

THE CITY OF PRINCE ALBERT



SANITATION FUND BUDGET FOR YEAR ENDING DECEMBER 31, 2020

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December 31, 2020 Consolidated Budget Document

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Budget Overview



The Sanitation Utility Fund was created in 2003 and was intended to be self-sustaining providing waste collection and recycling services, as well as operate a Landfill without being dependent on the City's tax base. In order to continue to ensure the ability to be self-sufficient and to meet future capital requirements, City Council passed Waste Collection and Disposal Bylaw #40 of 2015, setting the rates and fees for a period of five years (2016 to 2020).

As part of the 2020 budgeting process, Administration is recommending an increase to the Residential Utility Surcharge of \$0.50 per month, approximately 2.7%, from \$18.25 in 2019 to \$18.75 in 2020.

For 2020 there are budgetary adjustments to the revenues and expenditures of this fund which are highlighted below.

Budgeted Revenue – Increase of \$263,530

There are two primary sources of revenue for the Sanitation Fund:

1. Landfill Fees – These are the rates charged to customers using the Landfill. In 2020, the entry fees and per tonne charges at the Landfill will be increasing as set forth in Waste Collection and Disposal Bylaw #8 of 2018. The minimum per load entry fee for residual waste below 150 kilograms is increasing from \$11.50 in 2019 to \$12.00 in 2020 and the per tonne rate for residual waste more than 150 kilograms will increase from \$71.00 per tonne in 2019 to \$73.00 per tonne in 2020. In 2020, revenues are projected to increase by \$67,000 based on expanded utilization of Landfill services and the annual increase in the entrance fee and per tonnage rates set forth in the Waste Collection and Disposal Bylaw.
2. Sanitation Surcharge – This represents the monthly Residential Utility Surcharge located on the utility bills of property owners of the City. Administration is recommending a \$0.50 increase from \$18.25 per month to \$18.75 per month for 2020 which represents a 2.7% increase over the prior year. The rate increase is required to ensure sufficient funds are available to cover the operating costs for waste collection, the residential recycling program, the portion of Landfill costs related to garbage processing, future capital projects and future cell expansions and cell closures. The additional revenue generated from the increase in the Residential Utility Surcharge is offset by an adjustment of approximately \$80,000 related to correcting the budgeted number of residences that the surcharge is applicable to. Overall, budgeted revenue is decreasing by \$14,280 from \$2,479,280 in 2019 to \$2,465,000 in 2020.

In addition, budgeted revenues for 2020 include funding received from the North Central Saskatchewan Waste Management Corporation (NCSWMC) as part of the Multi Material Stewardship Initiative which was announced in 2016. The NCSWMC has long been an advocate of having the producers of the recycling packaging be responsible for its ultimate disposal. To that end, based on the 2019-2020 agreement with the City, the Sanitation Fund will receive quarterly payments in 2020 of just over \$95,510 per quarter or \$382,040 for the year. This is an increase of \$210,670 over the amount budgeted for 2019 and offsets the City's annual member contribution of \$142,100.

Budgeted Expenses – Increase of \$72,280

Significant 2020 budgetary adjustments to expenses are noted below:

- An increase of \$65,910 in fleet expenses related to the 6% increase in fleet charge out rates proposed by Administration for the 2020 Budget along with adjustments to reflect the actual equipment hours and associated fleet expenses charged to the Sanitation Fund.
- A decrease of \$40,000 related to the 2020 tender results for the collection of recyclable cardboard from community drop off centers throughout the City.
- An increase of \$19,360 in salaries, wages, and benefits primarily related to the provision for CUPE 160 and out-of-scope staff as the current collective bargaining agreements expire at the end of 2019. A 2% increase has been budgeted for 2020.
- An increase of \$19,320 in maintenance, materials, and supplies primarily related to the following:
 - \$50,000 increase in the budget for landfill decommission costs. Environmental law requires closure and post-closure care of solid waste landfill sites. Administration is required to adjust the liability that reflects this future cost on its financial statements and record the associated expense on an annual basis.
 - (\$20,000) decrease in the budget for equipment rentals based on a review of historical costs and expectations for 2020.
 - (\$15,000) decrease related to the removal of one-time items budgeted in the prior year.

Capital and Interfund Transactions – Increase of \$816,440

Significant 2020 budgetary adjustments to expenses are noted below:

- An increase of \$800,000 related to amortization. Amortization, or depreciation, is an accounting method of allocating the cost of a tangible or physical asset over its useful life or life expectancy. Depreciation represents how much of an asset's value has been used up. Prior to 2020 the City did not budget for amortization as it is a non-cash item (i.e. it does not represent a cash outlay in the current year but rather the annual cost of the fund's assets spread over their useful lives). The City's auditors have requested that the City budget for amortization.
- An increase of \$16,500 in the transfer to the General Fund related to the Franchise Fee paid to the General Fund as a result of increasing revenues. The 2020 budgeted transfer is based on 5% of 2019's budgeted revenue less revenue from City Facilities.

