			
B203002 - Glazed Doors	Adjust door speed as needed	quarterly	10-20 minutes	Building Operator	Minor	Lubricant, toolset	N			
B203002 - Glazed Doors	Visual Inspection of all components, grease binges and inspect door closers for proper operation.	quarterly	10-20 minutes	Building Operator	Minor	Lubricant toolset	N			
B203002 - Glazed Doors	Check all binges for proper operation	quarterly	10-20 minutes	Building Operator	Minor	Lubricant toolset	N		-	
B203002 - Glazed Doors	Clean all binnes and lubricate as required	quarterly	10-20 minutes	Building Operator	Minor	Lubricant toolset	N		-	
B203002 - Glazed Doors	Adjust door speed as needed	quarterly	10-20 minutes	Building Operator	Minor	Lubricant toolset	N		+	
B203002 - Glazed Doors	Lubricate door clocar as needed	quarterly	10-20 minutes	Building Operator	Minor	Lubricant, toolset	N		-	
B203002 - Glazed Doors	check latch operation and adjusts as needed	quarterly	10-20 minutes	Building Operator	Minor	Lubricant, toolset	N		-	
B203002 - Glazed Doors	lancet frames for preparation	quarterly	10-20 minutes	Building Operator	Minor	Lubricant, toolaet	IN N		-	
B203002 - Glazed Doors	Inspect names for proper alignment	quarterly	TU-20 Minutes	Building Operator	WIITIOI	Lubricant, tobiset	IN		-	
B203003 - Overhead Doors	Inspect: All rollers, bearings, cables, chains, shaft, track and hardware. All safety equipment and related controls.	quarterly	4 hours	Door Technician	Minor	Belts, Toolset, Voltmeter, Springs, Lubricant, other specialized equipment provided by vendor	Y			
B203003 - Overhead Doors	Adjust: All spring counterbalance assemblies, level of door, track spacing.	quarterly	4 hours	Door Technician	Minor	Belts, Toolset, Voltmeter, Springs, Lubricant, other specialized equipment provided by vendor	Y			
B203003 - Overhead Doors	Lubricate: Counterbalance shaft bearings, rollers, hinges, chain hoists, bearings and disconnect.	quarterly	4 hours	Door Technician	Minor	Belts, Toolset, Voltmeter, Springs, Lubricant, other specialized equipment provided by vendor	Y			
B203003 - Overhead Doors	Tighten: Hardware including hinges, couplings, drums, track brackets and hangers	quarterly	4 hours	Door Technician	Minor	Belts, Toolset, Voltmeter, Springs, Lubricant, other specialized equipment provided by vendor	Y			
B203003 - Overhead Doors	Inspect: Operator bearings, disconnect linkage and ropes and chain hoist assemblies.	quarterly	4 hours	Door Technician	Minor	Belts, Toolset, Voltmeter, Springs, Lubricant, other specialized equipment provided by vendor	Y			
B203003 - Overhead Doors	Adjust: Clutch, brake and limit assemblies.	quarterly	4 hours	Door Technician	Minor	Belts, Toolset, Voltmeter, Springs, Lubricant, other specialized equipment provided by vendor	Y			
B203003 - Overhead Doors	Lubricate: Bearings, chains, gear reducers, disconnects and pivot points.	quarterly	4 hours	Door Technician	Minor	Belts, Toolset, Voltmeter, Springs, Lubricant, other specialized equipment provided by vendor	Y			
B203003 - Overhead Doors	Tighten: Sprockets, brake solenoids, draw-arms and hook-up.	quarterly	4 hours	Door Technician	Minor	Belts, Toolset, Voltmeter, Springs, Lubricant, other specialized equipment provided by vendor	Y			

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Dubma duam Protect Stand Approx Part (Not Approx <th colspan="12">Peace River Regional District PMP Tasking - Tate Creek CC</th>	Peace River Regional District PMP Tasking - Tate Creek CC											
Base of the sector of the se	Uniformat 4-Asset Functional Name	PMP Task	Frequency	Estimate Time	Resource/Craft	Failure Risk	Materials/Consumables	LOTO (Y/N)	Completed By	Date		
Applic Deck contributions. Ip assetly, hold on int and inage. and mathew of home on point an	B203003 - Overhead Doors	Inspect: Hold down unit, springs, slide bar, rear hinges, lip assembly, hydraulic hoses and connections.	quarterly	4 hours	Door Technician	Minor	Belts, Toolset, Voltmeter, Springs, Lubricant, other specialized equipment provided by vendor	Y				
Laholas Algo and an analysis of a second and	8203003 - Overheard Doors	Adjust: Deck counterbalances, lip assembly, hold down unit and linkage.	quarterly	4 hours	Door Technician	Minor	Belts, Toolset, Voltmeter, Springs, Lubricant, other specialized equipment provided by vendor	×				
Typic: Typic:<	B203003 - Overhead Doors	Lubricate: All pivot points, rear hinges, lip hinge and shaft. Clean dock pit.	quarterly	4 hours	Door Technician	Minor	Belts, Toolset, Voltmeter, Springs, Lubricant, other specialized equipment provided by vendor	Y				
Chill Partinon - General Import and Involves partial and lucitate as mediad perimananal So mutuals Building Operator None Totales, Marinan N Image C1010 - Partitions - General Ensura all Involves and aligned and there from durin estimananal 30 mituals Building Operator Monor Totales, Marinan N Image C1010 - Partitions - General Ensura all Involves and aligned and there from durin estimananal 30 mituals Building Operator Monor Totales, Marinan N Image C1010 - Partitions - General General Ministry Door General Ministry Door General Ministry Door General Ministry Door N Image N Image Monor Totales, Marinan N <	B203003 - Overhead Doors	Tighten: Linkage fastener and cable clamps.	quarterly	4 hours	Door Technician	Minor	Belts, Toolset, Voltmeter, Springs, Lubricant, other specialized equipment provided by vendor	×				
C1010 - Pathicas - General Tightna H progra as medid Section 2 Static Q general Moner Toolset, Marination Mone Toolset, Marination Moner Moner <td>C1010 - Partitions - General</td> <td>Inspect all moving parts and lubricate as needed</td> <td>semi-annually</td> <td>30 minutes</td> <td>Building Operator</td> <td>Minor</td> <td>Toolset lubricant</td> <td>N</td> <td></td> <td>-</td>	C1010 - Partitions - General	Inspect all moving parts and lubricate as needed	semi-annually	30 minutes	Building Operator	Minor	Toolset lubricant	N		-		
Circle - Functional Text operation Funct and transform adjust and the form dots's semi-annual/s So minules Builting Operator Word Toolet, Unbriant N Percentions- C1010 - Pertitions - General Check all hinges of tropper operation quarter/y 30 minules Builting Operator More Toolet, Unbriant N C10200 - Standard Interior Doos Check all hinges of tropper operation quarter/y 30 minules Builting Operator More Toolet, Unbriant N C10200 - Standard Interior Doos Adjust door speed as needed quarter/y 30 minules Builting Operator More Toolet, Unbriant N C10200 - Standard Interior Doos Lobect all moges or proper operation quarter/y 30 minules Builting Operator More Toolet, Unbriant N C10200 - Standard Interior Doos Check all hinges for poper operation quarter/y 30 minules Builting Operator More Toolet, Unbriant N C10200 - Standard Interior Doos Check all hinges for poper operation quarter/y 30 minules Builting Operator More Toolet, Unbriant <	C1010 - Partitions - General	Tighten all hinges as needed	semi-annually	30 minutes	Building Operator	Minor	Toolset lubricant	N				
C1010 - Francisco - General Test operation Statuting Operator More Toolet, Lubricant N N N N C102001 - Standard Interior Doos Check all hingse proper operation quartery 30 minutes Building Operator More Toolet, Lubricant N	C1010 - Partitions - General	Ensure all tracks are aligned and free from debris	semi-annually	30 minutes	Building Operator	Minor	Toolset, lubricant	N		-		
C102001 - Shandar Interior Doors Check all hings for proper operation sparthy 30 minuss Building Operator Micor Toolet, Lubricat N C102001 - Shandar Interior Doors Adjust door speed as needed sparthy 30 minules Building Operator Micor Toolet, Lubricant N C102001 - Shandar Interior Doors Lubratel door check an anedda sparthy 30 minules Building Operator Micor Toolet, Lubricant N C102001 - Shandar Interior Doors check alth operator and adjusts as needed sparthy 30 minules Building Operator Micor Toolet, Lubricant N C102001 - Shandar Interior Doors check althings for opport operation sparthy 30 minules Building Operator Micor Toolet, Lubricant N C102001 - Shandar Interior Doors check althings for opport operation sparthy 30 minules Building Operator Micor Toolet, Lubricant N C102001 - Shandar Interior Doors check althings for opport operation sparthy 30 minules Building Operator Micor Toolet, Lubricant N C1020	C1010 - Partitions - General	Test operation	semi-annually	30 minutes	Building Operator	Minor	Toolset, lubricant	N		+		
C120201-Shandard Interior Doors Oten at Indige and Abricals as required spatial Building Operator Minor Toblet, Lubricant N Image C120201-Shandard Interior Doors Lubricate door obser as needed quarterly 30 minutes Building Operator Minor Toolet, Lubricant N Image C120201-Shandard Interior Doors Hock Rich Operation and Adjusta as needed quarterly 30 minutes Building Operator Minor Toolet, Lubricant N Image Image N Image	C102001 - Standard Interior Doors	Check all hinges for proper operation	quarterly	30 minutes	Building Operator	Minor	Toolset, Lubricant	N		-		
C120201-Shandard Interior Doors Adjuit door speed as needed sparted Sparted Minor Toollet, Lubriant N Image C120201-Shandard Interior Doors check kith operation and adjusts as needed quarted/ 30 minutes Building Operator Minor Toollet, Lubriant N Image C120201-Shandard Interior Doors check kith operation and adjusts as needed quarted/ 30 minutes Building Operator Minor Toollet, Lubriant N Image	C102001 - Standard Interior Doors	Clean all hinges and lubricate as required	quarterly	30 minutes	Building Operator	Minor	Toolset, Lubricant	N				
C102001 Standard Interior Doors Unificate door closer as meded startery S0 minutes Building Operator Monor Tooles, Lubrant N Image Image C102001 Standard Interior Doors Inspect frames for proper alignment quartery 30 minutes Building Operator Monor Tooles, Lubrant N Image N Image N Image N Image N Image N Image Image N Image Image N Image Image <td< td=""><td>C102001 - Standard Interior Doors</td><td>Adjust door speed as needed</td><td>quarterly</td><td>30 minutes</td><td>Building Operator</td><td>Minor</td><td>Toolset, Lubricant</td><td>N</td><td></td><td></td></td<>	C102001 - Standard Interior Doors	Adjust door speed as needed	quarterly	30 minutes	Building Operator	Minor	Toolset, Lubricant	N				
C102001Standard Interior DoorsInspect Transe for poper alignmentquarterly30 minutesBuilding OperatorMinorToolket, LubricantNNC102001Standard Interior DoorsObes All hinges for poper agenationquarterly30 minutesBuilding OperatorMinorToolket, LubricantNC102001Standard Interior DoorsClean all hinges and buincts as requiredquarterly30 minutesBuilding OperatorMinorToolket, LubricantNC102001Standard Interior DoorsAlluit door speed as neededquarterly30 minutesBuilding OperatorMinorToolket, LubricantNC102001Standard Interior Doorsdheot Standard Interior DoorsMinorToolket, LubricantNC102001Standard Interior Doorsdheot Standard Interior DoorsMinorToolket, LubricantNC102001Standard Interior DoorsInspect Tannes (Building OperatorMinorToolket, LubricantNC102001Standard Interior DoorsInspect Tannes (Building OperatorMinorToolket, LubricantNC102001Standard Interior DoorsClean all hinges and Inficita as requiredmonthy10-20 minutesBuilding OperatorMinorToolket, LubricantNC102003Fie DoorsClean all hinges and Inficita as requiredmonthy10-20 minutesBuilding OperatorMajorToolket, Lubricant<	C102001 - Standard Interior Doors	Lubricate door closer as needed	quarterly	30 minutes	Building Operator	Minor	Toolset Lubricant	N				
C120201 - Standard Interior Doors Dinek all hings for propregration quarterly 30 mixules Building Operator Minor Totalet, Lubricant N C120201 - Standard Interior Doors Dinek all hings for propregration quarterly 30 mixules Building Operator Minor Totalet, Lubricant N C120201 - Standard Interior Doors Dinek all hings for propregration quarterly 30 mixules Building Operator Minor Totalet, Lubricant N C120201 - Standard Interior Doors Lubricant & one seeded quarterly 30 mixules Building Operator Minor Totalet, Lubricant N C120201 - Standard Interior Doors Interiation Sorger alignment quarterly 30 mixules Building Operator Minor Totalet, Lubricant N C120201 - Standard Interior Doors Test emergency door relases (liding door) quarterly 30 mixules Building Operator Minor Totalet, Lubricant N C120201 - Standard Interior Doors Clean and Insign for proper operation monthy 10-20 mixules Building Operator Minor Totalet, Lubricant N Clean alter alter alter alter a	C102001 - Standard Interior Doors	check latch operation and adjusts as needed	quarterly	30 minutes	Building Operator	Minor	Toolset, Lubricant	N				
C102001 - Standard Interior DoorsCheck all hinges for proper operationquartery30 minutesBuiding OperatorMinorTotelit, LubricantNC102001 - Standard Interior DoorsAlgua door speed as neededquartery30 minutesBuiding OperatorMinorTotelit, LubricantNC102001 - Standard Interior DoorsAlgua door speed as neededquartery30 minutesBuiding OperatorMinorTotelit, LubricantNC102001 - Standard Interior Doorscheck latch operation and alguits as neededquartery30 minutesBuiding OperatorMinorTotelit, LubricantNC102001 - Standard Interior DoorsInspect finames for proper algumentquartery30 minutesBuiding OperatorMinorTotelit, LubricantNC102001 - Standard Interior DoorsClean and test automatic sensors (kilding door)quartery30 minutesBuiding OperatorMinorTotelit, LubricantNC102003 - File DoorsClean and theges and Lubricatas exqueriedmonthy10-20 minutesBuiding OperatorMigorTotelit, LubricantN <t< td=""><td>C102001 - Standard Interior Doors</td><td>Inspect frames for proper alignment</td><td>quarterly</td><td>30 minutes</td><td>Building Operator</td><td>Minor</td><td>Toolset Lubricant</td><td>N</td><td></td><td>-</td></t<>	C102001 - Standard Interior Doors	Inspect frames for proper alignment	quarterly	30 minutes	Building Operator	Minor	Toolset Lubricant	N		-		
C102001Standard Interior DoorsConstructionNumber	C102001 - Standard Interior Doors	Check all hinges for proper operation	quarterly	30 minutes	Building Operator	Minor	Toolset Lubricant	N		-		
C120201 - Standard Interior Doors Adjust door speed as needed sparterly 30 mnudes Building Operator Minor Totalet. Lubricant N C120201 - Standard Interior Doors check lath operation and adjusts as needed quarterly 30 mnudes Building Operator Minor Totalet. Lubricant N C120201 - Standard Interior Doors Inspect frames for proper adjusts as needed quarterly 30 mnudes Building Operator Minor Totalet. Lubricant N C120201 - Standard Interior Doors Test emergency door release (liding door) quarterly 30 mnudes Building Operator Minor Totalet. Lubricant N C120201 - Standard Interior Doors Clean and Inhiges and Inhicrica as required monthy 10-20 minutes Building Operator Minor Totalet. Lubricant N	C102001 - Standard Interior Doors	Clean all binges and lubricate as required	quarterly	30 minutes	Building Operator	Minor	Toolset Lubricant	N		-		
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C120201 - Standard Interior Doors check latch operation and alights as needed parterly 30 minutes Building Operator Minor Toolset, Lubricant N C102001 - Standard Interior Doors Test emergency door release (sliding door) quarterly 30 minutes Building Operator Minor Toolset, Lubricant N C102001 - Standard Interior Doors Clean and test automatic sensors (sliding door) quarterly 30 minutes Building Operator Minor Toolset, Lubricant N C102001 - Standard Interior Doors Clean all hinges to proper operation monthy 110-20 minutes Builing Operator Minor Toolset, Lubricant N C102003 - Fire Doors Clean all hinges to proper operation monthy 110-20 minutes Builing Operator Major Toolset, Lubricant N C12003 - Fire Doors Lubricant door obser as needed monthy 110-20 minutes Builing Operator Major Toolset, Lubricant N C120203 - Fire Doors Inspect Trames for proper alignment monthy 10-20 minutes Builing Operator Major Toolset, Lubricant N C120207 - Interior Door Hardware (door openers) <	C102001 - Standard Interior Doors	Lubricate door closer as needed	quarterly	30 minutes	Building Operator	Minor	Toolset Lubricant	N		-		
C102001 - Standard Interior Doors Inspect frames for proper alignment Number Juilding Operator Minor Toolset, Lubricant N N C102001 - Standard Interior Doors Clean and lest automatic sensore (sliding door) Sun indust Building Operator Minor Toolset, Lubricant N N C102001 - Standard Interior Doors Chean and Ininges an proper agration Nonthes Building Operator Minor Toolset, Lubricant N C102001 - Fixe Doors Chean all hinges and Lubricate as required monthy 11-20 minutes Building Operator Major Toolset, Lubricant N C102003 - Fixe Doors Chean all hinges and Lubricate as required monthy 11-20 minutes Building Operator Major Toolset, Lubricant N C102003 - Fixe Doors Chean all hinges and guitsta as needed monthy 11-20 minutes Building Operator Major Toolset, Lubricant N C102003 - Fixe Doors Inspect frames for proper alignment monthy 11-20 minutes Building Operator Major Toolset, Lubricant N C102007 - Interior Door Hardware (door operens) Teol set Lubricant N N <	C102001 - Standard Interior Doors	check latch operation and adjusts as needed	quarterly	30 minutes	Building Operator	Minor	Toolset Lubricant	N		-		
Origonic Labitities Desired and interior Doors Test emergency door release (alding door) Quarterly Dor Initialis During Operator Minor Toolset, Lubricant N C102001 - Standard Interior Doors Clean and test automatic sensors (alding door) Quarterly 30 minutes Building Operator Minor Toolset, Lubricant N C102003 - Fire Doors Clean all hinges to proper operation monthy 110-20 minutes Building Operator Major Toolset, Lubricant N C102003 - Fire Doors Clean all hinges on poper operation monthy 110-20 minutes Building Operator Major Toolset, Lubricant N C102003 - Fire Doors Lubricate door obsers a needed monthy 10-20 minutes Building Operator Major Toolset, Lubricant N C102003 - Fire Doors Inspect frames for proper alignment monthy 10-20 minutes Building Operator Major Toolset, Lubricant N C102007 - Interior Door Hardware (door openers) Test emergency door release and valuish as a needed monthy 10-20 minutes Buil	C102001 - Standard Interior Doors	Inspect frames for proper alignment	quarterly	30 minutos	Building Operator	Minor	Toolset, Lubricant	N		-		
C102001 - Signading Instructions Clear and set automatic sensors (ultiming foor) Quarterly 30 minutes Juilding Operator Ninor Tooliest, Lubricant N C102000 - Fixe Doors Cinck all hinges for proper agrintion monthly 10-20 minutes Building Operator Major Tooliest, Lubricant N N C102003 - Fixe Doors Cinck all hinges and lubricate as required monthly 10-20 minutes Building Operator Major Tooliest, Lubricant N N C102003 - Fixe Doors Lubricate door obser as needed monthly 10-20 minutes Building Operator Major Tooliest, Lubricant N <td< td=""><td>C102001 - Standard Interior Doors</td><td>Test emergency door release (sliding door)</td><td>quarterly</td><td>30 minutes</td><td>Building Operator</td><td>Minor</td><td>Toolset, Lubricant</td><td>N</td><td></td><td></td></td<>	C102001 - Standard Interior Doors	Test emergency door release (sliding door)	quarterly	30 minutes	Building Operator	Minor	Toolset, Lubricant	N				
Origon Control Operating Operation Operation Operation N C120203 Fire Doors Clear all hinges for poper operation monthly 112-20 minutes Builing Operator Major Toolset, Lubricant N C120203 Fire Doors Clear all hinges for poper operation monthly 112-20 minutes Builing Operator Major Toolset, Lubricant N C120203 Fire Doors Adjust door operator Adjust door operator Major Toolset, Lubricant N C120203 Fire Doors Lubricate door obsers as needed monthly 10-20 minutes Builing Operator Major Toolset, Lubricant N C120203 Fire Doors Lubricate door obsers as needed monthly 10-20 minutes Builing Operator Major Toolset, Lubricant N C120207 Fire Doors Inspect frames for proper alignment monthly 10-20 minutes Builing Operator Major Toolset, Lubricant N C120207 Fire Door Hardware (door openers) Testal avaining/caution signs arin place an visable monthly 10-20 minutes <td>C102001 - Standard Interior Doors</td> <td>Clean and test automatic sensors (sliding door)</td> <td>quarterly</td> <td>30 minutes</td> <td>Building Operator</td> <td>Minor</td> <td>Tooleet, Lubricant</td> <td>N</td> <td></td> <td>+</td>	C102001 - Standard Interior Doors	Clean and test automatic sensors (sliding door)	quarterly	30 minutes	Building Operator	Minor	Tooleet, Lubricant	N		+		
C102003 Fire Doors Clasm all hinges and Lubricate as required monthly 10-20 minutes Building Operator Major Tooliset, Lubricant N M C102003 Fire Doors Adjuit door spend as needed monthly 10-20 minutes Building Operator Major Tooliset, Lubricant N M <t< td=""><td>C102003 - Eira Doore</td><td>Check all binges for proper operation</td><td>monthly</td><td>10.20 minutos</td><td>Building Operator</td><td>Major</td><td>Toolset, Lubricant</td><td>N</td><td></td><td>+</td></t<>	C102003 - Eira Doore	Check all binges for proper operation	monthly	10.20 minutos	Building Operator	Major	Toolset, Lubricant	N		+		
C102002 Fire Doors Adjust door spared as needed monthy 10-20 minutes Building Operator Major Toolset, Lubricant N C102003 Fire Doors Lubricate door obser as needed monthy 10-20 minutes Building Operator Major Toolset, Lubricant N C102003 Fire Doors Unbricate door obser as needed monthy 10-20 minutes Building Operator Major Toolset, Lubricant N C102003 Fire Doors Inspect frames for proper alignment monthy 10-20 minutes Building Operator Major Toolset, Lubricant N C102007 - Interior Door Hardware (door openers) Ensure al warming/caution signs are in place and visible monthy 10-20 minutes Building Operator Minor Toolset, Lubricant N C102007 - Interior Door Hardware (door openers) Inspect al infernal motors, clean, emove dust and debica as required monthy 10-20 minutes Building Operator Minor Toolset, Lubricant N C102007 - Interior Door Hardware (door openers) Inspect al infernal motors, clean, emove dust and debica as required monthy 10-20 minutes Building Operator Minor Toolset, Lub	C102003 - Fire Doors	Clean all hinges and lubricate as required	monthly	10-20 minutes	Building Operator	Major	Toolset, Lubricant	N				
C102002 Fine Doors Lubricate door obser as needed monthy 10-20 minutes Building Operator Napp Tooliset, Lubricate N C102002 Fine Doors check lubricate door obser as needed monthy 10-20 minutes Building Operator Napp Tooliset, Lubricated N C102003 Fine Doors inspect frames for proper alignment monthy 10-20 minutes Building Operator Mapr Tooliset, Lubricant N C102007 Fine Door Hardware (door openers) Ensure all warning/caulton signs are in place and viable monthy 10-20 minutes Building Operator Minor Tooliset, Lubricant N C102007 Fine Lobor Ensure all warning/caulton signs are in place and viable monthy 10-20 minutes Building Operator Minor Tooliset, Lubricant N C102007 Fine Lobor Sandware (door openers) Inspect all inferma motors, clean, remove duat and dubricate as required monthy 10-20 minutes Building Operator Minor Tooliset, Lubricant N C102007 Fine Lobor Sandware (door openers) Inspect all inferma motors, clean, remove duat and dubricate as required monthy 10-20 minutes Building Operator <td>C102003 - Fire Doors</td> <td>Adjust door speed as needed</td> <td>monthly</td> <td>10-20 minutes</td> <td>Building Operator</td> <td>Major</td> <td>Toolset, Lubricant</td> <td>N</td> <td></td> <td>-</td>	C102003 - Fire Doors	Adjust door speed as needed	monthly	10-20 minutes	Building Operator	Major	Toolset, Lubricant	N		-		
C102002 Fire Doors Indext and Aglipts as needed Indext and Aglipts agging and Idda Aglipts as needed Indext and Aglipts agging Aglipts and Idda Aglipts agging Aglipts and	C102003 - Fire Doors	Lubricate door operative needed	monthly	10-20 minutes	Building Operator	Major	Toolset, Lubricant	N				
C102002 Fire Doors Inspect frames for proper alignment monthy 10-20 minutes Building Operator Major Toolset, Lubricant N Month C102007 - Interior Door Hardware (door openers) Ensure all warning/caultion signs are in place and visible monthy 10-20 minutes Building Operator Minor Toolset, Lubricant N Month C102007 - Interior Door Hardware (door openers) Ensure all warning/caultion signs are in place and visible monthy 10-20 minutes Building Operator Minor Toolset, Lubricant N Month C102007 - Interior Door Hardware (door openers) Inspect all informal motors, clean, emove dust and dobtais and lubricate as required monthy 10-20 minutes Building Operator Minor Toolset, Lubricant N Month C102007 - Interior Door Hardware (door openers) Inspect all informal motors, clean, emove dust and dubricate as required. monthy 10-20 minutes Building Operator Minor Toolset, Lubricant N Month C102007 - Interior Door Hardware (door openers) Lubricate as required, as prevised and alguita as required, as pre ANSI (PMLA AS519 monthy 10-20 minutes Building Operator Minor Toolset, Lubricant N Month Toolset, Lubricant <td>C102003 - Fire Doors</td> <td>check latch operation and adjusts as needed</td> <td>monthly</td> <td>10-20 minutes</td> <td>Building Operator</td> <td>Major</td> <td>Toolset, Lubricant</td> <td>N</td> <td></td> <td></td>	C102003 - Fire Doors	check latch operation and adjusts as needed	monthly	10-20 minutes	Building Operator	Major	Toolset, Lubricant	N				
Closer Construction Construction <thconstruction< th=""> Construction</thconstruction<>	C102003 - Fire Doors	Inspect frames for proper alignment	monthly	10-20 minutes	Building Operator	Major	Toolset Lubricant	N		-		
C102007 - Interior Door Hardware (door openary) Ensure all warning/caution signs are in place and visible monthy 10-20 minutes Building Operator Minor Tooliset, Lubricant N C102007 - Interior Door Hardware (door openary) Insertion all werning/caution signs are in place and visible monthy 10-20 minutes Building Operator Minor Tooliset, Lubricant N C102007 - Interior Door Hardware (door openary) Inspect all interna motors, clean, emove dust and debratis and lubricate as required monthy 10-20 minutes Building Operator Minor Tooliset, Lubricant N C102007 - Interior Door Hardware (door openars) Ensure all fectorias oncometorism within motor housing monthy 10-20 minutes Building Operator Minor Tooliset, Lubricant N C102007 - Interior Door Hardware (door openars) Existre all fectorias an escure, tighten as required. monthy 10-20 minutes Building Operator Minor Tooliset, Lubricant N C102007 - Interior Door Hardware (door openars) Check style and anotors. (giften as required as engured semi-annually 5-10 minutes Building Operator Minor Tooliset, Lubricant N C102007 - Interior Door Hardware (door openars) Check door hinges and lubricat as required on esequir	C102007 - Interior Door Hardware (door openers)	Test operation of buttons and sensors	monthly	10-20 minutes	Building Operator	Minor	Toolset Lubricant	N				
C102007 Interior Door Hardware (door openers) Tost all switches and "onciff" functions - ensure door opens manually when off monthly 10-20 minutes Building Operator Minor Toolset, Lubricant N C102007 Interior Door Hardware (door openers) Inspect all internal motors, clean, renove dust and debria and Lubricate as required monthly 10-20 minutes Building Operator Minor Toolset, Lubricant N C102007 - Interior Door Hardware (door openers) Inspect all internal motors, clean, renove dust and debria and Lubricate as required monthly 10-20 minutes Building Operator Minor Toolset, Lubricant N C102007 - Interior Door Hardware (door openers) Ensure all flutures are societ, gibten as required, as per ANSI /BHMA A156.19 monthly 10-20 minutes Building Operator Minor Toolset, Lubricant N C103001 - Vashrown (door openers) Check dual anchors, gibten as required semi-annually 5-10 minutes Building Operator Minor Toolset, Lubricant N C103001 - Washroom Partitions Check dual anchors, gibten as required semi-annually 5-10 minutes Building Operator Minor Toolset, Lubricant N C103001 - Washroom Partitions Inspect on giss of	C102007 - Interior Door Hardware (door openers)	Ensure all warning/caution signs are in place and visible	monthly	10-20 minutes	Building Operator	Minor	Toolset, Lubricant	N		-		
C102007 - Interior Door Handware (door openant) Inspect all Internal motors, clean, enrove duat and dehistic and tubricate as required monthy 10-20 minutes Building Operator Minor Tooliset, Lubricant N C102007 - Interior Door Handware (door openant) Inspect all Internal motors, clean, enrove duat and dehistic and tubricate as required. monthy 10-20 minutes Building Operator Minor Tooliset, Lubricant N C102007 - Interior Door Handware (door openant) Ensure all federical connections within motor housing monthy 10-20 minutes Building Operator Minor Tooliset, Lubricant N C102007 - Interior Door Handware (door openant) Lubricate door am monthy 10-20 minutes Building Operator Minor Tooliset, Lubricant N C102007 - Interior Door Handware (door openants) Check speed and alguita as required, as par ANSI (RHMA A15519 monthy 10-20 minutes Building Operator Minor Tooliset, Lubricant N C102001 - Vashroom Paritions Check door hinges and lathes, adguita nd lubricate arequired semi-annually 5-10 minutes Building Operator Minor Tooliset, Lubricant N C102001 - Washroom Paritions Inspect Grigs of ontal-se anguired semi-annually 5-10 minut	C102007 - Interior Door Hardware (door openere)	Test all switches and "on/off" functions - ensure door opens manually when off	monthly	10-20 minutes	Building Operator	Minor	Toolset Lubricant	N				
C102007 - Interior Door Hardware (door openers) Inspect all electrical connections within motor housing monthly 10-20 minutes Building Operator Minor Toolset, Lubricant N C102007 - Interior Door Hardware (door openers) Ensure all falues are secure, tighten as required. monthly 10-20 minutes Building Operator Minor Toolset, Lubricant N C102007 - Interior Door Hardware (door openers) Ensure all falues are secure, tighten as required. monthly 10-20 minutes Building Operator Minor Toolset, Lubricant N C102007 - Interior Door Hardware (door openers) Check speed and alguts as required, as per ANSI /BHMA A156.19 monthly 10-20 minutes Building Operator Minor Toolset, Lubricant N C103001 - Vashroom Partitions Check all and nohrs, tighten as required semi-annually 5-10 minutes Building Operator Minor Toolset, Lubricant N C103001 - Washroom Partitions Inspect for signs of nst - participate anguired semi-annually 5-10 minutes Building Operator Minor Toolset, Lubricant N C103001 - Washroom Partitions Inspect for signs of nst - participat	C102007 - Interior Door Hardware (door openers)	Inspect all internal motors, clean, remove dust and debris and lubricate as required	monthly	10-20 minutes	Building Operator	Minor	Toolset, Lubricant	N				
C102007 - Interior Door Handware (door openers) Ensure all fautures are score, tighten as required. monthy 10-20 minutes Building Operator Minor Toolset, Lubricant N Month C102007 - Interior Door Handware (door openers) Check speed and alguit as required, as per ANSI (PHMA A15519 monthy 10-20 minutes Building Operator Minor Toolset, Lubricant N Month C102007 - Interior Door Handware (door openers) Check speed and alguit as required, as per ANSI (PHMA A15519 monthy 10-20 minutes Building Operator Minor Toolset, Lubricant N C102007 - Interior Door Handware (door openers) Check door hingos and lathens, adjust and lubricate a required semi-annually 5-10 minutes Building Operator Minor Toolset, Lubricant N C102007 - Washroom Paritions Inspect Cor signs of nut-specta and pariat as required semi-annually 5-10 minutes Building Operator Minor Toolset, Lubricant N C102007 - Washroom Paritions Inspect Cor signs of nut-specta and pariat as required to meet building standards semi-annually 5-10 minutes Building Operator Minor Toolset, Lubricant N C102007 - Washroom Paritions Inspect Cor signs of nut-spect and anguit	C102007 - Interior Door Hardware (door openers)	Inspect all electrical connections within motor housing	monthly	10-20 minutes	Building Operator	Minor	Toolset, Lubricant	N				
Construction Construction<	C102007 - Interior Door Hardware (door openers)	Ensure all fixtures are secure, tighten as required	monthly	10-20 minutes	Building Operator	Minor	Toolset, Lubricant	N				
C102007 : Interior Door Handware (door openans) Check speed and adjust as required, as per ANSI (RHMA A156.19 monthy 10-20 minutes Building Operator Minor Tooliset, Lubricant N C102007 : Valancom Partitions Check door hinges and latches, adjust and rubricate a required semi-annually 5-10 minutes Building Operator Minor Tooliset, Lubricant N C102007 : Valancom Partitions Check door hinges and latches, adjust and lubricate a required semi-annually 5-10 minutes Building Operator Minor Tooliset, Lubricant N C102007 : Washroom Partitions Inspect Cord signs of nst - propind and parts arequired semi-annually 5-10 minutes Building Operator Minor Tooliset, Lubricant N C102007 : Washroom Partitions Inspect Cord signs of nst - propind and sate segurind semi-annually 5-10 minutes Building Operator Minor Tooliset, Lubricant N C102007 : Washroom Partitions Inspect Cord signs of nst - sequined to meet building standards semi-annually 5-10 minutes Building Operator Minor N C1010 - Partiting to Walis Inspect Corling areas for signs of fleaks - rurestigate if found semi-annually 4 hours Cleaner Minor NA C2010 - Partiting to Walis Partitid suffacion, sequiling to meet building standards semi-annu	C102007 - Interior Door Hardware (door openers)	Lubricate door arm	monthly	10-20 minutes	Building Operator	Minor	Toolset, Lubricant	N		-		
Original method (bod opends) One of the problem structure (bod opends) One of the problem structure (bod opends) N C103001 - Washcom Partitions Check door hings and latches, algister as required semi-annually S-10 minutes Building Operator Minor Toolset, Lubricant N C103001 - Washcom Partitions Check door hings and latches, adgist and lubricate as required semi-annually S-10 minutes Building Operator Minor Toolset, Lubricant N C103001 - Washcom Partitions Inspect for signs of rust - particinal and quired semi-annually S-10 minutes Building Operator Minor Toolset, Lubricant N C103001 - Washcom Partitions Inspect for signs of rust - particinal and quired semi-annually S-10 minutes Building Operator Minor Toolset, Lubricant N C103001 - Vashcom Partitions Inspect for signs of rust - particinal and rust as departed and particinal as required to meet building standards Semi-annually S-10 minutes Building Operator Minor N C10300 - Partiting by Walls Inspect Fault and zona are required to meet building standards semi-annually 4 hours Cleaner Minor N<	C102007 - Interior Door Hardware (door openere)	Check speed and adjust as required, as per ANSI /BHMA A156 19	monthly	10-20 minutes	Building Operator	Minor	Toolset Lubricant	N				
C103001 Washnoon Partitions Check door hinges and lizhes, adjust and lubricate arequired semi-annually 5 10 minubes Juilding Operator Minor Toolset, Lubricant N C103001 Washnoon Partitions Inspect for tigns of nst - patch and paint as enguired semi-annually 5 10 minubes Juiling Operator Minor Toolset, Lubricant N C103001 Washnoon Partitions Inspect for tigns of nst - patch and paint as enguired semi-annually 5 Nonsulart Minor Toolset, Lubricant N C103001 Washnoon Partitions Inspect for tigns of nst - patch and paint as enguired 5 years greater than 1 day Minor Na N C1010- Partiting to Wals Inspect C painted surfaces, servigined to meet building standards semi-annually 4 hours Cleaner Minor NA N C3010 - Partiting to Wals Inspect C painted surfaces, servigined to meet building standards semi-annually 4 hours Cleaner Minor NA N C3010 - Partiting to Wals Inspect C pating standards to semi-annually 4 hours Cleaner Minor NA N	C103001 - Washroom Partitions	Check all wall anchors, tighten as required	semi-annually	5-10 minutes	Building Operator	Minor	Toolset, Lubricant	N		1		
Closent Inspect for signs of nask-patch and paint as required Semi-annually Soft mutuals Closent Update N C103001 - Valence Inspect for signs of nask-patch and paint as required semi-annually Soft mutuals Soft mutu	C103001 - Washroom Partitions	Check door binges and latches, adjust and lubricate as required	semi-annually	5-10 minutes	Building Operator	Minor	Toolset Lubricant	N		+		
Construction Construction Description Minute Note C03000 Counters Schematical For minutes Description Minor NA N C03000 Counters Schematical Inspect on long observation Schematical Schematical Minor NA N C3010 - Painting to Walls Inspect onling areas for signs of feats - investigate if found semi-annually 4 hours Cleaner Minor NA N C3010 - Painting to Walls Inspect onling areas for signs of feats - investigate if found semi-annually 4 hours Cleaner Minor NA N C3010 - Painting to Walls Inspect onling areas for signs of feats - investigate if found semi-annually 4 hours Cleaner Minor NA N	C103001 - Washroom Partitions	Inspect for signs of rust - patch and paint as required	semi-annually	5-10 minutes	Building Operator	Minor	Toolset Lubricant	N		+		
Collo - Paniting to Walls Inspect Painted surfaces, patch and paint as required to meet building standards. semi-annually 4 hours Cleaner Minor NA N Collo - Painting to Walls Inspect Painted surfaces, patch and paint as required to meet building standards. semi-annually 4 hours Cleaner Minor NA N Collo - Painting to Walls Inspect ceiling areas for signs of leaks - investigate if found semi-annually 4 hours Cleaner Minor NA N Collon - Painting to Walls Cleaner Minor NA N	C103008 Counters - Counters & Cabinets	Inspection through Building Condition Assessment	5 years	greater than 1 day	Consultant	Minor	NA	N		+		
C3010 - Painting to Walls Inspect celling areas for signs of leaks - investigate if found semi-annually 4 hours Cleaner Minor NA N C3010 - Painting to Walls C3010 - Painting to Walls Calener Minor NA N Cleaner Minor NA N Calener Minor NA N N N N N N N N N N N N N N N N N N	C3010 - Painting to Walls	Inspect Painted surfaces, patch and paint as required to meet building standards	semi-annually	4 hours	Cleaner	Minor	NA	N		+		
Configuration for Market Configuration and Confi	C3010 - Painting to Walls	Inspect ceiling areas for signs of leaks - investigate if found	semi-annually	4 hours	Cleaner	Minor	NΔ	N		+		
	C3010 - Painting to Walls	Patch and paint areas of damage as required to meet building standards	semi-annually	4 hours	Cleaner	Minor	NA	N		+		