2020 Capital Budget

For 2020, Administration is requesting \$720,000 in capital spending for the following items:

- \$380,000 for the replacement of Automated Waste Collection Truck Unit #62 to be funded from the Equipment and Fleet Reserve.
- \$340,000 for design and engineering services for the construction of Cell 2B at the Landfill to be funded from the Sanitation Improvement Fund Balance. It is estimated that the City will require another cell within the next four years.

Sanitation Improvement Fund Balance

In conclusion, the lifespan of any Landfill is dependent on the amount of refuse that enters the Landfill and how much can be re-used or re-cycled in other capacities. Most landfill cells have a lifespan of about 13 - 15 years and each cell, if they are to meet environmental regulatory requirements, can cost several millions of dollars to construct. In order to have financial resources available for future capital needs, any remaining unspent surpluses are set aside in anticipation of these necessities.

A summary of the 2020 Budget's impact on the Sanitation Improvement Fund Balance is as follows:

- The budgeted surplus from operations to be transferred to the Sanitation Improvement Fund Balance in 2020 is \$1,145,300, after adjusting for non-cash amortization.
- A transfer of \$340,000 to the Capital Committed Reserve is required for 2020 capital expenditures.
- This results in an estimated net increase to the Sanitation Improvement Fund Balance in 2020 of \$805,300 and an estimated closing surplus of \$978,191.

SANITATION FUND
OPERATING BUDGET

For the Year Ending December 31, 2020

	2020 Budget	2019 Budget	(Favourable) Unfavourable Change
REVENUES			
Landfill Operations Fees	(\$2,280,000)	(\$2,213,000)	\$ (67,000)
Sanitation Surcharge	(2,465,000)	(2,479,280)	14,280
Sanitation Surcharge - City Facilities	(42,720)	(42,580)	(140)
Bioreactor Building Rental Revenue	(16,990)	(16,990)	-
Operating Grants and Donations	(382,040)	(171,370)	(210,670)
Sundry	(1,000)	(1,000)	-
Total Revenues	(5,187,750)	(4,924,220)	(263,530)
EXPENSES			
Salaries Wages and Benefits	1,245,090	1,225,730	19,360
Contracted and General Services	187,000	233,000	(46,000)
Financial Charges	5,750	5,750	-
Grants and Donations	142,100	142,100	-
Utilities	33,400	30,100	3,300
Fleet Expenses	1,660,000	1,594,090	65,910
Maintenance Materials and Supplies	467,540	448,220	19,320
Insurance	10,470	5,080	5,390
Bad Debt Expense	7,000	2,000	5,000
Total Expenses	3,758,350	3,686,070	72,280
Operating (Surplus) Deficit	(1,429,400)	(1,238,150)	(191,250)
CAPITAL AND INTERFUND TRANSACTIONS			
Amortization	800,000	-	800,000
Transfer to General Fund - Franchise Fee	244,080	227,580	16,500
Transfer to General Fund - Sanitation Fees	39,020	39,020	-
Transfer to Utility Fund - Sanitation Fees	3,700	3,560	140
Transfer from Utility Fund - Utility Fees	(2,700)	(2,500)	(200)
Capital and Interfund Transactions	1,084,100	267,660	816,440
TOTAL (SURPLUS) DEFICIT	(345,300)	(970,490)	625,190
Allocated as Follows:			
Total (Surplus) Deficit	(345,300)	(970,490)	625,190
Non-Cash Adjustment - Amortization	(800,000)	-	(800,000)
Total (Surplus) Deficit - Adjusted for Amortization	(1,145,300)	(970,490)	(174,810)
Transfer to Sanitation Improvement Fund	1,145,300	970,490	174,810
	-	-	-

SANITATION FUND
OPERATING BUDGET SEGMENTED BY DIVISION
For the Year Ending December 31, 2020

ADMINISTRATION & BILLING

	2020 Budget	2019 Budget	(Favourable) Unfavourable Change
REVENUES			
Landfill Operations Fees	(\$2,280,000)	(\$2,213,000)	\$ (67,000)
Sanitation Surcharge	(2,465,000)	(2,479,280)	14,280
Sanitation Surcharge - City Facilities	(42,720)	(42,580)	(140)
Bioreactor Building Rental Revenue	(16,990)	(16,990)	-
Operating Grants and Donations	(382,040)	(171,370)	(210,670)
Sundry	(1,000)	(1,000)	-
Total Revenues	(5,187,750)	(4,924,220)	(263,530)
EXPENSES			
Salaries Wages and Benefits	20,000	-	20,000
Fleet Expenses	-	-	-
Bad Debt Expense	7,000	2,000	5,000
Total Expenses	27,000	2,000	25,000
Operating (Surplus) Deficit	(5,160,750)	(4,922,220)	(238,530)
CAPITAL AND INTERFUND TRANSACTIONS			
Amortization	800,000	-	800,000
Transfer to General Fund - Franchise Fee	244,080	227,580	16,500
Transfer to General Fund - Sanitation Fees	39,020	39,020	-
Transfer to Utility Fund - Sanitation Fees	3,700	3,560	140
Transfer from Utility Fund - Utility Fees	(2,700)	(2,500)	(200)
Capital and Interfund Transactions	1,084,100	267,660	816,440
TOTAL (SURPLUS) DEFICIT	(4,076,650)	(4,654,560)	577,910

(\$263,530) Increase in Revenues

- **(\$67,000)** increase in Landfill operation fee revenue. These are the revenues from the rates charged to customers using the Landfill. In 2020, revenues are projected to increase by \$67,000 based on expanded utilization of the Landfill services and the annual increase in the entrance fee and per tonnage rates set forth in the Waste Collection and Disposal Bylaw.
- **\$14,280** decrease in Sanitation Surcharge fee revenue. This represents the monthly Residential Utility Surcharge located on the utility bills of property owners in the City. Administration is recommending a \$0.50 increase from \$18.25 per month to \$18.75 per month for 2020 which represents a 2.7% increase over the prior year. The rate increase is required to ensure sufficient funds are available to cover the operating costs for waste collection, the residential recycling program, the portion of Landfill costs related to garbage processing, future capital projects and future cell expansions and cell closures.

SANITATION FUND
OPERATING BUDGET SEGMENTED BY DIVISION

For the Year Ending December 31, 2020

The additional revenue generated from the increase in the Residential Utility Surcharge is offset by an adjustment of approximately \$80,000 related to correcting the budgeted number of residences that the surcharge is applicable to.

- **(\$210,670)** increase in operating grants and donations related to funding received from the North Central Saskatchewan Waste Management Corporation (NCSWMC) as part of the Multi Material Stewardship Initiative which was announced in 2016. The NCSWMC has long been an advocate of having the producers of the recycling packaging be responsible for its ultimate disposal. Based on the 2019-2020 agreement with the City, the Sanitation Fund will receive quarterly payments in 2020 of just over \$95,510 per quarter or \$382,040 for the year. This is an increase of \$210,670 over the amount budgeted for 2019.
- **(\$140)** decrease in the Sanitation Surcharge fee charged to City facilities based on expectations for 2020.

\$25,000 Increase in Expenses

- **\$20,000** increase in salaries, wages, and benefits related to the provision for CUPE 160 and out-of-scope staff as the current collective bargaining agreements expire at the end of 2019. A two percent increase has been budgeted for 2020.
- **\$5,000** increase in bad debt expense based on a review of bad debt expenses incurred in prior years.

\$816,440 Increase in Capital and Interfund Transactions

- **\$800,000** increase related to amortization. Amortization, or depreciation, is an accounting method of allocating the cost of a tangible or physical asset over its useful life or life expectancy. Depreciation represents how much of an asset's value has been used up. Prior to 2020 the City did not budget for amortization as it is a non-cash item (i.e. it does not represent a cash outlay in the current year but rather the annual cost of the fund's assets spread over their useful lives). The City's auditors have requested that the City budget for amortization.
- **\$16,500** increase in the transfer to the General Fund related to the Franchise Fee paid to the General Fund as a result of increasing revenues. The 2020 budgeted transfer is based on five percent of 2019's budgeted revenue less revenue from City Facilities.
- **(\$60)** net decrease in adjustments to the other interfund transfers related to City facilities.

SANITATION FUND
OPERATING BUDGET SEGMENTED BY DIVISION
For the Year Ending December 31, 2020

LANDFILL OPERATIONS

	2020 Budget	2019 Budget	(Favourable) Unfavourable Change
REVENUES			
EXPENSES			
Salaries Wages and Benefits	\$564,350	\$557,490	\$6,860
Contracted and General Services	122,500	128,500	(6,000)
Financial Charges	5,750	5,750	-
Utilities	33,400	30,100	3,300
Fleet Expenses	650,000	630,000	20,000
Maintenance Materials and Supplies	347,370	313,380	33,990
Insurance	10,240	4,840	5,400
Total Expenses	1,733,610	1,670,060	63,550
Operating (Surplus) Deficit	1,733,610	1,670,060	63,550
CAPITAL AND INTERFUND TRANSACTIONS			
TOTAL (SURPLUS) DEFICIT	1,733,610	1,670,060	63,550

\$6,860 increase in salaries, wages, and benefits related to base adjustments and a review of actual costs charged.