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	reace River Regional District	T T T T T T T T T T T T T T T T T T T	ale creek CC	-	-				
Uniformat 4-Asset Functional Name	PMP Task	Frequency	Estimate Time	Resource/Craft	Failure Risk	Materials/Consumables		Completed By	Date
omormat 4-Asset Functional Name		Trequency	Louinate fille	Resource/crait	T allule Klok	Cleaning Materials	2010(1/14)	completed by	Date
						Cleaning Materials,			
C3010 - Wood	Strin way and polish - as required	quarterly	4 hours	Cleaner	Minor	Machine Machine	N		
C3020 - Cameting	Thoroughly vacuum	weekly	4 hours	Cleaner	Minor	Vacuum	N		
occupeting	noidigni y factain	weekly	4 Houro	Cidanoi	Number 1	Vuodum			
C3020 - Cameting	Spot clean and low absorption scrubbing	monthly	4 hours	Cleaner	Minor	Carpet Steamer, vacuum	N		
occupeting		monuny	4 Houro	oldanoi	inition .				
C3020 - Carpeting	Deep Hot Water Extraction	semi-annually	4 hours	Cleaner	Minor	Carpet Steamer, vacuum	N		
		1				Waxing Machine, Wax			
C3020 - Tile Floor Finishes	Strip, wax and polish - as required.	quarterly	4 hours	Cleaner	Minor	and Stripping agent	N		
						Waxing Machine, Wax			
C3020 - Vinyl Floor Tiles	Strip, wax and polish - as required.	quarterly	4 hours	Cleaner	Minor	and Stripping agent	N		
D201001 - Water closets	Inspect for leaks, flush function and cleanliness	daily	Less than 5 minutes	Building Operator	Minor	Toolset	N		
D201001 - Water closets	Water lines - Inspect for breaks cracks or leaks	daily	Less than 5 minutes	Building Operator	Minor	Toolset	N		
D201001 - Water closets	Vacuum lines - Inspect for improper operations and inspect elbow for Leaking	daily	Less than 5 minutes	Building Operator	Minor	Toolset	N		
D201001 - Water closets	Seat - In inspect for breaks cracks or splinters and ensure all hardware is tight	monthly	5-10 minutes	Building Operator	Minor	Toolset	N		
D201002 - Urinals	Inspect for leaks, flush function and cleanliness	monthly	5-10 minutes	Building Operator	Minor	Toolset	N		
D201002 - Urinals	Check Water flow/pressure conditions.	daily	Less than 5 minutes	Building Operator	Minor	Toolset	N		
D201002 - Urinals	Inspect cap and part conditions.	daily	Less than 5 minutes	Building Operator	Minor	Toolset	N		
D201002 - Urinals	Check operation and settings of automatics flush meters, change batteries as required.	monthly	5-10 minutes	Building Operator	Minor	Toolset	N		
D201004 - Sinks	Inspect for cracks, tap function and cleanliness	monthly	5-10 minutes	Building Operator	Minor	Toolset	N		
D202001 - Domestic Water Distribution Pumps	Visual inspection	weekly	5-10 minutes	Building Operator	Minor	Toolset, filters, lubricant	N		
D202001 - Domestic Water Distribution Pumps	Inspect all mountings, ensure tight and secure	weekly	5-10 minutes	Building Operator	Minor	Toolset, filters, lubricant	N		
D202001 - Domestic Water Distribution Pumps	Check for vibrations	weekly	5-10 minutes	Building Operator	Minor	Toolset filters lubricant	N		
D202001 - Domestic Water Distribution Pumps	Verify pressures on gauges	quarterly	5-10 minutes	Building Operator	Minor	Toolset, filters, lubricant	Y		
D202001 - Domestic Water Distribution Pumps	Visual inspection	quarterly	5-10 minutes	Building Operator	Minor	Toolset filters lubricant	Ŷ		
D202001 - Domestic Water Distribution Pumps	Check for vibrations	quarterly	5-10 minutes	Building Operator	Minor	Toolset filters lubricant	Y Y		
D202001 - Domestic Water Distribution Pumps	Verify pressures on gauges	quarterly	5-10 minutes	Building Operator	Minor	Toolset filters lubricant	· ·		
D202001 - Domestic Water Distribution Pumps	Test any shut-offs or safety features	quarterly	10-20 minutes	Building Operator	Minor	Toolset filters lubricant	Ý		
BEGEGGT Bombalo Waldi Bibaibalor Fampo		quarterly	10 20 1111000	Building Operator		Specialized Equipment			
D202001 - Domestic Water Distribution Pumps	Visual inspection	semi-annually	10-20 minutes	Plumber	Minor	Provided by Vendor	v		
DECECCI Demosile Water Distribution Fampe		donn drinddily	10 20 1111000	i lamber	inin or	Specialized Equipment	· · ·		
D202001 - Domestic Water Distribution Pumps	Check for vibrations	semi-annually	10-20 minutes	Plumber	Minor	Provided by Vendor	Y I		
						Specialized Equipment			
D202001 - Domestic Water Distribution Pumps	Verify pressures on gauges	semi-annually	10-20 minutes	Plumber	Minor	Provided by Vendor	Y		
						Specialized Equipment			
D202001 - Domestic Water Distribution Pumps	Check the condition of the motor through temperature or vibration analysis to assure long life.	semi-annually	10-20 minutes	Plumber	Minor	Provided by Vendor	Y		
	· · · · · · · · · · · · · · · · · · ·					Specialized Equipment			
D202001 - Domestic Water Distribution Pumps	Lest any shut-offs or safety features	semi-annually	10-20 minutes	Plumber	Minor	Provided by Vendor	Y		
	Observe a land of the second sec					Specialized Equipment			
D202001 - Domestic Water Distribution Pumps	Change or inspect any filters	semi-annually	10-20 minutes	Plumber	Minor	Provided by Vendor	Y		
D202001 - Pipes And Fittings	Inspection through Building Condition Assessment	5 years	greater than 1 day	Consultant	Moderate	NA	N		
D202003 - Chemical Treatment System	This the water softener - noted below	semi-annually	1-2 hours	Building Operator	Minor	NA	N		
D202003 - Chemical Treatment System	This the water softener - noted below	semi-annually	1-2 hours	Building Operator	Minor	NA	N		
D202003 - Water Softener	Check Salt Levels	weekly	5-10 minutes	Building Operator	Minor	Salt Pellets, toolset	N		
D202003 - Water Softener	Overall Water Softener System Review, look for:	bi-monthly	30-60 minutes	Building Operator	Minor	Salt Pellets, toolset	N		
D202003 - Water Softener	Rust or holes in system	bi-monthly	30-60 minutes	Building Operator	Minor	Salt Pellets, toolset	N		
D202003 - Water Softener	Leaking gaskets or other signs of wear or system malfunction	bi-monthly	30-60 minutes	Building Operator	Minor	Salt Pellets, toolset	N		
D202003 - Water Softener	Inspect brine tank, clean as required.	bi-monthly	30-60 minutes	Building Operator	Minor	Salt Pellets, toolset	N		
	Inspect for Salt Bridges - if evident, empty the tank, break up salt bridge, add several gallons of								
	hot water to dissolve the salt. Once dissolved turn system back on to use up brine left over from								
D202003 - Water Softener	bridge.	bi-monthly	30-60 minutes	Building Operator	Minor	Salt Pellets, toolset	N		
	Flush out the Resin Bed - using the appreciate cleaner designated by manufacturer and follow								
D202003 - Water Softener	instructions provided in O&M manual.	bi-monthly	30-60 minutes	Building Operator	Minor	Salt Pellets, toolset	N		
D202003 - Water Softener	Clean Venturi Valve - using mild detergent, remove parts are clean by hand and replace.	bi-monthly	30-60 minutes	Building Operator	Minor	Salt Pellets, toolset	N		
D202021 - Electric Resistant DHW	Check Thermostat Function:	quarterly	30-60 minutes	Building Operator	Minor	Toolset, voltmeter	Y		
D202021 - Electric Resistant DHW	Let water heater completely heat to a designated thermostat setting.	quarterly	30-60 minutes	Building Operator	Minor	Toolset, voltmeter	Y		
D202021 - Electric Resistant DHW	After thermostat satisfies (that is, when the thermostat actually clicks off), draw water from heater.	quarterly	30-60 minutes	Building Operator	Minor	Toolset, voltmeter	Y		

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	Peace River Regional District	rivir rasking - ra	ILE CIEEK CC	1					
Uniformat 4-Asset Functional Name	PMP Task	Frequency	Estimate Time	Resource/Craft	Failure Risk	Materials/Consumables	LOTO (Y/N)	Completed By	Date
	Compare water temperature of drawn water to the temperature setting of the thermostat when it								
	satisfies. Normal variation between the two points is approximately + 5°F. Replace if outside this							1	
D202021 - Electric Resistant DHW	range.	quarterly	30-60 minutes	Building Operator	Minor	Toolset, voltmeter	Y		
D202021 - Electric Resistant DHW	Check Pressure relief Valve Function:	quarterly	30-60 minutes	Building Operator	Minor	Toolset, voltmeter	Y		
	Lift test lever on relief valve and let water run through valve for a period of approximately 10								
D202021 - Electric Resistant DHW	seconds.	quarterly	30-60 minutes	Building Operator	Minor	Toolset, voltmeter	Y		
D202021 - Electric Resistant DHW	Inspect element flange for leakage as follows:	quarterly	30-60 minutes	Building Operator	Minor	Toolset, voltmeter	Y		
D202021 - Electric Resistant DHW	Shut off Power Supply.	quarterly	30-60 minutes	Building Operator	Minor	Toolset, voltmeter	Y		
D202021 - Electric Resistant DHW	Remove element housing cover.	quarterly	30-60 minutes	Building Operator	Minor	Toolset, voltmeter	Y		
D202021 - Electric Resistant DHW	Visually inspect heating element gasket for evidence of leaks.	quarterly	30-60 minutes	Building Operator	Minor	Toolset, voltmeter	Y		
D202021 - Electric Resistant DHW	Check for loose electrical connections. Tighten as necessary.	quarterly	30-60 minutes	Building Operator	Minor	Toolset, voltmeter	Y		
D202021 - Electric Resistant DHW	Flush tank as follows:	annually	30-60 minutes	Building Operator	Minor	Toolset, voltmeter	Y		
D202021 - Electric Resistant DHW	Shut off power supply.	annually	30-60 minutes	Building Operator	Minor	Toolset, voltmeter	Y		
D202021 - Electric Resistant DHW	Close valve on hot water outlet piping.	annually	30-60 minutes	Building Operator	Minor	Toolset, voltmeter	Y		
D202021 - Electric Resistant DHW	Open valve on drain piping.	annually	30-60 minutes	Building Operator	Minor	Toolset, voltmeter	Y		
	Cold water inlet line pressure will be strong enough to flush sediment from the bottom of the tank								
D202021 - Electric Resistant DHW	out through the drain. Let water run for 3-4 minutes.	annually	30-60 minutes	Building Operator	Minor	Toolset, voltmeter	Y		
D202021 - Electric Resistant DHW	Close drain valve.	annually	30-60 minutes	Building Operator	Minor	Toolset, voltmeter	Y		
D202021 - Electric Resistant DHW	Open hot water valve.	annually	30-60 minutes	Building Operator	Minor	Toolset, voltmeter	Y		
D202021 - Electric Resistant DHW	Turn power supply ON	annually	30-60 minutes	Building Operator	Minor	Toolset, voltmeter	Y		
D203004 - Sanitary Sump Pump	Visual inspection, check for leaks	weekly	Less than 5 minutes	Building Operator	Major	Toolset, Lubricant	N		
D203004 - Sanitary Sump Pump	Check for vibrations	weekly	Less than 5 minutes	Building Operator	Major	Toolset, Lubricant	N		
D203004 - Sanitary Sump Pump	Verify pressures on gauges are within posted limits	weekly	Less than 5 minutes	Building Operator	Major	Toolset, Lubricant	N		
D203004 - Sanitary Sump Pump	Visual inspection, check for leaks	quarterly	5-10 minutes	Building Operator	Major	Toolset, Lubricant	N		
D203004 - Sanitary Sump Pump	Check for vibrations	quarterly	5-10 minutes	Building Operator	Major	Toolset, Lubricant	N		
D203004 - Sanitary Sump Pump	Verify pressures on gauges are within posted limits	quarterly	5-10 minutes	Building Operator	Major	Toolset, Lubricant	N		
D203004 - Sanitary Sump Pump	Test any shut-offs or safety features	quarterly	5-10 minutes	Building Operator	Major	Toolset, Lubricant	N		
D203004 - Sanitary Sump Pump	Check electrical cords, plugs and connections	semi-annually	10-20 minutes	Plumber	Major	Toolset, Lubricant	N		
D203004 - Sanitary Sump Pump	Activate float switches and check pumps for proper operation.	semi-annually	10-20 minutes	Plumber	Major	I oolset, Lubricant	N		
D203004 - Sanitary Sump Pump	Lubricate pumps as required.	semi-annually	10-20 minutes	Plumber	Major	Toolset, Lubricant	N		
D203004 - Sanitary Sump Pump	Inspect packing and tighten as required.	semi-annually	10-20 minutes	Plumber	Major	Toolset, Lubricant	N		
D203004 - Sanitary Sump Pump	Check pumps for misalignment and bearings for overheating	semi-annually	10-20 minutes	Plumber	Major	I oolset, Lubricant	N		
D203004 - Sanitary Sump Pump	Clean out trash from sump bottom.	semi-annually	10-20 minutes	Plumber	Major	Toolset, Lubricant	N		
D203004 - Sanitary Sump Pump	Test and run pump	semi-annually	10-20 minutes	Plumber	Major	I oolset, Lubricant	N		
						Tester			
Decence and the West	Open the interceptor, and suction off the top layer of grease using a wet-dry vacuum or by		00.00	Disaster		l oolset, scarper, wet-vac,			
D203004 - Sahitary Waste	scooping manually. Once removed, place in an appropriate storage container for later disposal.	montniy	30-60 minutes	Plumber	Major	cleaning agent.	N		
D202004 Capiton Wests	Remove baffle and scrape fat/oil off the baffle into the same storage container	monthly	20.60 minutes	Diumhor	Major	cleaning agent	N		
D203004 - Sanitary Waste	remove bane and scrape razon on the bane into the same storage container.	monuny	SU-OU MINULES	Fluitibei	Major	Teoloot ocorror wetwee	IN		
D203004 - Sanitan/Waste	Suction out the solids at the bottom of the intercentor and place it in the storage container	monthly	20.60 minutos	Plumbor	Major	cleaning agent	N		
B203004 - Salitaly Waste	oution out the dollad at the bottom of the interdeptor and place it in the storage container.	monuny	30-00 minutes	i lumber	Major	Toolset scarper wetwac	in in		
D203004 - Sanitary Waste	Suction out any water, and discard	monthly	30-60 minutes	Plumber	Major	cleaning agent	N		
5203004 - Sanitary Waste	Thoroughly clean all four sides and bottom of intercentor using fresh water, and a scraping tool	monany	30-00 minutes		Major	dicarning agont.	IN .		
	Rinse out with clean water and suction one last time. Place all waste in the proper storage					Toolset, scarper, wet-vac,			
D203004 - Sanitary Waste	receptacle for later disposal.	monthly	30-60 minutes	Plumber	Maior	cleaning agent.	N		
	Ensure that the inlet, outlet and air relief ports are clean and clear and that all internal					Toolset, scarper, wet-vac,			
D203004 - Sanitary Waste	components are working properly.	monthly	30-60 minutes	Plumber	Major	cleaning agent.	N		
	Properly reinstall all seals, replacing any that are damaged, or cracked. Securely fasten the cover					Toolset, scarper, wet-vac,			
D203004 - Sanitary Waste	and fill the grease interceptor with clean water to ensure maximum efficiency.	monthly	30-60 minutes	Plumber	Major	cleaning agent.	N		
						Toolset, scarper, wet-vac,			
D203004 - Sanitary Waste	Ensure that you or the hauler record all maintenance, cleaning, and inspection of your interceptor.	monthly	30-60 minutes	Plumber	Major	cleaning agent.	N		
						Toolset, patching			
D204001 - Rain Water Drainage	Check for signs of leaks and or pipe damage	annually	30-60 minutes	Building Operator	Moderate	tape/materials.	N		
						Specialized Equipment			
D301002 - Gas Supply System	Inspect all connects for signs of damage and or leaks	annually	8 hours	Gas Technician	Moderate	Provided by Vendor	N		
	Inspect all shut off valves, exercise to confirm operation (ensure supplied equipment is shut				L	Specialized Equipment		1	
D301002 - Gas Supply System	down)	annually	8 hours	Gas Technician	Moderate	Provided by Vendor	N		
Data and a construction of the	Increase meteor for any tempering		0.1	One Technisian		Specialized Equipment		1	
D301002 - Gas Supply System	Inspect meter for any tampening	annually	8 nours	Gas recnnician	moderate	Flovided by Vendor	N		

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Uniformat & Accest Exactional Name	DMD Task	Ereaueneu	Estimate Time	Des surses/Craft	Failure Diek	Materials/Consumables		Completed Bu	Data
Omormat 4-Asset Functional Name	FINE 100K	Frequency	Estimate rime	Resource/Gran	Failure Kisk	Specialized Equipment	LOTO (T/N)	Completed By	Date
D301002 - Gas Supply System	ensure all roof support piers have not shifted.	annually	8 hours	Gas Technician	Moderate	Provided by Vendor	N		
D301002 - Gas Supply System	paint and patch any pipe lines showing signs of rusting.	annually	8 hours	Gas Technician	Moderate	Specialized Equipment Provided by Vendor	N		
		, i				Toolset, filters, belts,			
D302003 Fumaces	Check operating pressures	semi-annually	30 minutes	Building Operator	Minor	brush Toolset filters belts	Y		
D302003 Furnaces	Check operation of condensation system	semi-annually	30 minutes	Building Operator	Minor	brush	Y		
D302003 Furnaces	Safety test for carbon monoxide (CO)	semi-annually	30 minutes	Building Operator	Minor	Toolset, filters, belts, brush	Y		
D302003 Furnaces	Check temperatures across air handler	semi-annually	30 minutes	Building Operator	Minor	Toolset, filters, belts, brush	Y		
D202002 Eumono	Inspect for hexadeus debie is the elimneu fue	comi oppuollu	20 minutes	Building Operator	Minor	Toolset, filters, belts,	v		
D302003 Fumaces	Inspect for nazardous debris in the chimney flue	semi-annually	30 minutes	Building Operator	Minor	Toolset, filters, belts,	Ŷ		
D302003 Furnaces	Check unit is operating to manufacturer's specifications	semi-annually	30 minutes	Building Operator	Minor	brush	Y		
D302003 Furnaces	Check fan belt and perform required adjustments	semi-annually	30 minutes	Building Operator	Minor	l colset, filters, belts, brush	Y		
D302003 Euroace	Test unit by putting it through a full operation cycle	comi-annually	30 minutor	Ruilding Operator	Minor	Toolset, filters, belts, brush	~		
Diozoosi unaces		aerin-anindany	50 minutes	building operator	WIITIO	bidon			
D304001 - Ducte	Depending on the use of the facility, duct cleaning by a certified vendor (NADCA). Cleaning of duct systems can be completed as part of good indoor air quality management.	5 10000	8 hours	Ruilding Operator	Minor	NA	N		
5304001-56018	ade systems can be completed as part of good indeor an quarky management.	5 years	o noura	Building Operator	WIITO	Specialized Equipment			
D304001 Air Distribution, Heating	Drain cooling coils; blow down to remove moisture; refill with antifreeze and water solution; drain	semi-annually	1-2 hours	HVAC Tech	Moderate	Provided by Vendor	Y		
D304001 Air Distribution, Heating	Inspect wiring for deterioration; Tighten electrical connections	semi-annually	1-2 hours	HVAC Tech	Moderate	Provided by Vendor	Y		
Department Ale Distribution I la stien	Visually inspect disconnect switches and starters for broken parts, contact arcing or any evidence		4.0.1	IN A O To al		Specialized Equipment	v		
D304001 Air Distribution, Heating		semi-annually	1-2 nours	HVAC Tech	Moderate	Specialized Equipment	Ŷ		
D304001 Air Distribution, Heating	Clean air intake and screens	semi-annually	1-2 hours	HVAC Tech	Moderate	Provided by Vendor	Y		
D304001 Air Distribution Heating	Check dampers and seals for dirt accumulations	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y		
						Specialized Equipment			
D304001 Air Distribution, Heating	Check damper motors and linkage for proper operation	semi-annually	1-2 hours	HVAC Tech	Moderate	Provided by Vendor Specialized Equipment	Ŷ		
D304001 Air Distribution, Heating	Replace filters	semi-annually	1-2 hours	HVAC Tech	Moderate	Provided by Vendor	Y		
D304001 Air Distribution Heating	Check belts for wear: adjust tension or alignment and replace when pecessary	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y		
						Specialized Equipment			
D304001 Air Distribution, Heating	Clean fan and motor;	semi-annually	1-2 hours	HVAC Tech	Moderate	Provided by Vendor	Y		
D304001 Air Distribution, Heating	Check fan blades for cracks or excessive wear	semi-annually	1-2 hours	HVAC Tech	Moderate	Provided by Vendor	Y		
D204001 Ais Distribution, Masting	Lubricate for and materif required	comi oppuoltu	1.2 hours	WAC Tech	Madarata	Specialized Equipment	v		
D304001 Air Distribution, Heating	Eduncate fan and motor in required	Serni-annually	1-2 Hours	HVAC TECH	Moderate	Specialized Equipment	1		
D304001 Air Distribution, Heating	Check all motors, belts, pulleys, shafts, etc. for alignment	semi-annually	1-2 hours	HVAC Tech	Moderate	Provided by Vendor	Y		
D304001 Air Distribution. Heating	Check direct drive couplings for alignment and tightness of assembly. Check flexible couplings for alignment and wear.	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y		
						Specialized Equipment			
D304001 Air Distribution, Heating	Check fan for vibration or excessive noise.	semi-annually	1-2 hours	HVAC Tech	Moderate	Provided by Vendor Specialized Equipment	Y		
D304001 Air Distribution, Heating	Check fan RPM against design specifications	semi-annually	1-2 hours	HVAC Tech	Moderate	Provided by Vendor	Y		
D304001 Air Distribution, Heating	Clean heating coile and check for leake	comi-annually	1.2 hours	HVAC Tech	Modorato	Specialized Equipment Provided by Vendor	~		
Distribution, reading		serin-aniruany	1-2 10013	INAC IEU	Woderate	Specialized Equipment			
D304001 Air Distribution, Heating	Use fin comb to straighten coil fins	semi-annually	1-2 hours	HVAC Tech	Moderate	Provided by Vendor	Y		
D304001 Air Distribution, Heating	Operate unit - Check all controls and freeze protection	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y		
D304001 Air Distribution Heating	Pacard outcide ambient air temperature:	comi annualt.	1.2 hours	HVAC Tech	Moderate	Specialized Equipment	v		
D304001 Air Distribution, Heating	record outside ambient air temperature:F	semi-annually	1-2 110UIS	INVAC TECH	Invoderate	Flovided by vendor	Ť		I

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Uniformat 4-Asset Functional Name	PMP Task	Frequency	Estimate Time	Resource/Craft	Failure Risk	Materials/Consumables	LOTO (Y/N)	Completed By	Date
D304001 Air Distribution, Heating	Record heating coil entering water temperature:F	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y		
D304001 Air Distribution, Heating	Record heating coil leaving water temperature:F	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y		
D304001 Air Distribution, Heating	Record return air temperature:F	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y		
D304001 Air Distribution, Heating	Record supply air temperature:F	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y		
D304001 Air Distribution, Heating	Check Fan Motor Amps: RatedActual	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y		
D304001 Air Distribution, Heating	Restore power and proper operating mode as needed	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y		
D304001 Air Distribution, Cooling	Flush and clean condensate pans and drains	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y		
D304001 Air Distribution, Cooling	Inspect wiring for deterioration; Tighten electrical connections	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y		
D304001 Air Distribution, Cooling	Visually inspect disconnect switches and starters for broken parts, contact arcing or any evidence of overheating	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y		
D304001 Air Distribution, Cooling	Clean air intake and screens	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y		
D304001 Air Distribution, Cooling	Check dampers and seals for dirt accumulations	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y		
D304001 Air Distribution, Cooling	Check damper motors and linkage for proper operation	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y		
D304001 Air Distribution, Cooling	Replace filters	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y		
D304001 Air Distribution, Cooling	Check belts for wear; adjust tension or alignment and replace when necessary	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y		
D304001 Air Distribution, Cooling	Clean fan and motor;	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y		
D304001 Air Distribution, Cooling	Check fan blades for cracks or excessive wear	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y		
D304001 Air Distribution, Cooling	Check bearing collar set screws on fan shaft for tightness	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y		
D304001 Air Distribution, Cooling	Lubricate fan and motor if required	semi-annually	1-2 hours	HVAC Tech	Moderate	Provided by Vendor	Y		
D304001 Air Distribution, Cooling	Check all motors, belts, pulleys, shafts, etc. for alignment	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y		
D304001 Air Distribution, Cooling	Check direct drive couplings for alignment and tightness of assembly. Check flexible couplings for alignment and wear.	semi-annually	1-2 hours	HVAC Tech	Moderate	Provided by Vendor	Y		
D304001 Air Distribution, Cooling	Check fan for vibration or excessive noise.	semi-annually	1-2 hours	HVAC Tech	Moderate	Provided by Vendor	Y		
D304001 Air Distribution, Cooling	Check fan RPM against design specifications	semi-annually	1-2 hours	HVAC Tech	Moderate	Provided by Vendor	Y		
D304001 Air Distribution, Cooling	Clean cooling coils and check for leaks	semi-annually	1-2 hours	HVAC Tech	Moderate	Provided by Vendor	Y		
D304001 Air Distribution, Cooling	Use fin comb to straighten coil fins	semi-annually	1-2 hours	HVAC Tech	Moderate	Provided by Vendor	Y		
D304001 Air Distribution, Cooling	Operate unit - Check all controls and freeze protection	semi-annually	1-2 hours	HVAC Tech	Moderate	Provided by Vendor	Y		
D304001 Air Distribution, Cooling	Record outside ambient air temperature:F	semi-annually	1-2 hours	HVAC Tech	Moderate	Provided by Vendor	Y		
D304001 Air Distribution, Cooling	Record cooling coil entering water temperature:F	semi-annually	1-2 hours	HVAC Tech	Moderate	Provided by Vendor	Y		
D304001 Air Distribution, Cooling	Record cooling coil leaving water temperature:F	semi-annually	1-2 hours	HVAC Tech	Moderate	Provided by Vendor	Y		
D304001 Air Distribution, Cooling	Record return air temperature:F	semi-annually	1-2 hours	HVAC Tech	Moderate	Provided by Vendor	Y		+
D304001 Air Distribution, Cooling	Record supply air temperature:F	semi-annually	1-2 hours	HVAC Tech	Moderate	Provided by Vendor	Y		

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Peace River Regional District PMP Tasking - Tate Creek CC											
Uniformat 4-Asset Functional Name	PMP Task	Frequency	Estimate Time	Resource/Craft	Failure Risk	Materials/Consumables	LOTO (Y/N)	Completed By	Date		
D304001 Air Distribution, Cooling	Check Fan Motor Amps: RatedActual	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y				
D304001 Air Distribution, Cooling	Replace any covers removed and clean area	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y				
D304001 Air Distribution Cooling	Restore power and proper operating mode as needed	semi-annually	1-2 hours	HVAC Tech	Moderate	Specialized Equipment Provided by Vendor	Y				
D304002 - Exhaust Systems	Inspected as Part of BCA	annually	8 hours	Consultant	Minor	NA	N		-		
D304002 - Kitchen Hood Exhaust Fan	clean and degrease all hood and filters, as required	daily	30-60 minutes	Cleaner	Minor	Cleaning agent, clean rags	N				
						Cleaning agent, clean					
D304002 - Kitchen Hood Exhaust Fan	Clean out grease collection cups	daily	30-60 minutes	Cleaner	Minor	rags Tooleat Lubricant holte	N				
						filters, vacuum, vibration					
D304002 - Kitchen Hood Exhaust Fan	Inspect extractor hood for any gas or air leaks	quarterly	1-2 hours	Building Operator	Minor	meter	Y				
						Toolset, Lubricant, belts, filters, vacuum, vibration					
D304002 - Kitchen Hood Exhaust Fan	Clean out ductwork to remove grease accumulation	quarterly	1-2 hours	Building Operator	Minor	meter	Y				
						Toolset, Lubricant, belts,					
D304002 - Kitchen Hood Exhaust Fan	Check fan bearings and lubricate as required	quarterly	1-2 hours	Building Operator	Minor	meter	Y				
				5 1		Toolset, Lubricant, belts,			-		
D204002 Kitshan Hand Exhaust Fan	check factoriar lightness	quartarly	1.2 hours	Building Operator	Minor	filters, vacuum, vibration	~				
D304002 - Nichen Hood Exhaust Pan		quarteny	1-2 Hours	Building Operator	WILLOT	Toolset, Lubricant, belts,			+		
						filters, vacuum, vibration					
D304002 - Kitchen Hood Exhaust Fan	check belt tension, replace/adjust as required	quarterly	1-2 hours	Building Operator	Minor	meter Toolset Lubricant helts	Y				
						filters, vacuum, vibration					
D304002 - Kitchen Hood Exhaust Fan	Clean fan blades with appropriate grease cleaning solution.	quarterly	1-2 hours	Building Operator	Minor	meter	Y				
						Toolset, Lubricant, belts, filters, vacuum, vibration					
D304002 - Kitchen Hood Exhaust Fan	Check Rooftop Containment Systems (RTCS)	quarterly	1-2 hours	Building Operator	Minor	meter	Y				
						Toolset, Lubricant, belts,					
D304002 - Kitchen Hood Exhaust Fan	Clean and or change filters in RTCS	quarterly	1-2 hours	Building Operator	Minor	filters, vacuum, vibration meter	Y				
		4				Toolset, Lubricant, belts,			-		
D204002 Kitshan Hand Exhaust Fan	Clean Eulerust Steeles	quartarly	1.2 hours	Building Operator	Minor	filters, vacuum, vibration	~				
D304002 - Nichen Hood Exhaust Pan	Clean Exhaust Stacks	quarteny	1-2 10015	Building Operator	WILLOT	Toolset, Lubricant, belts.	1		-		
	Check fan belt tension. Check for belt wear and alignment. Replace if necessary, to ensure					filters, vacuum, vibration					
D304002 - Kitchen rooftop Exhaust Fan	proper operation.	quarterly	30-60 minutes	Building Operator	Minor	meter Toolset Lubricant helts	Y				
	Check drive alignment, wear, bearing and coupling seating and operation. Repair and replace as					filters, vacuum, vibration					
D304002 - Kitchen rooftop Exhaust Fan	needed.	quarterly	30-60 minutes	Building Operator	Minor	meter	Y				
						filters vacuum vibration					
D304002 - Kitchen rooftop Exhaust Fan	Check fan blades. Clean, repair or replace as needed to ensure proper operation.	quarterly	30-60 minutes	Building Operator	Minor	meter	Y				
						Toolset, Lubricant, belts,					
D304002 - Kitchen rooftop Exhaust Fan	If field serviceable lubricate bearings.	quarterly	30-60 minutes	Building Operator	Minor	meter	Y				
		1 1				Toolset, Lubricant, belts,					
D304002 - Kitchen rooffon Exhaust Fan	Measure motor amperage using a C clamp and probe. Increased current flow may indicate that	quarterly	30.60 minutes	Building Operator	Minor	filters, vacuum, vibration	~				
Doorooz - Nicolen Tooloop Exilabit Fall	Dearings are setting.	quarterly	50-00 millutes	Durining Operator	WIITO	Toolset, Lubricant, belts,	- '	·	+		
						filters, vacuum, vibration			1		
D304002 - Kitchen rooftop Exhaust Fan	If the exhaust fan is automatically controlled check thermostat operation.	quarterly	30-60 minutes	Building Operator	Minor	Toolset Lubricant holte	Y		+		
	If the exhaust fan is interlocked with the operation of other fan systems check sequence of					filters, vacuum, vibration			1		
D304002 - Kitchen rooftop Exhaust Fan	control.	quarterly	30-60 minutes	Building Operator	Minor	meter	Y				

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	Peace River Regional District	PMP Tasking - Ta	ate Creek CC			1			
Uniformat 4-Asset Functional Name	PMP Task	Frequency	Estimate Time	Resource/Craft	Failure Risk	Materials/Consumables	LOTO (Y/N)	Completed By	Date
						Toolset, Lubricant, belts,			
						filters, vacuum, vibration			
D304002 - Rooftop exhaust fan	Check cleanliness of the fan. Clean as required.	quarterly	1-2 hours	Building Operator	Minor	meter Teoloot Lubricent helte	Y		
						filters vacuum vibration			
D304002 - Rooftop exhaust fan	Check switch operation. Repair as required.	quarterly	1-2 hours	Building Operator	Minor	meter	Y		
						Toolset, Lubricant, belts,			
	Check fan belt tension. Check for belt wear and alignment. Replace if necessary, to ensure					filters, vacuum, vibration			
D304002 - Rooftop exhaust fan	proper operation.	quarterly	1-2 hours	Building Operator	Minor	meter Teoloot Lubricent helte	Y		
	Check drive alignment wear bearing and coupling seating and operation. Repair and replace as					filters vacuum vibration			
D304002 - Rooftop exhaust fan	needed.	quarterly	1-2 hours	Building Operator	Minor	meter	Y		
						Toolset, Lubricant, belts,			
Data (Data)			1.0.1	Duilding Onesides		filters, vacuum, vibration	~		
D304002 - Roottop exhaust fan	Check fan blades. Clean, repair or replace as needed to ensure proper operation.	quarteriy	1-2 nours	Building Operator	Minor	Tooleet Lubricant helte	Ŷ		-
						filters, vacuum, vibration			
D304002 - Rooftop exhaust fan	If field serviceable lubricate bearings.	quarterly	1-2 hours	Building Operator	Minor	meter	Y		
						Toolset, Lubricant, belts,			
D004000 D-4	Measure motor amperage using a C clamp and probe. Increased current flow may indicate that		1.0.1	Duilding Onesides		filters, vacuum, vibration	~		
D304002 - Roottop exhaust fan	bearings are seizing.	quarteriy	1-2 nours	Building Operator	Minor	Toolset Lubricant belts	Ŷ		
						filters, vacuum, vibration			
D304002 - Rooftop exhaust fan	If the exhaust fan is automatically controlled check thermostat operation.	quarterly	1-2 hours	Building Operator	Minor	meter	Y		
						Toolset, Lubricant, belts,			
Decision Decision for	If the exhaust fan is interlocked with the operation of other fan systems check sequence of		1.0.1	Duilding Onesides		filters, vacuum, vibration	~		
D304002 - Roottop exhaust fan	control.	quarteriy	1-2 nours	Building Operator	Minor	Toolset filter lubricant	Ŷ		
						leak testing equipment,			
D305003 Fan Coil Units	Power off the fan coil unit.	semi-annually	30 minutes	Building Operator	Minimal	belts	Y		
						Toolset, filter, lubricant,			
D205002 Een Ceil Lleite	Vieually inexect the outeride and ineride of the unit	anni annualtu	20 minutes	Building Operator	Minimal	leak testing equipment,	~		
Disologi Pari Coli Onits	visually inspect the outside and inside of the drift.	Seriii-ariirualiy	30 minutes	Building Operator	wimma	Toolset filter lubricant			-
	Examine the blower fan for movement, wear and tear and dust. Remove dust and dirt with a					leak testing equipment,			
D305003 Fan Coil Units	vacuum.	semi-annually	30 minutes	Building Operator	Minimal	belts	Y		
						Toolset, filter, lubricant,			
D305003 Eap Coil Units	Change the air filter	semi-annually	30 minutes	Building Operator	Minimal	leak testing equipment, belts	v		
		com annaany	oo minatoo	Building Operator		Toolset, filter, lubricant,			-
						leak testing equipment,			
D305003 Fan Coil Units	Lubricate all the moving parts, except the ball bearings.	semi-annually	30 minutes	Building Operator	Minimal	belts	Y		
						l colset, filter, lubricant,			
D305003 Fan Coil Units	Replace any dry, cracked or worn belts.	semi-annually	30 minutes	Building Operator	Minimal	belts	Y		
						Toolset, filter, lubricant,			-
	If the motor is in disrepair, sounds odd, vibrates or is not operational, you may need to call a					leak testing equipment,			
D305003 Fan Coil Units	professional to have it replaced.	semi-annually	30 minutes	Building Operator	Minimal	belts	Ŷ		-
						leak testing equipment			
D305003 Fan Coil Units	Document all the maintenance procedures performed on the appropriate maintenance paperwork	semi-annually	30 minutes	Building Operator	Minimal	belts	Y		
						Toolset, filter, lubricant,			
D005000 E 0-111-1-	Perform chemical testing of water. Treat as needed to ensure proper water chemistry for open		00	Duilding Occurrent	A first and	leak testing equipment,	~		
D305003 Fan Coll Units	systems.		30 minutes	Building Operator	Minimai	Toolset Lubricant helts	Ŷ		
D305004 - Electric Baseboard	Inspect unit for unusual noise and/or vibration	quarterly	5-10 minutes	Building Operator	Minor	filters, vacuum	Y		1
						Toolset, Lubricant, belts,			1
D305004 - Electric Baseboard	Clean and re-install permanent filters or replace disposable filters.	quarterly	5-10 minutes	Building Operator	Minor	filters, vacuum	Y		+
D305004 Electric Reschaard	Dravide lubriceties, if accessory	au cartertu	E 10 minutes	Building Operator	Minor	Toolset, Lubricant, belts,			
D303004 - Electric Baseboard	Frovide lubrication, it necessary.	quarteriy	p-10 minutes	building Operator	INITIOL	inters, vacuum	T I		1

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Peace River Regional District PMP Tasking - Tate Creek CC									
Uniformat 4-Asset Functional Name	PMP Task	Frequency	Estimate Time	Resource/Craft	Failure Risk	Materials/Consumables	LOTO (Y/N)	Completed By	Date
						Toolset, Lubricant, belts,			
D305004 - Electric Baseboard	Clean coils by vacuuming or brushing.	quarterly	5-10 minutes	Building Operator	Minor	filters, vacuum	Y		
	Inspect units for correct pressure ready, ensure pins and all tags are up to date and there are no								
D403001 - Fire Extinguishing Devices	signs of damage to the unit.	monthly	Less than 5 minutes	Building Operator	Major	NA	N		
D403001 - Eire Extinguishing Devices	and federal fire code legislation	annually	Less than 5 minutes	Fire Safety Tech	Major	NA	N		
						Specialized Equipment			
D403001 - Fire Extinguishing Devices	Every 5 years all units should be pressure tested as per the NFRP	5 years	Less than 5 minutes	Fire Safety Tech	Major	Provided by Vendor	Y		
	Annual shutdown of electrical system in commercial applications are required for all major								
	electrical systems. There is not boiler plate program for this type of maintenance and would								
	depend on a significant number of factors, such as size of system, application of system, age of								
	system to name a few. All critical electrical system should be maintained in accordance with local					Specialized Equipment			
D501002 - Interior Distribution Transformers	electrical safety laws and legislations as also as per equipment manufacturer recommendations	annually	8 hours	Electrician	Major	Provided by Vendor	Y		
	Annual shutdown of electrical system in commercial applications are required for all major								
	electrical systems. There is not boiler plate program for this type of maintenance and would								
	depend on a significant number of factors, such as size of system, application of system, age of								
	system to name a few. All critical electrical system should be maintained in accordance with local					Specialized Equipment			
D501002 - Interior Distribution Transformers	electrical safety laws and legislations as also as per equipment manufacturer recommendations	annually	8 hours	Electrician	Major	Provided by Vendor	Y		
	Annual shutdown of electrical system in commercial applications are required for all major								
	electrical systems. There is not holler plate program for this type of maintenance and would								
	depend on a significant number of factors, such as size of system, application of system, age of								
	system to name a few. All critical electrical system should be maintained in accordance with local					Specialized Equipment			
D501003 - Main Switchgear	electrical safety laws and legislations as also as per equipment manufacturer recommendations	annually	8 hours	Electrician	Major	Provided by Vendor	Y		
	Annual shutdown of electrical system in commercial applications are required for all major								
	depend on a significant number of factors, such as size of system, application of system, age of								
	system to name a few. All critical electrical system should be maintained in accordance with local					Specialized Equipment			
D501005 - Distribution Panels & Breakers	electrical safety laws and legislations as also as per equipment manufacturer recommendations	annually	8 hours	Electrician	Major	Provided by Vendor	Y		
	Annual shutdown of electrical system in commercial applications are required for all major								
	depend on a significant number of factors, such as size of system, application of system, age of								
	system to name a few. All critical electrical system should be maintained in accordance with local					Specialized Equipment			
D501005 - Distribution Panels & Breakers	electrical safety laws and legislations as also as per equipment manufacturer recommendations	annually	8 hours	Electrician	Major	Provided by Vendor	Y		
	Annual shutdown of electrical system in commercial applications are required for all major								
	depend on a significant number of factors, such as size of system, annlication of system, and of								
	system to name a few. All critical electrical system should be maintained in accordance with local					Specialized Equipment			
D501005 - Distribution Panels & Breakers	electrical safety laws and legislations as also as per equipment manufacturer recommendations	annually	8 hours	Electrician	Major	Provided by Vendor	Y		
	Annual shutdown of electrical system in commercial applications are required for all major								
	depend on a significant number of factors, such as size of system, annlication of system, and of								
	system to name a few. All critical electrical system should be maintained in accordance with local					Specialized Equipment			
D501006 - Enclosed Circuit Breakers	electrical safety laws and legislations as also as per equipment manufacturer recommendations	annually	8 hours	Electrician	Major	Provided by Vendor	Y		
D502001 - Branch Wiring	Inspection as part of Building Condition Assessment	5 years	1 day	Consultant	Minor	NA	Y		
	Ober de service de la contraction de la des					Spare Bulbs, Ladder or			
D502002 - Exterior Lighting	Check and replace burnt out builds	annually	30-60 minutes	Building Operator	Minor	Litt Spare Rulbe Ladder or	Ŷ		-
D502002 - Exterior Lighting	Check lighting pole foundations for signs of cracks or corrosion	annually	30-60 minutes	Building Operator	Minor	Lift	Y		
				, j primer		Spare Bulbs, Ladder or			t
D502002 - Interior Lighting Equipment	Check and replace burnt out bulbs	monthly	30-60 minutes	Building Operator	Minor	Lift	Y		
D503001 - Fire Alarm Systems	Check Fire Alarm AC power lamp and trouble light	daily	Less than 5 minutes	Building Technician	Major	Toolset, Spare Bulbs	N		+
D503001 - Eiro Alarm Sustame	Check trauble conditions	daily	Loce than 5 minutes	Ruilding Technician	Major	NA	N		1
Doodoor - riid Alahn oystems	Touese nonne countrols	Traily	Less man a minutes	pounding recrimician	Inialoi	100	IN		11