(\$6,000) decrease in contracted and general services related to the budget required for environmental monitoring at the Bioreactor based on expectations for 2020. The City constructed an encapsulation cell in order to dispose of soil contaminated from previous wood treatment facilities. The permit to operate the disposal cell requires that the City perform annual monitoring of groundwater wells around the cell as well as annual reporting to the Ministry of Environment. This work must be completed by a qualified professional.

\$3,300 increase to utilities due to updated forecasts and utility rate increases. The increase incorporates the impact of the carbon tax on electricity and natural gas.

\$20,000 increase in fleet expenses related to the 6% increase in fleet charge out rates proposed by Administration for the 2020 Budget along with adjustments to reflect the actual equipment hours and associated fleet expenses charged to the Sanitation Fund.

SANITATION FUND
OPERATING BUDGET SEGMENTED BY DIVISION

For the Year Ending December 31, 2020

\$33,990 increase to maintenance, materials, and supplies:

- **\$50,000** increase in the budget for landfill decommission costs. Environmental law requires closure and post-closure care of solid waste landfill sites. Administration is required to adjust the liability that reflects this future cost on its financial statements and record the associated expense on an annual basis.
- **\$9,230** increase in the allocation from General Fund as a result of the increase in budget for the Functional Areas whose costs are partially allocated to the Sanitation Fund.
- **(\$20,000)** decrease related to equipment rentals. Equipment rentals are required when City equipment is not available due to regular maintenance, breakdowns, or when other City roadways equipment is not available due to competing demands. A review of historical costs the last few years indicates that this budget can be reduced.
- **(\$5,000)** decrease in the cost for granular materials required to maintain the four kilometer roadway from the highway to the Landfill based on a review of historical costs and expectations for 2020.
- **(\$1,480)** decrease in telephone costs based on a reallocation of telephone costs throughout City departments.
- **\$1,240** increase as a result of overall increased fiscal need for 2020 related to other smaller changes.

\$5,400 increase in insurance based on 2020 estimates as well as increased insurance coverage required for the new Landfill Kiosk and scales.

SANITATION FUND
OPERATING BUDGET SEGMENTED BY DIVISION
For the Year Ending December 31, 2020

RESIDENTIAL WASTE COLLECTION

	2020	2019	(Favourable) Unfavourable Change
	Budget	Budget	
REVENUES			
EXPENSES			
Salaries Wages and Benefits	\$486,200	\$486,200	\$0
Fleet Expenses	750,000	730,000	20,000
Maintenance Materials and Supplies	102,170	102,840	(670)
Insurance	230	240	(10)
Total Expenses	1,338,600	1,319,280	19,320
Operating (Surplus) Deficit	1,338,600	1,319,280	19,320
CAPITAL AND INTERFUND TRANSACTIONS			
TOTAL (SURPLUS) DEFICIT	1,338,600	1,319,280	19,320

\$20,000 increase in fleet expenses related to the 6% increase in fleet charge out rates proposed by Administration for the 2020 Budget along with adjustments to reflect the actual equipment hours and associated fleet expenses charged to the Sanitation Fund.

SANITATION FUND
OPERATING BUDGET SEGMENTED BY DIVISION
For the Year Ending December 31, 2020

RESIDENTIAL RECYCLING

	2020 Budget	2019 Budget	(Favourable) Unfavourable Change
REVENUES			
EXPENSES			
Salaries Wages and Benefits	\$174,540	\$182,040	(\$7,500)
Contracted and General Services	64,500	104,500	(40,000)
Grants and Donations	142,100	142,100	-
Fleet Expenses	260,000	234,090	25,910
Maintenance Materials and Supplies	18,000	32,000	(14,000)
Total Expenses	659,140	694,730	(35,590)
Operating (Surplus) Deficit	659,140	694,730	(35,590)
CAPITAL AND INTERFUND TRANSACTIONS			
TOTAL (SURPLUS) DEFICIT	659,140	694,730	(35,590)

(\$7,500) decrease in salaries, wages, and benefits related to base adjustments and a review of actual costs charged.

(\$40,000) decrease in contracted and general services related to the 2020 tender results for the collection of recyclable cardboard from community drop off centers throughout the City.

\$25,910 increase in fleet expenses related to the 6% increase in fleet charge out rates proposed by Administration for the 2020 Budget along with adjustments to reflect the actual equipment hours and associated fleet expenses charged to the Sanitation Fund.

(\$14,000) decrease in maintenance, materials, and supplies:

- **(\$15,000)** decrease related to the removal of one-time costs budgeted in the prior year.
- **\$1,000** increase in the budget for training expenses based on expectations for 2020.

SANITATION FUND
CAPITAL EXPENDITURES AND FUND PROJECTIONS

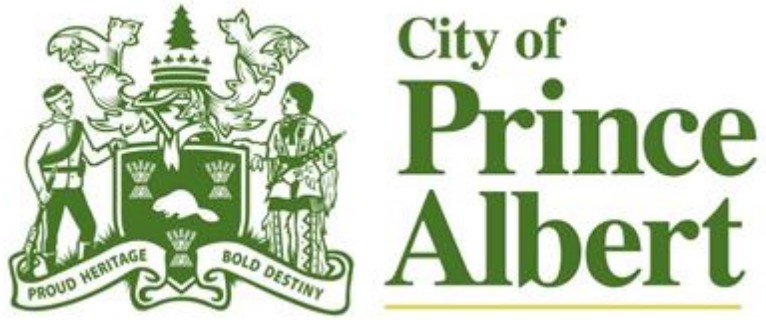
For the Year Ending December 31, 2020

CAPITAL COMMITTED RESERVE	2020	2019
	Budget	Budget
Budgeted Transactions		
Funding:		
Funding for Capital: via transfer from Sanitation Improvement Fund (Uncommitted)	(\$340,000)	(\$340,000)
Funding for Capital - via Transfer from Equipment Reserve	(380,000)	(385,000)
Total Funding	(720,000)	(725,000)
Expenditures:		
Automated Waste Collection Truck - Replacement of Unit #62	380,000	
Landfill Expansion - Cell 2B Design and Project Services	340,000	
Automated Waste Collection Truck - Replacement of Unit #67	-	385,000
New Kiosk Building and Weigh Scales	-	340,000
Total Expenditures	720,000	725,000
Budgeted (Increase) Decrease to Reserve	-	-
Reserve Balance, beginning of year (estimated)	-	664,625
Capital Carryforward - Outstanding from Prior Years	-	(664,625)
Reserve Balance, end of year (estimated)	-	-

SANITATION FUND
CAPITAL EXPENDITURES AND FUND PROJECTIONS (Continued)

For the Year Ending December 31, 2020

SANITATION IMPROVEMENT FUND BALANCE (UNCOMMITTED EQUITY)	2020	2019
	<u>Budget</u>	<u>Budget</u>
Budgeted Transactions		
Funding:		
Contribution from Operations	<u>(\$1,145,300)</u>	<u>(\$970,490)</u>
Expenditures:		
Transfer to Capital Committed Reserve	<u>340,000</u>	<u>340,000</u>
Budgeted (Increase) Decrease	(805,300)	(630,490)
Fund (Surplus) Deficit, beginning of year (estimated)	<u>(172,891)</u>	<u>499,497</u>
Fund (Surplus) Deficit , end of year (estimated)	<u>(978,191)</u>	<u>(130,993)</u>