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Uniformat 4-Asset Functional Name	PMP Task	Frequency	Estimate Time	Resource/Craft	Failure Risk	Materials/Consumables	LOTO (Y/N)	Completed By	Date
D503001 - Fire Alarm Systems	Check power supply of interconnected smoke alarms	weekly	Less than 5 minutes	Building Technician	Major	Toolset, Ladder or Lift	N		
D503001 - Fire Alarm Systems	Test and inspect fire alarm system	monthly	30-60 minutes	Building Technician	Major	NA	N		
D503001 - Fire Alarm Systems	Test voice communications system	monthly	30-60 minutes	Building Technician	Major	NA	N		
D503001 - Fire Alarm Systems	Verify transmission signals to monitoring station	monthly	30-60 minutes	Building Technician	Major	NA	N		
D503001 - Fire Alarm Systems	Test interconnected smoke alarm signals	monthly	30-60 minutes	Building Technician	Major	Ladder or Lift	N		
D503001 - Fire Alarm Systems	Test smoke alarms and CO alarms	monthly	30-60 minutes	Building Technician	Major	Ladder or Lift	N		
D503001 - Fire Alarm Systems	Test fire alarm system	annually	30-60 minutes	Fire Safety Tech	Major	Provided by Vendor	N		
D503001 - Fire Alarm Systems	Test voice communications system	annually	30-60 minutes	Fire Safety Tech	Major	Provided by Vendor	N		
D503001 - Fire Alarm Systems	Test interconnected smoke alarm signals	annually	30-60 minutes	Fire Safety Tech	Major	Provided by Vendor	N		
G3020 - Sanitary Lift Pump	Inspection of submersible pumps	monthly	30-60 minutes	Building Operator	Major	Toolset, Filters, Vibration Meter, Lubricant, wet-vac	Y		
G3020 - Sanitary Lift Pump	Inspection of impellers	monthly	30-60 minutes	Building Operator	Major	Toolset, Filters, Vibration Meter, Lubricant, wet-vac	Y		
						Toolset, Filters, Vibration			
G3020 - Sanitary Lift Pump	Inspection of Floats	monthly	30-60 minutes	Building Operator	Major	Meter, Lubricant, wet-vac	Y		
G3020 - Sanitary Lift Pump	Clearance of debris and or grease that may hamper operation	monthly	30-60 minutes	Building Operator	Major	Meter, Lubricant, wet-vac	Y		
G3020 - Sanitary Lift Pump	Inspect check valves for proper valve function	monthly	30-60 minutes	Building Operator	Major	Toolset, Filters, Vibration Meter, Lubricant, wet-vac	Y		
G3020 - Sanitary Lift Pump	Wet Well cleaning, as applicable.	quarterly	30-60 minutes	Building Operator	Major	Toolset, Filters, Vibration Meter, Lubricant, wet-vac	Y		
G2020 - Sanitary Life Dump	Cherk and inspect all electrical connections	quarterly	20.60 minutor	Building Operator	Major	Toolset, Filters, Vibration	×		
		quantity			major	Toolset, Filters, Vibration			
G3020 - Sanitary Lift Pump	Check and Test all alarms systems and indicator lights	quarterly	30-60 minutes	Building Operator	Major	Meter, Lubricant, Wet-Vac	Ŷ		
G3020 - Sanitary Lift Pump	Grease pumps and drivelines, as applicable.	quarterly	30-60 minutes	Building Operator	Major	Meter, Lubricant, wet-vac	Y		
G3020 - Sanitary Lift Pump	Test Hydrostatic Alarm	annually	1-2 hours	Plumber	Major	Toolset, Filters, Vibration Meter, Lubricant, wet-vac	Y		
						Toolset, Filters, Vibration			
G3020 - Sanitary Lift Pump	Inspect rotating Element	annually	1-2 hours	Plumber	Major	Meter, Lubricant, wet-vac	Y		
G3020 - Sanitary Lift Pump	Measure suctions and discharge head	annually	1-2 hours	Plumber	Major	Meter, Lubricant, wet-vac	Y		
G3020 - Sanitary Lift Pump	Inspect check valves for proper valve function	annually	1-2 hours	Plumber	Major	Toolset, Filters, Vibration Meter, Lubricant, wet-vac	Y		
G3020 - Sanitary Lift Pump	Check over system operation - check and test all systems	annually	1-2 hours	Plumber	Major	Toolset, Filters, Vibration Meter, Lubricant, wet-vac	Y		

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Peace River Regional District PMP Tasking - Tate Creek CC									
Uniformat 4-Asset Functional Name	PMP Task	Frequency	Estimate Time	Resource/Craft	Failure Risk	Materials/Consumables	LOTO (Y/N)	Completed By	Date
						Toolset, Filters, testing			
G306021 - Fuel Storage Tanks - Aboveground	Inspect Fuel tank/day tank	monthly	30 minutes	Building Operator	Major	equipment	Y		
						Toolset, Filters, testing			
G306021 - Fuel Storage Tanks - Aboveground	Check Fuel filters-primary/secondary (change as needed)	monthly	30 minutes	Building Operator	Major	equipment	Y		
						Toolset, Filters, testing			
G306021 - Fuel Storage Tanks - Aboveground	Inspect Fuel system components/hoses/piping	monthly	30 minutes	Building Operator	Major	equipment	Y		
						Toolset, Filters, testing			
G306021 - Fuel Storage Tanks - Aboveground	Check Gauges and Safety mechanism	monthly	30 minutes	Building Operator	Major	equipment	Y		
						Toolset, Filters, testing			
G306021 - Fuel Storage Tanks - Aboveground	Test for Condensation/water in fuel	monthly	30 minutes	Building Operator	Major	equipment	Y		

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APPENDIX 5 Photo Log



Asset Photos



PRRD - Tate Creek Community Centre : 1



PRRD - Tate Creek Community Centre : 2

Element Photos



A1020 Special Foundations



A1030 Slab on Grade - 1



A1030 Slab on Grade - 2



B1010 Floor Construction - Wood - 1



B1010 Floor Construction - Wood - 2



B1010 Floor Construction - Wood - 3



B1010 Floor Construction - Steel



B1010 Floor structure - gym - 1



B1010 Floor structure - gym - 2



B1020 Roof Construction - Steel



B1020 Roof construction gym - 1



B1020 Roof construction gym - 2



B1030 Structure - Steel



B1030 Wall structure - gym - 1



B1030 Wall structure - gym - 2



B201024 Metal Siding - 1



B201024 Metal Siding - 2



B201024 Metal Siding - 3



B201026 Wood Siding - 1



B201026 Wood Siding - 2



B201026 Wood Siding - 3



B201026 Wood Siding - 4



B201030 Cement Fiberboard Panels



B202001 Windows - 1970s & 1980s - 1



B202001 Windows - 1970s & 1980s - 2



B202001 Windows - 1970s & 1980s - 3



B202001 Windows - 2005



B203002 Solid Doors - Single - 1



B203002 Solid Doors - Single - 2



B203002 Solid Doors - Single - 3



B203003 Solid Doors - Double - 1



B203003 Solid Doors - Double - 2



B203006 Glazed Doors - Double



B203008 Roll up concession door



B301005 Gutters and Downspouts - 1



B301005 Gutters and Downspouts - 2



B301022 Conventional - Modified Bitumen - Classrooms - 1



B301022 Conventional - Modified Bitumen - Classrooms - 2



B301022 Conventional - Modified Bitumen - Gym - 1



B301022 Conventional - Modified Bitumen - Gym - 2



B301028 Metal Roofing



B302022 Hatches



C101001 Fixed Partitions - 1



C101001 Fixed Partitions - 2



C101002 Demountable Partitions - 1



C101002 Demountable Partitions - 2



C101003 Retractable Partitions - 1



C101003 Retractable Partitions - 2



C1010006 Glazed partitions



C102002 Solid interior doors - single



C102002 Solid interior doors - Single - 2006



C102003 Solid interior door - double



C103001 Washroom Partitions



C103009 Built in cabinets and millwork - 1



C103009 Built in cabinets and millwork - 2



C103009 Millwork - trophy case



C103010 Cabinets - Kitchen - 1



C103010 Cabinets - Kitchen - 2



C103010 Cabinets - 2013



C201001 Interior Stair Construction



C201027 Roof Access Ladders



C301005 Painted Wall Covering - 1



C301005 Painted Wall Covering - 2



C301007 Acoustic Panels



C301021 Fabric wall covering



C302001 Ceramic - Classrooms - 1



C302001 Ceramic - Classrooms - 2



C302001 Ceramic - Kitchen



C302003 Wood Flooring - 1



C302003 Wood Flooring - 2



C302003 Wood Flooring - 3



C302005 Carpet - Meeting Room - 1



C302005 Carpet - Meeting Room - 2



C302006 Vinyl Sheet - 2005



C302006 Vinyl Sheet - 2013 - 1



C302006 Vinyl Sheet - 2013 - 2



C303006 Painted Ceiling Structures - 1



C303006 Painted Ceiling Structures - 2



C303007 Suspended Acoustic Ceiling Panels



C303007 Suspended Acoustic ceiling panels - 1



C303007 Suspended Acoustic ceiling panels - 2



D201001 Water Closets



D201002 Urinals



D201004 Sinks - 1



D201004 Sinks - 2



D201003 Lavatories 2006



D201004 Sinks - kitchen - 1



D201004 Sinks - kitchen - 2



D201004 Sinks - kitchen - 3



D201004 Sinks - kitchen - 4



D201004 Sinks - 1



D201004 Sinks - 2



D201024 Custodial Sink



D202001 Domestic Water Pipes and Fittings - 1970s - 1



D202001 Domestic Water Pipes and Fittings - 1970s - 2



D202001 Domestic Water Pipes and Fittings - 2005



D202006 Domestic Water Equipment - Booster Systems



D202021 Domestic Water Tank Heaters - 1



D202021 Domestic Water Tank Heaters - 2



D203001 Sanitary Waste and Vent Piping - 1970s - 1



D203001 Sanitary Waste and Vent Piping - 1970s - 2



D203001 Sanitary Waste and Vent Piping - 2005



D204001 Rain Water Drainage Piping and Fittings - 1970s - 1



D204001 Rain Water Drainage Piping and Fittings - 1970s - 2



D301002 Natural Gas Supply - 1



D301002 Natural Gas Supply - 2



D302008 Fuel Fired Forced Air Furnace - 1980 - 1



D302008 Fuel Fired Forced Air Furnace - 1980 - 2



D302008 Fuel Fired Forced Air Furnace - 2005 - 1



D302008 Fuel Fired Forced Air Furnace - 2005 - 2



D302008 Fuel Fired Forced Air Furnace - 2010 - 1



D302008 Fuel Fired Forced Air Furnace - 2010 - 2



D303022 Self Contained Cooling Units



D304001 Air Distribution Systems - 1970s



D304001 Air Distribution Systems - 2005 - 1



D304001 Air Distribution Systems - 2005 - 2



D304007 Exhaust Fans



D304026 Kitchen Exhaust Systems - 1



D304026 Kitchen Exhaust Systems - 2



D409021 Kitchen Suppression Systems - 1



D409021 Kitchen Suppression Systems - 2



D409099 Fire extinguishers



D501022 Low Voltage Electrical Service - 1



D501022 Low Voltage Electrical Service - 2



D501022 Low Voltage Electrical Service - 3



D501022 - Electrical Distribution



D501023 Electrical Panels



D502002 Interior Lighting - 1970s



D502002 Interior Lighting - 2005



D502002 Interior lighting - 1981



D502021 Exterior Lighting



D502022 Exit Lighting - 1970s



D502022 Exit Lighting - 2005



D503001 Fire Alarm Systems



D509003 Emergency Lighting Systems - 2



D509003 Emergency Lighting Systems - 1



F101001 Playground Equipment - 1989 - 2



F101001 Playground Equipment - 1989 - 1



F101001 Playground Equipment - 2011 - 1



F101001 Playground Equipment - 2011 - 2



F101004 Chain Link Fence Enclosure - 1



F101004 Chain Link Fence Enclosure - 2



F101005 Arena/Race Track - 1



F101005 Arena/Race Track - 2



G201024 Gravel Paved Surface - Roadway



G202024 Gravel Paved Surface - Parking Area - 1



G202024 Gravel Paved Surface - Parking Area - 2



G203022 Concrete Paved Surfaces



G203023 Precast Paved Surfaces - 1



G203023 Precast Paved Surfaces - 2



G203025 Exterior Stairs (Site) - 1



G203025 Exterior Stairs (Site) - 2



G204007 Playing Fields



G204009 Flagpoles



G204021 Fencing and Gates - Chain Link Fence - 1



G204021 Fencing and Gates - Chain Link Fence - 2



G204031 Retaining Walls - Cast-in-place - 1



G204031 Retaining Walls - Cast-in-place - 2



G204031 Retaining Walls - Cast-in-place - 3



G204040 Miscellaneous Structures - Storage Barn - 1



G204040 Miscellaneous Structures - Storage Barn - 2



G204040 Miscellaneous Structures - Storage Barn - 3



G204040 Miscellaneous Structures - Storage Barn - 4



G204040 Miscellaneous Structures - Storage Barn - 5



G204040 Miscellaneous Structures - Storage Barn - 6



G204040 Miscellaneous Structures - Rink Bldg - 1



G204040 Miscellaneous Structures - Rink Bldg - 2



G204040 Miscellaneous Structures - Rink Bldg - 3



G204040 Miscellaneous Structures - Rink Bldg - 4



G301001 Domestic Water Storage Tank - Underground



G302001 Sanitary Waste Lagoon



G306099 Other Fuel Distribution - Propane Distribution - 1



G306099 Other Fuel Distribution - Propane Distribution - 2



G402011 Light poles - 20' high - 1



G402011 Light poles - 20' high - 2



REPORT

Subject:	Charlie Lake Sewer 2021 Budgetary Considerations	
From:	Kari Bondaroff, Environmental Services Manager	Date: December 17, 2020
То:	Rural Budgets Administration Committee	Report Number: ENV-RBAC-008

RECOMMENDATION #1:

That the Rural Budgets Administration Committee approve a funding commitment in the amount of \$1,500,000, payable from Electoral Area C Community Works Gas Tax, to be issued to the Charlie Lake sewer function – 601, for a 2021/2022 condition assessment for the Charlie Lake Waste Water Facility, including but not limited to the collection works, the lift station, the trucked waste facility, and the outfall; further, that any remaining funds be permitted to be used for immediate capital upgrade requirements.

RECOMMENDATION #2:

That the Rural Budgets Administration Committee recommend that the Regional Board authorize an amendment to "Charlie Lake Sewage Local Service Area Parcel Tax Roll Direction and Imposition Bylaw 2195, 2015" to include an increase in parcel tax to a maximum of \$250 per parcel for the Charlie Lake Sewer function – 601.

RECOMMENDATION #3:

That the Rural Budgets Administration Committee recommend that the Regional Board authorize an amendment to "Charlie Lake Sewage User Fee By-law NO.2011, 2012" to include an updated Schedule "A", user fee structure, to reflect the annual inflation increases within the last 10 years for a total increase of 25% for each of the payment structures.

BACKGROUND/RATIONALE:

Recommendation 1 – Condition Assessment

Within the 2019-2022 Strategic Plan of the Regional Board, the first priority is to develop a corporate asset management program which includes undertaking condition assessments for all PRRD owned assets. To that end, a Request for Proposal (RFP) will be issued in 2021 to conduct a condition assessment of the Charlie Lake Sewer System. This RFP for the proposed assessments will include:

- a. A detailed inspection of each system.
- b. An estimated costs to conduct major repairs and parts replacements.
- c. Expected timelines for major repairs and parts replacements will be provided.

The results of the assessment will be used to inform budgeting for works on the appropriate sewer systems (see Financial Considerations for further details).
Recommendation 2 – Parcel Tax

The Charlie Lake Sewer system, including the Charlie Lake Collection, Treatment, and Trucked Waste Facility is currently operated by Aquatech Canadian Water Services. This contract is extended until November 30, 2021. As such, this contract will be put out for request for proposals early in the spring of 2021 to secure the 2022-2026 operations of the facility. For forecasting purposes, the current contract has a 2.5% annual increase for operations. This is the percentage increase that the parcel tax is being recommended to mirror. The Charlie Lake Wastewater Contract includes operations of the collection system and lift station that are directly related to the parcels within the service function area. As well, the contract includes operations and maintenance of the treatment system and outfall which are also directly related to the Charlie Lake sewer service function area. However, due to the current status of the bylaw, maximum parcel tax is currently set at \$150/parcel and there are 483 parcels within the service area. This maximizes the parcel tax at \$72,450.

In order to allow for an incremental increase in parcel tax to reflect the annual operational increase, Bylaw 2195, 2015 needs to be amended to allow for the increase. Currently, the maximum parcel tax that can be requested per parcel is \$150. It is recommended that the maximum parcel tax ceiling be removed to allow for parcel tax to be able to fund operations appropriately.

Recommendation 3 – Collection System User Fees

User fees for the Charlie Lake Collection System have been equivalent since 2012, as shown in Bylaw 2011, 2012, within Table 2 (See Financial Considerations). Revenue collected from the service area for 2018, 2019, and 2020¹ are as follows: \$146,916, \$147,240, and \$147,240, respectfully. These fees are directly related to the revenue required to cover the expenses related to the collection system, the lift station, the treatment facility, and the outfall. The incremental increase to operational expenditures on an annual basis has been 2.5%. To align with that trend, it is recommended that the user fees be increased by 25% to reflect this increase over the past 10 years. Projected revenue for 2021 with a 25% increase to the fees would increase revenue by \$36,810. This increase would ensure funding for operations of the collection system, lift station, treatment facility, and outfall. In addition, these funds would allow for increased budgeting for capital and operational reserve funds.

ALTERNATIVE OPTIONS:

1. That the Rural Budgets Administration Committee provide further direction.

STRATEGIC PLAN RELEVANCE:

Organizational Effectiveness

Develop a Corporate Asset Management Program

FINANCIAL CONSIDERATION(S):

Recommendation 1 – Parcel Tax

Parcel tax has historically fluctuated in a manner that has not been consistent with operational activities within the Charlie Lake collection and treatment systems. The contractual financial allocations for the maintenance of these systems has increased annually by approximately 2.5%. As such, the parcel tax should also increase with these expenditures in order to have enough funds to allocate to unexpected

¹Revenue as of Dec 4, 2020

capital expenditures through capital reserve budgeting. Table 1 outlines the historical parcel tax for the Charlie Lake sewer service area, as well as the projected parcel tax allocations moving forward from 2021-2025.

Table 1. Charlie Lake Sewer Historical and Projected Parcel Tax with a 2.5% annual increase.

2018	2019	2020	2021	2022	2023	2024	2025
\$71,400	\$69,090	\$71,258	\$72,450	\$74,261	\$76,118	\$78,021	\$79,971

*It should be noted that following a successful award of the 2021-2026 Charlie Lake Sewer Operational Contract, the percentage increase in 2022 should reflect the contractual annual increase. This will require an amendment to bylaw 2195, 2015 to allow for future increases.

Recommendation 3 – User Fees

Table 2 (next page) shows the current user fee payment structure for the Charlie Lake collection system. All parcels within the service area share the parcel tax fee. However, user fees are only paid by property owners that are connected to the collection system. With a 25% increase monthly charges will increase within the following manner:

- \$20/month increases to \$25/month for an annual charge of \$300
- \$40/month increases to \$50/month for an annual charge of \$600

Table 2. Charlie Lake Sewage System User Fees as per Bylaw 2011, 2012.

				0	
		Household	Monthly	Semi-Annu	Annual
<u> </u>		Equivalent	Charge	al Charge	Charge
1.	For each single dwelling, manufactured home, trailer, second dwelling, or apartment	1	\$20	\$120	\$240
2.	Manufactured Home Parks occupied or unoccupied - without holding pond per pad	1	\$20	\$120	\$240
	 with holding pond for every 3 pads or part thereof 	2	\$40	\$240	\$480
3.	Recreational Vehicle Parks - for every 6 pads or part thereof - with showers add for every	1	\$20	\$120	\$240
	12 pads or part thereof - with laundromat add for every	1	\$20	\$120	\$240
	12 pads or part thereof	1	\$20	\$120	\$240
4.	Campgrounds - for every 6 sites or part thereof	1	\$20	\$120	\$240
5.	Schools - for every classroom	2	\$40	\$240	\$480
6.	For each store or retail business	1	\$20	\$120	\$240
7.	For each Post Office	1	\$20	\$120	\$240
8.	Each Gas Bar or Service Station	1	\$20	\$120	\$240
9.	Each cafe, restaurant or dining room - for every 10 seats or part thereof	1	\$20	\$120	\$240
10.	Each cabaret, public house or beer parlour - for every 5 seats or part thereof	1	\$20	\$120	\$240
11.	Church	1	\$20	\$120	\$240
12.	Industrial users (must be metered) - for every 40,860 litres (9,000 gallons) discharged per annum, or part thereof	1	\$20	\$120	\$240

CHARLIE LAKE SEWAGE SYSTEM - USER FEES

<u>Reserves</u>

)

The following are the current reserve balances as of December 4, 2020:

Charlie Lake DCC Reserve Balance (for community sewer alteration/expansion):	\$280,265
Charlie Lake Waste Water Truck Facility Capital Reserve (facility upgrades):	\$593 <i>,</i> 733
Charlie Lake Treatment/Disposal Capital Reserve (treatment upgrades):	\$366,403
Charlie Lake Sewer Capital Reserve (for community sewer capital/land purchase):	\$517,209
Charlie Lake Sewer Operating Reserve (community sewer maintenance/repairs):	\$103,499
PRA Carryforward for Lift Station Land Purchase:	\$100,000

Reserve Summary as of November 2020:

PRA R	eserve Area C:	
0	(Uncommitted) -	\$2,310,314
0	(Currently committed) -	\$1,255,978
0	Total -	\$3,566,291
Other	Available Reserves:	
0	Gas Tax Area C (Uncommitted) -	\$1,712,490
0	Fair Share Area C (Uncommitted) -	\$1,088,617

All stated reserves are applicable for capital infrastructure designed as an improvement to the rural community.

COMMUNICATIONS CONSIDERATION(S):

Following approval of recommendations 2 and/or 3, a letter should be sent to all property owners within the service function area to inform them of the 2021 changes.

OTHER CONSIDERATION(S):

None at this time.

External Links:

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1. <u>Bylaw 2195, 2015</u> – Parcel Tax bylaw.



REPORT

t: Chilton, Harper, and Friesen Subdivision Wastewater Condition Assessments						
Kari Bondaroff, Environmental Services Manager	Date: December 17, 2020					
Rural Budgets Administration Committee	Report Number: ENV-RBAC-007					
	Rural Budgets Administration Committee Kari Bondaroff, Environmental Services Manager Chilton, Harper, and Friesen Subdivision Wastewater					

RECOMMENDATION #1:

That the Rural Budgets Administration Committee approve a funding commitment in the amount of \$50,000, payable from Electoral Area D Community Works Gas Tax, to be issued to the Chilton Subdivision sewer function – 602, for a 2021 condition assessment for the Chilton Sewer, including but not limited to the collection works and the lift station and further; that any remaining funds be permitted to be used for capital upgrade requirements.

RECOMMENDATION #2:

That the Rural Budgets Administration Committee approve a funding commitment in the amount of \$50,000, payable from Electoral Area D Community Works Gas Tax, to be issued to the Harper Subdivision sewer function – 605, for a 2021 condition assessment for the Harper Sewer including but not limited to the collection works and the lift station and further; that any remaining funds be permitted to be used for capital upgrade requirements.

RECOMMENDATION #3:

That the Rural Budgets Administration Committee approve a funding commitment in the amount of \$50,000, payable from Electoral Area D Community Works Gas Tax, to be issued to the Friesen Subdivision sewer function – 604, for a 2021 condition assessment for the Friesen Sewer, including but not limited to the collection works and the lift station and further; that any remaining funds be permitted to be used for capital upgrade requirements.

BACKGROUND/RATIONALE:

Within the 2019-2022 Strategic Plan of the Regional Board, the first priority is to develop a corporate asset management program which includes undertaking condition assessments for all PRRD owned assets. As the three of these functions are all within the proximity of Dawson Creek and all feed into the Dawson Creek collection facility, efficiency will be obtained by combining the three condition assessments into one request for proposal (RFP). The RFP for each of the proposed assessments will include:

- a. A detailed inspection of each system.
- b. An estimated costs to conduct major repairs and parts replacements.
- c. Expected timelines for major repairs and parts replacements will be provided.

The results of the assessment will be used to inform budgeting for works on the appropriate sewer systems (see Financial Considerations for further details).

Staff Initials: Kari Bondaroff Dept. Head: Paulo Eichelberger

CAO: Shawn Dahlen

ALTERNATIVE OPTIONS:

- 1. That the Rural Budgets Administration Committee allocate use of Area D Fair Share funds towards the three condition assessments for Harper Sewer (\$50,000), Chilton Sewer (\$50,000), and Friesen Sewer (\$50,000).
- 2. That the Rural Budgets Administration Committee recommend the funding of the 2021 condition assessment for the Harper Sewer, Chilton Sewer, and Friesen sewer systems be done through parcel tax charges.
- 3. That the Rural Budgets Administration Committee provide further direction.

STRATEGIC PLAN RELEVANCE:

- ☑ Organizational Effectiveness
 - Develop a Corporate Asset Management Program

FINANCIAL CONSIDERATION(S):

During the condition assessments there may be deficiencies found that require immediate attention. Additional funding will be required to conduct any repair work. As such, should any large repairs and or replacements of infrastructure be recommended for any of the systems, additional funding may be required through additional grant funding allocations or parcel tax requisitions within the appropriate service area.

Tuble 1. Carrent Operational and Capital Reserve Balances as of Becember 1, 2020							
Function	Operational Reserve Balance	Capital Reserve Balance					
Harper Sewer	\$24,458.59	\$26,952.76					
Chilton Sewer	\$30,155.41	\$34,785.05					
Friesen Sewer	\$21,085.31	\$13,852.62					

Table 1. Current Operational and Capital Reserve Balances as of December 4, 2020

As of November 30, 2020, the balance available after remaining commitments in the Area D Community Works Gas Tax Reserve fund was \$937,141 and \$2,177,417 in Electoral Area D Fair Share fund.

COMMUNICATIONS CONSIDERATION(S):

None at this time.

OTHER CONSIDERATION(S):

None at this time.



REPORT

Subject:	North Pine Tower Condition Assessment	
From:	Paulo Eichelberger, GM of Environmental Services	Date: December 17, 2020
To:	Rural Budgets Administration Committee	Report Number: ENV-RBAC-009

RECOMMENDATION:

That the Rural Budgets Administration Committee approve a funding commitment of \$50,000, payable from Electoral Area B, Spending Item #11 – Connectivity, for a 2021 condition assessment of the North Pine Tower, including but not limited to the tower, all attached infrastructure, supports, power building and fenced compound.

BACKGROUND/RATIONALE:

Within the 2019-2022 Strategic Plan of the Regional Board, the first priority is to develop a corporate asset management program which includes undertaking condition assessments for all PRRD owned assets. To that end, a Request for Proposal (RFP) will be issued in 2021 to conduct a condition assessment of the North Pine Tower (Tower). This RFP for the proposed assessments will include:

- a. A detailed inspection of the tower and all associated infrastructure.
- b. An estimated costs to conduct major repairs and parts replacements.
- c. Expected timelines for major repairs and parts replacements.

The results of the assessment will be used to inform budgeting for works on the Tower (see Financial Considerations for further details).

ALTERNATIVE OPTIONS:

- 1. That the Rural Budgets Administration Committee consider selling the North Pine Tower asset.
- 2. That the Rural Budgets Administration Committee provide further direction.

STRATEGIC PLAN RELEVANCE:

Organizational Effectiveness

Develop a Corporate Asset Management Program

FINANCIAL CONSIDERATION(S):

The Tower is currently funded by secondary users as well as operating reserves. Secondary users provide \$3,000 each for a total of \$6,000 annually in revenue. The reserve balances for the Tower are:

- Operating Reserve = \$32,828.31
- Capital Reserve = \$0

The draft 2021 budget will show a transfer of \$1,500 to capital reserve to build funds for any possible future upgrades.

Staff Initials: Kari Bondaroff Dept. Head: Paulo Eichelberger

CAO: Shawn Dahlen

The balance for Electoral Area B PRA as of November 30, 2020 is \$82,634.

COMMUNICATIONS CONSIDERATION(S):

None at this time.

OTHER CONSIDERATION(S):

None at this time.

Attachments:

1. 2018 NP Tower - Structural Analysis - Rev 3

STRUCTURAL ANALYSIS

61.0m Guyed Tower

Northpine, BC

June 26, 2018



Vincent Communications Project: Tower Load Bearing Study Prepared for: Vincent Communications

Structure Owner: Peace River Regional District

Varcon Job #: 80257

Distribution: Vincent Communications



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	Graphical Analysis Results
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	Site Specific Wind

1.0 Introduction

As per your instructions, we have analyzed the 61.0m triangular, guyed tower located at Northpine, BC. The structural analysis was performed to assess whether the tower meets the strength requirements of CSA S37-13 under the loading shown on the attached tower profile.

Structure Details

Height:	61.0m
Type:	Guyed Mast
Name:	Northpine, BC
Latitude:	56° 22' 9.7" (N)
Longitude:	120° 49' 29.6" (W)
Analysis Parameters	
Standard:	CSA S37-13
Ice Loading:	10.0mm
Wind Loading:	456 Pa (Site Specific Wind)
Earthquake Loading:	0.095
Earthquake Class:	Life Safety Performance Level 1 (PL1)
Reliability Class:	Ι
Serviceability Factor:	1.00
Loading Combinations:	24 Load Cases (12 bare, 12 iced)
Sources of Information	
Structural Mapping:	2018, Varcon Inc. Structural Mapping
Reports:	1991, Hardy BBT Limited Geotechnical Investigation
	1990, BC Ministry of Regional and Economic Development Site and
	System Inspection Record
Environmental Data:	2018, Environment Canada Site Specific Wind Data
	CSA S37-13 Ice Map
	2010, National Building Code Seismic Hazard Calculation
Correspondence:	2018, Email Correspondence with Vincent Communications
Missing Information:	
Drawings:	As-Built Tower and Foundation Drawings

2.0 Assumptions

Several assumptions were made in order to facilitate our analysis. If you have any knowledge which would indicate they do not accurately represent the existing tower, proposed and existing antenna and transmission line arrangements, or site specific information, we must be notified so that we can make the appropriate changes to our analysis, conclusions and any recommendations.

Assumptions utilized in completing our structural analysis include:

- 1. The tower and antenna loading considered in our analysis includes all existing antennas and transmission lines as identified by the 2018 Structural Mapping completed by Varcon Inc. The proposed loading is as per email correspondence with Vincent Communications. The complete loading scenario is as shown in Appendix A.
- 2. The tower members, connections and other relevant components are in good condition and are capable of carrying their full design capacity.
- 3. The yield strength was taken as 300MPa for the tower legs, diagonals and horizontals.
- 4. The manufacturer of the shackles and turnbuckles for various guy wires are unknown. We have assumed that these elements do not limit the capacity of the guy wires.

3.0 Analysis Results

Based on the above information and assumptions, our analysis results indicate that the tower mast is in conformance with the strength requirements of CSA S37-13.

Due to lack of information as detailed in section 1.0 above, we are unable to review or verify the capacities of the existing tower foundations. We cannot comment on the suitability of the foundations at this time without site specific foundation details.

Graphical tower loading and capacity results are provided in Appendix B.

Based on the above information and assumptions, our analysis results indicate that the mount at elevation 25.0m experiences overloads under a fall arrest scenario in accordance with Canada Occupational Health and Safety Regulations, Section 12.10 requirements.

During our analysis we assessed the site specific spectral ground acceleration parameters. Since Sa(0.2) is below 0.35g, this site does not require earthquake loading analysis per CSA S37-13.

 Table 1: Microwave Antenna Serviceability Deflections

Description	Elevation (m)	Owner	Calculated Rotation (Degrees)	Allowable Rotation (Degrees)
0.6m HP Dish	55.8	PRIS	0.90	-
0.6m HP Dish	34.4	PRIS	0.54	-
0.9m PL Dish w/ Radome	25.0	PRIS	0.52	-
0.6m HP Dish	20.7	PRIS	0.44	-
0.6m PL Dish w/ Radome	19.5	PRIS	0.42	-

Microwave antenna deflections are taken with a serviceability factor (τ) of 1.0.

For your information, we have attached the following appendices:

- A. Tower Profile and Antenna Loading
- B. Graphical Analysis Results
- C. Site Specific Wind

4.0 Conclusions

Based on the above information and assumptions, our analysis results indicate that the tower mast meets the strength requirements of CSA S37-13.

The existing mount at 25.0m is not adequate to resist the forces resulting from a fall arrest scenario. If there are going to be upgrades to the antennas at this elevation we recommend the mount be replaced to meet the Canada Occupational Health and Safety Regulations, Section 12.10 fall arrest requirements.

It should be noted that the capacity of the tower foundations could not be verified. If foundation drawings exist for this site, they should be forwarded to Varcon Inc. so that we can complete a review of the foundation.

We trust the forgoing is satisfactory. If you have any questions or comments, please contact the undersigned.



Trevor Van Wiechen, EIT. Structural Associate trevor.vanwiechen@varcon.ca



Reviewed Bý? Troy Stafford, P.Eng. troy.stafford@varcon.ca



5.0 General Notes

- 1. Results, conclusions and recommendations derived from this analysis report are as accurate as the information provided to Varcon Inc. and are prepared for the exclusive use of the Client noted. Any use, which a third party makes of this report or reliance on or decisions made based on it are the responsibility of such third parties. Varcon Inc. accepts no responsibility for damages, if any, suffered by any third party or use of the report information by anyone, outside the specific indicated scope, as a result of decisions made or actions based on this report. Further, any use outside the specific indicated scope is done so at the full responsibility of the user.
- 2. Results, conclusions and recommendations are based on analysis results for Reliability Class I. This is the most conservative case whereby no probability of failure is tolerated, since any failure would result in unacceptable risk of injury and/or interrupted service. Should the Client wish to accept some measure of risk, Varcon Inc. can re-evaluate the results, conclusions and recommendations based on either Reliability Class II or III at the Client's request.
- 3. This analysis is completed in accordance with the strength/safety (Ultimate Limit States-ULS) and antenna service (Serviceability Limit States-SLS) requirements of CSA S37-13.
- 4. In our analysis, twenty-four (24) load cases are evaluated: twelve (12) wind directions under (a) full design wind pressure without ice and (b) half design wind plus full ice thickness.
- 5. Our assessment is based on the minimum CSA S37-13 recommended ice thickness. These figures are general in nature and based on Environment Canada data. Site specific ice loading could change considerably. If you have any site specific information which would indicate that greater uniform accumulations of ice are likely to occur, please contact us immediately and our analysis results will be modified accordingly.
- 6. ULS evaluation compares the minimum factored resistance governed by either members or connections with factored loads resulting from wind and/or ice (maximum governing) applied to the structure.
- 7. SLS evaluation reports deflection of microwave antenna beams as a result of applied service loads, if applicable. Unless specified by the owner, total deflection is compared against antenna manufacturer data for ½ antenna beam width. The owner may also specify operational availability for the analysis, used in calculating service loads (default for our analyses is a serviceability factor of 1).
- 8. All existing antenna mounts are modeled with regard to their impact on the tower mast. We have not completed a structural assessment of mount components or connection interface with the tower structure. We assume the mounts have been properly designed for site specific conditions by others.
- 9. The analysis does not constitute an approval/disapproval of the physical condition of the structure. Unless noted otherwise, Varcon Inc. assumes the physical condition of the structure does not impair its performance under ULS or SLS. A thorough inspection of the actual tower conditions is recommended by CSA S37-13 prior to any analysis or modifications to the structure. This should be completed by qualified engineering personnel if it has not been done immediately prior to the analysis. Varcon Inc. cannot comment on any capacity effects due to degradation of subsurface foundations unless a thorough on-site evaluation is performed.
- 10. Azimuths are generally referenced to True North unless otherwise indicated.
- 11. This report is only valid if antennas and lines are installed as listed above. Any changes should be forwarded to Varcon Inc. for further assessment.
- 12. All cost estimates for reinforcement is order of magnitude only and may change dependant on location, time of year and market conditions. Detailed estimates should be based on finalized design documents.

Appendix A

Tower Profile and Antenna Loading

	#	Owner	Status	Antenna	Elev. (m)	Additional Equipment	Tx-Line	AZ. (TN°)
	1	PRRD	To Be Removed	Scala SL-8 Paraslot UHF- TV Antenna	62.6	-	(1) 49mm OD Coax	Omni
	2	PRRD	Existing	DOL	61.0	-	(1) Teck	-
	3	Vincent Communications	Proposed	PMP450i	60.0	-	(1) Cat5e	0
	4	Vincent Communications	Proposed	PMP450i	60.0	-	(1) Cat5e	90
	5	Vincent Communications	Proposed	PMP450i	60.0	-	(1) Cat5e	180
	6	Vincent Communications	Proposed	PMP450i	60.0	-	(1) Cat5e	270
\$ \	7	PRIS	Existing	TRH2412016	57.3	-	(1) Cat5e	0
	8	PRIS	Existing	0.6m HP Dish	55.8	-	(1) Cat5e	12
§ \	9	Sunrise Media	Proposed	SD210-HF7PASNM	53.0	-	(1) LMR600	300
8	10	PRIS	Existing	AM-V5G-Ti	51.1	-	(1) Cat5e	0
2	11	PRIS	Existing	AM-V5G-Ti	47.5	-	(1) Cat5e	120
\$1	12	PRIS	Existing	TRH2412016	43.4	(1) RRU	(1) Cat5e	90
\$P	13	PRIS	Existing	AM-V5G-Ti	41.3	-	(1) Cat5e	240
Š	14	PRIS	Existing	Unknown Panel	35.8	-	(1) Cat5e	245
	15	PRIS	Existing	0.6m HP Dish	34.4	(1) ODU	(1) Cat5e	320
Š.	16	PRRD	Existing	(2) DOL	30.9	-	(1) Teck	-
	17	Vincent Communications	Proposed	PTP650	29.0	-	(1) Cat5e	174
	18	PRIS	Existing	0.9m PL Dish w/ Radome	25.0	(1) OD U	(1) Cat5e	155
	19	PRIS	Existing	-	22.1	(1) ODU	(1) Cat5e	-
3	20	PRIS	Existing	0.6m HP Dish	20.7	(1) ODU	(1) Cat5e	180
\$	21	PRIS	Existing	0 6m PL Dish w/ Radome	19.5	(1) ODU	(1) Cat5e	180

Appendix B

Graphical Analysis Results



MAXIMUM LEG COMPRESSION (kN)



MAXIMUM DIAGONALS CAPACITIES (COMPRESSION) (kN)

Guy Elevation (m)	Guy Size	Initial Tension (kN)	Max. Tension at Mast (kN)	Assessment Ratio %
14.9	GS 10	6.0	17.3	48.0 %
30.2	GS 10	6.0	19.9	55.0 %
45.4	GS 11	8.7	26.4	51.0 %
60.7	GS 11	8.7	25.2	49.0 %

Guy Tensions, Anchor Loads, and Base Loads

Tower Base	Vertical (kN)	Shear (kN)	Moment (kNm)	Torsion (kNm)
	143.7	2.4	0.0	-0.5

Anchor #	Azimuth (deg)	Radius (m)	Horiz. LoadVertical LoadResultan(kN)(kN)(kN)		Resultant (kN)
1	80.0	69.9	72.5	41.8	83.7
2	200.0	68.8	74.1	41.9	85.1
3	320.0	65.6	74.6	40.4	84.8

Appendix C

Site Specific Wind

Site Information:

Name: Northpine, BC Latitude: 56° 22' 9.7" N Longitude: 120° 49' 29.6" W Tower Height (m): 61 Elevation MSL (m): 762

Results:

Note: Following direction from the S37 Committee, Qe can no longer be provided.

Q _{nbc} (Pa):	300	$Q_{nbc} = 300(Z/10)^{0.2}$	$V_{nbc} = 48.19 \text{ mph}$
Icing:	As per CAN/CSA S37-13		
Q _{Min} (Pa)	250	$Q_{Min} = 250(Z/10)^{0.2}$	V_{Min} = 43.99 mph

Wind Pressure Formula (for z in metres and result in Pa):

 $Q_h = 0.12919 \{ [0.1326 e^{(-0.0033 z)} + 1.0000 \ln(z/0.1000) / \ln(z/0.1000)] 46.30 \}^2 (z/10)^{0.218}$

Profile Formula General Form:

$$Q_{h} = 0.12919 \{ [a_{1} e^{(-a^{2} z)} + a_{3} ln(z/z_{h}) / ln(z/z_{01})] v_{01} \}^{2} (z/10)^{0.218}$$

Site Values of Coefficients:

 $a_1 = 0.1326$, $a_2 = 0.0033$, $a_3 = 1.0000$, $z_h = 0.1000$, $z_{01} = 0.1000$, $v_{01} = 46.30$ mph

Definitions

Tower Height: Height of the tower from ground level at the base of the tower to the top of the structure. Q_{nbc} : Regionally representative reference wind pressure at 10 m in the format of the National Building Code of Canada and the Q_{nbc} value is profiled with the $^{2}/_{10}$ power law.

 \mathbf{Q}_{Min} : Minimum reference wind pressure (320 Pa, 300 Pa, and 250 Pa for the 50-year, 30-year, and 10-year return periods respectively) profiled with the $^{2}/_{10}$ power law as per Section 5.4.1 of S37-13.

Wind Pressure Formula: Formula for the design wind pressure as a function of height. (Ref.: S37-13, 5.3.1) **Height (Z):** the vertical distance (m) above ground level at the base of the tower.

Note: No wind pressure value less than 90% of the value at 10 m should be used for heights less than 10 m a.g.l.

These wind pressures were evaluated using a version of the methods described by Taylor and Lee (1984) "Simple Guidelines for Estimating Wind Speed Variations Due to Small Scale Topographic Features", Climatological Bulletin 18 2, using the Boyd (1969) analysis of thirty year return period wind speeds (which is also used for the National Building Code of Canada), modified by a technique described by Wieringa (1980) "Representativeness of Wind Observations at Airports" Bulletin of the American Meteorological Society, 61 9, as input data. The uncertainty in NBCC regionally representative reference wind pressures is about [+15%,-15%].

Environment Canada has not made and does not make any representations or warranties, either expressed or implied, arising by law or otherwise, respecting the accuracy of recommended climatic information. In no event will Environment Canada be responsible for any prejudice, loss or damages which may occur as a result of the use of design wind pressure recommendations.

Northpine, BC 61m Tower



Q_h.Profile: The site-specific wind pressure profile directly from the Taylor and Lee (1984) simple guidelines.

Explanatory notes regarding the new report format and changes to calculation methods.

- The most significant change from the previous versions of the reports is that the exponent used in the Q_h equation is no longer fixed at 0.2. The exponent now varies continuously from 0.2 for open terrain to 0.32 for closed terrain.
- 2. A new Q_{min} profile has been added to the graphs and it represents the minimum acceptable reference wind pressure profile. It starts with the minimum 10-metre reference wind pressure of 320 Pa for a 50-year return period as per section 5.4.1 of S37-13 and then uses the same $^{2}/_{10}$ power law formulation as the Q_{NBC} profile to generate the curve. The corresponding 10-metre reference wind pressures for the 10-year and 30-year return periods are 250 Pa and 300 Pa respectively.
- 3. Q_h will always be plotted even when they are less than Q_{Min} . This will allow designers to see how Q_h varies over the height of the tower. Also, in rough terrain and for taller towers, the Q_h profile might cross the Q_{Min} profile.
- 4. The coefficients for the Q_h equation will now always be given regardless of the Q_{NBC} or Q_{Min} values.
- 5. The wind speeds will be given for each of the 4 equations $(Q_h, Q_{NBC}, \text{ or } Q_{Min})$ too.

Site Information:

Name: Northpine, BC Latitude: 56° 22' 9.7" N Longitude: 120° 49' 29.6" W Tower Height (m): 61 Elevation MSL (m): 762

Results:

Note: Following direction from the S37 Committee, Qe can no longer be provided.

Q _{nbc} (Pa):	360	$Q_{nbc} = 360(Z/10)^{0.2}$	V_{nbc} = 52.79 mph
Icing:	As per CAN/CSA S37-13		
Q _{Min} (Pa)	300	$Q_{Min} = 300(Z/10)^{0.2}$	$V_{Min} = 48.19 \text{ mph}$

Wind Pressure Formula (for z in metres and result in Pa):

 $Q_h = 0.12919 \{ [0.1326 e^{(-0.0033 z)} + 1.0000 \ln(z/0.1000) / \ln(z/0.1000)] 50.68 \}^2 (z/10)^{0.218}$

Profile Formula General Form:

$$Q_{h} = 0.12919 \left\{ \left[a_{1} e^{(-a^{2} z)} + a_{3} \ln(z/z_{h}) / \ln(z/z_{01}) \right] v_{01} \right\}^{2} (z/10)^{0.218}$$

Site Values of Coefficients:

 $a_1 = 0.1326$, $a_2 = 0.0033$, $a_3 = 1.0000$, $z_h = 0.1000$, $z_{01} = 0.1000$, $v_{01} = 50.68$ mph

Definitions

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Q_{Min}: Minimum reference wind pressure (320 Pa, 300 Pa, and 250 Pa for the 50-year, 30-year, and 10-year return periods respectively) profiled with the ²/₁₀ power law as per Section 5.4.1 of S37-13.

Wind Pressure Formula: Formula for the design wind pressure as a function of height. (Ref.: S37-13, 5.3.1) **Height (Z):** the vertical distance (m) above ground level at the base of the tower.

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Northpine, BC 61m Tower



 \underline{Q}_{nbc} Profile: Regionally representative reference wind profiled with the $^{2}/_{10}$ power law.

<u>Q_{Min}</u> Profile: Minimum site-specific wind pressure (320 Pa, 300 Pa, and 250 Pa for the 50-year, 30-year, and 10year return periods respectively) profiled with the ²/₁₀ power law.

Q_h.Profile: The site-specific wind pressure profile directly from the Taylor and Lee (1984) simple guidelines.

Explanatory notes regarding the new report format and changes to calculation methods.

- The most significant change from the previous versions of the reports is that the exponent used in the Q_h equation is no longer fixed at 0.2. The exponent now varies continuously from 0.2 for open terrain to 0.32 for closed terrain.
- 2. A new Q_{min} profile has been added to the graphs and it represents the minimum acceptable reference wind pressure profile. It starts with the minimum 10-metre reference wind pressure of 320 Pa for a 50-year return period as per section 5.4.1 of S37-13 and then uses the same ²/₁₀ power law formulation as the Q_{NBC} profile to generate the curve. The corresponding 10-metre reference wind pressures for the 10-year and 30-year return periods are 250 Pa and 300 Pa respectively.
- 3. Q_h will always be plotted even when they are less than Q_{Min}. This will allow designers to see how Q_h varies over the height of the tower. Also, in rough terrain and for taller towers, the Q_h profile might cross the Q_{Min} profile.
- 4. The coefficients for the Q_h equation will now always be given regardless of the Q_{NBC} or Q_{Min} values.
- 5. The wind speeds will be given for each of the 4 equations $(Q_h, Q_{NBC}, \text{ or } Q_{Min})$ too.

Site Information:

Name: Northpine, BC Latitude: 56° 22' 9.7" N Longitude: 120° 49' 29.6" W Tower Height (m): 61 Elevation MSL (m): 762

Results:

Note: Following direction from the S37 Committee, Qe can no longer be provided.

Q _{nbc} (Pa):	390	$Q_{nbc} = 390(Z/10)^{0.2}$	$V_{nbc} = 54.94 \text{ mph}$
Icing:	As per CAN/CSA S37-13		
Q _{Min} (Pa)	320	$Q_{Min} = 320(Z/10)^{0.2}$	V_{Min} = 49.77 mph

Wind Pressure Formula (for z in metres and result in Pa):

 $Q_h = 0.12919 \{ [0.1326 e^{(-0.0033 z)} + 1.0000 \ln(z/0.1000) / \ln(z/0.1000)] 52.68 \}^2 (z/10)^{0.218}$

Profile Formula General Form:

$$Q_{h} = 0.12919 \left\{ \left[a_{1} e^{(-a^{2} z)} + a_{3} \ln(z/z_{h}) / \ln(z/z_{01}) \right] v_{01} \right\}^{2} (z/10)^{0.218}$$

Site Values of Coefficients:

 $a_1 = 0.1326$, $a_2 = 0.0033$, $a_3 = 1.0000$, $z_h = 0.1000$, $z_{01} = 0.1000$, $v_{01} = 52.68$ mph

Definitions

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Northpine, BC 61m Tower



<u>Q_{nbc}</u>Profile: Regionally representative reference wind profiled with the $^{2}/_{10}$ power law.

 $\underline{Q_{Min}}$ Profile: Minimum site-specific wind pressure (320 Pa, 300 Pa, and 250 Pa for the 50-year, 30-year, and 10-year return periods respectively) profiled with the $^{2}/_{10}$ power law.

Q_h.Profile: The site-specific wind pressure profile directly from the Taylor and Lee (1984) simple guidelines.

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- 4. The coefficients for the Q_h equation will now always be given regardless of the Q_{NBC} or Q_{Min} values.
- 5. The wind speeds will be given for each of the 4 equations $(Q_h, Q_{NBC}, \text{ or } Q_{Min})$ too.



REPORT

Subject:	North Peace Airport Subdivision Sewer 2020 and 2021 Bud	lget
From:	Paulo Eichelberger, GM of Environmental Services	Date: December 17, 2020
To:	Rural Budgets Administration Committee	Report Number: ENV-RBAC-011

RECOMMENDATION:

That the Rural Budgets Administration Committee approve a funding commitment in the amount of \$800,000, payable from Electoral Area C Peace River Agreement Funds, Spending Item #9 – PRRD Sewer Services Assistance, to be issued to the North Peace Airport Sewer Function – Function 603, for capital repairs to be conducted in 2021.

BACKGROUND/RATIONALE:

In 2020, a condition assessment was conducted on the North Peace Airport Subdivision Sewer Function. The entire sewer network was visually inspected with defects noted and assigned a value of 1-5 (1 being the least severe, 5 being the most severe). Any defect with a rank of 4-5 must be addressed within 1 year, whereas ranks 1-3 need periodic monitoring.

Out of the twenty six segments of piping evaluated, fifteen ranked a defect level of 4, meaning that these segments require repair within the next year. The estimated cost of repairs for these fifteen segments is \$800,000.

ALTERNATIVE OPTIONS:

- 1. That the Rural Budgets Administration Committee approve a funding commitment in the amount of \$800,000, payable from Electoral Area C Fair Share Funds, to be issued to the North Peace Airport Sewer Function Function 603, for capital repairs to be conducted in 2021.
- 2. That the Rural Budgets Administration Committee provide further direction.

STRATEGIC PLAN RELEVANCE:

Organizational Effectiveness

Develop a Corporate Asset Management Program

FINANCIAL CONSIDERATION(S):

The cost of repairing the sewer line is estimated at \$400 per lineal metre (with contingency). Based on the approximate length of the lines for the subdivision; 2,000 metres, the overall cost of repairs will be \$800,000. The 2021 budget reflects a cost of \$800,000 to include sufficient contingency for all repair works.

Dept. Head: Paulo Eichelberger

Reserve Summary as of November 2020:

•	PRA Reserve Area C	\$2,310,314
•	Gas Tax Area C	\$1,712,490**
•	Fair Share Area C	\$1,088,617

All stated reserves are applicable for capital infrastructure designed as an improvement to the rural community.

** ENV-RBAC-009 (Charlie Lake Sewer 2021 Budgetary Considerations) reflects an ask of \$1,500,000 in funding from Gas Tax Funds, which would reduce the Area C portion of available funds down to \$212,490.

Function Reserves are as follows:

- Operating Reserves \$52,121
- Capital Reserves \$73,137

COMMUNICATIONS CONSIDERATION(S):

None at this time.

OTHER CONSIDERATION(S):

None at this time.

Attachments:

1. PRRD YXJ Water-Sewer Network Assessment Report.pdf



Condition Assessment Report

YXJ Subdivision Water Network and Sewer Network

Draft Report Prepared for:

Peace River Regional District



By:

Pure Technologies, a Xylem Brand November 27th, 2020



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1. Executive Summary

In January August 2020, Pure Technologies, a Xylem Brand (Pure Technologies) was contracted to complete condition assessment of watermain network and sewer network in the YXJ subdivision, for the Peace River Regional District, British Columbia. Pure Technologies teamed up with Watermark Solutions for the watermain network external leak survey and AquaCoustic Remote Technologies to complete CCTV inspection of the sewer network.

The scope of work included:

- 2.3-Kilometre External leak survey on watermain network of Asbestos-Cement pipe and valve assessment
- 2.2-Kilometre CCTV survey on sewer network of Clay pipe and data analysis
- 30-days of Transient Pressure Monitoring
- AWWA design check of Asbestos-Cement pipe
- Condition Assessment Report summarizing the results and recommendations

Based on the external leak survey, CCTV survey, valve assessment, transient pressure monitoring, and the design check, Pure Technologies concludes and recommends the following:

1. One (1) leak was located during the survey. This was a leak on a hydrant lead on the hydrant located outside 10330 257 Rd. Good leak noise was audible on the hydrant and on the secondary isolation valve. The valve itself was the likely source of the leak and maintenance is required as soon as possible.

2. Seven (7) inline valves and eight (8) hydrants were located and assessed. Inline valves#1 and #2 could not be accessed, valves #3 and #7 were stuck and could not be turned and isolation valve for Hydrant G was stuck and could not be turned. Maintenance is required as soon as possible to ensure operability of these valves.

3. Without direct information on the physical condition of the watermain network's asbestos-cement pressure pipe, a prediction of the pipe's remaining life is not feasible. Pure has been informed that no failures have occurred in this pipe and there was nothing of concern found in the design check, which is an indicator that the pipe is still in relatively good condition. There are still thousands of kilometers of asbestos-cement pressure pipe in operation around the world, including Canada and the US. Most of this pipe has been in service well over 40 years with some now approaching 65 years in service. Strictly based on this information, the PRRD YXJ subdivision asbestos-cement pressure pipe might continue to operate under the current loading conditions for another 15 to 20 years.

4. Given the application, namely water distribution, it would be reasonable to expect the asbestos-cement pipe has not suffered any severe degradation unless its conveying "soft" water or is subjected to acidic sulfate bearing soils or groundwater. If PRRD wants some assurance that the pipe is still in good working condition then it would be advisable to check the Langelier Index (or Aggressiveness Index) of the water being conveyed through the pipes. It would also be advisable to retain a soils testing lab and have several tests run on soil samples extracted from the pipe zone. If the conveyed water is found to

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be "soft" (Langlier Index less than -2.0) or the surrounding soils and groundwater contain soluble sulfate exceeding 20,000 mg/L or 10,000 mg/L respectively, then it would be recommended to extract a sample of the pipe from the line for laboratory testing. The laboratory testing would include microscopic examination of the wall cross-section, pH indicator testing of the pipe wall and a crush test. This would provide direct evidence on the physical condition of the pipe. A prediction of the remaining service life could be rendered at that point.

5. All defects observed during the CCTV survey of the sewer network, were graded from 1 to 5, with 5 being the most severe. Pipe defects with a grade of 5, especially a structural defect, should be repaired or replaced immediately as collapse of the pipe or fitting is imminent. Defects graded 4 should be addressed within the year, and defects graded 1 through 3 need to be periodically monitored to ensure they don't continue to deteriorate rapidly. Based on a review of the CCTV video in conjunction with the PACP coding, some sewer lines need to be repaired (point repairs), replaced (CIPP) or cleaned (jet cleaning) for maintenance issues. To monitor deteriotion of the sewer network, it is recommended to do a routine inspection bi-annually. Refer to Appendix C for a detailed list of recommendations.

6. Pressure data collected using a pressure monitor installed on a hydrant, over a period of approximately 30 days indicated there is little difference between the minimum, average and maximum recorded values. Majority of the maximum pressure measurements (applies to minimum and average too) falls into a very narrow band and 70% of all maximum pressures fall between 53 and 55 psi. The two maximum recorded pressures above 60 psi, which occurred at 9:00AM and 9:04AM on September 3, 2020, were probably due to some minor transient event in the system.

7. The AWWA C401 design check found the pipe, assuming no significant degradation, to be operating well within the defined safety limits recommended by the AWWA standard. In fact, the factor of safety in pressure was 8.0 and for external load 4.19. This is versus a recommended minimum value of 4.0 and 2.5, respectively.



2. Introduction

The Peace River Regional District (PRRD) retained the services of Pure Technologies, a Xylem brand (Pure Technologies) to perform inspection of the 150mm watermain network & 200mm gravity sewer network for YXJ Subdivision in Fort St John, BC. The purpose of the inspection was to detect and locate leaks, perform valve assessment within the watermain network and assess the internal condition of sewer network. Given the complex nature of the network (multiple pipeline, short distances, smaller diameter, etc.) that would limit the use of inline inspection tools, Pure Technologies teamed up with Watermark Solutions for the watermain network external leak survey and AquaCoustic Remote Technologies to complete CCTV inspection of the sewer network.

In addition to the watermain network external leak detection survey and valve assessment; Pure Technologies performed transient pressure monitoring and conducted an AWWA design evaluation on the AC pipe (to determine if the pipe design is adequate for internal/external loading).

2.1 Background

The YXJ Subdivision watermain network is comprised of approximately 2.3 kilometres of 150millimetre Asbestos Cement Pipe (ACP) and the sewer network is approximately 2.2 kilometres of 200-millimetre Vitrified Clay Pipe (VCP). The watermain and sewer network serves about 60 households in this neighbourhood.



Figure 2.1: Inspection Scope of the 150mm watermain network and 200mm sewer network


3. Project Scope

This condition assessment report of the watermain and sewer network, provides findings from the network assessment. The following investigative techniques were deployed:

- External leak survey of watermain network
- CCTV inspection of sewer network
- Transient Pressure Monitoring
- Valve Assessment
- AWWA design evaluation

4. Inspection Overview

External leak survey for the watermain network and valve assessment was completed by Watermark Solutions the week of August 17th, 2020 and CCTV survey of the sewer network was completed by AquaCoustic Remote Technologies the week of August 24th, 2020. Pressure was monitored on the watermain network for a period of 30-days to collect transient pressure data.

4.1 Watermain Network

4.1.1 External Leak Survey

At the start of the external leak survey, a systematic "listening" procedure was used. The technician "listened" for sound on direct contact points such as main line gate valves, fire hydrants, meters/curb-valves, blow-offs, etc. On the mains, staff used a ground microphone to listen over the main approximately every two to three meters. With this method, comprehensive coverage of the system was attained, and all leak sounds were investigated and pinpointed immediately.

Any leak noises that were located by the field staff throughout the distribution system was graded by severity and this enabled the field technician to prioritize and identify the larger leaks first, then the technician systematically worked through the smaller leak noises. The Leak noises were then graded from 1 to 5, 5 being the typical sized mains break and 1 being a very small leak such as a weeping curb box or valve.

The noise produced by pressurized water forcing its way through a crack or joint makes a distinct sound when listened to on pipes, valves or services and as a proven method for leak detection, the Ground Microphone was used as acoustic listening device. Potential leak sites were identified by this method and further localized by Correlation Testing.





Figure 4.1: X-Mic Ground listening system

4.1.2 Valve Assessment

The valve assessment work was performed in accordance with the AWWA M44 standard. For the direct buried valves, Pure determined if the valve could be located, accessed and mechanically operated (if so, valves were exercised and turn count documented). The findings were documented, the as-is condition photographed, and GPS coordinates were taken.

4.1.3 Transient Pressure Monitor

Hydraulic pressure transients occur in pipelines when the steady-state conditions of the system change due to pressure and/or flow disturbances (e.g., the rapid closure of a valve, pump startup/ shutdown, air pockets). Transient pressure monitoring (TPM) captured these pressure transients, as well as captured the working pressures of a pipeline. Figure 4.2 shows an example of transient pressure data gathered on a pipeline.



Figure 4.2: Example Transient Pressure Monitoring Data



A TPM was installed on a hydrant in the YXJ Subdivision for 30-days. Figures 4.3 and 4.4 below shows the Telog HPR installed on a hydrant.



Figure 4.3: Telog HPR on Hydrant



Figure 4.4: Telog HPR

4.2 Gravity Sewer Network

4.2.1 CCTV Inspection

A small crawler was deployed from a short-range system (~190 meters) to inspect the distances between manholes (~100 meters). The crawler was inserted into upstream manholes and surveyed downstream. In some locations, due to blockage, the sewer network was surveyed upstream from the downstream manhole. The video file was analyzed, and areas of concern recorded, including a NASSCO PACP coded observations table. PRRD flushed the gravity sewer pipes prior to inspection.



5. Inspection Results

5.1 Watermain Network External Leak Survey

Pure Technologies subcontracted Watermark Solutions to conduct an Acoustic Leak Survey at the subdivision adjacent to North Peace Regional Airport. The water system for the subdivision is fed from a main linked to the airport's domestic water supply. Between 50 and 55 properties are connected to the water mains which are made of asbestos cement material with a diameter of 150mm. There are eight hydrants with secondary isolation valves and seven main line valves throughout the system which is approximately 2 kms in total pipe length.

A shed to the south east of the subdivision contains the main system control valve (with bypass) and a Sensus water meter. Watermark Technician Lee Stansfield attended the location on August 17th and 18th, 2020. On August 17th, majority of valve assessment operations were carried out with Pure Technologies and Peace River Regional District assisting. On August 18th, a comprehensive acoustic leak detection survey was completed.

All hydrants, hydrant isolation valves, all main line valves and any located service valves (curbboxes) in the subdivision were sounded using an X-Mic ®. This is an electronic device similar to a microphone or a stethoscope with which a trained operator can detect leaks on a water pipe.

One leak was located during the survey. This was a leak on a hydrant lead on the hydrant located outside 10330 257 Rd. (Figure 5.1). Good leak noise was audible on the hydrant and on the secondary isolation valve. When the isolation valve was operated, the leak noise increased and water began to surface in the valve box. This indicated that the valve itself was the likely source of the leak and maintenance is required as soon as possible.



Figure 5.1: Leak on hydrant located outside 10330 257 Road

Prior to this survey a similar leak on the southernmost hydrant on Rowantree Ave had been noted and stopped by Peace River Regional District. These two leaks were the likely cause of any ongoing substantial water loss within the community. Meter readings at the main subdivision supply were taken 48 hours apart after the leak detection survey with one of these leaks still needing attention.



These revealed an average of 16 l/h being fed into the system which is within the bounds of normal domestic usage. The repair of the remaining hydrant leak should reduce this further.

5.2 Watermain Network Valve Assessment

On August 17th, 2020, Watermark assisted Pure to perform a valve assessment on the system's main line and hydrant secondary valves. Pure Technologies also carried out a GPS location survey on all main and hydrant valves and hydrants within the system.



Figure 5.2: Location of Inline Valves and Hydrants

From the drawings provided, seven (7) inline valves were identified in the watermain network within the inspection limits. Inline Valves 1 and 2 could not be accessed as it is located in fence line in neighboring airport field.

5.2.1 Inline Valve#3

Type: 6-inch Gate Valve Location: South of Lily-Rowantree



Notes: Buried 1 foot under gravel and raised back up while onsite. Value stuck and could not be turned.



Figure 5.3: Inline Valve#3

5.2.2 Inline Valve#4

Type: 6-inch Gate Valve

Location: Right of Way south of Rowantree and between 257 Road and Lily Notes: Cap was stuck on and repaired onsite

Turn count: approximately 17.75 turns; fully closed and fully opened



Figure 5.4: Inline Valve#4

5.2.3 Inline Valve#5

Type: 6-inch Gate Valve

Location: Northeast corner od 257 Rd and Rowantree Notes: Buried 1 foot in ditch; raised back up while onsite Turn count: approximately 19.5 turns; fully closed and fully opened





Figure 5.5: Inline Valve#5

5.2.4 Inline Valve#6

Type: 6-inch Gate Valve

Location: Off of gravel right of way, southeast of 257 road and Rowentree Turn count: 20.25 turns; fully closed and fully opened



Figure 5.6: Inline Valve#6

5.2.5 Inline Valve#7

Type: 6-inch Gate Valve Location: On 242 road (242 road – 257 road intersection) Notes: Valve was buried, and casing broken; cleaned up and raised. Valve could not be exercised.





Figure 5.7: Inline Valve#7

5.2.6 Hydrant A

Type: 6-inch isolation Gate Valve Turn count: 19.5 turns; fully closed and fully opened



Figure 5.8: Hydrant A

5.2.7 Hydrant B

Type: 6-inch isolation Gate Valve Turn count: 20.25 turns; fully closed and fully opened Notes: Keys stuck on extension



Figure 5.9: Hydrant B



5.2.8 Hydrant C

Type: 6-inch isolation Gate Valve Turn count: 20.5 turns; fully closed and fully opened Notes: Leaks when valve operated



Figure 5.10: Hydrant C

5.2.9 Hydrant D

Type: 6-inch isolation Gate Valve Turn count: 20.25 turns; fully closed and fully opened



Figure 5.11: Hydrant D

5.2.10 Hydrant E

Type: 6-inch isolation Gate Valve Turn count: 20.5 turns; fully closed and fully opened Notes: Leaks when valve operated





Figure 5.12: Hydrant E

5.2.11 Hydrant F

Type: 6-inch isolation Gate Valve Turn count: 20.25 turns; fully closed and fully opened Notes: Leaks when valve operated



Figure 5.13: Hydrant F

5.2.12 Hydrant G

Type: 6-inch isolation Gate Valve Notes: Valve extension not on valve nut; could not be exercised





Figure 5.14: Hydrant G

5.2.13 Hydrant H

Type: 6-inch isolation Gate Valve Turn count: 20.25 turns; fully closed and fully opened



Figure 5.15: Hydrant H



5.3 Sewer Network CCTV Survey

The PRRD YXJ subdivision's sanitary sewer system was CCTV surveyed by AquaCoustic Remote Technologies from August 24 to August 28, 2020. In total 26 lines between manholes were surveyed. The technician reviewing the video during the survey coded all defects observed in accordance to NASSCO's PACP grading system. This included both structural defects such as cracks, fractures, and breaks in either the barrel of the pipe or taps, as well as operational and maintenance defects such as root intrusion, debris, obstructions, encrustations in the barrel or at joints and infiltration stains at joints.

All defects observed were graded from 1 to 5, with 5 being the most severe. Typically a pipe defect receiving a grade of 5, especially a structural defect, should be repaired or replaced immediately as collapse of the pipe or fitting is imminent. Defects graded 4 should be addressed within the year, and defects graded 1 through 3 need to be periodically monitored to ensure they don't continue to deteriorate rapidly.

Table 5.1 summarizes the PACP coding data for the entire system, by line. The Structural Pipe Rating or O&M Pipe Rating is the sum of the product of each number of defect times it's grade. The larger this number the greater number of significant defects found. The Structural Pipe Rating Index is the Structural Pipe Rating divided by the total number of structural defects found in each line. Likewise for determining the O&M Pipe Rating Index. When these indices exceed 3.0 it means that a majority of the defects found in the line are of a very serious nature.

There was no active infiltration observed in any of the lines during the survey. All manhole interiors appeared to be in reasonable good shape and not requiring any maintenance or repair.

A review of the index data in Table 5.1 suggests that lines SMH 9 to SMH 10, SMH 9 to SMH 8, and SMH 7 to SMH 6 have some significant structural defects, while lines SMH 9 to SMH 8, SMH 11 to SMH 10 and SMH 3 to SMH 4 have a large number of serious defects. Line SMH 9 to SMH 8 falls into both categories. Line SMH 3 to SMH 4 also has a large number of structural defects. Details of each noted defect can be found in Appendix C.

Start Manhole	End Manhole	Structural Defects			Operational & Maintenance Defects			Pipe Material
		No. of Structural Defects	Structural Pipe Rating	Structural Pipe Rating Index	No. of O&M Defects	O&M Pipe Rating	O&M Pipe Rating Index	
SCO 2	SMH 11	7	17	2.4	21	34	1.6	VCP
SMH 11	SMH 10	12	35	2.9	63	120	1.9	VCP
SMH 9	SMH 10	8	26	3.3	70	138	2.0	VCP
SMH 9	SMH 8	9	39	3.3	78	152	1.9	VCP
SMH 8	SMH 7	9	16	1.8	23	46	2.0	VCP
SMH 7	SMH 8	3	5	1.7	22	44	2.0	VCP
SMH 7	SCO 1	9	21	2.3	60	118	2.0	VCP



SMH 7	SMH 6	1	3	3.0	52	102	2.0	VCP
SMH 6	SMH 5	5	13	2.6	65	131	2.0	VCP
SMH	SMH	1	3	3.0	4	10	2.5	PVC
102		0	0	0.0	0	0	0.0	
5MH 101	5003	0	0	0.0	3	Ø	2.0	PVC
SCO 3	SMH 17	4	9	2.3	25	50	2.0	VCP
SMH 16	SMH 17	3	7	2.3	83	163	2.0	VCP
SMH 16	SMH 15	8	21	2.6	55	107	1.9	VCP
SMH 15	SMH 14	5	15	3.0	19	38	2.0	VCP
SMH 13	SMH 14	8	20	2.5	18	32	1.8	VCP
SMH 13	SCO 5	8	18	2.3	47	95	2.0	VCP
SMH 12	SMH 13	11	29	2.6	9	16	1.8	VCP
SMH 18	SMH	10	23	2.3	38	78	2.1	VCP
SMH 12	SMH 18	11	32	2.9	34	63	1.9	VCP
SMH 12	SMH 5	7	19	2.7	48	92	1.9	VCP
SMH 4	SMH 5	12	29	2.4	20	39	2.0	VCP
SMH 3	SMH 4	18	47	2.6	74	140	1.9	VCP
SMH 3	SMH 2	9	24	2.7	74	144	1.9	VCP
SMH 2	SMH 1	3	5	1.7	52	101	1.9	VCP
SMH 1	SMH	0	0	0	6	12	2.0	PVC

Figure 5.1: Summary of CCTV survey results

Based on a review of the CCTV video in conjunction with the PACP coding, a number of pipe barrel locations as well as factory tee fittings and break-in taps will need to be repaired. Many of these can be point repairs. However, one line (SMH 3 to SMH 4) in particular would probably be best rehabilitated by a cured in place (CIPP) liner through the whole line. There are also a couple lines that should be cleaned given the large amount of debris that has accumulated at dips or inverted siphons in these lines.

Appendix C reviews each line in detail and identifies those structural items that need to be addressed, either with a repair or replacement, or jet cleaning for maintenance issues.

6. Transient Pressure Monitoring

6.1 **Pressure Monitoring Details**

The Telog high speed pressure transducer was installed on the fire hydrant (HYD B) located at the southeast corner of Rowantree Ave. (Road A) and Lily St. (Road D). This location (see Figure 6.1) was selected because it is approximately in the middle of the YXJ Subdivision serviced by the 6-inch AC water main.

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Figure 6.1: Location of Hydrants and Gate Valves in the 6-inch AC Water Mains

The transducer was activated on August 17, 2020 at 9:28 AM and was deactivated on September 15, 2020 at 11:32 AM. Pressure measurements are recorded every 4 minutes. If a transient (water hammer) event is detected, then the transducer records the pressure in micro-seconds. During the nearly one-month monitoring period 10,473 pressure measurements were recorded every 4 minutes. No significant surge pressure was detected.

Appendix A graphically shows the minimum, average and maximum pressure recorded during that month-long cycle. There is little difference in the minimum, average and maximum pressure over this time cycle due to the relatively short period (4 minutes) between pressure data recordings.

On September 3, 2020 at 10:08 AM a minimum pressure of magnitude -5.08 psi was recorded. This negative pressure lasted a duration of 3-1/2 hours, until 1:36 PM. An hour proceeding this registration of a negative pressure, the maximum pressure of 62.76 psi was recorded. This maximum pressure lasted approximately 8 minutes (2 recording cycles) before returning to a more normal level. It is suspected that the pressure to the subdivision was deactivated for that 3-1/2 hour period so maintenance or repair could be performed at some other location in the feeder system.

6.2 Analysis of Pressure Data

Table 6.1 below shows the statistical analysis of the three measurement values recorded every 4 minutes. As stated above, there is virtually little difference between the minimum, average and maximum recorded values. For the purposes of carrying out a design check on the 6-inch AC Class 150 pipe, the values for the maximum pressure were used. The median maximum pressure was 52.62 psi.



Statistical	Recorded Pressure, psi				
Value	Minimum	Average	Maximum		
Minimum	-5.08	-4.34	-4.29		
Average	49.99	51.14	51.94		
Median	50.47	51.73	52.62		
Maximum	58.35	59.03	62.76		

Table 6.1: Statistical Analysis of Recorded Pressure Data

The frequency distribution of the 10,473 maximum pressure measurements can be seen in Figure 6.2 below. As expected from the graph in Appendix A, the majority of the maximum pressure measurements (applies to minimum and average too) falls into a very narrow band. In fact, 70% of all maximum pressures fall between 53 and 55 psi. This can also be observed in Figure 6.3 which shows the cumulative frequency distribution of this same data. More importantly, from a design perspective, 99.9% of all maximum pressures fall at 56 psi or below. The two maximum recorded pressures above 60 psi, which occurred at 9:00AM and 9:04AM on September 3, 2020, were probably due to some minor transient event in the system. The AWWA C401 design method incorporates a factor of safety of 4 on the working pressure to accommodate unexpected transients that may occur in a water distribution system. Consequently, for the AWWA C401 design check, a working pressure of 56 psi at the hydrant level was used. This represents the 99.9 percentile of all maximum pressure measurements in the YXJ subdivision.



Figure 6.2: Frequency Distribution of Maximum Pressure



Figure 6.3: Cumulative Frequency Distribution of Maximum Pressure

7. Design Check

7.1 Design Methodology of AC Pressure Pipe

AWWA C401, *Selection of Asbestos-Cement Pressure Pipe*, incorporates the design method for AC pipe. AC pipe is designed on the basis of the interaction of both the internal pressure and external load on the pipe's strength. This is commonly called combined loading and was first introduced for cast iron pipe by Prof. Schlick, Iowa State University. The AC pipe industry adopted the same design methodology for AC pipe, after confirmation testing.

7.1.1 Design Equation

Tests of AC pipe with both internal pressure and external 3-edge bearing loads have shown that there is a relationship between the combined loads at the point of failure. This relationship at failure is expressed by the following Schlick formula, and is represented by a parabolic curve:

$$\left(\frac{w}{W}\right)^2 + \frac{p}{P} = 1\tag{1}$$

Where

w = external crush load on the pipe in conjunction with some internal pressure p at failure

W = 3-edge bearing (crush) load that will cause failure, with no internal pressure

p = internal pressure in conjunction with some external load w at failure

a xylem brand



P = internal pressure that will cause failure, with no external load

For the purposes of design, factors of safety are applied to both the external load and internal pressure acting simultaneously on the pipe. In the case of AC pipe in a water distribution system, the AWWA standard recommends a safety factor of 4 be applied to the operating pressure when surge is not calculated. Likewise, for external load a safety factor of 2.5 is recommended.

With the incorporation of safety factors, the Schlick formula takes on the form:

$$\left(\frac{w}{W/f_{s_w}}\right)^2 + \left(\frac{p}{P/f_{s_p}}\right) = 1$$
(2)

Where

 fs_w = factor of safety for external load, 2.5 recommended

 fs_p = factor of safety for pressure, 4 recommended



Figure 7.1: AWWA C401 Combined Loading

The above figure illustrates the application of the Schlick combined loading formula for AC pipe with the recommended AWWA factors of safety. Pipe safely meeting the design requirements will fall on or below the green design line in Figure 7.1.

7.1.2 External Soil Load and Relationship to 3-Edge Bearing

External soil load is calculated using the Marston's formula for a rigid pipe (AC is actually semi-rigid) and any live load determined using the integration of the Boussinesq formula or a simplification of same. The general form of Marston's equation:

$$W_E = C\gamma B_d^2 \tag{3}$$

Where:



- C = coefficient dependent on ratio of height of fill to width of trench or pipe diameter, shearing forces between earth prisms and direction of relative settlement between interior and adjacent earth prisms
- γ = unit weight of fill material (120 lbs/ft³)
- B_d = width of trench at top of pipe

For trench conditions,

$$C_d = \frac{1 - e^{-2Ku' \left(\frac{H}{B_d}\right)}}{2Ku'}$$

Where:

K = Rankine's ratio of active lateral unit pressure to vertical unit pressure

$$= tan\left(45^o - \frac{\varphi'}{2}\right)$$

 $u' = \text{coefficient of friction between fill material and sides of trench} = tan \varphi'$

Generally, when the character of the soil is uncertain a value of *Ku*' of 0.150 maybe typically selected, corresponding to saturated top-soil. The external field load is then converted to an "equivalent" 3-edge bearing load by the application of a bedding factor, BF. The external load applied to a buried pipe is actually distributed over a broader arc of the pipe's circumference than a 3-edge bearing load, dependent on the type of installation. So, the calculated external load (soil plus live load) is divided by the bedding factor to arrive at an equivalent 3-edge bearing load. Mathematically,

$$w = \frac{W_E + W_t}{BF} \tag{4}$$

Where

 W_E = external soil load

 $W_t = live load$

BF = bedding factor (ranges from 1.1 to 2.2 dependent on the class of bedding as defined in AWWA 401)

AWWA C401 and AWWA C603, *Standard for the Installation of Asbestos-Cement Pressure Pipe*, identify four classes of bedding for pipes buried in trench installations. Class A involves either a concrete cradle or arch and Class D is placement of the pipe on a flat bottom with loose sidefill soil. Neither of these classes of installation were common for AC pipe. The most common installation types would be represented by Class B and Class C beddings. Class B, which has a bedding factor of 1.9, can be achieved by placing the pipe in a trench with a shaped bottom and granular bedding and carefully compacted backfill to each side, or the use of carefully compacted granular material under the pipe ($1/4 B_c$ min) and up to the springline with compacted backfill from there to over the pipe a minimum of 12 inches (300 mm). Class C, which has a bedding factor of 1.5, is similar to Class B except in the case of the shaped trench bottom there is no granular fill and the soil sidefill is only lightly compacted, or a bedding of carefully compacted granular material is placed under the pipe to a depth of 1/8 B_c or 4 inches minimum, then extended up the sides a further 1/6 B_c minimum, with the balance of the backfill to 6 inches over the pipe composed of lightly compacted backfill. The use of shaped bottom trenches was a very uncommon practice, so realistically the following figures illustrate the Class B and Class C beddings in AWWA C401 most commonly used.

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Figure 7.2: Class B

Figure 7.3: Class C

There was no information provided regarding the type of installation for the 6-inch AC pressure pipe so the Class C detail as described in AWWA C401 and illustrated in Figure 7.3 is assumed. The bedding or load factor for Class B is 1.5.

7.1.3 Burst Pressure and Crush Strength from Stress

The internal pressure that will cause failure, *P*, can be expressed in terms of the burst or hoop tensile strength of the pipe, namely:

$$P = \frac{2ts_h}{D} \tag{5}$$

Where

t = wall thickness D = mean diameter $s_h =$ hoop tensile strength

For the 6-inch AC pressure main, the minimum internal design pressure per AWWA C400-77 for Class 150 is 632 psi. Obviously as the pipe degrades these values decline too.

Likewise, the 3-edge bearing load, W, can be expressed in terms of the modulus of rupture or circumferential flexural strength, s_{f} , of the pipe wall:

$$W = \frac{1.048 \, t^2 s_f}{D} \tag{6}$$

Where

 s_f = circumferential flexural strength

For the 6-inch AC water main, the AWWA C400 standard specifies that the minimum design external load, namely the 3-edge bearing load that will cause failure without internal pressure, *W*, for Class 150 it is 5400 lb/ft (79 kN/m). Similarly, these values will decline as the pipe degrades. It should be noted that that this design approach does not cover longitudinal (beam) and transverse shear stresses caused by ground movement and/or uneven bedding. These result in circumferential rather than longitudinal fractures. Such transverse fractures have been the most common type of structural failure observed in asbestos cement pipes in some North American communities, especially in smaller diameters.

7.1.4 Internal Pressure

As covered in Section 6.2, the 99.9 percentile maximum internal pressure for the 6-inch AC distribution main was determined to be 56 psi after the statistical analysis of the Telog hi-speed transducer data. This is the pressure that was measured by the transducer mounted on a fire hydrant (HYD B) at a ground elevation of approximately 2299 ft. The buried pipe is 9 ft. lower. Plus, the



lowest ground elevation in the YXJ subdivision is at 2265 ft. Therefore, the pipe at the lowest elevation in the system would be 44 ft. below the transducer's level, which would impose an additional 19 psi of head on the buried pipe resulting in a maximum working pressure of 75 psi.