APPENDIX B

2020 SANITATION FUND CAPITAL BUDGET

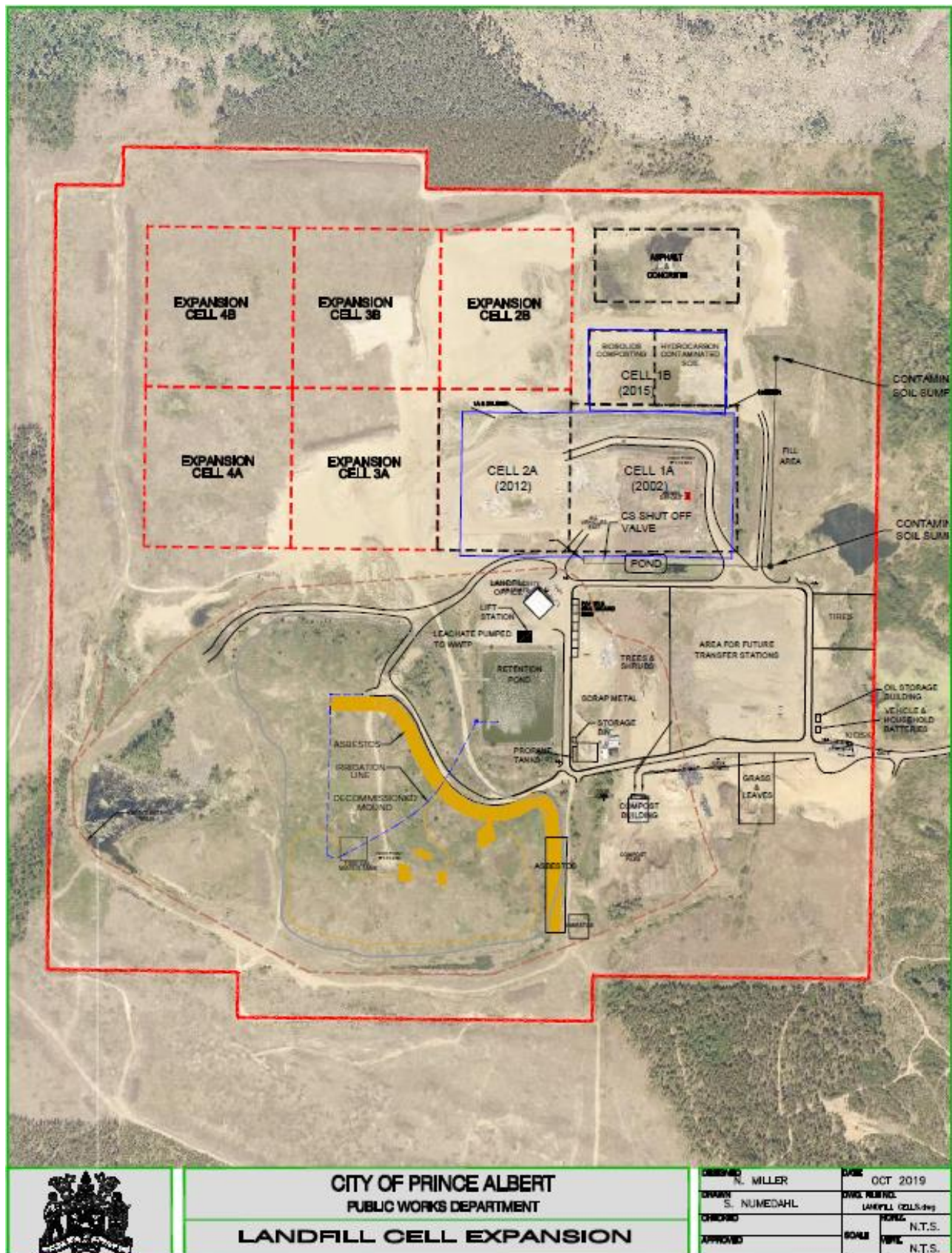
2020 Sanitation Fund Capital Budget

SANITATION FUND CAPITAL BUDGET				
SC-01	Automated Waste Collection Truck-Replacement of Unit # 62	Capital	Reserve	Externally Funded
	<p>Detail: Unit # 62 is a 2009 Freightliner Truck that comes with the Rapid-Rail Automated Refuse Collection system.</p> <p>Purpose: Unit # 62 has been identified for replacement in 2020. The Fleet Manager reviews a list of criteria from the City's Fleet Replacement Program before determining which units should be replaced. Unit # 62 will have approximately 15,500 hours on it by 2020. It takes approximately one year before a replacement unit is delivered.</p> <p>Funding Source: Equipment and Fleet Equipment Reserve</p>		\$380,000	
The Equipment and Fleet Reserve will have a projected <u>surplus</u> of \$1,190,996 at the end of 2020 with this project included.				



2020 Sanitation Fund Capital Budget

SC-02	Landfill Expansion - Waste Cell Design and Project Services	Capital	Reserve	Externally Funded
	<p>Detail: Design and engineering services for a review of the Landfill cells, decommissioning and reclamation of the existing cells and construction of a new cell at the City Landfill.</p> <p>Purpose: The Landfill has been designed with a series of cells to provide for the long term waste disposal needs of the City and members of the NCSWMC.</p> <p>The site consists of two existing cells; Cell 1A and Cell 2A for waste disposal and Cell 1B for disposal of hydrocarbon impacted soil. Cell 1A and 2A were built in 2002 and 2012 respectively and are currently both active. With the current waste disposal rate of 60,000 - 65,000 cubic meters. Construction of a new Cell will be required in 2021.</p> <p>This project will prepare the engineering design & tender for a review of all the Landfill cells, decommissioning and reclamation of the existing cells and construction of a new cell at the City Landfill.</p> <p>Additional information on the status of the Landfill can be found in RPT# 19-509 that is included in Appendix G.</p> <p>Funding Source: Sanitation Improvement Fund</p>		\$340,000	
	<p>The Sanitation Improvement Fund balance will have a projected surplus of \$978,191 at the end of 2020 with this project included.</p>			



2020 Sanitation Fund Capital Budget

SANITATION FUND CAPITAL BUDGET			
	Capital	Reserve	Externally Funded
Total of Capital Requests by Funding Source	-	\$720,000	-
Grand Total of All Capital Requests		\$720,000	