The AWWA C401 standard for a water distribution pipe recommends a minimum factor of safety of 4 on working pressure, especially when transients are unknown. The AWWA C403 design standard that covers transmission pipes has a reduced factor of safety, but this factor of safety is applied to the maximum pressure the pipeline could experience which would include both working pressure and water hammer. Theoretically, transmission mains are "engineered" pipelines where transient pressures are either quantifiable or are limited by water hammer mitigation equipment (eg. surge vessels). For this distribution system, the factor of safety of 4 on the 99.9 percentile maximum pressure is reasonable.

7.1.5 External Load

There are no profile drawings available for the 6-inch AC water main. According to sheet 2 of the "as constructed" drawings (FJ 6169-1), the minimum depth of soil cover is to be 9 feet.

The dead soil load on the pipe was calculated using the Marston trench formula and the embankment or wide trench formula. The smaller of the two is then used for the dead load on the pipe, as recommended in AWWA C401. A trench width of the pipe outside diameter plus 2 feet (.6m) was used with a soil unit weight of 120 lb/ft³ (18.9 kN/m³). The results are shown in Table 7.1 below.

The pipe was also installed inside a casing where it passes under 257 Road. This was no doubt to protect the pipe from large vehicular loading. However, it does appear from the drawings that some portions of the pipeline could be subjected to light vehicular loading, especially from automobiles. For the design check, the live load on the 6-inch AC pipe was calculated using an HS20 truck load (individual wheel load 71 kN), with the appropriate impact factor based on cover depth. The results of this calculation are also shown in Table 7.5 below. Using the bedding factor of 1.5, the above soil and live loads are converted to an equivalent 3-edge bearing load. This is the load in a 3-edge bearing test that would produce the same flexural stress level as that due to the higher burial load. The 6-inch Class 150 pipe's minimum 3-edge bearing strength is 5,400 lb/ft, (79 kN/m) and with a factor of safety of 2.5, the maximum permitted load becomes 2,160 lb/ft (31.5 kN/m) with no internal pressure. As the pressure increases, this maximum allowable external load drops in accordance to the Schlick formula (Eqn. 1 in Section 7.1.1)

Property	External Load, lb/ft		
	(kN/m)		
	9 ft. (3.24 m) Burial		
Trench Load, Wd	1,738 (25.4)		
Embankment Load, Wc	13,339(195)		
Dead Load, We	1,738 (25.4)		
Live Load, WI	77 (1.1)		
Total External Load, Wt	1,815 (26.5)		

Table 7.1:	External	Soil and	Live	Load
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With the bedding factor of 1.5, this total external soil and live load transforms to an equivalent 3-edge bearing load of 1,210 lb/ft (17.7 kN/m).

7.2 Results of the Design Check

To aid in the design check, Pure installed a high speed recording pressure transducer on the hydrant located at the SE corner of Lily St. (Road D) and Rowantree Ave. (Road A) for 30 days. This TPM recorded the minimum, average and maximum pressure at the monitoring site every four minutes. If a transient is detected the pressure is recorded every micro-second thus capturing any surge (water hammer) pressures that are often overlooked by standard SCADA gauges that only sample every few minutes. The analysis of the pressure data collected may be in found in Section 6.

All total there is approximately 7,351 linear feet (2,241 m) of AC pipe in this subdivision. The closed piping system is plugged at Airport Road, 242 Ave., and Rowantree Ave. and has it's only feed from the east by an extension of the line from Tulip Ave to a metering chamber and connection at another 6-inch line. The metering chamber and connection is approximately 25 meters north of a pump house.

The "as constructed" drawings are dated August 1977. The name of the roads on the 1977 drawings have all changed. Road A is now Rowantree Ave., Road B is 242 Ave., Road C is Tulip Ave., Road D is Lily Street and Airport Road is 257 Road. The Airport By-pass Road to the north is now Airport Road. The site plan shows the airport just to the south as Fort St. John Airport, but it is now known as North Peace Regional Airport (YXJ).

7.2.1 Pipe Information from Drawings

The drawings (FJ 6169-1, sheets 1 to 10) identify the water pipe as 6-inch Class 150 asbestoscement (AC). The drawings show a plan view of the water pipeline but no profile. A plan and profile for the sewer pipeline that lies adjacent to the water main is shown. The general notes on sheet 2 states that all watermains shall have a minimum of 9 ft. cover and that all watermains shall be designated in accordance to the latest AWWA specifications.

The gound elevation along the sewer pipeline ranges from a low of 2263 (ft.) at the end of the line on 242 Ave. to a high of 2303 (ft.) at the end of the line on Rowantree Ave. It would be reasonable to assume the ground elevations for the watermain follow these same patterns, as these lines are parallel, and are generally only separated by 10 feet (3 m). This 40 foot (12.2 m) of elevation change would translate into a difference of 17.2 psi of pressure between the pipeline's low and high points. The pressure transducer was placed on a hydrant with a ground elevation of approximately 2299 ft., or near a high point in the system.

The pipeline where it crosses under 257 Road (old Airport Road) is installed in a 24-inch corrugate casing filled with sand. This is undoubtably designed to protect the pipe from any large traffic loads. Aside from this location there is no information on the drawings to indicate how the pipe was installed, or specifically the type of trench construction (bedding, side-support, trench width) used. Assumptions will have to be made about these conditions in order to calculate the dead load (soil cover) on the 6-inch AC pipe.



7.2.2 Pipe Information from AWWA Standard

The AWWA C400 pipe standard that would have been in effect at the time of this project was published in 1977. This standard, AWWA C400-77, covered asbestos-cement pressure pipe in diameters 4-inch through 16-inch. The three main strength requirements in the AWWA C400 standard are a flexural load test, an internal design pressure (burst) and an external design load (crush) requirement. The specified design internal pressure (minimum burst pressure) is 632 psi (4400 kPa) and the design external load (3-edge bearing crush strength) is 5400 lb/ft (79 kN/m). The AWWA C400 standard is a performance based specification and does not include any minimum wall thickness requirements for AC pipe. Using nominal hoop and flexural strength values for AC pipe, as outlined in Section 3.2, an approximation of what the wall thickness should be for the 6-inch Class 150 pipe. Interestingly, the burst pressure requirement generally controls the minimum wall thickness for pipe diameters 8-inch and above, while 4-inch and 6-inch pipe wall thickness are typically controlled by the crush strength requirement. Specifically in the case of 6-inch Class 150, the nominal wall needed to meet the burst pressure requirement of 632 psi is 0.545 inches (13.4 mm), and the nominal wall to meet the crush strength requirement of 5400 lb/ft is 0.596 inches (15.1 mm).

7.2.3 Results

Using the AWWA C400 design (i.e., burst) internal pressure of 632 psi and a design external (crush) load of 5400 lb/ft, the failure envelop for the 6-inch Class 150 AC pipe can be calculated and plotted (blue line in Figure 7.4). Then applying the AWWA C401 recommended factors of safety of 4 for internal pressure and 2.5 for external (crush) load, the allowable or design envelope can be established (red line in Figure 7.4). Figure 7.4 shows the two curves, failure and design, for a 6-inch Class 150 AC pipe meeting the performance requirements of AWWA C400.

Superimposed on this design and failure graph in Figure 7.4 is the intersection of the maximum working pressure of 75 psi and the external load of 1,210 lb/ft. This point falls well below the design line, meaning the pipe exceeds the recommended minimum safety requirements in AWWA C401. Table 7.2 below shows the factors of safety in pressure and external crush load for the 75 psi maximum working pressure and 9 ft. of soil burial with live load.

Loading Condition	Factor of Safety
Working Pressure	8.0
External Load	4.2

Table 7.2: Factors of Safety



Figure 7.4: Design and Failure Envelop for 6-in Class 150 AC Water Pipe

The 6-in Class 150 AC water pipe in the YXJ subdivision has been in service since 1977, a total of 43 years. There have been no reported failures in this piping system. Pure Technologies has assessed the condition of asbestos-cement pipes used for water pipes and sewer force mains on other projects. Although we have seen significant degrees of deterioration in some AC pipes used for sewer force mains, the condition of water main pipes has been relatively good. Unless AC water pipes are conveying "soft water" or buried in acidic sulfate bearing soils there would be little to no expectation to see significant degradation of these pipes.

Profile drawings of the 6-inch water main was not included in the "as constructed" drawings provided Pure Technology. A note in the drawings states that pipes were to be buried with a minimum of 9 ft. of soil cover. This depth of soil cover was used to determine the external soil load on the buried main. A HS-20 wheel live load was also included, although at this depth it's contribution to the total external load was minimal.

Pure monitored the pressure in the YXJ subdivision's system with a Telog hi-speed pressure transducer from August 17, 2020 to September 15, 2020. The measured pressures fell into a very narrow band. Based on the maximum pressure values measured, the 99.9 percentile value was determined to be 56 psi. The pressure transducer was installed on a fire hydrant at approximately ground elevation of 2299 ft. Based on the elevation of the buried pipe at the lowest ground elevation location (2265 ft), an additional pressure head of 44 ft. (19 psi) was added for a total working pressure of 75 psi.

a xylem brand



The AWWA C401 design check found the pipe, assuming no significant degradation, to be operating well within the defined safety limits recommended by the AWWA standard. In fact, the factor of safety in pressure was 8.0 and for external load 4.19. This is versus a recommended minimum value of 4.0 and 2.5, respectively.

While the structural evaluation based on AWWA standards indicate that the pipe section has been designed within the defined safety limits, with no direct information on the physical condition of the existing pipe, a prediction of the pipe's remaining life is not feasible. No pipe samples were available for physical property testing and no failures have be recorded. This would be a good indicator that the pipe is still in relatively good shape. Given the application, namely water distribution, it would be reasonable to expect the asbestos-cement pipe has not suffered any severe degradation unless its conveying "soft" water or is subjected to acidic sulfate bearing soils or groundwater.

If the pipe owner wants some assurance that the pipe is still in good working condition then it would be advisable to check the Langelier Index (or Aggressiveness Index) of the water being conveyed through the pipes. If the Langelier Index is equal to or greater than zero, then the water is not aggressive to AC pipe. For a Langelier Index less than -2.0, some degradation would be expected. The following table (extracted from AWWA C401) illustrates this point and compares the Aggressiveness Index and Langelier Index.

Table 9.

Effect on AC Pipe	pH + log (AH)	Langelier Index	
Highly Aggressive	<10.0	<-2.0	
Moderately Aggressive	10.0 to 11.9	-2.0 to -0.1	
Non-aggressive	>= 12.0	>=0	

External corrosion can occur when AC pipe is buried in acidic sulfate soils. The pH and water soluble sulfate in the surrounding soils and groundwater can be assessed to determine if these substances might pose a problem for the pipe. It would be advisable to retain a soils testing lab and have several tests run on soil samples extracted from the pipe zone. Table 10 (extracted from AWWA C401) shows the possible effect of sulfates on the pipe.

Table 10.

Sulfate	Water	Soil
Aggressiveness	Water-Soluble Sulfates -	Water-Soluble Nuetral
Classification	mg/L SO4	Sulfates-mg/L SO4
Non-aggressive	150 and less	1000 and less
Mildy Aggressive	150-1500	1000-2000
Moderately Aggressive	1500-10,000	2000-20,000
Highly Aggressive	10,000 and greater	20,000 and greater

If the conveyed water is found to be "soft" (Langlier Index less than -2.0) or the surrounding soils and groundwater contain soluble sulfate exceeding 20,000 mg/L or 10,000 mg/L respectively, then it



would be recommended to extract a sample of the pipe from the line for laboratory testing. The laboratory testing would include microscopic examination of the wall cross-section, pH indicator testing of the pipe wall and a crush test. This would provide direct evidence on the physical condition of the pipe. A prediction of the remaining service life could be rendered at that point.

If the conveyed water or surrounding soil and groundwater are found to be not aggressive, then there is a good chance the pipe is still in reasonable working condition. However, it would be recommended that if any future modification are made to the line, for example the line is extended, or if a failure does occur, that a section of pipe be removed from the line at those opportunities and subjected to the laboratory testing mentioned in the previous paragraph.



APPENDIX A Transient Pressure Data





Figure A: Pressure Data over a 30-day monitoring period



APPENDIX B Asbestos – Cement Pipe



Asbestos – Cement Pipe

B.1 Composition

AC pipe is composed of a mixture of asbestos fibers, Portland cement, and inorganic hydrated silicates. Typically, the asbestos fibers comprise less than 20% of the AC pipe. The AWWA product specifications for AC pipe (AWWA C400 and C402) also include physical and chemical requirements for the pipe itself. For the pipe composition, it requires that AC pipe shall be composed of an intimate mixture of either:

- Portland cement or Portland blast furnace slag cement and asbestos fiber with or without silica; (or)
- Portland pozzolana cement in asbestos fibers.

The same specifications limit the amount of uncombined calcium hydroxide, presumably to curtail pipe dissolution: for Type I, there is no limit, and for Type II, 1.0% or less uncombined calcium hydroxide is permitted. Manufacture of Type I, which is not autoclaved, was discontinued in North America in the 1960s. Type II Portland cement is moderately sulfate resistant. The asbestos portion of AC pipe is composed of naturally occurring hydrated mineral silicates that possess a crystalline structure. There are four main types of asbestos. The principal type of asbestos found in AC pipe is chrysotile (white asbestos). Another type of asbestos, crocidolite (or blue asbestos) is also used for reinforcement of the pipe and improves the manufacturing process. Most high-pressure AC pipes had some crocidolite in addition to chrysotile fibers used in the manufacture.

During the formation of asbestos cement, the constituent oxides contained in Portland cement react with water to form calcium hydroxide (lime) and calcium silicate/aluminate hydrates. The physical binding of these hydration products cures the cement mortar and together with the formation of lime determines the structural integrity of the final product.

B.2 Manufacture

AC pipes produced in North America mainly used the 'Mazza' method whose origins are in the paper making industry. In this method a felt sheet was fed through a cement, silica and asbestos slurry bath where cement, silica and asbestos was picked up by the felt and then later transferred to a rotating mandrel under compactive force until the required thickness was achieved. The finished pipe is then removed from the mandrel by subjecting the mandrel to a strong electrostatic charge that produces steam around the pipe and thereby breaking the bond with the mandrel. The pipe is then steam cured under 2 atmospheres of pressure in an autoclave for 24 hours.

B.3 Degradation

Degradation can occur at both the internal and external surfaces of a pipe. Internal corrosion of a water pipe is mostly due to leaching of calcium hydroxide from the cement matrix. External attack can be from low pH (acidic) soils and/or groundwater as well as high sulfate bearing soils.



B.3.1 Internal Corrosion

In contrast to the original expectations that AC pipe would not be attacked by corrosive water, it became evident that under certain circumstances AC pipe can be attacked by aggressive (soft) water. If the pipe is exposed to aggressive water, the cement matrix constituents dissolve, thereby exposing asbestos fibers and releasing some into the water.

The AC pipe industry developed the concept of an Aggressiveness Index for use as a guide in determining whether AC pipe would be appropriate in a given situation. The original purpose of the index was to ensure the structural integrity of the pipe. More recently, it has been used to predict whether water quality degradation would occur from pipe dissolution. The Aggressiveness Index is a simplified form of the Langelier Index and has some shortcomings, which are noted below.

The Aggressiveness Index (AI) is defined as follows:

 $\begin{aligned} AI &= pH + log(AH) \\ where: \\ A &= total alkalinity, mg/liter as calcium carbonate \\ H &= calcium hardness, mg/liter as calcium carbonate. \end{aligned}$

The Aggressiveness Index does not incorporate corrections for temperature and ionic strength.

Application of the Aggressiveness Index (AI) to determine when AC pipe could be used was incorporated into standards published by ASTM (1976) and AWWA (1975, 1980). The standards applied the Aggressiveness and Langelier Indices to relate water quality and the use of AC pipe.

Al < 10	Aggressive water
Al 10 - 12	Moderately aggressive water
Al > 12	Non-aggressive water

These standards recommended that Type I (non-autoclaved) or Type II (autoclaved) AC pipe could be used with non-aggressive water. Type II pipe is permitted for moderately aggressive water. For highly aggressive water, "the serviceability of pipe for such applications should be established by the purchaser in conjunction with the manufacturer" (AWWA, 1980). Recognizing the relationship between water quality and the use of AC pipe, the U.S. EPA proposed that the Aggressiveness Index should be > 12 for water transported through AC pipe in order to prevent adverse effects.

The Aggressiveness Index is based on calcium carbonate saturation, therefore it should yield a fairly accurate prediction of "non-aggressiveness" provided by a protective calcium carbonate coating if water is oversaturated. However, if the water is undersaturated with calcium carbonate, there is no reason to expect the Aggressiveness Index to predict with accuracy the dissolution of AC pipe since calcium carbonate is only a minor constituent of the cement and calcium silicate is the predominant pipe component. Furthermore, the Aggressiveness Index does not account for temperature and ionic



strength as does the Langelier Index. Finally, the Aggressiveness Index fails to account for protective chemical reactions in drinking water.

The Aggressiveness Index was used for several years by pipe manufacturers and the water supply industry. Therefore, the majority of the data on water quality and AC pipe deterioration contains information on the Aggressiveness Index, calcium, and alkalinity of the water. In the absence of a better predictor of pipe performance, this index has been used extensively and is still a simple first approximation for predicting water pipe performance.

B.3.2 External Corrosion

Attack of asbestos cement pipe from the exterior can come from soft groundwater (low in calcium carbonate) or acidic sulfate soils. The mechanism of attack from soft groundwater is the same as internal attack, i.e., leaching of calcium hydroxide. For acidic sulfate soils, the sulfate in the soil reacts with calcium hydroxide and silica compounds in the pipe to form weaker and larger compounds that result in swelling of the cement matrix. Three different corrosion products can be formed by the reaction with the sulfate solution, namely gypsum, ettringite and thaumasite. Gypsum and ettringite formed by these reactions can swell to 123% to 224% (Matti, 1985) of the original solids they replace leading to expansion and destruction of the cementitious portion of the pipe.

B.4 AWWA and ASTM Standards

There were several important standards governing the supply, design and installation of AC pressure pipe. Those standards are:

AWWA C400 Asbestos-Cement Pressure Pipe, For Water Distribution Systems and Other Liquids - this is the product standard which includes minimum performance requirements

AWWA C401 The Selection of Asbestos-Cement Pressure Pipe, For Water Distribution Systems and Other Liquids - this standard essentially covers the interactive design approach for AC pressure pipe

AWWA Manual M16 (1978) *Work Practices for Asbestos-Cement Pipe* - replaced by another AWWA handbook of the same title in 1995

AWWA C603 *Standard for Installation of Asbestos-Cement Pressure Pipe* - covers recommended installation practices and laying of the pipe

ASTM C500 Standard Test Method for Asbestos-Cement Pipe

In 1975, AWWA revised AWWA C400 to only cover pipe diameters 4-inch through 16-inch which were considered distribution sized pipes and introduced AWWA C402 for transmission pipe in diameters 18-inch through 42-inch. ASTM C500 not only contains three important test protocols for AC pipe, namely hydrostatic pressure (burst), 3-edge bearing (crush) and uncombined calcium hydroxide tests, but also guidelines for establishing the degree of aggressiveness of transported



water to the internal surface of the pipe, and acidic and sulfate laden soils and waters to the external surface.

B.4.1 Pipe Classes

Pressure classes covered by AWWA C400 include class 100, 150 and 200 psi rated products. It was very common to specify Class 200 for 4-in and 6-in diameter pipe, not because of pressure requirements but in order to increase the available beam strength. Diameters 8-in and above were normally specified Class 150.

B.4.2 Physical Requirements

The AWWA product standards are performance based. They do not specify minimum unit strength properties or physical dimensions (eg. thickness) for the AC pipe. Rather, they specify the minimum "design" internal pressure (or burst pressure) and the minimum "design" external load (or 3-edge bearing crush load) that the pipe's are required to have in order to meet the standard. The following table (Table B.2. from AWWA C400) lists those minimum "design" pressures and loads. It should be noted that the 1964T version of AWWA C400 did not list any internal design pressures. The design pressures shown in Table 2 first appeared in the 1975 version of AWWA C400. The 1964T version did state that each length of pipe should have sufficient strength to withstand an internal hydrostatic pressure of four times the rated operating pressure for it's class.

Nominal Class 100		s 100	Class	s 150	Class	s 200
Diameter	Internal	External	Internal	External	Internal	External
in	Pressure	Load	Pressure	Load	Pressure	Load
	psi	lb/ft	psi	lb/ft	psi	lb/ft
4	417	4100	616	5400	809	8700
6	441	4000	632	5400	815	9000
8	472	4000	653	5500	824	9300
10	490	4400	650	7000	826	11000
12	490	5200	658	7600	830	11800
14	500	5200	650	8600	826	13500
16	500	5800	654	9200	825	15400
18		6500		10100		17400
20		7100		10900		19400
24		8100		12700		22600
30		9700		15900		28400
36		11200		19600		33800

Table B.2: Design Internal Pressure and Design External Load

The "design" internal pressure requirement is at least 4 times the pressure class. In reality, it has to be slightly higher as the pressure class supposedly applies to a buried pipe with approximately 5 feet of soil cover. As shown in Section B.4.1, there is an interaction between the pipe's internal pressure and external load capacity.



B.4.3 Standard Pipe Diameters and Lengths

The pipe average internal diameter is not less than the nominal diameter by more than 5%. Standard lengths are either 10 ft. (3m) or 13 ft. (4m) for 4-in, 6-in and 8-in diameters, and 13 ft. (4m) for 10-in and larger. The shorter length for the smaller diameters was to limit the bending moment (beam action) in those sizes as their relatively thin walls did not provide adequate beam strength in some soil conditions. Beam breaks in 4-inch AC pipe were not uncommon especially in clayey soils.

B.4.4 Wall Thickness

The wall thickness is not specified in the standards. It was up to each manufacturer to determine the minimum thickness their product needed to meet the design pressure and external design load requirements. However, there was a tolerance on the manufacturer's stated standard thickness.

Nominal	Pipe Size	Wall Thickness Tolerance		
4-12 in 100-300 mm		-0.06 in	-1.5 mm	
14-16 in	350-400 mm	-0.12 in	-3.0 mm	

Table B.3: Wall Thickness Tolerance

B.4.5 Joints

The standard joint for AC pipe was a coupling machined with two inner grooves from thicker AC stock. Rubber gaskets meeting the requirements of ASTM D1869 were used. Similarly, each end of a standard length of AC pipe was machined to fit inside the coupling and seal against the compressed rubber gasket. Approximately 15% compression of the gasket was achieved when the spigot end entered each side of the coupling. The spigot end actually had two machined surfaces, D_2 and D_3 , as shown in Figure B.1.



Figure B.1: Coupling and Spigot End of AC Pipe

All fittings used with AC pressure pipe were cast iron, ductile iron or steel. No AC pressure fittings were made, except heavy tapped couplings, which were couplings with threaded bushings factory installed that would accept $\frac{3}{4}$ " and 1" corporation stops. In order to facilitate the manufacture of fittings for AC pipe standardized D₂ and D₃ dimensions were adopted by the industry. The following table (Table A.1 in AWWA C400) identifies those pertinent dimensions.



Pipe Size		Class 100				Class 150/200			
		D_2		D_3		D_2		D ₃	
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
4	100	4.64	118	4.80	122	4.81	122	4.97	126
6	150	6.91	176	7.07	180	6.91	176	7.07	180
8	200	9.11	231	9.27	236	9.11	231	9.27	235
10	250	11.24	286	11.40	290	11.66	296	11.82	300
12	300	13.44	341	13.60	345	13.92	354	14.08	358
14	350	15.07	383	15.23	387	16.22	412	16.38	416
16	400	17.15	436	17.31	440	18.46	469	18.62	473

Table B.4: Dimensions of Spigot End of AC Small Diameter Pressure Pipe

B.5 Physical Strength Parameters

B.5.1 Unit Strengths

As stated previously, the AWWA standards are performance oriented and do not include any minimum strength properties aside from the design (burst) internal pressure and the design (crush) external load. However, there are other worldwide standards for AC pipe that do include minimum properties. These can be helpful in an investigation of AC pipe's current and future performance expectations, especially when little is known about the pipe itself.

The Australian Standard AS 1711 (1975) offers a minimum tensile strength of 3,915 psi (27 MPa). The British Standard for AC pipe includes a crush strength (modulus of rupture) of 6,380 psi (44 MPa). There were several AC pipe manufacturing plants in the Middle East (Saudi Arabia, Dubai, Oman, Jordan, Lebanon). The Saudi Arabian Standards Organization (SASO) did include 28 day strength requirements (pipe produced in the Middle East was normal cured, not autoclaved, hence the need for a 28 day requirement). The SASO requirements, according to one of the manufacturers, was as follows:

- Longitudinal bending strength of small diameter pipes, Rf 3,988 psi (27.5 MPa)
- Circumferential bending strength (crushing strength), Re 7,250 psi (50.0 MPa)
- Bursting strength, Rb 3,480 psi (24 MPa)

The SASO standard did not have a requirement for longitudinal compressive strength, Rc, or longitudinal tensile strength, Rt, but the Saudi manufacturer included this information in their literature:

- Longitudinal compressive strength, Rc 7,250-9,425 psi (50-65 MPa)
- Longitudinal tensile strength, Rt 1,450 psi (10 MPa)

The elastic modulus properties of AC pipe depends on the direction in which the stresses are applied to the pipe, given the preferential orientation of the reinforcement fibers (asbestos) in the circumferential plane. The following table, extracted from the Saudi Arabian Amiantit Company's brochure, gives design values for the elastic modulus.



Stress	10 MPa	18 MPa	8 MPa	10-35 MPa	
Loading	Beam	3-Edge Bearing	Internal	Longitudinal	
			Pressure	Compression	
Emin, GPa	22.5	25.5 (3.7 x 10 ⁶	31.0 (5.5 x 10 ⁶	22.0	
		psi)	psi)		
Emax, GPa	24.0	27.8	33.0	24.0	

Table B.5: Elastic Modulus of AC pipe (Saudi Arabian Amiantit Company)

For calculation of water hammer, it is recommended that an elastic modulus of 25.0 GPa (3.62×10^6 psi) be used.



APPENDIX C AquaCoustic Video Analysis


Line by Line Detailed Review

C.1 SCO 2 to SMH 11

There are 4 joints in this line that show infiltration staining or encrustation around the joint, both signs of possible infiltration. None viewed during the survey. Four joints showed some signs of root intrusion but not significant enough to warrant action. There were five locations, at or near joints, with cracks or fractures.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.0	4	Multiple fractures and cracks, ~1m long	Point repair
11.8	2	Longitudinal crack - minor	None
13.2	1	Circumferential crack - minor	None
28.8	3	Multiple cracks at joint	Monitor
30.0	2	Longitudinal/spiral crack, ~1m long	None
65.6	3	Longitudinal fracture, ~.3m long	Monitor

Table C.1: Sewer Data Analysis – SCO 2 to SMH 11

C.2 SMH 11 to SMH 10

There are 2 joints with infiltration staining. No active infiltration. There is a 1.4m length of PVC pipe in this line, beginning at 20.0m from SMH 11, with the joint offset from the clay pipe. This line had a lot of floating and underwater debris. There were 8 locations with cracks or fractures, one requiring immediate repair.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.3	1	Circumferential crack - minor	None
11.8	1	Longitudinal crack - minor	None
20.0	3	PVC section - joint offset	None
40.7	2	Longitudinal crack - minor	None
63.1	2	Longitudinal crack - minor	None
73.8	4 (2)	Entire length of pipe has 2 to 3 longitudinal cracks	Point repair
75.0	5	Multiple longitudinal and circumferential fractures	Point repair
81.2	3 (4)	Broken joint - minor	None
83.2	3	Several (2) longitudinal cracks along entire pipe	Monitor

Table C.2: Sewer Data Analysis – SMH 11 to SMH 10

C.3 SMH 9 to SMH 10

There are 3 joints with infiltration stains, but no active infiltration. There was a lot of encrustation on the interior of this pipe over its whole length. There are 4 taps in this line, three are factory tees and one a break-in tap. Eight (8) locations with cracks or fractures, six are relatively minor but two are significant and need to be addressed.

Prepared for	Peace River Reg	a xylem brand	
Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.0	2	Circumferential fracture at joint - minor	None
2.9	3 (4)	Multiple fractures at joint - minor	Monitor
11.3	1	Tap break-in at 3 o'clock - good	None
17.1	3	Tap tee at 3 o'clock, plugged with deposits	Clear
34.8	2	Longitudinal crack - minor	None
52.6	3	Multiple longitudinal cracks at joint - minor	None
62.4		Tap tee	None
66.6	3	Longitudinal fracture at joint - ~.2m long - minor	None
93.7	3 (4)	Multiple fractures at joint - minor	Monitor
110.3		Tap tee - 2 o'clock - good	None
111.8	4	Several longitudinal & spiral fractures - 0.6 to 1m long	Point repair
112.4	4	Multiple fractures entire last pipe at MH	Point repair

Table C.3: Sewer Data Analysis – SMH 9 to SMH 10

C.4 SMH 9 to SMH 8

More than seven (7) joints with signs of infiltration staining. There are two factory taps (tees) in this line with one showing 60% blockage and requiring clearing. Eight (8) locations with varying cracks and fractures, two (2) very significant and requiring repair

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.0	4	Multiple longitudinal and spiral cracks about 0.6m long.	Point repair
1.5	4	Break at joint	Monitor
18.8	1	Very minor crack from 10 to 11 o'clock	None
26.3	3 (4)	Spiral crack - minor	Monitor
34.7	1	Insignificant crack	None
44.2	3	Tap (tee) 60% plugged	Clear
63.6	2	Longitudinal crack - 0.6m long - minor	None
68.1		Tap (tee)	
95.5	4	Multiple fracturs at joint - not too significant	Monitor
104.8	2	Cracks at joint - very minor	None
107.7	4	Multiple fractures - ~6m long	Monitor
120.2	4	Broken pipe with significant fractures - last pipe at MH	Point repair

Table C.4: Sewer Data Analysis – SMH 9 to SMH 8

C.5 SMH 16 to SMH 17

Six (6) joints with signs of infiltration staining or encrustation. There are six (6) taps on this line, some showing signs of infiltration or encrustation but not active. One tap has 30% blockage. Three (3) locations with cracks at joints but none major enough to require repair.



Distance	Defect Grade	Description of Defect(s)	Rehabilitation
From SMH			Recommendation
to Defect			
9.3		Tap (tee) at 2 o'clock - good	None
10.0		Tap (tee) at 10 o'clock - good	None
46.4	1	Tap break-in - some minor restriction	None
53.3	3	Multiple small cracks at joint - minor	None
68.9	1	Tap (tee) at 2 o'clock - good	None
87.1	2	Longitudinal crack - minor	None
91.2	2	Spiral crack - 0.6m long - minor	None
99.7		Tap (tee) 10 o'clock - good	
100.3	2	Tap (tee) 2 o'clock - 30% blockage	Clear

Table C.5: Sewer Data Analysis – SMH 16 to SMH 17

C.6 SMH 16 to SMH 15

Three (3) joints with infiltration stains. No active infiltration. Three (3) taps in this line, two tees and one break-in tap. The break-in tap had some potential infiltration during the survey. Seven (7) locations had cracks or fractures, two significant enough to require repair.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
7.4	3	Longitudinal crack - 0.5m long - minor	None
8.6	1	Minor crack	None
33.8		Tap (tee) at 2 o'clock - good	None
37.5	2	Tap break-in - some sign of infiltration	Monitor
42.5	2	Two longitudinal cracks at springline - 0.6m long	None
44.0	2	Two longitudinal cracks at springline - 0.6m long	None
50.7	3	Multiple cracks	Monitor
77.0	4	Fracture at joint - significant	Point repair
103.1		Tap (tee) at 1 o/clock - good	None
120.9	4	Multiple fractures in last pipe next to MH 15	Point repair

Table C.6: Sewer Data Analysis – SMH 16 to SMH 15

C.7 SMH 15 to SMH 14

Six (6) joints had infiltration staining or encrustation indicative of past infiltration. There are two taps in this line, with one being a break-in tap and requiring repair. Three(3) locations in this line had fractures and cracks, with one in bad shape and requiring repair. This line also had a lot of underwater debris and would be a good candidate for jet cleaning with a vacuum truck.

Distance	Defect Grade	Description of Defect(s)	Rehabilitation
From SMH			Recommendation
to Defect			
17.6 to		PVC pipe (previous repair) with large dip.	Clean the entire line
23.2		Lots of debris.	
27.5	2 (3)	Longitudinal fracture - 0.3m long - minor	None
43.8	2	Circumferential fracture at joint - minor	None



67.5		Tap (tee) at 10 o'clock	None
93.3	3	Tap break-in at 11 o'clock - not good	Top hat repair
97.0	5	Multiple fractures, including spiral fracture	Immediate point
		in last pipe section and cracks at joint -	repair
		collapse possible	

Table C.7: Sewer Data Analysis – SMH 15 to SMH 14

C.8 SMH 14 to SMH 13

Seven (7) joints show infiltration staining or encrustation, signs of past infiltration. There are two taps in this line, both break-in taps. One tap protrudes 25mm into the clay pipe. This line has five (50 locations with cracks or fractures with four (4) being minor, and one a missing triangular section of the pipe wall at joint. This line also had a lot of debris, especially the last 12m near SMH 13. It would be a good candidate for jet cleaning with a vacuum truck.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.0	2	Circumferential fracture - minor	None
24.3	2	Longitudinal crack at joint2m long - minor	None
24.4		Tap break-in at 10 o'clock - okay	None
60.9		Tap break-in at 11 o'clock - lateral protrudes 25mm into sewer	Top hat
62.8 to 74.1		PVC (previous repair)	
81.7	4	Triangular section of pipe missing at joint - 75mm on side at 8 o'clock	Monitor
89.0	2	Circumferential fracture from 9 to 12 o'clock at joint - minor	None

Table C.8: Sewer Data Analysis – SMH 14 to SMH 13

C.9 SMH 13 to SCO 5

There are four (4) joints in this line with infiltration stains. This line has three (3) taps, one is a factory tee with a 150mm inlet in good shape, one is a factory tee that is 90% plugged, possibly and one break-in tap that is possibly defective. Four (4) locations all at joints with fractures and cracks were noted.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
8.0	2(3)	Multiple small cracks at joint - minor	None
20.3	4	Multiple fractures at joint with lots of encrustation	Point repair
36.0	2	Circumferential fracture - minor	None
51.0 to 56.0		Steep upslope - 6% to 9% grade	None
60.7		Tap factory 150mm tee - 9 o'clock -good	None
75.2	3	Tap break-in - 10 o'clock - possible defective	None



80.2	3	Tap factory tee at 9 o'clock with 90% blockage	Clear
81.9	2	Circumferential fracture - minor line 70% full - line goes up	None

Table C.9: Sewer Data Analysis – SMH 13 to SCO 5

C.10 SMH 12 to SMH 13

There are four (4) joints with infiltration staining and/or encrustation suggestive of past infiltration. No taps on this line. Six (6) locations with cracks or fractures, three (3) especially bad and in need of repair.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.4	4	Broken joint - roots intruding	Point repair
28.0	2	Longitudinal crack ~ .6m long - minor	None
44.8	3	Two cracks about .6m long, at 8 and 11 o'clock	None
55.6	3	Two cracks about .5m long at 11 and 1 o'clock	None
58.9	4 (3)	Multiple cracks at 12 and 1 o'clock	Monitor

Table C.10: Sewer Data Analysis – SMH 12 to SMH 13

C.11 SCO 3 to SMH 17

This line has seven (7) joints with infiltration staining and/or encrustation. One joint also has possible root intrusion. There are six (6) taps in this line, five (5) are factory tees and one is a breakin with PVC lateral protruding 50mm into the sewer. Three (3) locations with cracks and fractures.

Distance From SMH	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
	1	Circumferential crack - minor	None
8.2	1	Tap factory tee at 10 o'clock - good	None
8.8		Tap factory tee at 2 o'clock - good	None
31.0	2	Joint with possible root intrusion	None
34.0		Tap factory tee at 2 o'clock - good	None
60.6	3	Longitudinal fracture	
60.6	4	Tap break-in - PVC protrudes into sewer ~50mm	Trim
62.0	3 (0)	Tap factory tee with 90% blockage	Clear
62.4		Tap factory tee at 2 o'clock - good	None
77.8	4	Break (fracture) at joint from 3 to 8 o'clock	Point repair

Table C.11: Sewer Data Analysis – SCO3 to SMH 17

C.12 SMH 101 to SCO 3

This is the eastern extension to the Rowantree line and is all PVC. No defects observed in this line.



Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.0 to 27.1		All new PVC line. No defects.	None

Table C.12: Sewer Data Analysis – SMH 101 to SCO 3

C.13 SMH 101 to SMH 102

This is also an extension to the Rowantree line and is PVC. Several joints were found to have noticeable elliptical deflection (up to 5%). There is also a big dip in this line between 36.4m and 41.8m where the water level reached 50% of the pipe diameter.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
23.9	3	5% elliptical deflection at joint - could allow some infiltration	None
35.9		2% to 3% elliptical deflection at joint	None
47.8	2	Infiltration at joint	None

Table C.13: Sewer Data Analysis – SMH 101 to SMH 102

C.14 SMH 7 to SCO 1

There are five (5) joints with infiltration staining and/or encrustation. There are five (5) taps in this line, four (4) are factory tees and one is a break-in. The break-in tap has cracks all around and one factory tee is 50% plugged.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
9.3	4	Multiple fractures at joint, ~0.3m long, also infiltration staining	Point repair
12.5		Tap factory tee at 2 o'clock - good	None
37.6	4	Multiple fractures and cracks that extend to tap	Point repair
38.0	3	Tap break-in at 10 o'clock with cracks all around	Monitor
40.9		Tap factory tee at 2 o'clock - good	None
51.0	2	Two longitudinal cracks at 9 and 3 o'clock - 0.6m long	None
54.2		Tap factory tee at 3 o'clock - good	None
55.1	2	Complete circumferential fracture 0.3m from joint - no staining	None
58.0	2	Longitudinal crack at 3 o'clock - extends 0.6m from joint	None
69.5	3	Tap factory tee at 2 o'clock - 50% plugged with deposits	Clear

Table C.14: Sewer Data Analysis – SMH 7 to SCO 1



C.15 SMH 6 to SMH 5

Five (5) joints have encrustation associated with infiltration. There are three (3) taps in this line, two (2) are factory tees in good shape and one is a break-in tap of PVC with cracks surrounding the tap. Three (3) locations were observed with cracks with one with spiral fractures that initiate at a joint and proceeds to the break-in tap.

Distance From SMH	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
to Defect			
9.9		Tap factory tee at 10 o'clock - good	None
35.1		Tap factory tee at 10 o'clock - good	None
45.2	1	Minor crack at 8 o'clock	None
72.9	3	Spiral fracture -minor	None
72.9	3	Tap break-in PVC with fractures around	None
		tap	

Table C.15: Sewer Data Analysis – SMH 6 to SMH 5

C.16 SMH 7 to SMH 6

Two (2) joints with infiltration staining and/or encrustation. There are two (2) factory tee taps that are in good shape. Two (2) locations observed with cracks but not major and not needing repair.

Distance From SMH	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
to Defect			
0.1	2	Minor cracks at 3 o'clock	None
37.1		Tap factory tee at 10 o'clock - good	None
61.1		Tap factory tee at 10 o'clock - good	None
65.7	3	Multiple circumferential cracks at joint -	None
		minor	

Table C.16: Sewer Data Analysis – SMH 7 to SMH 6

C.17 SMH 7 to SMH 8

Three (3) joints with encrustation, two particularly bad. No taps. There was surface spalling in a large number of pipes. Only one location with small cracks, but minor.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.3	3	Longitudinal fracture at joint - small	None
21.6	2	Joint has large amount of encrustation	None
25.9	2	Joint has large amount of encrustation over 60% of circumference	None

Table C.17: Sewer Data Analysis – SMH 7 to SMH 8



C.18 SMH 8 to SMH 7

Three (3) joints with encrustation. No taps. There are four (4) locations with cracks and fractures, the one adjacent to MH 8 needing repair.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.0	4	Multiple longitudinal fractures at manhole, at 3 and 9 o'clock - ~0.6m long	Point repair
0.2	3	Multiple circumferential cracks from 8 to 12 o'clock	Point repair (with above)
40.2	2	Spiral crack - minor	None
41.6	2	Spiral crack - minor	None

Table C.18: Sewer Data Analysis – SMH 8 to SMH 7

C.19 SMH 3 to SMH 2

There are six (6) joints showing signs of infiltration staining and/or encrustation. No active infiltration. One tap factory tee in good shape. Five (5) locations with cracks or fractures, but only one needing repair at the moment.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.0	4(3)	Multiple cracks at first joint at MH	Point repair
0.8	2	Circumferential fracture - minor	None
2.0	3	Multiple circumferential cracks with staining - minor	None
3.8	2	Longitudinal crack at 11 o'clock - less than 0.3m long	None
27.4	4	Large joint separation - no signs of infiltration	None
29.7	4	Large joint separation - encrustation	None
30.0		Tap factory tee at 2 o'clock - good	None
30.1		Dip in line - 35% water level	None

Table C.19: Sewer Data Analysis – SMH 3 to SMH 2

C.20 SMH 12 to SMH 5

This line had considerable amounts of debris (including rocks) and should be jet cleaned with a vacuum truck. In addition there were twelve (12) joints in this line with infiltration staining and/or encrustation. Three (3) joints in particular had some root intrusion, but not clogging the line yet. No taps. Four (4) locations were observed with cracks or fractures, one being a clean 360° break around the entire circumference.

Distance From SMH	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
to Defect			
0.3	4	Clean 360o break around the entire circumference	Point repair
14.2		Roots intruding into joint	None



15.5		Roots intruding into joint	None
23.8		Roots intruding into joint	None
47.0		Dip in line - 50% water level	Clean whole line
76.8	2	Longitudinal crack at 10 o'clock - 0.5m	None
		long	

Table C.20: Sewer Data Analysis – SMH 12 to SMH 5

C.21 SMH 3 to SMH 4

This is the worst line in the system and the entire line should be lined with a CIPP liner. There are 13 joints showing signs of infiltration staining and/or encrustation. There are six (6) taps in this line, four (4) are factory tees and two (2) break-ins. The greatest concern are the fifteen (15) locations with pipe breakage, cracks and fractures, many requiring repair.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.3	5(4)	Break in pipe from 12 to 12 o'clock. Pipe ready to collapse	Repair immediately
16.1		Tap break-in - fair condition	None
19.4	4	Multiple fractures	Point repair
25.4	3	Tap factory tee at 2 o'clock - 70% plugged	Clear
26.9	3	Longitudinal crack - 0.3m long - minor	None
31.3	2	Longitudinal crack at 3 o'clock at joint - minor	None
35.4	2	Longitudinal crack at 10 o'clock - minor	None
46.4	3	Multiple cracks - fair	Monitor
53.4	4	Multiple fractures near joint	Point repair
53.7	3	Longitudinal fracture in crown - 1m long	Monitor
54.3		Tap break in at 2 o'clock - okay	None
57.6	2	Circumferential fracture - minor	None
65.0		Tap factory tee at 2 o'clock - partial blockage	None
83.3	2	Small longitudinal crack at 3 o'clock - 0.15m long	None
84.0	3	Three longitudinal cracks - 0.6m long	Point repair
85.8	4	Two longitudinal fractures - 1m long	Point repair
88.8	2(3)	Two longitudinal cracks -minor	None
89.2		Tap factory tee at 10 o'clock - good	None
89.7		Tap factory tee at 2 o'clock - good	None
109.2	3	Multiple cracks - not too bad	None
116.6		Tap factory tee - 30% blockage	Clean
116.9	2	Two longitudinal cracks at springline - 0.15m long	None

Table C.21: Sewer Data Analysis – SMH 3 to SMH 4

C.22 SMH 4 to SMH 5

This line has six (6) joints with infiltration staining and/or encrustation. There are four (4) taps, all factory tees, with only one having some blockage. Six (6) locations have broken, fractured or cracked pipe with three (3) needing repair.



Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.4	4	Multiple fractures in the pipe - 0.5m to 0.6m long	Point repair
2.7	2	Minor cracks at 2 o'clock	None
10.2		Tap factory tee at 2 o'clock - good	None
28.8	4	Fitting has break through the crown	Point repair
28.8		Tap factory tee - 30% blockage	Clear
37.2	2	Crack at joint crown - small	None
38.6	2	Longitudinal crack at joint - ~0.3m long - minor	None
45.9		Tap factory tee at 3 o'clock - good	None
46.8	4	Break 360° around circumference	Point repair
64.3		Tap factory tee at 2 o'clock - good	None
75.0	3	Multiple cracks at joint - not too bad	None

Table C.22: Sewer Data Analysis – SMH 4 to SMH 5

C.23 SMH 12 to SMH 18

There are eight (8) joints in this line with infiltration staining and/or encrustation. There are six (6) taps with two (2) factory tees and four (4) break-in taps. One of the break-in taps is a 150mm lateral and protrudes into the sewer main. Another break-in tap is poorly constructed and is nearly 100% plugged with roots. One of the factory tees also has 25% blockage by roots. Ten (10) locations were found with breaks, fractures or cracks in the pipe. The pipe break near SMH 18 needs immediate repair as it could collapse.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
11.5	3	Spiral fracture at joint - 0.3m long	None
12.5	3(4)	Multiple longitudinal fractures at joint - 0.5m long	Monitor
15.0		Tap break-in at 2 o'clock - fair	None
19.2		Tap (150mm) break-in at 10 o'clock - intrudes into the main sewer, poorly constructed	
26.5	3	Two longitudinal cracks at joint along springline - 0.3m long	None
30.6	2	Spiral crack	None
31.1	3	Tap break-in - 100% plugged with roots	Clear and treat roots
33.4	2(3)	Multiple cracks at joint - minor	None
34.8	3	Two longitudinal cracks at 11 and 3 o'clock, one spiral crack at joint	None
55.6	3	Multiple cracks at joint, less than 0.3m long	None
67.2		Tap factory tee at 2 o'clock - 20% plugged with roots	None
69.4	3	Tap break-in with PVC - roots	None
69.4	2	Spiral crack at tap - minor	None



72.0		Tap factory tee - okay	None
74.6	4	Circumferential break at joint, with	Point repair
		multiple fractures	immediately

Table C.23: Sewer Data Analysis – SMH 12 to SMH 18

C.24 SMH 18 to SMH

One joint with encrustation was found. There are six (6) taps in this line, with four (4) being factory tees and two (2) break-in taps. One of the taps has cracks surrounding it. Nine (9) locations were observed with breaks, fractures and cracks with two requiring a repair.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.0	4	Multiple breaks in first pipe joint	Point repair
11.7	2	Longitudinal crack - 0.3m long - minor	None
22.8		Tap break-in at 10 o'clock - fair	None
23.3		Tap break-in at 2 o'clock - fair	None
23.7	4	Multiple fractures near joint	Point repair
28.0	2	Longitudinal crack - minor	None
40.6	2	Spiral crack from 1 to 3 o'clock - minor	None
46.2	2	Longitudinal crack at 9 o'clock - 0.3m long	None
52.2	3	Tap factory tee at 9 o'clock - fracture inside tap	None
54.1	3	Tap factory tee at 2 o'clock - fracture inside tap	None
61.0	2	Spiral crack at joint - minor	None
62.5	3	Multiple cracks at joint	Monitor
72.4		Tap factory tee - okay	None
72.9	3	Tap factory tee - fracture around tap	None
72.9	2	Circumferential fracture in tee fitting	None

Table C.24: Sewer Data Analysis – SMH 18 to SMH

C.25 SMH 2 to SMH 1

There are seven (7) joints in this line with infiltration staining and/or encrustation. One break-in tap in this line with PVC lateral protruding into sewer main 25mm. The line has three (3) locations with cracks, and one short section of PVC.

Distance From SMH	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
50.1	2	Joint with large amount of encrustation	None
62.3	2	Tap break-in at 2 o'clock - PVC protrudes into main 25mm. Crack around the tap	Repair
62.3	2	Spiral crack at tap - minor	None
77.0	1	Short longitudinal crack at 9 o'clock - less than 0.15m	None
116.8	1	Circumferential crack at joint - from 9 to 10 o'clock - minor	None
119.5 to 124.5		PVC - previous repair by replacement	None



Table C.25: Sewer Data Analysis – SMH 2 to SMH 1

C.26 SMH 1 to SMH

This line is all PVC. The CCTV survey was stopped at 18.5m due to high water. No taps or structural defects in the portion of the line surveyed. There is debris and grease in the line probably due to dip. The line should be jet cleaned with a vacuum truck.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
10.5		Dip in pipe. Water level at 50% of diameter	Clean
18.5		Siphon. Water level at 100% of diameter.	Clean
		End of survey.	

Table C.26: Sewer Data Analysis – SMH 1 to SMH



REPORT

Subject:	North Peace Airport Subdivision Water 2020 and 2021 Bu	døet
From:	Kari Bondaroff, Environmental Services Manager	Date: December 17, 2020
То:	Rural Budgets Administration Committee	Report Number: ENV-RBAC-010

RECOMMENDATION #1:

That the Rural Budgets Administration Committee authorize a funding commitment in the amount of \$35,000, to be paid from the Electoral Area C Fair Share Funds, for emergency 2020 infrastructure repairs and maintenance within the North Peace Airport Subdivision Water function – 701; further, that remaining funds be carried forward for the 2021 repairs and maintenance requirements.

RECOMMENDATION #2:

That the Rural Budgets Administration Committee authorize a funding commitment in the amount of \$125,000 to be paid from the Electoral Area C Fair Share Funds, for the necessary water infrastructure repairs and upgrades within the North Peace Airport Subdivision water function – 701, as recommended within the attached PRRD YXJ Water-Sewer Network Assessment Report.

BACKGROUND/RATIONALE:

The North Peace Airport Subdivision water system was installed in 1978 and includes 2.3 km's of asbestos-cement pipe and 8 hydrants as well as many T-junctions and in-line and isolation valves.

NP Airport Subdivision Waterline Findings – Function 701

- The asbestos-cement waterline main was found to be in good condition. Without conducting a pressure test, a prediction of the pipe's remaining life was non-conclusive and yet estimated to be 15-20 years. However, since the completion of the report, the PRRD has conducted repairs on a water valve and hydrant. As such, a piece of the waterline has been obtained and is available for laboratory tests to determine estimated remaining years of life.
- There are 7 inline valves and 8 hydrants within the water system. 4 of the inline valves were found inaccessible or non-functioning. The PRRD has since repaired 3 of the leaking valves and repaired 2 valve stacks, with one mainline valve that remains inoperable. 1 hydrant and its associated isolation valve has also been replaced.
- The iron fittings found within the system are suspected to be in severe condition due to oxidation. These fittings are found within the T-joints, valves, and hydrants. As such, hydrant and valve maintenance and inspection of the T-joints when valves are replaced is necessary to ensure the mainline continues to function without leaks.
- Estimated cost for replacing the remaining valves and hydrants is \$125,000.
- Estimated annual contractual costs for inspecting and maintaining the 8 hydrants is \$15,000, replacement parts not included.

Dept. Head: Paulo Eichelberger

CAO: Shawn Dahlen

ALTERNATIVE OPTIONS:

- That the Rural Budgets Administration Committee authorize a funding commitment of \$35,000 and \$125,000 to be paid from the Area C Peace River Agreement funds to be allocated towards the 2020 and 2021 North Peace Airport Subdivision water function – 701 infrastructure repairs and maintenance activities.
- 2. That the Rural Budgets Administration Committee authorize that requisition be increased to fund the 2020 deficit and 2021 scheduled infrastructure repairs and upgrades for the North Peace Airport Subdivision water function 701.
- 3. That the Rural Budgets Administration Committee provide further direction.

STRATEGIC PLAN RELEVANCE:

☑ Organizational Effectiveness

☑ Develop a Corporate Asset Management Program

FINANCIAL CONSIDERATION(S):

The North Peace Airport Subdivision is funded through parcel tax for operations and maintenance. As well, user fees are collected to pay the North Peace Airport Society who provides the water, and maintains the pumps and lift station.

Reserve Summary as of November 2020:

PRA Reserve Area C	\$2,310,314
Gas Tax Area C	\$1,712,490**
Fair Share Area C	\$1,088,617
	PRA Reserve Area C Gas Tax Area C Fair Share Area C

All stated reserves are applicable for capital infrastructure designed as an improvement to the rural community.

** ENV-RBAC-009 (Charlie Lake Sewer 2021 Budgetary Considerations) reflects an ask of \$1,500,000 in funding from Gas Tax Funds, which would reduce the Area C portion of available funds down to \$212,490.

Function Reserves are as follows:

- Operating Reserve: \$30,193.93
- Capital Reserve: \$39,458.65

COMMUNICATIONS CONSIDERATION(S):

None at this time.

OTHER CONSIDERATION(S):

Water leaks directly affect the property owners within the Fort St John Subdivision service area. A water meter is installed directly after the lift station which monitors all water provided by the North Peace Airport Society to the subdivision. As well, each house/shop/barn within the service area has a water meter installed. Any unaccounted for water use within the subdivision is deemed communal water. This communal water is charged equally to each property. Water leaks are a major contributor

to communal water increases and it is within the PRRD's best interest to keep these leaks to a minimum and to fix known leaks immediately.

A Request for Proposal was put out for bid in November of 2020. The result and recommendations from this RFP will be brought forward in January 2021.

Attachments:

1. PRRD YXJ Water-Sewer Network Assessment Report.pdf



Condition Assessment Report

YXJ Subdivision Water Network and Sewer Network

Draft Report Prepared for:

Peace River Regional District



By:

Pure Technologies, a Xylem Brand November 27th, 2020



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1. Executive Summary

In January August 2020, Pure Technologies, a Xylem Brand (Pure Technologies) was contracted to complete condition assessment of watermain network and sewer network in the YXJ subdivision, for the Peace River Regional District, British Columbia. Pure Technologies teamed up with Watermark Solutions for the watermain network external leak survey and AquaCoustic Remote Technologies to complete CCTV inspection of the sewer network.

The scope of work included:

- 2.3-Kilometre External leak survey on watermain network of Asbestos-Cement pipe and valve assessment
- 2.2-Kilometre CCTV survey on sewer network of Clay pipe and data analysis
- 30-days of Transient Pressure Monitoring
- AWWA design check of Asbestos-Cement pipe
- Condition Assessment Report summarizing the results and recommendations

Based on the external leak survey, CCTV survey, valve assessment, transient pressure monitoring, and the design check, Pure Technologies concludes and recommends the following:

1. One (1) leak was located during the survey. This was a leak on a hydrant lead on the hydrant located outside 10330 257 Rd. Good leak noise was audible on the hydrant and on the secondary isolation valve. The valve itself was the likely source of the leak and maintenance is required as soon as possible.

2. Seven (7) inline valves and eight (8) hydrants were located and assessed. Inline valves#1 and #2 could not be accessed, valves #3 and #7 were stuck and could not be turned and isolation valve for Hydrant G was stuck and could not be turned. Maintenance is required as soon as possible to ensure operability of these valves.

3. Without direct information on the physical condition of the watermain network's asbestos-cement pressure pipe, a prediction of the pipe's remaining life is not feasible. Pure has been informed that no failures have occurred in this pipe and there was nothing of concern found in the design check, which is an indicator that the pipe is still in relatively good condition. There are still thousands of kilometers of asbestos-cement pressure pipe in operation around the world, including Canada and the US. Most of this pipe has been in service well over 40 years with some now approaching 65 years in service. Strictly based on this information, the PRRD YXJ subdivision asbestos-cement pressure pipe might continue to operate under the current loading conditions for another 15 to 20 years.

4. Given the application, namely water distribution, it would be reasonable to expect the asbestos-cement pipe has not suffered any severe degradation unless its conveying "soft" water or is subjected to acidic sulfate bearing soils or groundwater. If PRRD wants some assurance that the pipe is still in good working condition then it would be advisable to check the Langelier Index (or Aggressiveness Index) of the water being conveyed through the pipes. It would also be advisable to retain a soils testing lab and have several tests run on soil samples extracted from the pipe zone. If the conveyed water is found to

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be "soft" (Langlier Index less than -2.0) or the surrounding soils and groundwater contain soluble sulfate exceeding 20,000 mg/L or 10,000 mg/L respectively, then it would be recommended to extract a sample of the pipe from the line for laboratory testing. The laboratory testing would include microscopic examination of the wall cross-section, pH indicator testing of the pipe wall and a crush test. This would provide direct evidence on the physical condition of the pipe. A prediction of the remaining service life could be rendered at that point.

5. All defects observed during the CCTV survey of the sewer network, were graded from 1 to 5, with 5 being the most severe. Pipe defects with a grade of 5, especially a structural defect, should be repaired or replaced immediately as collapse of the pipe or fitting is imminent. Defects graded 4 should be addressed within the year, and defects graded 1 through 3 need to be periodically monitored to ensure they don't continue to deteriorate rapidly. Based on a review of the CCTV video in conjunction with the PACP coding, some sewer lines need to be repaired (point repairs), replaced (CIPP) or cleaned (jet cleaning) for maintenance issues. To monitor deteriotion of the sewer network, it is recommended to do a routine inspection bi-annually. Refer to Appendix C for a detailed list of recommendations.

6. Pressure data collected using a pressure monitor installed on a hydrant, over a period of approximately 30 days indicated there is little difference between the minimum, average and maximum recorded values. Majority of the maximum pressure measurements (applies to minimum and average too) falls into a very narrow band and 70% of all maximum pressures fall between 53 and 55 psi. The two maximum recorded pressures above 60 psi, which occurred at 9:00AM and 9:04AM on September 3, 2020, were probably due to some minor transient event in the system.

7. The AWWA C401 design check found the pipe, assuming no significant degradation, to be operating well within the defined safety limits recommended by the AWWA standard. In fact, the factor of safety in pressure was 8.0 and for external load 4.19. This is versus a recommended minimum value of 4.0 and 2.5, respectively.



2. Introduction

The Peace River Regional District (PRRD) retained the services of Pure Technologies, a Xylem brand (Pure Technologies) to perform inspection of the 150mm watermain network & 200mm gravity sewer network for YXJ Subdivision in Fort St John, BC. The purpose of the inspection was to detect and locate leaks, perform valve assessment within the watermain network and assess the internal condition of sewer network. Given the complex nature of the network (multiple pipeline, short distances, smaller diameter, etc.) that would limit the use of inline inspection tools, Pure Technologies teamed up with Watermark Solutions for the watermain network external leak survey and AquaCoustic Remote Technologies to complete CCTV inspection of the sewer network.

In addition to the watermain network external leak detection survey and valve assessment; Pure Technologies performed transient pressure monitoring and conducted an AWWA design evaluation on the AC pipe (to determine if the pipe design is adequate for internal/external loading).

2.1 Background

The YXJ Subdivision watermain network is comprised of approximately 2.3 kilometres of 150millimetre Asbestos Cement Pipe (ACP) and the sewer network is approximately 2.2 kilometres of 200-millimetre Vitrified Clay Pipe (VCP). The watermain and sewer network serves about 60 households in this neighbourhood.



Figure 2.1: Inspection Scope of the 150mm watermain network and 200mm sewer network



3. Project Scope

This condition assessment report of the watermain and sewer network, provides findings from the network assessment. The following investigative techniques were deployed:

- External leak survey of watermain network
- CCTV inspection of sewer network
- Transient Pressure Monitoring
- Valve Assessment
- AWWA design evaluation

4. Inspection Overview

External leak survey for the watermain network and valve assessment was completed by Watermark Solutions the week of August 17th, 2020 and CCTV survey of the sewer network was completed by AquaCoustic Remote Technologies the week of August 24th, 2020. Pressure was monitored on the watermain network for a period of 30-days to collect transient pressure data.

4.1 Watermain Network

4.1.1 External Leak Survey

At the start of the external leak survey, a systematic "listening" procedure was used. The technician "listened" for sound on direct contact points such as main line gate valves, fire hydrants, meters/curb-valves, blow-offs, etc. On the mains, staff used a ground microphone to listen over the main approximately every two to three meters. With this method, comprehensive coverage of the system was attained, and all leak sounds were investigated and pinpointed immediately.

Any leak noises that were located by the field staff throughout the distribution system was graded by severity and this enabled the field technician to prioritize and identify the larger leaks first, then the technician systematically worked through the smaller leak noises. The Leak noises were then graded from 1 to 5, 5 being the typical sized mains break and 1 being a very small leak such as a weeping curb box or valve.

The noise produced by pressurized water forcing its way through a crack or joint makes a distinct sound when listened to on pipes, valves or services and as a proven method for leak detection, the Ground Microphone was used as acoustic listening device. Potential leak sites were identified by this method and further localized by Correlation Testing.





Figure 4.1: X-Mic Ground listening system

4.1.2 Valve Assessment

The valve assessment work was performed in accordance with the AWWA M44 standard. For the direct buried valves, Pure determined if the valve could be located, accessed and mechanically operated (if so, valves were exercised and turn count documented). The findings were documented, the as-is condition photographed, and GPS coordinates were taken.

4.1.3 Transient Pressure Monitor

Hydraulic pressure transients occur in pipelines when the steady-state conditions of the system change due to pressure and/or flow disturbances (e.g., the rapid closure of a valve, pump startup/ shutdown, air pockets). Transient pressure monitoring (TPM) captured these pressure transients, as well as captured the working pressures of a pipeline. Figure 4.2 shows an example of transient pressure data gathered on a pipeline.



Figure 4.2: Example Transient Pressure Monitoring Data



A TPM was installed on a hydrant in the YXJ Subdivision for 30-days. Figures 4.3 and 4.4 below shows the Telog HPR installed on a hydrant.



Figure 4.3: Telog HPR on Hydrant



Figure 4.4: Telog HPR

4.2 Gravity Sewer Network

4.2.1 CCTV Inspection

A small crawler was deployed from a short-range system (~190 meters) to inspect the distances between manholes (~100 meters). The crawler was inserted into upstream manholes and surveyed downstream. In some locations, due to blockage, the sewer network was surveyed upstream from the downstream manhole. The video file was analyzed, and areas of concern recorded, including a NASSCO PACP coded observations table. PRRD flushed the gravity sewer pipes prior to inspection.



5. Inspection Results

5.1 Watermain Network External Leak Survey

Pure Technologies subcontracted Watermark Solutions to conduct an Acoustic Leak Survey at the subdivision adjacent to North Peace Regional Airport. The water system for the subdivision is fed from a main linked to the airport's domestic water supply. Between 50 and 55 properties are connected to the water mains which are made of asbestos cement material with a diameter of 150mm. There are eight hydrants with secondary isolation valves and seven main line valves throughout the system which is approximately 2 kms in total pipe length.

A shed to the south east of the subdivision contains the main system control valve (with bypass) and a Sensus water meter. Watermark Technician Lee Stansfield attended the location on August 17th and 18th, 2020. On August 17th, majority of valve assessment operations were carried out with Pure Technologies and Peace River Regional District assisting. On August 18th, a comprehensive acoustic leak detection survey was completed.

All hydrants, hydrant isolation valves, all main line valves and any located service valves (curbboxes) in the subdivision were sounded using an X-Mic ®. This is an electronic device similar to a microphone or a stethoscope with which a trained operator can detect leaks on a water pipe.

One leak was located during the survey. This was a leak on a hydrant lead on the hydrant located outside 10330 257 Rd. (Figure 5.1). Good leak noise was audible on the hydrant and on the secondary isolation valve. When the isolation valve was operated, the leak noise increased and water began to surface in the valve box. This indicated that the valve itself was the likely source of the leak and maintenance is required as soon as possible.



Figure 5.1: Leak on hydrant located outside 10330 257 Road

Prior to this survey a similar leak on the southernmost hydrant on Rowantree Ave had been noted and stopped by Peace River Regional District. These two leaks were the likely cause of any ongoing substantial water loss within the community. Meter readings at the main subdivision supply were taken 48 hours apart after the leak detection survey with one of these leaks still needing attention.



These revealed an average of 16 l/h being fed into the system which is within the bounds of normal domestic usage. The repair of the remaining hydrant leak should reduce this further.

5.2 Watermain Network Valve Assessment

On August 17th, 2020, Watermark assisted Pure to perform a valve assessment on the system's main line and hydrant secondary valves. Pure Technologies also carried out a GPS location survey on all main and hydrant valves and hydrants within the system.



Figure 5.2: Location of Inline Valves and Hydrants

From the drawings provided, seven (7) inline valves were identified in the watermain network within the inspection limits. Inline Valves 1 and 2 could not be accessed as it is located in fence line in neighboring airport field.

5.2.1 Inline Valve#3

Type: 6-inch Gate Valve Location: South of Lily-Rowantree



Notes: Buried 1 foot under gravel and raised back up while onsite. Value stuck and could not be turned.



Figure 5.3: Inline Valve#3

5.2.2 Inline Valve#4

Type: 6-inch Gate Valve

Location: Right of Way south of Rowantree and between 257 Road and Lily Notes: Cap was stuck on and repaired onsite

Turn count: approximately 17.75 turns; fully closed and fully opened



Figure 5.4: Inline Valve#4

5.2.3 Inline Valve#5

Type: 6-inch Gate Valve

Location: Northeast corner od 257 Rd and Rowantree Notes: Buried 1 foot in ditch; raised back up while onsite Turn count: approximately 19.5 turns; fully closed and fully opened





Figure 5.5: Inline Valve#5

5.2.4 Inline Valve#6

Type: 6-inch Gate Valve

Location: Off of gravel right of way, southeast of 257 road and Rowentree Turn count: 20.25 turns; fully closed and fully opened



Figure 5.6: Inline Valve#6

5.2.5 Inline Valve#7

Type: 6-inch Gate Valve Location: On 242 road (242 road – 257 road intersection) Notes: Valve was buried, and casing broken; cleaned up and raised. Valve could not be exercised.





Figure 5.7: Inline Valve#7

5.2.6 Hydrant A

Type: 6-inch isolation Gate Valve Turn count: 19.5 turns; fully closed and fully opened



Figure 5.8: Hydrant A

5.2.7 Hydrant B

Type: 6-inch isolation Gate Valve Turn count: 20.25 turns; fully closed and fully opened Notes: Keys stuck on extension



Figure 5.9: Hydrant B



5.2.8 Hydrant C

Type: 6-inch isolation Gate Valve Turn count: 20.5 turns; fully closed and fully opened Notes: Leaks when valve operated



Figure 5.10: Hydrant C

5.2.9 Hydrant D

Type: 6-inch isolation Gate Valve Turn count: 20.25 turns; fully closed and fully opened



Figure 5.11: Hydrant D

5.2.10 Hydrant E

Type: 6-inch isolation Gate Valve Turn count: 20.5 turns; fully closed and fully opened Notes: Leaks when valve operated





Figure 5.12: Hydrant E

5.2.11 Hydrant F

Type: 6-inch isolation Gate Valve Turn count: 20.25 turns; fully closed and fully opened Notes: Leaks when valve operated



Figure 5.13: Hydrant F

5.2.12 Hydrant G

Type: 6-inch isolation Gate Valve Notes: Valve extension not on valve nut; could not be exercised





Figure 5.14: Hydrant G

5.2.13 Hydrant H

Type: 6-inch isolation Gate Valve Turn count: 20.25 turns; fully closed and fully opened



Figure 5.15: Hydrant H



5.3 Sewer Network CCTV Survey

The PRRD YXJ subdivision's sanitary sewer system was CCTV surveyed by AquaCoustic Remote Technologies from August 24 to August 28, 2020. In total 26 lines between manholes were surveyed. The technician reviewing the video during the survey coded all defects observed in accordance to NASSCO's PACP grading system. This included both structural defects such as cracks, fractures, and breaks in either the barrel of the pipe or taps, as well as operational and maintenance defects such as root intrusion, debris, obstructions, encrustations in the barrel or at joints and infiltration stains at joints.

All defects observed were graded from 1 to 5, with 5 being the most severe. Typically a pipe defect receiving a grade of 5, especially a structural defect, should be repaired or replaced immediately as collapse of the pipe or fitting is imminent. Defects graded 4 should be addressed within the year, and defects graded 1 through 3 need to be periodically monitored to ensure they don't continue to deteriorate rapidly.

Table 5.1 summarizes the PACP coding data for the entire system, by line. The Structural Pipe Rating or O&M Pipe Rating is the sum of the product of each number of defect times it's grade. The larger this number the greater number of significant defects found. The Structural Pipe Rating Index is the Structural Pipe Rating divided by the total number of structural defects found in each line. Likewise for determining the O&M Pipe Rating Index. When these indices exceed 3.0 it means that a majority of the defects found in the line are of a very serious nature.

There was no active infiltration observed in any of the lines during the survey. All manhole interiors appeared to be in reasonable good shape and not requiring any maintenance or repair.

A review of the index data in Table 5.1 suggests that lines SMH 9 to SMH 10, SMH 9 to SMH 8, and SMH 7 to SMH 6 have some significant structural defects, while lines SMH 9 to SMH 8, SMH 11 to SMH 10 and SMH 3 to SMH 4 have a large number of serious defects. Line SMH 9 to SMH 8 falls into both categories. Line SMH 3 to SMH 4 also has a large number of structural defects. Details of each noted defect can be found in Appendix C.

Start Manhole	End Manhole	Structural Defects Operational & Maintenance Defects			Pipe Material			
		No. of Structural Defects	Structural Pipe Rating	Structural Pipe Rating Index	No. of O&M Defects	O&M Pipe Rating	O&M Pipe Rating Index	
SCO 2	SMH 11	7	17	2.4	21	34	1.6	VCP
SMH 11	SMH 10	12	35	2.9	63	120	1.9	VCP
SMH 9	SMH 10	8	26	3.3	70	138	2.0	VCP
SMH 9	SMH 8	9	39	3.3	78	152	1.9	VCP
SMH 8	SMH 7	9	16	1.8	23	46	2.0	VCP
SMH 7	SMH 8	3	5	1.7	22	44	2.0	VCP
SMH 7	SCO 1	9	21	2.3	60	118	2.0	VCP



SMH 7	SMH 6	1	3	3.0	52	102	2.0	VCP
SMH 6	SMH 5	5	13	2.6	65	131	2.0	VCP
SMH	SMH	1	3	3.0	4	10	2.5	PVC
102		0	0	0.0	0	0	0.0	
5MH 101	5003	0	0	0.0	3	Ø	2.0	PVC
SCO 3	SMH 17	4	9	2.3	25	50	2.0	VCP
SMH 16	SMH 17	3	7	2.3	83	163	2.0	VCP
SMH 16	SMH 15	8	21	2.6	55	107	1.9	VCP
SMH 15	SMH 14	5	15	3.0	19	38	2.0	VCP
SMH 13	SMH 14	8	20	2.5	18	32	1.8	VCP
SMH 13	SCO 5	8	18	2.3	47	95	2.0	VCP
SMH 12	SMH 13	11	29	2.6	9	16	1.8	VCP
SMH 18	SMH	10	23	2.3	38	78	2.1	VCP
SMH 12	SMH 18	11	32	2.9	34	63	1.9	VCP
SMH 12	SMH 5	7	19	2.7	48	92	1.9	VCP
SMH 4	SMH 5	12	29	2.4	20	39	2.0	VCP
SMH 3	SMH 4	18	47	2.6	74	140	1.9	VCP
SMH 3	SMH 2	9	24	2.7	74	144	1.9	VCP
SMH 2	SMH 1	3	5	1.7	52	101	1.9	VCP
SMH 1	SMH	0	0	0	6	12	2.0	PVC

Figure 5.1: Summary of CCTV survey results

Based on a review of the CCTV video in conjunction with the PACP coding, a number of pipe barrel locations as well as factory tee fittings and break-in taps will need to be repaired. Many of these can be point repairs. However, one line (SMH 3 to SMH 4) in particular would probably be best rehabilitated by a cured in place (CIPP) liner through the whole line. There are also a couple lines that should be cleaned given the large amount of debris that has accumulated at dips or inverted siphons in these lines.

Appendix C reviews each line in detail and identifies those structural items that need to be addressed, either with a repair or replacement, or jet cleaning for maintenance issues.

6. Transient Pressure Monitoring

6.1 **Pressure Monitoring Details**

The Telog high speed pressure transducer was installed on the fire hydrant (HYD B) located at the southeast corner of Rowantree Ave. (Road A) and Lily St. (Road D). This location (see Figure 6.1) was selected because it is approximately in the middle of the YXJ Subdivision serviced by the 6-inch AC water main.

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Figure 6.1: Location of Hydrants and Gate Valves in the 6-inch AC Water Mains

The transducer was activated on August 17, 2020 at 9:28 AM and was deactivated on September 15, 2020 at 11:32 AM. Pressure measurements are recorded every 4 minutes. If a transient (water hammer) event is detected, then the transducer records the pressure in micro-seconds. During the nearly one-month monitoring period 10,473 pressure measurements were recorded every 4 minutes. No significant surge pressure was detected.

Appendix A graphically shows the minimum, average and maximum pressure recorded during that month-long cycle. There is little difference in the minimum, average and maximum pressure over this time cycle due to the relatively short period (4 minutes) between pressure data recordings.

On September 3, 2020 at 10:08 AM a minimum pressure of magnitude -5.08 psi was recorded. This negative pressure lasted a duration of 3-1/2 hours, until 1:36 PM. An hour proceeding this registration of a negative pressure, the maximum pressure of 62.76 psi was recorded. This maximum pressure lasted approximately 8 minutes (2 recording cycles) before returning to a more normal level. It is suspected that the pressure to the subdivision was deactivated for that 3-1/2 hour period so maintenance or repair could be performed at some other location in the feeder system.

6.2 Analysis of Pressure Data

Table 6.1 below shows the statistical analysis of the three measurement values recorded every 4 minutes. As stated above, there is virtually little difference between the minimum, average and maximum recorded values. For the purposes of carrying out a design check on the 6-inch AC Class 150 pipe, the values for the maximum pressure were used. The median maximum pressure was 52.62 psi.



Statistical Value	Recorded Pressure, psi		
	Minimum	Average	Maximum
Minimum	-5.08	-4.34	-4.29
Average	49.99	51.14	51.94
Median	50.47	51.73	52.62
Maximum	58.35	59.03	62.76

Table 6.1: Statistical Analysis of Recorded Pressure Data

The frequency distribution of the 10,473 maximum pressure measurements can be seen in Figure 6.2 below. As expected from the graph in Appendix A, the majority of the maximum pressure measurements (applies to minimum and average too) falls into a very narrow band. In fact, 70% of all maximum pressures fall between 53 and 55 psi. This can also be observed in Figure 6.3 which shows the cumulative frequency distribution of this same data. More importantly, from a design perspective, 99.9% of all maximum pressures fall at 56 psi or below. The two maximum recorded pressures above 60 psi, which occurred at 9:00AM and 9:04AM on September 3, 2020, were probably due to some minor transient event in the system. The AWWA C401 design method incorporates a factor of safety of 4 on the working pressure to accommodate unexpected transients that may occur in a water distribution system. Consequently, for the AWWA C401 design check, a working pressure of 56 psi at the hydrant level was used. This represents the 99.9 percentile of all maximum pressure measurements in the YXJ subdivision.



Figure 6.2: Frequency Distribution of Maximum Pressure


Figure 6.3: Cumulative Frequency Distribution of Maximum Pressure

7. Design Check

7.1 Design Methodology of AC Pressure Pipe

AWWA C401, *Selection of Asbestos-Cement Pressure Pipe*, incorporates the design method for AC pipe. AC pipe is designed on the basis of the interaction of both the internal pressure and external load on the pipe's strength. This is commonly called combined loading and was first introduced for cast iron pipe by Prof. Schlick, Iowa State University. The AC pipe industry adopted the same design methodology for AC pipe, after confirmation testing.

7.1.1 Design Equation

Tests of AC pipe with both internal pressure and external 3-edge bearing loads have shown that there is a relationship between the combined loads at the point of failure. This relationship at failure is expressed by the following Schlick formula, and is represented by a parabolic curve:

$$\left(\frac{w}{W}\right)^2 + \frac{p}{P} = 1\tag{1}$$

Where

w = external crush load on the pipe in conjunction with some internal pressure p at failure

W = 3-edge bearing (crush) load that will cause failure, with no internal pressure

p = internal pressure in conjunction with some external load w at failure

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P = internal pressure that will cause failure, with no external load

For the purposes of design, factors of safety are applied to both the external load and internal pressure acting simultaneously on the pipe. In the case of AC pipe in a water distribution system, the AWWA standard recommends a safety factor of 4 be applied to the operating pressure when surge is not calculated. Likewise, for external load a safety factor of 2.5 is recommended.

With the incorporation of safety factors, the Schlick formula takes on the form:

$$\left(\frac{w}{W/f_{s_w}}\right)^2 + \left(\frac{p}{P/f_{s_p}}\right) = 1$$
(2)

Where

 fs_w = factor of safety for external load, 2.5 recommended

 fs_p = factor of safety for pressure, 4 recommended



Figure 7.1: AWWA C401 Combined Loading

The above figure illustrates the application of the Schlick combined loading formula for AC pipe with the recommended AWWA factors of safety. Pipe safely meeting the design requirements will fall on or below the green design line in Figure 7.1.

7.1.2 External Soil Load and Relationship to 3-Edge Bearing

External soil load is calculated using the Marston's formula for a rigid pipe (AC is actually semi-rigid) and any live load determined using the integration of the Boussinesq formula or a simplification of same. The general form of Marston's equation:

$$W_E = C\gamma B_d^2 \tag{3}$$

Where:



- C = coefficient dependent on ratio of height of fill to width of trench or pipe diameter, shearing forces between earth prisms and direction of relative settlement between interior and adjacent earth prisms
- γ = unit weight of fill material (120 lbs/ft³)
- B_d = width of trench at top of pipe

For trench conditions,

$$C_d = \frac{1 - e^{-2Ku' \left(\frac{H}{B_d}\right)}}{2Ku'}$$

Where:

K = Rankine's ratio of active lateral unit pressure to vertical unit pressure

$$= tan\left(45^o - \frac{\varphi'}{2}\right)$$

 $u' = \text{coefficient of friction between fill material and sides of trench} = tan \varphi'$

Generally, when the character of the soil is uncertain a value of *Ku*' of 0.150 maybe typically selected, corresponding to saturated top-soil. The external field load is then converted to an "equivalent" 3-edge bearing load by the application of a bedding factor, BF. The external load applied to a buried pipe is actually distributed over a broader arc of the pipe's circumference than a 3-edge bearing load, dependent on the type of installation. So, the calculated external load (soil plus live load) is divided by the bedding factor to arrive at an equivalent 3-edge bearing load. Mathematically,

$$w = \frac{W_E + W_t}{BF} \tag{4}$$

Where

 W_E = external soil load

 $W_t = live load$

BF = bedding factor (ranges from 1.1 to 2.2 dependent on the class of bedding as defined in AWWA 401)

AWWA C401 and AWWA C603, *Standard for the Installation of Asbestos-Cement Pressure Pipe*, identify four classes of bedding for pipes buried in trench installations. Class A involves either a concrete cradle or arch and Class D is placement of the pipe on a flat bottom with loose sidefill soil. Neither of these classes of installation were common for AC pipe. The most common installation types would be represented by Class B and Class C beddings. Class B, which has a bedding factor of 1.9, can be achieved by placing the pipe in a trench with a shaped bottom and granular bedding and carefully compacted backfill to each side, or the use of carefully compacted granular material under the pipe ($1/4 B_c$ min) and up to the springline with compacted backfill from there to over the pipe a minimum of 12 inches (300 mm). Class C, which has a bedding factor of 1.5, is similar to Class B except in the case of the shaped trench bottom there is no granular fill and the soil sidefill is only lightly compacted, or a bedding of carefully compacted granular material is placed under the pipe to a depth of 1/8 B_c or 4 inches minimum, then extended up the sides a further 1/6 B_c minimum, with the balance of the backfill to 6 inches over the pipe composed of lightly compacted backfill. The use of shaped bottom trenches was a very uncommon practice, so realistically the following figures illustrate the Class B and Class C beddings in AWWA C401 most commonly used.

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Figure 7.2: Class B

Figure 7.3: Class C

There was no information provided regarding the type of installation for the 6-inch AC pressure pipe so the Class C detail as described in AWWA C401 and illustrated in Figure 7.3 is assumed. The bedding or load factor for Class B is 1.5.

7.1.3 Burst Pressure and Crush Strength from Stress

The internal pressure that will cause failure, *P*, can be expressed in terms of the burst or hoop tensile strength of the pipe, namely:

$$P = \frac{2ts_h}{D} \tag{5}$$

Where

t = wall thickness D = mean diameter $s_h =$ hoop tensile strength

For the 6-inch AC pressure main, the minimum internal design pressure per AWWA C400-77 for Class 150 is 632 psi. Obviously as the pipe degrades these values decline too.

Likewise, the 3-edge bearing load, W, can be expressed in terms of the modulus of rupture or circumferential flexural strength, s_{f} , of the pipe wall:

$$W = \frac{1.048 \, t^2 s_f}{D} \tag{6}$$

Where

 s_f = circumferential flexural strength

For the 6-inch AC water main, the AWWA C400 standard specifies that the minimum design external load, namely the 3-edge bearing load that will cause failure without internal pressure, *W*, for Class 150 it is 5400 lb/ft (79 kN/m). Similarly, these values will decline as the pipe degrades. It should be noted that that this design approach does not cover longitudinal (beam) and transverse shear stresses caused by ground movement and/or uneven bedding. These result in circumferential rather than longitudinal fractures. Such transverse fractures have been the most common type of structural failure observed in asbestos cement pipes in some North American communities, especially in smaller diameters.

7.1.4 Internal Pressure

As covered in Section 6.2, the 99.9 percentile maximum internal pressure for the 6-inch AC distribution main was determined to be 56 psi after the statistical analysis of the Telog hi-speed transducer data. This is the pressure that was measured by the transducer mounted on a fire hydrant (HYD B) at a ground elevation of approximately 2299 ft. The buried pipe is 9 ft. lower. Plus, the



lowest ground elevation in the YXJ subdivision is at 2265 ft. Therefore, the pipe at the lowest elevation in the system would be 44 ft. below the transducer's level, which would impose an additional 19 psi of head on the buried pipe resulting in a maximum working pressure of 75 psi.