City of
**Prince
Albert**

APPENDIX C

2020 – 2024 SANITATION FUND 5-YEAR CAPITAL BUDGET

2020 Capital Budget :: Simplified Detail Report

----- Filters -----									
Year :		2020 to 2024							
Revenue Sources :		No							
Fund :		Sanitation							
Group By :		Year							

* in thousands of dollars

Ref#	Pri	Fund	E.F.	Location	Item Description	Cap.	Res..	Ext.	Total
2020									
1	1	Sanitation	Yes	Equipment	Automated Waste Collection Truck - Replacement of Unit #62 <i>Detail :</i> Unit #62 is a 2009 Freightliner Truck that comes with the Rapid-Rail Automated Refuse Collection system. <i>Purpose :</i> Unit #62 has been identified for replacement in 2020. The Fleet Manager reviews a list of criteria from the City's Fleet Replacement Program before determining which units should be replaced. Unit #62 will have approximately 15,500 hours on it by 2020. It takes approximately one year before a replacement unit is delivered. <i>Reserve Source :</i> Equipment and Fleet Reserve	\$0	\$380.0	\$0	\$380.0
2	1	Sanitation	No	Landfill	Landfill Expansion - Waste Cell Design and Project Services <i>Detail :</i> Design and engineering services for a review of the Landfill cells, decommissioning and reclamation of the existing cells and construction of a new cell at the City Landfill. <i>Purpose :</i> The Landfill has been designed with a series of cells to provide for the long term waste disposal needs of the City and members of the NCSWMC. The site consists of two existing cells; Cell 1A and Cell 2A for waste disposal and Cell 1B for disposal of hydrocarbon impacted soil. Cell 1A and 2A were built in 2002 and 2012 respectively and are currently both active. With the current waste disposal rate of 60-65,000 cu.m. Construction of a new cell will be required in 2021. This project will prepare the engineering design & tender for a review of all the Landfill cells, decommissioning and reclamation of the existing cells and construction of a new cell at the City Landfill. <i>Reserve Source :</i> Sanitation Improvement Fund	\$0	\$340.0	\$0	\$340.0

2020 Capital Budget :: Simplified Detail Report

						* in thousands of dollars			
Ref#	Pri	Fund	E.F.	Location	Item Description	Cap.	Res..	Ext.	Total
2020 sub-total						\$0	\$720.0	\$0	\$720.0
2021									
3	1	Sanitation	Yes	Equipment	Automated Waste Collection Truck - Replacement of Unit #63 <i>Detail :</i> Unit #63 is a 2010 Freightliner Truck that comes with the Rapid-Rail Automated Refuse Collection system. <i>Purpose :</i> Unit #63 has been identified for replacement in 2021. The Fleet Manager reviews a list of criteria from the City's Fleet Replacement Program before determining which units should be replaced. Unit #63 will have approximately 16,000 hours on it by 2021. It takes approximately one year before a replacement unit is delivered. <i>Reserve Source :</i> Equipment and Fleet Reserve	\$0	\$390.0	\$0	\$390.0
4	1	Sanitation	Yes	Landfill	Agricultural Style Tractor and Disc <i>Detail :</i> Agricultural Style Tractor and Disc <i>Purpose :</i> This tractor and disc will be a new or a low hour used machine that will be used to farm contaminated soil at the Landfill. The tractor will be equipped with a front end loader and the disc will be heavy enough to mix the contaminated soil. <i>Reserve Source :</i> Sanitation Improvement Fund <i>External Source :</i>	\$0	\$155.0	\$0	\$155.0
5	1	Sanitation	No	Landfill	Landfill Expansion - Waste Cell Construction <i>Detail :</i> Construction of new Waste Cell at the City Landfill <i>Purpose :</i> The landfill has been designed with a series of cells to provide for the long term waste disposal needs of the City and members of the NCSWMC. The site consists of two existing cells; Cell 1A and Cell 2A for waste disposal and Cell 1B for disposal of hydrocarbon impacted soil. Cell 1A and 2A were built in 2002 and 2012 respectively and are currently both active. With the current waste disposal rate of 60,000 - 65,000 cubic meters construction of a new cell will be required in 2021. This project will be for the construction of a new waste cell including earthwork, clay liner, HDPE liner and leachate	\$0	\$0	\$3,500.0	\$3,500.0