The AWWA C401 standard for a water distribution pipe recommends a minimum factor of safety of 4 on working pressure, especially when transients are unknown. The AWWA C403 design standard that covers transmission pipes has a reduced factor of safety, but this factor of safety is applied to the maximum pressure the pipeline could experience which would include both working pressure and water hammer. Theoretically, transmission mains are "engineered" pipelines where transient pressures are either quantifiable or are limited by water hammer mitigation equipment (eg. surge vessels). For this distribution system, the factor of safety of 4 on the 99.9 percentile maximum pressure is reasonable.

7.1.5 External Load

There are no profile drawings available for the 6-inch AC water main. According to sheet 2 of the "as constructed" drawings (FJ 6169-1), the minimum depth of soil cover is to be 9 feet.

The dead soil load on the pipe was calculated using the Marston trench formula and the embankment or wide trench formula. The smaller of the two is then used for the dead load on the pipe, as recommended in AWWA C401. A trench width of the pipe outside diameter plus 2 feet (.6m) was used with a soil unit weight of 120 lb/ft³ (18.9 kN/m³). The results are shown in Table 7.1 below.

The pipe was also installed inside a casing where it passes under 257 Road. This was no doubt to protect the pipe from large vehicular loading. However, it does appear from the drawings that some portions of the pipeline could be subjected to light vehicular loading, especially from automobiles. For the design check, the live load on the 6-inch AC pipe was calculated using an HS20 truck load (individual wheel load 71 kN), with the appropriate impact factor based on cover depth. The results of this calculation are also shown in Table 7.5 below. Using the bedding factor of 1.5, the above soil and live loads are converted to an equivalent 3-edge bearing load. This is the load in a 3-edge bearing test that would produce the same flexural stress level as that due to the higher burial load. The 6-inch Class 150 pipe's minimum 3-edge bearing strength is 5,400 lb/ft, (79 kN/m) and with a factor of safety of 2.5, the maximum permitted load becomes 2,160 lb/ft (31.5 kN/m) with no internal pressure. As the pressure increases, this maximum allowable external load drops in accordance to the Schlick formula (Eqn. 1 in Section 7.1.1)

Property	External Load, lb/ft
	(kN/m)
	9 ft. (3.24 m) Burial
Trench Load, Wd	1,738 (25.4)
Embankment Load, Wc	13,339(195)
Dead Load, We	1,738 (25.4)
Live Load, WI	77 (1.1)
Total External Load, Wt	1,815 (26.5)

Table 7.1:	External	Soil and	Live	Load
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With the bedding factor of 1.5, this total external soil and live load transforms to an equivalent 3-edge bearing load of 1,210 lb/ft (17.7 kN/m).

7.2 Results of the Design Check

To aid in the design check, Pure installed a high speed recording pressure transducer on the hydrant located at the SE corner of Lily St. (Road D) and Rowantree Ave. (Road A) for 30 days. This TPM recorded the minimum, average and maximum pressure at the monitoring site every four minutes. If a transient is detected the pressure is recorded every micro-second thus capturing any surge (water hammer) pressures that are often overlooked by standard SCADA gauges that only sample every few minutes. The analysis of the pressure data collected may be in found in Section 6.

All total there is approximately 7,351 linear feet (2,241 m) of AC pipe in this subdivision. The closed piping system is plugged at Airport Road, 242 Ave., and Rowantree Ave. and has it's only feed from the east by an extension of the line from Tulip Ave to a metering chamber and connection at another 6-inch line. The metering chamber and connection is approximately 25 meters north of a pump house.

The "as constructed" drawings are dated August 1977. The name of the roads on the 1977 drawings have all changed. Road A is now Rowantree Ave., Road B is 242 Ave., Road C is Tulip Ave., Road D is Lily Street and Airport Road is 257 Road. The Airport By-pass Road to the north is now Airport Road. The site plan shows the airport just to the south as Fort St. John Airport, but it is now known as North Peace Regional Airport (YXJ).

7.2.1 Pipe Information from Drawings

The drawings (FJ 6169-1, sheets 1 to 10) identify the water pipe as 6-inch Class 150 asbestoscement (AC). The drawings show a plan view of the water pipeline but no profile. A plan and profile for the sewer pipeline that lies adjacent to the water main is shown. The general notes on sheet 2 states that all watermains shall have a minimum of 9 ft. cover and that all watermains shall be designated in accordance to the latest AWWA specifications.

The gound elevation along the sewer pipeline ranges from a low of 2263 (ft.) at the end of the line on 242 Ave. to a high of 2303 (ft.) at the end of the line on Rowantree Ave. It would be reasonable to assume the ground elevations for the watermain follow these same patterns, as these lines are parallel, and are generally only separated by 10 feet (3 m). This 40 foot (12.2 m) of elevation change would translate into a difference of 17.2 psi of pressure between the pipeline's low and high points. The pressure transducer was placed on a hydrant with a ground elevation of approximately 2299 ft., or near a high point in the system.

The pipeline where it crosses under 257 Road (old Airport Road) is installed in a 24-inch corrugate casing filled with sand. This is undoubtably designed to protect the pipe from any large traffic loads. Aside from this location there is no information on the drawings to indicate how the pipe was installed, or specifically the type of trench construction (bedding, side-support, trench width) used. Assumptions will have to be made about these conditions in order to calculate the dead load (soil cover) on the 6-inch AC pipe.



7.2.2 Pipe Information from AWWA Standard

The AWWA C400 pipe standard that would have been in effect at the time of this project was published in 1977. This standard, AWWA C400-77, covered asbestos-cement pressure pipe in diameters 4-inch through 16-inch. The three main strength requirements in the AWWA C400 standard are a flexural load test, an internal design pressure (burst) and an external design load (crush) requirement. The specified design internal pressure (minimum burst pressure) is 632 psi (4400 kPa) and the design external load (3-edge bearing crush strength) is 5400 lb/ft (79 kN/m). The AWWA C400 standard is a performance based specification and does not include any minimum wall thickness requirements for AC pipe. Using nominal hoop and flexural strength values for AC pipe, as outlined in Section 3.2, an approximation of what the wall thickness should be for the 6-inch Class 150 pipe. Interestingly, the burst pressure requirement generally controls the minimum wall thickness for pipe diameters 8-inch and above, while 4-inch and 6-inch pipe wall thickness are typically controlled by the crush strength requirement. Specifically in the case of 6-inch Class 150, the nominal wall needed to meet the burst pressure requirement of 632 psi is 0.545 inches (13.4 mm), and the nominal wall to meet the crush strength requirement of 5400 lb/ft is 0.596 inches (15.1 mm).

7.2.3 Results

Using the AWWA C400 design (i.e., burst) internal pressure of 632 psi and a design external (crush) load of 5400 lb/ft, the failure envelop for the 6-inch Class 150 AC pipe can be calculated and plotted (blue line in Figure 7.4). Then applying the AWWA C401 recommended factors of safety of 4 for internal pressure and 2.5 for external (crush) load, the allowable or design envelope can be established (red line in Figure 7.4). Figure 7.4 shows the two curves, failure and design, for a 6-inch Class 150 AC pipe meeting the performance requirements of AWWA C400.

Superimposed on this design and failure graph in Figure 7.4 is the intersection of the maximum working pressure of 75 psi and the external load of 1,210 lb/ft. This point falls well below the design line, meaning the pipe exceeds the recommended minimum safety requirements in AWWA C401. Table 7.2 below shows the factors of safety in pressure and external crush load for the 75 psi maximum working pressure and 9 ft. of soil burial with live load.

Loading Condition	Factor of Safety
Working Pressure	8.0
External Load	4.2

Table 7.2: Factors of Safety



Figure 7.4: Design and Failure Envelop for 6-in Class 150 AC Water Pipe

The 6-in Class 150 AC water pipe in the YXJ subdivision has been in service since 1977, a total of 43 years. There have been no reported failures in this piping system. Pure Technologies has assessed the condition of asbestos-cement pipes used for water pipes and sewer force mains on other projects. Although we have seen significant degrees of deterioration in some AC pipes used for sewer force mains, the condition of water main pipes has been relatively good. Unless AC water pipes are conveying "soft water" or buried in acidic sulfate bearing soils there would be little to no expectation to see significant degradation of these pipes.

Profile drawings of the 6-inch water main was not included in the "as constructed" drawings provided Pure Technology. A note in the drawings states that pipes were to be buried with a minimum of 9 ft. of soil cover. This depth of soil cover was used to determine the external soil load on the buried main. A HS-20 wheel live load was also included, although at this depth it's contribution to the total external load was minimal.

Pure monitored the pressure in the YXJ subdivision's system with a Telog hi-speed pressure transducer from August 17, 2020 to September 15, 2020. The measured pressures fell into a very narrow band. Based on the maximum pressure values measured, the 99.9 percentile value was determined to be 56 psi. The pressure transducer was installed on a fire hydrant at approximately ground elevation of 2299 ft. Based on the elevation of the buried pipe at the lowest ground elevation location (2265 ft), an additional pressure head of 44 ft. (19 psi) was added for a total working pressure of 75 psi.

a xylem brand



The AWWA C401 design check found the pipe, assuming no significant degradation, to be operating well within the defined safety limits recommended by the AWWA standard. In fact, the factor of safety in pressure was 8.0 and for external load 4.19. This is versus a recommended minimum value of 4.0 and 2.5, respectively.

While the structural evaluation based on AWWA standards indicate that the pipe section has been designed within the defined safety limits, with no direct information on the physical condition of the existing pipe, a prediction of the pipe's remaining life is not feasible. No pipe samples were available for physical property testing and no failures have be recorded. This would be a good indicator that the pipe is still in relatively good shape. Given the application, namely water distribution, it would be reasonable to expect the asbestos-cement pipe has not suffered any severe degradation unless its conveying "soft" water or is subjected to acidic sulfate bearing soils or groundwater.

If the pipe owner wants some assurance that the pipe is still in good working condition then it would be advisable to check the Langelier Index (or Aggressiveness Index) of the water being conveyed through the pipes. If the Langelier Index is equal to or greater than zero, then the water is not aggressive to AC pipe. For a Langelier Index less than -2.0, some degradation would be expected. The following table (extracted from AWWA C401) illustrates this point and compares the Aggressiveness Index and Langelier Index.

Table 9.

Effect on AC Pipe	pH + log (AH)	Langelier Index
Highly Aggressive	<10.0	<-2.0
Moderately Aggressive	10.0 to 11.9	-2.0 to -0.1
Non-aggressive	>= 12.0	>=0

External corrosion can occur when AC pipe is buried in acidic sulfate soils. The pH and water soluble sulfate in the surrounding soils and groundwater can be assessed to determine if these substances might pose a problem for the pipe. It would be advisable to retain a soils testing lab and have several tests run on soil samples extracted from the pipe zone. Table 10 (extracted from AWWA C401) shows the possible effect of sulfates on the pipe.

Table 10.

Sulfate	Water	Soil
Aggressiveness	Water-Soluble Sulfates -	Water-Soluble Nuetral
Classification	mg/L SO4	Sulfates-mg/L SO4
Non-aggressive	150 and less	1000 and less
Mildy Aggressive	150-1500	1000-2000
Moderately Aggressive	1500-10,000	2000-20,000
Highly Aggressive	10,000 and greater	20,000 and greater

If the conveyed water is found to be "soft" (Langlier Index less than -2.0) or the surrounding soils and groundwater contain soluble sulfate exceeding 20,000 mg/L or 10,000 mg/L respectively, then it



would be recommended to extract a sample of the pipe from the line for laboratory testing. The laboratory testing would include microscopic examination of the wall cross-section, pH indicator testing of the pipe wall and a crush test. This would provide direct evidence on the physical condition of the pipe. A prediction of the remaining service life could be rendered at that point.

If the conveyed water or surrounding soil and groundwater are found to be not aggressive, then there is a good chance the pipe is still in reasonable working condition. However, it would be recommended that if any future modification are made to the line, for example the line is extended, or if a failure does occur, that a section of pipe be removed from the line at those opportunities and subjected to the laboratory testing mentioned in the previous paragraph.



APPENDIX A Transient Pressure Data





Figure A: Pressure Data over a 30-day monitoring period



APPENDIX B Asbestos – Cement Pipe



Asbestos – Cement Pipe

B.1 Composition

AC pipe is composed of a mixture of asbestos fibers, Portland cement, and inorganic hydrated silicates. Typically, the asbestos fibers comprise less than 20% of the AC pipe. The AWWA product specifications for AC pipe (AWWA C400 and C402) also include physical and chemical requirements for the pipe itself. For the pipe composition, it requires that AC pipe shall be composed of an intimate mixture of either:

- Portland cement or Portland blast furnace slag cement and asbestos fiber with or without silica; (or)
- Portland pozzolana cement in asbestos fibers.

The same specifications limit the amount of uncombined calcium hydroxide, presumably to curtail pipe dissolution: for Type I, there is no limit, and for Type II, 1.0% or less uncombined calcium hydroxide is permitted. Manufacture of Type I, which is not autoclaved, was discontinued in North America in the 1960s. Type II Portland cement is moderately sulfate resistant. The asbestos portion of AC pipe is composed of naturally occurring hydrated mineral silicates that possess a crystalline structure. There are four main types of asbestos. The principal type of asbestos found in AC pipe is chrysotile (white asbestos). Another type of asbestos, crocidolite (or blue asbestos) is also used for reinforcement of the pipe and improves the manufacturing process. Most high-pressure AC pipes had some crocidolite in addition to chrysotile fibers used in the manufacture.

During the formation of asbestos cement, the constituent oxides contained in Portland cement react with water to form calcium hydroxide (lime) and calcium silicate/aluminate hydrates. The physical binding of these hydration products cures the cement mortar and together with the formation of lime determines the structural integrity of the final product.

B.2 Manufacture

AC pipes produced in North America mainly used the 'Mazza' method whose origins are in the paper making industry. In this method a felt sheet was fed through a cement, silica and asbestos slurry bath where cement, silica and asbestos was picked up by the felt and then later transferred to a rotating mandrel under compactive force until the required thickness was achieved. The finished pipe is then removed from the mandrel by subjecting the mandrel to a strong electrostatic charge that produces steam around the pipe and thereby breaking the bond with the mandrel. The pipe is then steam cured under 2 atmospheres of pressure in an autoclave for 24 hours.

B.3 Degradation

Degradation can occur at both the internal and external surfaces of a pipe. Internal corrosion of a water pipe is mostly due to leaching of calcium hydroxide from the cement matrix. External attack can be from low pH (acidic) soils and/or groundwater as well as high sulfate bearing soils.



B.3.1 Internal Corrosion

In contrast to the original expectations that AC pipe would not be attacked by corrosive water, it became evident that under certain circumstances AC pipe can be attacked by aggressive (soft) water. If the pipe is exposed to aggressive water, the cement matrix constituents dissolve, thereby exposing asbestos fibers and releasing some into the water.

The AC pipe industry developed the concept of an Aggressiveness Index for use as a guide in determining whether AC pipe would be appropriate in a given situation. The original purpose of the index was to ensure the structural integrity of the pipe. More recently, it has been used to predict whether water quality degradation would occur from pipe dissolution. The Aggressiveness Index is a simplified form of the Langelier Index and has some shortcomings, which are noted below.

The Aggressiveness Index (AI) is defined as follows:

AI = pH + log(AH)where: A = total alkalinity, mg/liter as calcium carbonateH = calcium hardness, mg/liter as calcium carbonate.

The Aggressiveness Index does not incorporate corrections for temperature and ionic strength.

Application of the Aggressiveness Index (AI) to determine when AC pipe could be used was incorporated into standards published by ASTM (1976) and AWWA (1975, 1980). The standards applied the Aggressiveness and Langelier Indices to relate water quality and the use of AC pipe.

Al < 10	Aggressive water
Al 10 - 12	Moderately aggressive water
Al > 12	Non-aggressive water

Table B.	1: AI	levels
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These standards recommended that Type I (non-autoclaved) or Type II (autoclaved) AC pipe could be used with non-aggressive water. Type II pipe is permitted for moderately aggressive water. For highly aggressive water, "the serviceability of pipe for such applications should be established by the purchaser in conjunction with the manufacturer" (AWWA, 1980). Recognizing the relationship between water quality and the use of AC pipe, the U.S. EPA proposed that the Aggressiveness Index should be > 12 for water transported through AC pipe in order to prevent adverse effects.

The Aggressiveness Index is based on calcium carbonate saturation, therefore it should yield a fairly accurate prediction of "non-aggressiveness" provided by a protective calcium carbonate coating if water is oversaturated. However, if the water is undersaturated with calcium carbonate, there is no reason to expect the Aggressiveness Index to predict with accuracy the dissolution of AC pipe since calcium carbonate is only a minor constituent of the cement and calcium silicate is the predominant pipe component. Furthermore, the Aggressiveness Index does not account for temperature and ionic



strength as does the Langelier Index. Finally, the Aggressiveness Index fails to account for protective chemical reactions in drinking water.

The Aggressiveness Index was used for several years by pipe manufacturers and the water supply industry. Therefore, the majority of the data on water quality and AC pipe deterioration contains information on the Aggressiveness Index, calcium, and alkalinity of the water. In the absence of a better predictor of pipe performance, this index has been used extensively and is still a simple first approximation for predicting water pipe performance.

B.3.2 External Corrosion

Attack of asbestos cement pipe from the exterior can come from soft groundwater (low in calcium carbonate) or acidic sulfate soils. The mechanism of attack from soft groundwater is the same as internal attack, i.e., leaching of calcium hydroxide. For acidic sulfate soils, the sulfate in the soil reacts with calcium hydroxide and silica compounds in the pipe to form weaker and larger compounds that result in swelling of the cement matrix. Three different corrosion products can be formed by the reaction with the sulfate solution, namely gypsum, ettringite and thaumasite. Gypsum and ettringite formed by these reactions can swell to 123% to 224% (Matti, 1985) of the original solids they replace leading to expansion and destruction of the cementitious portion of the pipe.

B.4 AWWA and ASTM Standards

There were several important standards governing the supply, design and installation of AC pressure pipe. Those standards are:

AWWA C400 Asbestos-Cement Pressure Pipe, For Water Distribution Systems and Other Liquids - this is the product standard which includes minimum performance requirements

AWWA C401 The Selection of Asbestos-Cement Pressure Pipe, For Water Distribution Systems and Other Liquids - this standard essentially covers the interactive design approach for AC pressure pipe

AWWA Manual M16 (1978) *Work Practices for Asbestos-Cement Pipe* - replaced by another AWWA handbook of the same title in 1995

AWWA C603 *Standard for Installation of Asbestos-Cement Pressure Pipe* - covers recommended installation practices and laying of the pipe

ASTM C500 Standard Test Method for Asbestos-Cement Pipe

In 1975, AWWA revised AWWA C400 to only cover pipe diameters 4-inch through 16-inch which were considered distribution sized pipes and introduced AWWA C402 for transmission pipe in diameters 18-inch through 42-inch. ASTM C500 not only contains three important test protocols for AC pipe, namely hydrostatic pressure (burst), 3-edge bearing (crush) and uncombined calcium hydroxide tests, but also guidelines for establishing the degree of aggressiveness of transported



water to the internal surface of the pipe, and acidic and sulfate laden soils and waters to the external surface.

B.4.1 Pipe Classes

Pressure classes covered by AWWA C400 include class 100, 150 and 200 psi rated products. It was very common to specify Class 200 for 4-in and 6-in diameter pipe, not because of pressure requirements but in order to increase the available beam strength. Diameters 8-in and above were normally specified Class 150.

B.4.2 Physical Requirements

The AWWA product standards are performance based. They do not specify minimum unit strength properties or physical dimensions (eg. thickness) for the AC pipe. Rather, they specify the minimum "design" internal pressure (or burst pressure) and the minimum "design" external load (or 3-edge bearing crush load) that the pipe's are required to have in order to meet the standard. The following table (Table B.2. from AWWA C400) lists those minimum "design" pressures and loads. It should be noted that the 1964T version of AWWA C400 did not list any internal design pressures. The design pressures shown in Table 2 first appeared in the 1975 version of AWWA C400. The 1964T version did state that each length of pipe should have sufficient strength to withstand an internal hydrostatic pressure of four times the rated operating pressure for it's class.

Nominal	Class	s 100	Class	Class 150		s 200
Diameter	Internal	External	Internal	External	Internal	External
in	Pressure	Load	Pressure	Load	Pressure	Load
	psi	lb/ft	psi	lb/ft	psi	lb/ft
4	417	4100	616	5400	809	8700
6	441	4000	632	5400	815	9000
8	472	4000	653	5500	824	9300
10	490	4400	650	7000	826	11000
12	490	5200	658	7600	830	11800
14	500	5200	650	8600	826	13500
16	500	5800	654	9200	825	15400
18		6500		10100		17400
20		7100		10900		19400
24		8100		12700		22600
30		9700		15900		28400
36		11200		19600		33800

Table B.2: Design Internal Pressure and Design External Load

The "design" internal pressure requirement is at least 4 times the pressure class. In reality, it has to be slightly higher as the pressure class supposedly applies to a buried pipe with approximately 5 feet of soil cover. As shown in Section B.4.1, there is an interaction between the pipe's internal pressure and external load capacity.



B.4.3 Standard Pipe Diameters and Lengths

The pipe average internal diameter is not less than the nominal diameter by more than 5%. Standard lengths are either 10 ft. (3m) or 13 ft. (4m) for 4-in, 6-in and 8-in diameters, and 13 ft. (4m) for 10-in and larger. The shorter length for the smaller diameters was to limit the bending moment (beam action) in those sizes as their relatively thin walls did not provide adequate beam strength in some soil conditions. Beam breaks in 4-inch AC pipe were not uncommon especially in clayey soils.

B.4.4 Wall Thickness

The wall thickness is not specified in the standards. It was up to each manufacturer to determine the minimum thickness their product needed to meet the design pressure and external design load requirements. However, there was a tolerance on the manufacturer's stated standard thickness.

Nominal	Pipe Size	Wall Thickness Tolerance		
4-12 in	100-300 mm	-0.06 in	-1.5 mm	
14-16 in	350-400 mm	-0.12 in	-3.0 mm	

Table B.3: Wall Thickness Tolerance

B.4.5 Joints

The standard joint for AC pipe was a coupling machined with two inner grooves from thicker AC stock. Rubber gaskets meeting the requirements of ASTM D1869 were used. Similarly, each end of a standard length of AC pipe was machined to fit inside the coupling and seal against the compressed rubber gasket. Approximately 15% compression of the gasket was achieved when the spigot end entered each side of the coupling. The spigot end actually had two machined surfaces, D₂ and D₃, as shown in Figure B.1.



Figure B.1: Coupling and Spigot End of AC Pipe

All fittings used with AC pressure pipe were cast iron, ductile iron or steel. No AC pressure fittings were made, except heavy tapped couplings, which were couplings with threaded bushings factory installed that would accept $\frac{3}{4}$ " and 1" corporation stops. In order to facilitate the manufacture of fittings for AC pipe standardized D₂ and D₃ dimensions were adopted by the industry. The following table (Table A.1 in AWWA C400) identifies those pertinent dimensions.



Pipe	Pipe Size		Class 100				Class 1	50/200	
		D	2	D	3	D	2	D	3
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
4	100	4.64	118	4.80	122	4.81	122	4.97	126
6	150	6.91	176	7.07	180	6.91	176	7.07	180
8	200	9.11	231	9.27	236	9.11	231	9.27	235
10	250	11.24	286	11.40	290	11.66	296	11.82	300
12	300	13.44	341	13.60	345	13.92	354	14.08	358
14	350	15.07	383	15.23	387	16.22	412	16.38	416
16	400	17.15	436	17.31	440	18.46	469	18.62	473

 Table B.4: Dimensions of Spigot End of AC Small Diameter Pressure Pipe

B.5 Physical Strength Parameters

B.5.1 Unit Strengths

As stated previously, the AWWA standards are performance oriented and do not include any minimum strength properties aside from the design (burst) internal pressure and the design (crush) external load. However, there are other worldwide standards for AC pipe that do include minimum properties. These can be helpful in an investigation of AC pipe's current and future performance expectations, especially when little is known about the pipe itself.

The Australian Standard AS 1711 (1975) offers a minimum tensile strength of 3,915 psi (27 MPa). The British Standard for AC pipe includes a crush strength (modulus of rupture) of 6,380 psi (44 MPa). There were several AC pipe manufacturing plants in the Middle East (Saudi Arabia, Dubai, Oman, Jordan, Lebanon). The Saudi Arabian Standards Organization (SASO) did include 28 day strength requirements (pipe produced in the Middle East was normal cured, not autoclaved, hence the need for a 28 day requirement). The SASO requirements, according to one of the manufacturers, was as follows:

- Longitudinal bending strength of small diameter pipes, Rf 3,988 psi (27.5 MPa)
- Circumferential bending strength (crushing strength), Re 7,250 psi (50.0 MPa)
- Bursting strength, Rb 3,480 psi (24 MPa)

The SASO standard did not have a requirement for longitudinal compressive strength, Rc, or longitudinal tensile strength, Rt, but the Saudi manufacturer included this information in their literature:

- Longitudinal compressive strength, Rc 7,250-9,425 psi (50-65 MPa)
- Longitudinal tensile strength, Rt 1,450 psi (10 MPa)

The elastic modulus properties of AC pipe depends on the direction in which the stresses are applied to the pipe, given the preferential orientation of the reinforcement fibers (asbestos) in the circumferential plane. The following table, extracted from the Saudi Arabian Amiantit Company's brochure, gives design values for the elastic modulus.



Stress	10 MPa	18 MPa	8 MPa	10-35 MPa
Loading	Beam	3-Edge Bearing	Internal	Longitudinal
			Pressure	Compression
Emin, GPa	22.5	25.5 (3.7 x 10 ⁶	31.0 (5.5 x 10 ⁶	22.0
		psi)	psi)	
Emax, GPa	24.0	27.8	33.0	24.0

Table B.5: Elastic Modulus of AC pipe (Saudi Arabian Amiantit Company)

For calculation of water hammer, it is recommended that an elastic modulus of 25.0 GPa (3.62×10^6 psi) be used.



APPENDIX C AquaCoustic Video Analysis



Line by Line Detailed Review

C.1 SCO 2 to SMH 11

There are 4 joints in this line that show infiltration staining or encrustation around the joint, both signs of possible infiltration. None viewed during the survey. Four joints showed some signs of root intrusion but not significant enough to warrant action. There were five locations, at or near joints, with cracks or fractures.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.0	4	Multiple fractures and cracks, ~1m long	Point repair
11.8	2	Longitudinal crack - minor	None
13.2	1	Circumferential crack - minor	None
28.8	3	Multiple cracks at joint	Monitor
30.0	2	Longitudinal/spiral crack, ~1m long	None
65.6	3	Longitudinal fracture, ~.3m long	Monitor

Table C.1: Sewer Data Analysis – SCO 2 to SMH 11

C.2 SMH 11 to SMH 10

There are 2 joints with infiltration staining. No active infiltration. There is a 1.4m length of PVC pipe in this line, beginning at 20.0m from SMH 11, with the joint offset from the clay pipe. This line had a lot of floating and underwater debris. There were 8 locations with cracks or fractures, one requiring immediate repair.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.3	1	Circumferential crack - minor	None
11.8	1	Longitudinal crack - minor	None
20.0	3	PVC section - joint offset	None
40.7	2	Longitudinal crack - minor	None
63.1	2	Longitudinal crack - minor	None
73.8	4 (2)	Entire length of pipe has 2 to 3 longitudinal cracks	Point repair
75.0	5	Multiple longitudinal and circumferential fractures	Point repair
81.2	3 (4)	Broken joint - minor	None
83.2	3	Several (2) longitudinal cracks along entire pipe	Monitor

Table C.2: Sewer Data Analysis – SMH 11 to SMH 10

C.3 SMH 9 to SMH 10

There are 3 joints with infiltration stains, but no active infiltration. There was a lot of encrustation on the interior of this pipe over its whole length. There are 4 taps in this line, three are factory tees and one a break-in tap. Eight (8) locations with cracks or fractures, six are relatively minor but two are significant and need to be addressed.

Prepared for	Peace River Reg	a xylem brand	
Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.0	2	Circumferential fracture at joint - minor	None
2.9	3 (4)	Multiple fractures at joint - minor	Monitor
11.3	1	Tap break-in at 3 o'clock - good	None
17.1	3	Tap tee at 3 o'clock, plugged with deposits	Clear
34.8	2	Longitudinal crack - minor	None
52.6	3	Multiple longitudinal cracks at joint - minor	None
62.4		Tap tee	None
66.6	3	Longitudinal fracture at joint - ~.2m long - minor	None
93.7	3 (4)	Multiple fractures at joint - minor	Monitor
110.3		Tap tee - 2 o'clock - good	None
111.8	4	Several longitudinal & spiral fractures - 0.6 to 1m long	Point repair
112.4	4	Multiple fractures entire last pipe at MH	Point repair

Table C.3: Sewer Data Analysis – SMH 9 to SMH 10

C.4 SMH 9 to SMH 8

More than seven (7) joints with signs of infiltration staining. There are two factory taps (tees) in this line with one showing 60% blockage and requiring clearing. Eight (8) locations with varying cracks and fractures, two (2) very significant and requiring repair

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.0	4	Multiple longitudinal and spiral cracks about 0.6m long.	Point repair
1.5	4	Break at joint	Monitor
18.8	1	Very minor crack from 10 to 11 o'clock	None
26.3	3 (4)	Spiral crack - minor	Monitor
34.7	1	Insignificant crack	None
44.2	3	Tap (tee) 60% plugged	Clear
63.6	2	Longitudinal crack - 0.6m long - minor	None
68.1		Tap (tee)	
95.5	4	Multiple fracturs at joint - not too significant	Monitor
104.8	2	Cracks at joint - very minor	None
107.7	4	Multiple fractures - ~6m long	Monitor
120.2	4	Broken pipe with significant fractures - last pipe at MH	Point repair

Table C.4: Sewer Data Analysis – SMH 9 to SMH 8

C.5 SMH 16 to SMH 17

Six (6) joints with signs of infiltration staining or encrustation. There are six (6) taps on this line, some showing signs of infiltration or encrustation but not active. One tap has 30% blockage. Three (3) locations with cracks at joints but none major enough to require repair.



Distance	Defect Grade	Description of Defect(s)	Rehabilitation
From SMH			Recommendation
to Defect			
9.3		Tap (tee) at 2 o'clock - good	None
10.0		Tap (tee) at 10 o'clock - good	None
46.4	1	Tap break-in - some minor restriction	None
53.3	3	Multiple small cracks at joint - minor	None
68.9	1	Tap (tee) at 2 o'clock - good	None
87.1	2	Longitudinal crack - minor	None
91.2	2	Spiral crack - 0.6m long - minor	None
99.7		Tap (tee) 10 o'clock - good	
100.3	2	Tap (tee) 2 o'clock - 30% blockage	Clear

Table C.5: Sewer Data Analysis – SMH 16 to SMH 17

C.6 SMH 16 to SMH 15

Three (3) joints with infiltration stains. No active infiltration. Three (3) taps in this line, two tees and one break-in tap. The break-in tap had some potential infiltration during the survey. Seven (7) locations had cracks or fractures, two significant enough to require repair.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
7.4	3	Longitudinal crack - 0.5m long - minor	None
8.6	1	Minor crack	None
33.8		Tap (tee) at 2 o'clock - good	None
37.5	2	Tap break-in - some sign of infiltration	Monitor
42.5	2	Two longitudinal cracks at springline - 0.6m long	None
44.0	2	Two longitudinal cracks at springline - 0.6m long	None
50.7	3	Multiple cracks	Monitor
77.0	4	Fracture at joint - significant	Point repair
103.1		Tap (tee) at 1 o/clock - good	None
120.9	4	Multiple fractures in last pipe next to MH 15	Point repair

Table C.6: Sewer Data Analysis – SMH 16 to SMH 15

C.7 SMH 15 to SMH 14

Six (6) joints had infiltration staining or encrustation indicative of past infiltration. There are two taps in this line, with one being a break-in tap and requiring repair. Three(3) locations in this line had fractures and cracks, with one in bad shape and requiring repair. This line also had a lot of underwater debris and would be a good candidate for jet cleaning with a vacuum truck.

Distance	Defect Grade	Description of Defect(s)	Rehabilitation
From SMH			Recommendation
to Defect			
17.6 to		PVC pipe (previous repair) with large dip.	Clean the entire line
23.2		Lots of debris.	
27.5	2 (3)	Longitudinal fracture - 0.3m long - minor	None
43.8	2	Circumferential fracture at joint - minor	None



67.5		Tap (tee) at 10 o'clock	None
93.3	3	Tap break-in at 11 o'clock - not good	Top hat repair
97.0	5	Multiple fractures, including spiral fracture in last pipe section and cracks at joint -	Immediate point repair
		collapse possible	

Table C.7: Sewer Data Analysis – SMH 15 to SMH 14

C.8 SMH 14 to SMH 13

Seven (7) joints show infiltration staining or encrustation, signs of past infiltration. There are two taps in this line, both break-in taps. One tap protrudes 25mm into the clay pipe. This line has five (50 locations with cracks or fractures with four (4) being minor, and one a missing triangular section of the pipe wall at joint. This line also had a lot of debris, especially the last 12m near SMH 13. It would be a good candidate for jet cleaning with a vacuum truck.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.0	2	Circumferential fracture - minor	None
24.3	2	Longitudinal crack at joint2m long - minor	None
24.4		Tap break-in at 10 o'clock - okay	None
60.9		Tap break-in at 11 o'clock - lateral protrudes 25mm into sewer	Top hat
62.8 to 74.1		PVC (previous repair)	
81.7	4	Triangular section of pipe missing at joint - 75mm on side at 8 o'clock	Monitor
89.0	2	Circumferential fracture from 9 to 12 o'clock at joint - minor	None

Table C.8: Sewer Data Analysis – SMH 14 to SMH 13

C.9 SMH 13 to SCO 5

There are four (4) joints in this line with infiltration stains. This line has three (3) taps, one is a factory tee with a 150mm inlet in good shape, one is a factory tee that is 90% plugged, possibly and one break-in tap that is possibly defective. Four (4) locations all at joints with fractures and cracks were noted.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
8.0	2(3)	Multiple small cracks at joint - minor	None
20.3	4	Multiple fractures at joint with lots of encrustation	Point repair
36.0	2	Circumferential fracture - minor	None
51.0 to 56.0		Steep upslope - 6% to 9% grade	None
60.7		Tap factory 150mm tee - 9 o'clock -good	None
75.2	3	Tap break-in - 10 o'clock - possible defective	None



80.2	3	Tap factory tee at 9 o'clock with 90% blockage	Clear
81.9	2	Circumferential fracture - minor line 70% full - line goes up	None

Table C.9: Sewer Data Analysis – SMH 13 to SCO 5

C.10 SMH 12 to SMH 13

There are four (4) joints with infiltration staining and/or encrustation suggestive of past infiltration. No taps on this line. Six (6) locations with cracks or fractures, three (3) especially bad and in need of repair.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.4	4	Broken joint - roots intruding	Point repair
28.0	2	Longitudinal crack ~ .6m long - minor	None
44.8	3	Two cracks about .6m long, at 8 and 11 o'clock	None
55.6	3	Two cracks about .5m long at 11 and 1 o'clock	None
58.9	4 (3)	Multiple cracks at 12 and 1 o'clock	Monitor

Table C.10: Sewer Data Analysis – SMH 12 to SMH 13

C.11 SCO 3 to SMH 17

This line has seven (7) joints with infiltration staining and/or encrustation. One joint also has possible root intrusion. There are six (6) taps in this line, five (5) are factory tees and one is a breakin with PVC lateral protruding 50mm into the sewer. Three (3) locations with cracks and fractures.

Distance From SMH	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
	1	Circumferential crack - minor	None
8.2	1	Tap factory tee at 10 o'clock - good	None
8.8		Tap factory tee at 2 o'clock - good	None
31.0	2	Joint with possible root intrusion	None
34.0		Tap factory tee at 2 o'clock - good	None
60.6	3	Longitudinal fracture	
60.6	4	Tap break-in - PVC protrudes into sewer ~50mm	Trim
62.0	3 (0)	Tap factory tee with 90% blockage	Clear
62.4		Tap factory tee at 2 o'clock - good	None
77.8	4	Break (fracture) at joint from 3 to 8 o'clock	Point repair

Table C.11: Sewer Data Analysis – SCO3 to SMH 17

C.12 SMH 101 to SCO 3

This is the eastern extension to the Rowantree line and is all PVC. No defects observed in this line.



Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.0 to 27.1		All new PVC line. No defects.	None

Table C.12: Sewer Data Analysis – SMH 101 to SCO 3

C.13 SMH 101 to SMH 102

This is also an extension to the Rowantree line and is PVC. Several joints were found to have noticeable elliptical deflection (up to 5%). There is also a big dip in this line between 36.4m and 41.8m where the water level reached 50% of the pipe diameter.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
23.9	3	5% elliptical deflection at joint - could allow some infiltration	None
35.9		2% to 3% elliptical deflection at joint	None
47.8	2	Infiltration at joint	None

Table C.13: Sewer Data Analysis – SMH 101 to SMH 102

C.14 SMH 7 to SCO 1

There are five (5) joints with infiltration staining and/or encrustation. There are five (5) taps in this line, four (4) are factory tees and one is a break-in. The break-in tap has cracks all around and one factory tee is 50% plugged.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
9.3	4	Multiple fractures at joint, ~0.3m long, also infiltration staining	Point repair
12.5		Tap factory tee at 2 o'clock - good	None
37.6	4	Multiple fractures and cracks that extend to tap	Point repair
38.0	3	Tap break-in at 10 o'clock with cracks all around	Monitor
40.9		Tap factory tee at 2 o'clock - good	None
51.0	2	Two longitudinal cracks at 9 and 3 o'clock - 0.6m long	None
54.2		Tap factory tee at 3 o'clock - good	None
55.1	2	Complete circumferential fracture 0.3m from joint - no staining	None
58.0	2	Longitudinal crack at 3 o'clock - extends 0.6m from joint	None
69.5	3	Tap factory tee at 2 o'clock - 50% plugged with deposits	Clear

Table C.14: Sewer Data Analysis – SMH 7 to SCO 1



C.15 SMH 6 to SMH 5

Five (5) joints have encrustation associated with infiltration. There are three (3) taps in this line, two (2) are factory tees in good shape and one is a break-in tap of PVC with cracks surrounding the tap. Three (3) locations were observed with cracks with one with spiral fractures that initiate at a joint and proceeds to the break-in tap.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
9.9		Tap factory tee at 10 o'clock - good	None
35.1		Tap factory tee at 10 o'clock - good	None
45.2	1	Minor crack at 8 o'clock	None
72.9	3	Spiral fracture -minor	None
72.9	3	Tap break-in PVC with fractures around tap	None

Table C.15: Sewer Data Analysis – SMH 6 to SMH 5

C.16 SMH 7 to SMH 6

Two (2) joints with infiltration staining and/or encrustation. There are two (2) factory tee taps that are in good shape. Two (2) locations observed with cracks but not major and not needing repair.

Distance From SMH	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
to Defect			
0.1	2	Minor cracks at 3 o'clock	None
37.1		Tap factory tee at 10 o'clock - good	None
61.1		Tap factory tee at 10 o'clock - good	None
65.7	3	Multiple circumferential cracks at joint -	None
		minor	

Table C.16: Sewer Data Analysis – SMH 7 to SMH 6

C.17 SMH 7 to SMH 8

Three (3) joints with encrustation, two particularly bad. No taps. There was surface spalling in a large number of pipes. Only one location with small cracks, but minor.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.3	3	Longitudinal fracture at joint - small	None
21.6	2	Joint has large amount of encrustation	None
25.9	2	Joint has large amount of encrustation over 60% of circumference	None

Table C.17: Sewer Data Analysis – SMH 7 to SMH 8



C.18 SMH 8 to SMH 7

Three (3) joints with encrustation. No taps. There are four (4) locations with cracks and fractures, the one adjacent to MH 8 needing repair.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.0	4	Multiple longitudinal fractures at manhole, at 3 and 9 o'clock - ~0.6m long	Point repair
0.2	3	Multiple circumferential cracks from 8 to 12 o'clock	Point repair (with above)
40.2	2	Spiral crack - minor	None
41.6	2	Spiral crack - minor	None

Table C.18: Sewer Data Analysis – SMH 8 to SMH 7

C.19 SMH 3 to SMH 2

There are six (6) joints showing signs of infiltration staining and/or encrustation. No active infiltration. One tap factory tee in good shape. Five (5) locations with cracks or fractures, but only one needing repair at the moment.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.0	4(3)	Multiple cracks at first joint at MH	Point repair
0.8	2	Circumferential fracture - minor	None
2.0	3	Multiple circumferential cracks with staining - minor	None
3.8	2	Longitudinal crack at 11 o'clock - less than 0.3m long	None
27.4	4	Large joint separation - no signs of infiltration	None
29.7	4	Large joint separation - encrustation	None
30.0		Tap factory tee at 2 o'clock - good	None
30.1		Dip in line - 35% water level	None

Table C.19: Sewer Data Analysis – SMH 3 to SMH 2

C.20 SMH 12 to SMH 5

This line had considerable amounts of debris (including rocks) and should be jet cleaned with a vacuum truck. In addition there were twelve (12) joints in this line with infiltration staining and/or encrustation. Three (3) joints in particular had some root intrusion, but not clogging the line yet. No taps. Four (4) locations were observed with cracks or fractures, one being a clean 360° break around the entire circumference.

Distance From SMH	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
to Defect			
0.3	4	Clean 360o break around the entire circumference	Point repair
14.2		Roots intruding into joint	None



15.5		Roots intruding into joint	None
23.8		Roots intruding into joint	None
47.0		Dip in line - 50% water level	Clean whole line
76.8	2	Longitudinal crack at 10 o'clock - 0.5m	None
		long	

Table C.20: Sewer Data Analysis – SMH 12 to SMH 5

C.21 SMH 3 to SMH 4

This is the worst line in the system and the entire line should be lined with a CIPP liner. There are 13 joints showing signs of infiltration staining and/or encrustation. There are six (6) taps in this line, four (4) are factory tees and two (2) break-ins. The greatest concern are the fifteen (15) locations with pipe breakage, cracks and fractures, many requiring repair.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.3	5(4)	Break in pipe from 12 to 12 o'clock. Pipe ready to collapse	Repair immediately
16.1		Tap break-in - fair condition	None
19.4	4	Multiple fractures	Point repair
25.4	3	Tap factory tee at 2 o'clock - 70% plugged	Clear
26.9	3	Longitudinal crack - 0.3m long - minor	None
31.3	2	Longitudinal crack at 3 o'clock at joint - minor	None
35.4	2	Longitudinal crack at 10 o'clock - minor	None
46.4	3	Multiple cracks - fair	Monitor
53.4	4	Multiple fractures near joint	Point repair
53.7	3	Longitudinal fracture in crown - 1m long	Monitor
54.3		Tap break in at 2 o'clock - okay	None
57.6	2	Circumferential fracture - minor	None
65.0		Tap factory tee at 2 o'clock - partial blockage	None
83.3	2	Small longitudinal crack at 3 o'clock - 0.15m long	None
84.0	3	Three longitudinal cracks - 0.6m long	Point repair
85.8	4	Two longitudinal fractures - 1m long	Point repair
88.8	2(3)	Two longitudinal cracks -minor	None
89.2		Tap factory tee at 10 o'clock - good	None
89.7		Tap factory tee at 2 o'clock - good	None
109.2	3	Multiple cracks - not too bad	None
116.6		Tap factory tee - 30% blockage	Clean
116.9	2	Two longitudinal cracks at springline - 0.15m long	None

Table C.21: Sewer Data Analysis – SMH 3 to SMH 4

C.22 SMH 4 to SMH 5

This line has six (6) joints with infiltration staining and/or encrustation. There are four (4) taps, all factory tees, with only one having some blockage. Six (6) locations have broken, fractured or cracked pipe with three (3) needing repair.



Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.4	4	Multiple fractures in the pipe - 0.5m to 0.6m long	Point repair
2.7	2	Minor cracks at 2 o'clock	None
10.2		Tap factory tee at 2 o'clock - good	None
28.8	4	Fitting has break through the crown	Point repair
28.8		Tap factory tee - 30% blockage	Clear
37.2	2	Crack at joint crown - small	None
38.6	2	Longitudinal crack at joint - ~0.3m long - minor	None
45.9		Tap factory tee at 3 o'clock - good	None
46.8	4	Break 360° around circumference	Point repair
64.3		Tap factory tee at 2 o'clock - good	None
75.0	3	Multiple cracks at joint - not too bad	None

Table C.22: Sewer Data Analysis – SMH 4 to SMH 5

C.23 SMH 12 to SMH 18

There are eight (8) joints in this line with infiltration staining and/or encrustation. There are six (6) taps with two (2) factory tees and four (4) break-in taps. One of the break-in taps is a 150mm lateral and protrudes into the sewer main. Another break-in tap is poorly constructed and is nearly 100% plugged with roots. One of the factory tees also has 25% blockage by roots. Ten (10) locations were found with breaks, fractures or cracks in the pipe. The pipe break near SMH 18 needs immediate repair as it could collapse.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation			
11.5	3	Spiral fracture at joint - 0.3m long	None			
12.5	3(4)	Multiple longitudinal fractures at joint - 0.5m long	Monitor			
15.0		Tap break-in at 2 o'clock - fair	None			
19.2		Tap (150mm) break-in at 10 o'clock - intrudes into the main sewer, poorly constructed				
26.5	3	Two longitudinal cracks at joint along springline - 0.3m long	None			
30.6	2	Spiral crack	None			
31.1	3	Tap break-in - 100% plugged with roots	Clear and treat roots			
33.4	2(3)	Multiple cracks at joint - minor	None			
34.8	3	Two longitudinal cracks at 11 and 3 o'clock, one spiral crack at joint	None			
55.6	3	Multiple cracks at joint, less than 0.3m long	None			
67.2		Tap factory tee at 2 o'clock - 20% plugged with roots	None			
69.4	3	Tap break-in with PVC - roots	None			
69.4	2	Spiral crack at tap - minor None				



72.0		Tap factory tee - okay	None
74.6	4	Circumferential break at joint, with	Point repair
		multiple fractures	immediately

Table C.23: Sewer Data Analysis – SMH 12 to SMH 18

C.24 SMH 18 to SMH

One joint with encrustation was found. There are six (6) taps in this line, with four (4) being factory tees and two (2) break-in taps. One of the taps has cracks surrounding it. Nine (9) locations were observed with breaks, fractures and cracks with two requiring a repair.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
0.0	4	Multiple breaks in first pipe joint	Point repair
11.7	2	Longitudinal crack - 0.3m long - minor	None
22.8		Tap break-in at 10 o'clock - fair	None
23.3		Tap break-in at 2 o'clock - fair	None
23.7	4	Multiple fractures near joint	Point repair
28.0	2	Longitudinal crack - minor	None
40.6	2	Spiral crack from 1 to 3 o'clock - minor	None
46.2	2	Longitudinal crack at 9 o'clock - 0.3m long	None
52.2	3	Tap factory tee at 9 o'clock - fracture inside tap	None
54.1	3	Tap factory tee at 2 o'clock - fracture inside tap	None
61.0	2	Spiral crack at joint - minor	None
62.5	3	Multiple cracks at joint	Monitor
72.4		Tap factory tee - okay	None
72.9	3	Tap factory tee - fracture around tap	None
72.9	2	Circumferential fracture in tee fitting	None

Table C.24: Sewer Data Analysis – SMH 18 to SMH

C.25 SMH 2 to SMH 1

There are seven (7) joints in this line with infiltration staining and/or encrustation. One break-in tap in this line with PVC lateral protruding into sewer main 25mm. The line has three (3) locations with cracks, and one short section of PVC.

Distance From SMH	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
50.1	2	Joint with large amount of encrustation	None
62.3	2	Tap break-in at 2 o'clock - PVC protrudes into main 25mm. Crack around the tap	Repair
62.3	2	Spiral crack at tap - minor	None
77.0	1	Short longitudinal crack at 9 o'clock - less than 0.15m	None
116.8	1	Circumferential crack at joint - from 9 to 10 o'clock - minor	None
119.5 to 124.5		PVC - previous repair by replacement	None



Table C.25: Sewer Data Analysis – SMH 2 to SMH 1

C.26 SMH 1 to SMH

This line is all PVC. The CCTV survey was stopped at 18.5m due to high water. No taps or structural defects in the portion of the line surveyed. There is debris and grease in the line probably due to dip. The line should be jet cleaned with a vacuum truck.

Distance From SMH to Defect	Defect Grade	Description of Defect(s)	Rehabilitation Recommendation
10.5		Dip in pipe. Water level at 50% of diameter	Clean
18.5		Siphon. Water level at 100% of diameter.	Clean

Table C.26: Sewer Data Analysis – SMH 1 to SMH



REPORT

To: Rural Budgets Administration Committee

From: Teri Vetter, Chief Financial Officer

Subject: November 2020 Financial Report

RECOMMENDATION:

That the Rural Budgets Administration Committee receive the report titled "November 2020 Financial Report – FN-RBAC-047", for discussion.

BACKGROUND/RATIONALE:

Not Applicable.

ALTERNATIVE OPTIONS:

Not Applicable.

STRATEGIC PLAN RELEVANCE:

Not Applicable to Strategic Plan.

FINANCIAL CONSIDERATION(S):

None.

COMMUNICATIONS CONSIDERATION(S):

None.

OTHER CONSIDERATION(S):

None.

Attachments:

- 1. Fair Share Commitments
- 2. Peace River Agreement Commitments
- 3. Community Works (Gas Tax) Commitments
- 4. BCR/PRA Commitments
- 5. Loans Fund Commitments
- 6. Reserve Balances
- 7. Grants in Aid Scholarship and Bursary Awards

Dept. Head: Teri Vetter

CAO: Shawn Dahlen

Report Number: FN-RBAC-047

Date: December 17, 2020

Fair Share Commitments November 2020				K. Goodings	B. Sperling	L. Hiebert	D. Rose	Total Fair Share
				Alea B	1 460 302 65	2 226 062 82	2 964 569 72	9 2/E 8E6 60
January 1, 2020 Opening balance				1,794,921.40	1,460,302.65	3,220,003.82	2,804,508.73	9,345,850.00
				19,551.27	13,202.03	30,012.38	32,040.17	-
	Date	Commitment	Previous Yrs.					Remaining
COMMITMENTS	Committed	Amount	Payments	F	air Share Payme	nts This Year		Commitment
Area B			-		-			
Clearview Arena; Service Operational Costs	Feb 20, 2019	5,985.00						5,985.00
Electrical Extension Grants	Ongoing	12,000.00		12,000.00				-
FSJ Minor Hockey; Fogger Applicator	Nov 19, 2020	1,200.00						1,200.00
FSJ Library (45,500 in 2018, 2019, 2020)	Nov 16, 2017	136,500.00	91,000.00	45,500.00				-
Goodlow Comm Club; Concession and Gazebo Improvements	Apr 16, 2020	9,500.00		9,500.00				-
Kings Valley Christian Camp; Facility Improvements	Apr 16, 2020	9,050.00		9,050.00				-
Montney Cemetery Cmte; Columbarium	Nov 19, 2020	30,000.00						30,000.00
NP Cultural Centre (30,000 in 2018, 2019, 2020)	Nov 16, 2017	90,000.00	60,000.00	30,000.00				-
NP Light Horse Assoc; Indoor Arena Improvements	Mar 15, 2018	15,000.00		12,332.33				2,667.67
Rock of Ages Bible Camp; Kitchen Range, Cooler, Siding	Apr 16, 2020	4,650.00		4,650.00				-
Rural Fire Protection Expansion Feasibility (CL)	Feb 16, 2017	10,000.00	8,794.54					1,205.46
Rural Gasification (Includes possible 5k for Blueberry Commune per Apr 16/15)	Oct 20, 2001; Apr 16, 2015	680,000.00	32,367.25					647,632.75
Upper Pine School PAC; Skating Rink Board Replacements	Apr 16, 2020	17,500.00		17,500.00				-
Waste Water Receiving Facility (Operating Deficit 75%)	Nov 27, 2014	-		20.000.00				-
Whiskey Jack Nordic Ski Club; Day Lodge & Ski Trails	Jan 16, 2020	20,000.00	102 101 70	20,000.00				-
Area C		1,041,385.00	192,161.79	160,532.33	-	-	-	688,690.88
Dave Mitchell & Assess Fire Protection Faas	Mar 15, 2019	28 250 00	28 200 00					E0.00
CLED: 2 Apparatus	Ividi 15, 2016	30,000,00	116 529 52		102 471 47			50.00
Electrical Extension Grants	Opgoing	300,000.00	110,528.55		165,471.47			
ESL Airport Sub Water Metering Initiative	Eeb 18, 2016	25 000 00	10 177 93					1/ 822 07
ESI Minor Hockey: Fogger Applicator	Nov 19, 2020	1 200 00	10,177.55					1 200 00
FSLLibrary (15 000 in 2018, 2019, 2020)	Nov 16, 2017	45 000 00	30 000 00		15 000 00			-
Natural Gas Extension Grants	Jan 16, 2020: Aug 20,2020	15.000.00			15.000.00			-
NPAS; Airport Swr Pumps & Maintenance	Dec 7, 2015	26,289.38	4,157.98		-,			22,131.40
NP Cultural Centre (14,062 in 2018,2019,2020)	Nov 16, 2017	42,186.00	28,124.00		14,062.00			-
Old Fort Slide Residents; Emergency Support	Oct 16, 2018	250,000.00	150,098.60					99,901.40
Rural Fire Protection Feasibility (CL)	Feb 16, 2017	10,000.00	8,750.00					1,250.00
Waste Water Truck Receiving Facility (Operating Deficit 75%)	Nov 27, 2014	-						-
Whiskey Jack Nordic Ski Club; Day Lodge & Ski Trails	Jan 16, 2020	20,000.00			20,000.00			-
		773,025.38	386,137.04	-	247,533.47	-	-	139,354.87
Area D								
Dave Mitchell & Assoc; Fire Protection Feas.	Mar 15, 2018	6,750.00	6,700.00					50.00
Dawson Creek Sportsman's Club; Indoor Range Expansion	Jun 18, 2015	80,000.00						80,000.00
Electrical Extension Grants	Ongoing	4,000.00				4,000.00		-
Kelly Lake Comm Cntr Rural Gasification	Sep 17, 2020	260,000.00						260,000.00
Rural Fire Protection Expansion Feasibility (DC)	Feb 16, 2017	35,000.00	25,000.00					10,000.00
Rural Gasification	Oct 20, 2011; Sep 17, 2020	740,000.00	67,390.26			5,000.00		667,609.74
Sunrise Valley Mtn Cemetery Assn; Shelter Belt, Fencing	Jun 18, 2020	8,000.00				8,000.00		-
Swan Lake Weir; PRRD Parks Budget Funding	Nov 19,2020	50,000.00	00.000.00			17.000.00		50,000.00
Aug. 5		1,183,750.00	99,090.26	-	-	17,000.00	-	1,067,659.74
Area E								
Camp Sagitawa: Phase 1 Climbing Wall	Fab 20, 2014	20,000,00	5 960 50					14 120 50
Camp Sagildwa, Flase I Clinibility Wall	rep 20, 2014	20,000.00	5,808.50					20,000,00
Electrical Extension Grants	Ongoing	20,000.00						20,000.00
Little Prairie Heritage Soc: Engineering/Capital Projects	May 16, 2013: Jul 20, 2017	4,000.00	10 132 50					4,000.00
Rural Gasification	Oct 20, 2013, Jul 20, 2017	700.000.00	5 1 87 15					694 817 85
Sunset Pr Rec Comm: Fair Kitchen	May 16, 2013	58 000 00	49 336 14					8 663 86
		827.000.00	70.525.29	-	-	-	-	756,474.71
Total Fair Share Bank Balance at Month End		,		1,653,720.34	1,227,971.87	3,245,076.80	2,896,608.90	9,023,377.91
Total Remaining Commitment				688,690.88	139,354.87	1,067,659.74	756,474.71	2,652,180.20
Balance After Remaining Commitments				965,029.46	1,088,617.00	2,177,417.06	2,140,134.19	6,371,197.71
				Area B	Area C	Area D	Area E	

1

Peace River Agreement Commitments	Nov	ember 2020			K. Goodings Area B	B. Sperling Area C	L. Hiebert Area D	D. Rose Area E	Total
January 1, 2020 Opening Balance					1,873,663.04	2,889,645.58	1,729,261.68	2,090,906.16	8,583,476.46
Total Interest Subscription PRA \$					24,067.77 765,000.00	37,518.29	23,206.53	28,210.71 765,000.00	113,003.30 3,060,000.00
	Date		Previous Yrs.	Category					Remaining
COMMITMENTS Area B	Committed	Commitment	Payments	Code	Peac	e Agreement Pay	ments This Year		Commitment
									-
Area B Potable Water Capital Project Loan	Oct 15, 2020	1,900,000.00	2 107 50	1	410 252 00				1,900,000.00
Cecil Lake Rec Comm: Hall Exterior Storage Construction	Oct 17, 2019; Jan 16, 2020 May 27, 2019	420,549.50	2,197.50	1 8	418,352.00				- 30.00
CDC; Fire Training Centre (4,375/year 2018-2022)	Apr 16, 2018	21,875.00	4,375.00	5	4,375.00				13,125.00
Clearview Arena Society; Upgrade Project	Apr 16, 2018	300,000.00	202,360.60	2	536.00				97,103.40
Clearview Rec Facility; Property Assessment FSI Seniors Assn Br#58: Seniors Hall Fire Alarm System Install	Jan 19, 2017 Apr 16, 2020	9.000.00	25,286.48	2	9.000.00				24,/13.52
Goodlow Comm Club; Concession & Gazebo Improvements	Apr 16, 2020	9,500.00		4	9,500.00				
Kings Valley Christian Camp; Facility Improvements	Apr 16, 2020	9,050.00		4	9,050.00				-
Osborn Comm Hall; Facility Assessment & Asset Mgmt Plan	Feb 21, 2019, Feb 20, 2020	11,171.56	11,171.56	8	2 224 00				-
PR Regional Cattleman's Assn; Livestock Protection Program	Jan 16, 2020	58,333.34		4	58,333.34				-
Rock of Ages Bible Camp; Kitchen Range, Cooler, Siding	Apr 16, 2020	4,650.00		4	4,650.00				-
Upper Pine School PAC; Skating Rink Board Replacements	Apr 16, 2020	17,500.00		4	17,500.00				-
	Dec 15, 2015	15,825.50		3	13,823.50				
		2,842,783.74			550,356.24	-	-	-	2,045,566.36
Area C									
CDC; Fire Training Centre (6,562.50/year 2018-2022)	Apr 16, 2018	32,812.50	6,562.50	5		6,562.50			- 19,687.50
CFSJ; Centennial Park Festival Plaza Construction Assistance	Sep 17, 2020	140,000.00		4					140,000.00
CLFD; New Brush Truck	Feb 20, 2020	60,000.00	40.200.00	6					60,000.00
CL waste H2O Tr Facility; BIO-SOlids Mgmt Feas Study CL Waste H2O Tr Facility; Reclaimed H2O/Purple Pipe Feas Study	Aug 17, 2017 Aug 17, 2017	50,000.00	49,300.00	9					26.900.00
CL Waste H20 Tr Facility; Reclaimed Water Project	Jul 19, 2018; Oct 15, 2020	1,000,000.00	2,230.00	9					1,000,000.00
NP Airport Sub Sewer; Upgrades	Jan 16, 2020	50,000.00		9		49,798.35			201.65
NP Airport Sub Water; Upgrades NP Airport Sub: Water Distribution Maintenance Initiative	Jan 16, 2020 Dec 1, 2016	50,000.00	12 000 00	1		44,511.60			5,488.40
PR Regional Cattleman's Assn; Livestock Protection Program	Jan 16, 2020	25,000.00	12,000.00	4		25,000.00			-
									-
Area D		1,497,812.50				125,872.45			1,255,977.55
									-
CDC; Kiskatinaw Watershed Stewardship (30K/yr 2016-2020)	Dec 17, 2015	150,000.00	120,000.00	4			30,000.00		-
CDC; New Fire Hall	Apr 16, 2018	600,000.00	15 212 50	6			15 212 50		600,000.00
Cbc, File Training Centre (15,512.50/year 2016-2022) Chilton Sewer: Upgrades	Apr 16, 2018 Jan 16, 2020	50.000.00	15,312.50	9			23.350.51		26.649.49
Cutbank Comm Club; Hall Improvements	Jan 16, 2020	11,358.35		3			11,358.35		-
DC Soc for Comm Living; Rural Seniors Initiatives	Apr 16, 2020; Oct 15, 2020	150,000.00		4			150,000.00		-
Harper/Imperial Sub Sewer; Upgrades KL Comm Centre: Facility Audit, Asset Mgmt & Design Feasibility	Jan 16, 2020 Feb 21, 2019	50,000.00	63,591,89	9			26,664.39		23,335.61
KL Comm Centre; Renovation Project	Sep 17, 2020	765,000.00		8					765,000.00
KL Sewer Lagoon; Upgrades and Repairs	Feb 21, 2019; Mar 14, 2019; Jan 6, 2	145,342.51	45,010.00	9			38,931.62		61,400.89
KL Sewer; Pump & Alarm System Install; Spare Pump MI22 Community Park Asso: Operating Assistance	Feb 18, 2016 May 21, 2020	22,000.00	12,601.51	9			2 000 00		9,398.49
N. Rolla Lutheran Church & Cemetery; Foundation Replacement	Aug 13, 2020 Reg Brd Mtg	24,780.00		4			24,780.00		-
PC/DC Fire; Pouce Coupe Fire New Tender	Feb 20, 2020	250,000.00		6					250,000.00
PR Regional Cattleman's Assn; Livestock Protection Program	Jan 16, 2020	58,333.33		4			58,333.33		-
Rolla Dike; Operations	Jan 16, 2020	11,960.00		1			11,960.00		- 15,924.57
Rolla Sewer; Upgrades	Jan 16, 2020	50,000.00		9			29,654.54		20,345.46
Rolla Sewer; Condition Assessment	Nov 19, 2020	50,000.00	4 200 45	9			6,000.00		44,000.00
SP Dist Crime Prevention Assn (1400/year 2018-2021 One Call Now)	Dec 17, 2015 Dec 20, 2018	4,375.00	2,800.00	4			1.400.00		1.400.00
Tate Creek Comm Centre; Facility Audit & Asset Mgmt Plan	Feb 21, 2019	25,000.00	11,171.55	8			,		13,828.45
Tomslake & Dist Rec Comm; Lawn Mower	Apr 16, 2020	6,800.00		4			6,800.00		-
Tomslake Cultural Comm Assn; Main H20 Cistern Repair/Replace	Jan 19, 2017 Feb 20, 2020	9,570.00		6					9,570,00
Tomslake FD; Enclosed Trailer Purchase	Apr 16, 2020	15,000.00		6			15,000.00		-
		2 652 604 60					107 000 07		-
Area E		2,053,681.69					487,620.87		1,891,264.22
									-
Boreal Centre for Sustainability; Rural Food Security Awareness	Jun 18, 2019	5,150.00		4				4,713.08	436.92
Chetwynd Fire; Operations	Feb 20, 2020	15,000.00 248.000.00	45 364 64	6					15,000.00
Chetwynd Public Library; New Library Construction	Jan 17, 2019; Jan 31, 2019	545,000.00	45,504.04	7					545,000.00
Chetwynd, Dist of; Wild-land Fire Protection Unit	Jun 18, 2020	25,000.00		4				25,000.00	-
CDC; Kiskatinaw Watershed Stewardship (10K/yr 2016-2020)	Dec 7, 2015	50,000.00	40,000.00	4 E				10,000.00	26 250 00
DC Soc for Comm Living; Rural Seniors Initiatives	Apr 16, 2018 Apr 16, 2020	50,000.00	8,750.00	4				50,000.00	- 20,230.00
Iver Johnson Park; Recreation Facility Upgrades	Feb 21, 2019	12,888.00		8					12,888.00
MLFD; Budget Requirements & Operations	Mar 5, 2019; Sp Board Mtg	8,700.00	1,848.10	6					6,851.90
IVILED; Operations/Needs Assessment PR Regional Cattleman's Assn: Livestock Protection Program	ост 17, 2019; Feb 20, 2020 Jan 16. 2020	75,502.00		6 4				58.333 33	75,502.00
Sunset Pr Rec Comm; Bleacher Project	Apr 16, 2020	5,500.00		4				5,500.00	-
		1 1 1 2 0 2 2 2						102 202 11	-
Total Peace River Agreement GL Balance at Month End		1,142,823.33			2,112,374,57	3,566,291,42	2.029.847.34	162,296.41 2.721.820.46	884,564.18
Total Remaining Commitment					2,045,566.36	1,255,977.55	1,891,264.22	884,564.18	6,077,372.31
Balance available after remaining commitments					66,808.21	2,310,313.87	138,583.12	1,837,256.28	4,352,961.48
					Area B	Area C	Area D	Area E	1
Spending Item Numbers:									-
1 Potable Water and Water Security/Studies 3 Halls, Trails and Wa 2 Arenas 4 Assistance to Other	Iking Paths 5 Dawson Cree Organizations 6 Fire Protection	k Fire Training Cent	re 7 8	Libraries, M Year-Round	luseums and Art Ga Recreation Facility	lleries Upgrades	9 PRRD Sew 10 Natural Gas 11 Connectivi	er Services Assistand 5 ty	^
				K. Goodings	B. Sperling	L. Hiebert	D. Rose	Total	
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Community Works (Gas Tax) Projects		November 2020		Area B	Area C	Area D	Area E		
October 1, 2020 opening balance				1,718,936.82	1,773,951.29	1,692,737.69	1,667,234.79	6,852,860.59	
Interest Earned From Sep 2020 to Oct 2020				2,432.94	2,526.27	2,410.61	2,374.30	9,744.12	
Total				1,721,369.76	1,776,477.56	1,695,148.30	1,669,609.09	6,862,604.71	
	Date	Commitment	Prev					Remaining	
<u>COMMITMENTS</u>	Committed	Amount	Payments	Pa	yments made fro	m October 1, 202	20	Commitment	
Area B									
Area B Potable Water Construction Loan Payment	Oct 15, 2020	1,000,000.00						1,000,000.00	
Buick Creek Community Club; Hall Furnace	Jun 18, 2019	7,832.00						7,832.00	
Clearview Arena Society; Arena Dehumidification System	Feb 20/Apr 16, 2020	160,000.00						160,000.00	
Cecil Lake Rec; Fencing, Ball Diamonds, Dugout, Bleachers	Apr 16, 2020	86,000.00		51,726.51				34,273.49	
Rose Prairie Water Station Pilot Project	May 21, 2020	100,000.00	24,855.97	30,676.73				44,467.30	
Clearview Arena Society; Arena Ventilation System	Jun 18, 2020	160,000.00						160,000.00	
	-	1,513,832.00	24,855.97	82,403.24				1,406,572.79	
Area C									
Charlie Lake Waste Water Truck Facility	Nov 27, 2014	63,987.66						63,987.66	
								-	
		63,987.66	-		-			63,987.66	
Area D									
Cutbank Comm Club; Exterior Façade Improvement	Oct 15, 2020	40,806.87						40,806.87	
Peace Region Internet Soc; Rolla Fiber Project	Jul 25, 2019	15,000.00						15,000.00	
Kelly Lake Community Centre; Hazardous Materials Study	Feb 20, 2020	15,000.00						15,000.00	
Kelly Lake Sewer System Assessment & Upgrades	Nov 19, 2020	100,000.00						100,000.00	
Rolla Sewer System Upgrades	Nov 19, 2020	587,200.00						587,200.00	
								-	
		758,006.87	-			-		758,006.87	
Area E									
Pine Valley Exhibition Park; Washroom Renovations	Mar 21, 2019	55,000.00	50,647.81					4,352.19	
Chetwynd & Dist. Rod and Gun Club; Interior Lighting	Apr 16, 2020	10,445.41						10,445.41	
								-	
		65,445.41	50,647.81				-	14,797.60	
Total Community Works (Gas Tax) Balance at month end				1,638,966.52	1,776,477.56	1,695,148.30	1,669,609.09	6,780,201.47	
Total Remaining Commitment				1,406,572.79	63,987.66	758,006.87	14,797.60	2,243,364.92	
Balance After Remaining Commitments				232,393.73	1,712,489.90	937,141.43	1,654,811.49	4,536,836.55	
				Area B	Area C	Area D	Area E		

BCR/PRA Commitments	November 2020	Area B	Area C	Area D	Area E	Total BCR/PRA
	2020 Opening Balance	49,688.07	41,512.06	19,204.45	42,921.11	153,325.69
	Interest	553.38	460.74	212.43	445.35	1,671.90
Commitments Remaining						
Arras Fire Brigade; Prespatou Mtg Ag CLFD; Hose Lay Competition Banquet	ppreciation	500.00	65.87			
Hasler Flats Comm Group; Society So Wonowon Horse Club; Legal Opinior	atus Consulting 1 - Hall Ownership	2,500.00			1,000.00	
Total Commitments		3,000.00	65.87	-	1,000.00	4,065.87
TLC Thrift Shop; Storage Shed Const Bateman Contracting; Jackfish Lake I Husky Tank Rentals; CL Conserv Soc Peace Region Forage Seed Assn; Pe	ruction Assistance Hall Furnace Repair RS Cleanup; LF Fees st Monitoring Project	1,667.00	402.21 1,666.00	1,667.00	3,000.00 1,904.70	
Total Expenditures		1,667.00	2,068.21	1,667.00	4,904.70	10,306.91
Month End GL Balance		48,574.45	39,904.59	17,749.88	38,461.76	144,690.68
Balance available		45,574.45 Area B	39,838.72 Area C	17,749.88 Area D	37,461.76 Area E	140,624.81

Rural Loan Fund Reserve October 31, 2020	n Fund ReserveUncommitted Rural Loan Funds Available:1, 2020Unissued Loans Approved:			3,274,000.00 181,000.00
Loans in Rural Loan Fund	Date Committed	Loans Approved	Loans Issued	Outstanding Balance
NP Farmers Institute; Grain Elevator Upgrades (2021)	21-Jul-16	300,000.00	300,000.00	45,000.00
Whiskey Jack Nordic Ski Club; Beatton Park Day Lodge	17-Jan-19	181,000.00		
Total		481,000.00	300,000.00	45,000.00

	Date			
"Grants" from Loan Fund Interest	Committed	Approved	Issued	Outstanding
Total		-	-	-
Grants Available From RLF Interest:				

Rural Loan Fund Reserve Balance: 4,152,443.04

All Regional District Reserve Ba	alances as of Novembe	r 30, 2020
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			_	
911 Emergency Capital Reserve	\$ 328,157.40	Human Resources Operating Reserve	\$	306,985.22
*BCR/PRA	\$ 144,690.68	Information System Plan Reserve	\$	288,040.16
Buick Creek Arena Capital Reserve	\$ 224,132.33	Information Technology Operating Res	\$	66,850.52
Buick Creek Arena Operating Res	\$ 89,829.48	Insurance Reserve	\$	500,325.69
Building Reserve	\$ 1,267,142.65	Kelly Lake Comm Ctr. Operating Reserve	\$	27,471.89
Charlie Lake Fire Capital Reserve	\$ 662,966.95	Kelly Lake Comm Ctr. Capital Reserve	\$	47,859.93
Charlie Lake Sewer Capital Reserve	\$ 517,208.82	Kelly Lake Sewer Capital Reserve	\$	12,069.78
Charlie Lake Sewer Operating Reserve	\$ 103,499.12	Kelly Lake Sewer Operating Reserve	\$	21,723.35
Charlie Lake Sewer Treatment/Disposal	\$ 366,403.12	Landfill Closure Reserve	\$	1,448,813.81
Charlie Lk Waste Water Truck Facility Res	\$ 593,733.81	Medical Health Care Scholarship Reserve	\$	105,756.01
Chetwynd Arena Capital Reserve	\$ 2,069,719.11	Moberly Lake Fire Capital Reserve	\$	23,931.93
Chetwynd Leis Ctr Capital Reserve	\$ 2,482,588.51	North Pine TV Reserve	\$	32,828.31
Chilton Sewer Capital Reserve	\$ 34,785.05	NP Economic Development Commission	\$	-
Chilton Sewer Operating Reserve	\$ 30,155.41	NP Leisure Pool Building Repl Res	\$	3,722,560.10
Clearview Arena Operating Reserve	\$ 91,517.26	NP Leisure Pool Capital Reserve	\$	2,281,410.95
CL DCC Reserve	\$ 280,265.17	*Peace River Agreement	\$	10,430,333.79
CLFD Operating Reserve	\$ 78,242.40	Peace River Agreement Committee Reserve	\$	1,064,846.09
*Community Works (Gas Tax)	\$ 6,780,201.47	Regional Parks Capital Reserve	\$	126,084.62
DC/PC Fire Capital Reserve	\$ 235,138.30	Regional Parks Operating Reserve	\$	48,630.98
Election Reserve	\$ 98,922.44	Rolla Creek Dike Operating Reserve	\$	162.19
Emergency Plan Operating Reserve	\$ 298,537.57	Rolla Sewer Capital Reserve	\$	10,534.22
*Fair Share	\$ 9,023,377.91	Rolla Sewer Operating Reserve	\$	7,611.79
Feasibility Reserve	\$ 275,348.84	*Rural (Loan Fund)	\$	4,152,443.04
Financial Services Operating Reserve	\$ 115,108.24	Rural Fringe	\$	1,197,137.66
Friesen Sewer Capital Reserve	\$ 13,852.62	Solid Waste Capital Reserve	\$	5,671,854.56
Friesen Sewer Operating Reserve	\$ 21,085.31	Solid Waste Operating Reserve	\$	1,099,566.79
FSJ Airport Sewer Capital Reserve	\$ 73,137.45	Sub-Reg Recreation Insurance Reserve	\$	145,327.29
FSJ Airport Sewer Operating Reserve	\$ 52,120.69	Tomslake Fire Reserve	\$	38,985.72
FSJ Airport Water Capital Reserve	\$ 39,458.65	Vehicle (Fleet) Reserve	\$	122,454.68
FSJ Airport Water Operating Reserve	\$ 30,193.93	Vehicle (BI) Reserve	\$	28,324.88
Green "Carbon" Project Reserve	\$ 108,399.26			
Harp/Imp Sewer Capital Reserve	\$ 26,952.76	TOTAL	\$	59,612,257.25
Harp/Imp Sewer Operating Reserve	\$ 24,458.59			

*Colour highlighted items are RBAC delegated and have corresponding worksheets attached.

Rural Bursary_Scholarship Recipient

Area B Bursary

			Amount	
Year	Name	Amount	Remaining	Date Claimed
2020	Amanda Willms	2,000	0	17-Aug-20
2019	Iris Wenger	1,000	0	13-Sep-19
2018	Grace Giesbrecht	1,000	0	31-Dec-18
2017	Brittney Hein	1,000	0	14-Aug-17
		TOTAL 5,000	0	

Area C Scholarship

				Amount	Data Claimad
Year	Name		Amount	Remaining	Date Claimed
2020	Austin Lewis		1,000	0	18-Oct-20
2020	Adam Rogers		1,000	0	10-Jul-20
2020	Emily Ruehl		1,000	0	21-Aug-20
2020	Nicolas Guliov		1,000	1000	
2020	Shane Bontron		1,000	0	13-Oct-20
2019	Celine Quigley		1,000	0	27-Sep-19
2018	Allison Ostle		1,000	0	21-Sep-18
2017	Justin Fehr		1,000	0	27-Jul-18
		TOTAL	5,000	1,000	

Alea E Du	isaiy				
				Amount	Date Claimed
Year	Name		Amount	Remaining	Date Claimeu
2020	Tristan Gerry		500	500	
2020	Nicole Eddy		500	0	6-Nov-20
2019	Ethan Cameron		500	0	20-Jan-20
2019	Blaine Dixie		500	0	21-Nov-19
2018	Sierra Neuls		500	0	5-Dec-18
2018	Treydon Nichols		500	0	2-Jan-19
2017	Kaitlyn Dufresne		500	0	Nov-17
2017	Trevor Andres		500	0	22-Feb-19
		TOTAL	1,500	500	

Sub-Regional Bursary & Scholarship

				Amount	Date Claimed
Year	Name	Amount	Remaining	Date Claimeu	
2020	Austin Riley - Trades		1,500	0	24-Jul-20
2020	Sydnee Stewart - Scholarship		1,500	0	28-Aug-20
2019	Ashton Jobson		1,500	0	30-Nov-20
2019	Rory Todd		1,500	0	28-May-20
2018	Prestin Sorken		1,500	0	28-Sep-18
2018	Connor Riley		1,500	0	5-Dec-18
2017	Taylor Schweitzer		1,500	0	13-Jul-18
2017	Nadia Richer		1,500	0	16-Aug-18
		TOTAL	16,500	0	



PEACE RIVER REGIONAL DISTRICT

Rural Budgets Administration Committee

Diary Items

Item		Status	Notes	Diarized
1.	Potable Water	On- going	Area C potable water service	March 21, 2019
2.	Potable Water	On- going	Area D potable water	December 19, 2019
3.	Clean Farms	On- going	The Committee had a presentation at the May 21, 2020 EADC meeting.	May 25, 2020
4.	Bulterys Community House	On- going		September 17, 2020
5.	Creating a BC Hydro Legacy Fund	On- going		September 17, 2020

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PEACE RIVER REGIONAL DISTRICT

Rural Budgets Administration Bylaw No. 1166, 1998

Effective Date – November 26, 1998

CONSOLIDATED FOR CONVENIENCE ONLY

This is a consolidation of the bylaws listed below. The amending bylaws have been combined with the original bylaw for convenience only. This consolidation is not a legal document. Certified copies of the original bylaws should be consulted for all interpretations and applications of the bylaw on this subject.

> **Original Bylaw** Bylaw No. 1166, 1998

Amending Bylaw

Bylaw No. 1617 Bylaw No. 1853 Bylaw No. 2299 Date of Adoption November 26, 1998

January 26, 2006 May 14, 2009 (repealed) August 19, 2017

PEACE RIVER REGIONAL DISTRICT

BY-LAW No. 1166, 1998

A bylaw to establish a Standing Committee of the Board and delegate administrative powers to the committee

WHEREAS the Regional District has signed a Memorandum of Understanding with the Province of British Columbia which contributes a share of oil and gas revenue to the Electoral Areas of the Regional District;

AND WHEREAS there are certain services which are provided in two or more Electoral Areas, and in no member municipalities;

AND WHEREAS pursuant to Section 795(1) of the <u>Municipal Act</u> the Chair of a regional district may appoint a standing committee;

AND WHEREAS pursuant to Section 176(1)(e) and Section 192(1) of the Municipal Act a Regional Board may, by by-law adopted by at least 2/3 of the votes cast, delegate its powers duties and functions not limited by Section 191(1) of the <u>Municipal Act</u> to, inter alia, its committees;

AND WHEREAS the Chair has appointed the electoral area directors to a standing committee;

NOW THEREFORE the Board of the Peace River Regional District, in open meeting assembled, enacts as follows:

Citation

1. This Bylaw may be cited for all purposes as "Rural Budgets Administration Bylaw No. 1166, 1998".

Committee

2. The name of the committee appointed by the Chair is "Rural Budgets Administration Committee".

Membership

3. Membership in the committee is limited to the Electoral Director from each Electoral Area in the Peace River Regional District.

Duties

- Schedule "A" is attached hereto and forms part of this by-law. 4.
- The committee is delegated the authority of the Peace River Regional District Board to 5. administer the rural budgets identified in Schedule "A" in accordance with budgets, programs, plans, policies and guidelines adopted from time to time by the Regional Board.
- The committee will rotate chairperson from meeting to meeting, starting with Electoral 6. Area "B" and working in alphabetic order.
- The committee must keep minutes of its activities which will be provided to the Board 7. for information.

Dispute Resolution

- Should the committee be deadlocked on an issue it must refer that matter to the 8. Regional Board for resolution.
- 9. A person may appeal a decision of the committee in writing to the Regional Baord.

The decision of the Regional Board under section 8. and 9. is binding. 10.

READ A FIRST TIME THIS	:26 th	day of	Noven	nber	, 1998.
READ A SECOND TIME THIS	26+1	day of	Nove	mber	, 1998.
READ A THIRD TIME THIS	26th	day of .	Nov	ember	, 1998.
ADOPTED BY A 2/3 VOTE THIS	26+1		_ day of	November	, 1998.

CERTIFIED A TRUE AND CORRECT COPY of "Rural Budget Administration Bylaw No. 1166, 1998".

presence of:

Moray Stewart, Administrator

THE CORPORATE SEAL of the Peace River Regional District was hereto affixed in the

Karen Goodings, Chair

A

Moray Stewart, Administrator

Schedule 'A'

Fair Share Memorandum of Understanding – Rural Allocation

Peace River Agreement – Rural Allocation

BC Rail Grants-in-Lieu – Rural Allocation

Electoral Areas - Legislative (Elections, Conventions, Membership and information)

Grants to Community Organizations - Electoral Area Grants - Custodians of the Peace Country Society

Recreation and Cultural Services – Grants-in-Aid

Sub-Regional Recreation and Cultural Services – Rural Allocations

Community Parks

Cemeteries

North Pine Television Rebroadcasting

"New Deal" Funding Agreement (Gas Tax) – Rural Allocation

Other funding opportunities specific to Electoral Areas