2020 Capital Budget :: Simplified Detail Report

						* in thousands of dollars			
Ref#	Pri	Fund	E.F.	Location	Item Description	Cap.	Res..	Ext.	Total
					collection system. Due to cash constraints, it is Administrations recommendation that this project be funded with debt financing with interest and principal repayments to be funded from the Sanitation Improvement Fund. External Source : Debt Financing with principal repayments to be funded from the Sanitation Improvement Fund				
6	1	Sanitation	Yes	Landfill	Hook Lift Truck Landfill Detail : A Tandem axle hook lift truck for garbage and recycling bins. Purpose : The landfill uses recycling and garbage bins that use a hook lift to move them to the MURF and dump. Presently the Landfill borrows the hook lift trucks from the WWTP or Roadways to move these bins at the Landfill. Coordinating the borrowing has become more difficult for Sanitation as the other departments have other priorities that they need their hook lift trucks for. With the introduction of cardboard bins and garbage bins near the gates of the Landfill this truck is now needed more than ever. The diversion of the recyclables from the Landfill cell is important in the City's waste diversion plans. This truck would be a tandem axle with the hook lift mechanism, a gravel box and possibly a couple more recycling bins for the Landfill. Reserve Source : Sanitation Improvement Fund	\$0	\$250.0	\$0	\$250.0
7	1	Sanitation	No	Landfill	Landfill Expansion - Loan Repayment Detail : Long term debt loan repayment. Purpose : Principal payment for long term debt required for the construction of a new cell. The amount has been estimated based on an interest rate of 3.25%, a 5 year repayment schedule, and the assumption that the debt would be issued on January 1, 2021. This loan would be repaid in 2025. Reserve Source : Sanitation Improvement Fund	\$0	\$656.0	\$0	\$656.0

2020 Capital Budget :: Simplified Detail Report

* in thousands of dollars

Ref#	Pri	Fund	E.F.	Location	Item Description	Cap.	Res..	Ext.	Total
2021 sub-total						\$0	\$1,451.0	\$3,500.0	\$4,951.0

2022

8	1	Sanitation	No	Landfill	Landfill Expansion - Loan Repayment <i>Detail :</i> Long term debt loan repayment. <i>Purpose :</i> Principal payment for long term debt required for the construction of a new cell. The amount has been estimated based on an interest rate of 3.25%, a 5 year repayment schedule, and the assumption that the debt would be issued on January 1, 2021. This loan would be repaid in 2025. <i>Reserve Source :</i> Sanitation Improvement Fund	\$0	\$677.3	\$0	\$677.3
2022 sub-total						\$0	\$677.3	\$0	\$677.3

2023

9	1	Sanitation	Yes	Collection	Automated Waste Collection Truck - Replacement of Unit # 64 <i>Detail :</i> Replacement of Unit #64, a 2012 IHC with a Heil Rapid-Rail Automated collection system <i>Purpose :</i> Unit #64 has been identified for replacement in 2023. The Fleet Manager reviews a list of criteria from the City's Fleet Replacement Program before determining which units should be replaced. Unit #64 will have approximately 15,000 hours on it and is at a stage when a total rebuild is uneconomical. <i>Reserve Source :</i> Equipment and Fleet Reserve	\$0	\$400.0	\$0	\$400.0
10	1	Sanitation	Yes	Equipment	Automated Waste Collection Truck - Replacement of Unit # 68 <i>Detail :</i> Unit #68 is a 2008 Freightliner Truck that comes with a Heil Rear Load Refuse Collection system. This truck is used for the collection of yard waste. <i>Purpose :</i> Unit #68 has been identified for replacement in 2023. This truck is used for the collection of compost. The Fleet Manager reviews a list of criteria from the City's Fleet Replacement Program before determining which units should be replaced. Unit #68 will have approximately 13,000 hours on it by 2022. It takes approximately one year before a	\$0	\$400.0	\$0	\$400.0

2020 Capital Budget :: Simplified Detail Report

* in thousands of dollars

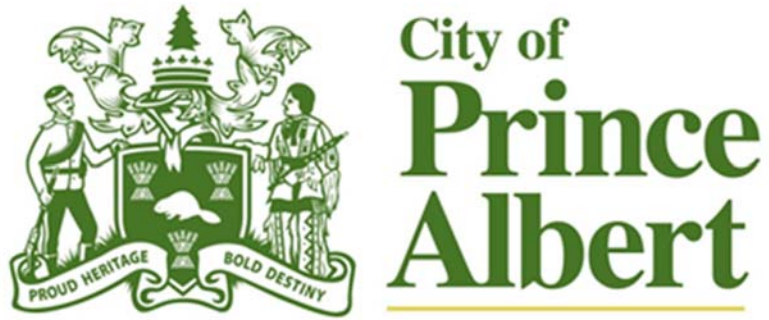
Ref#	Pri	Fund	E.F.	Location	Item Description	Cap.	Res..	Ext.	Total
					replacement unit is delivered. Reserve Source : Equipment and Fleet Reserve				
11	1	Sanitation	No	Landfill	Landfill Expansion - Loan Repayment Detail : Long term debt loan repayment. Purpose : Principal payment for long term debt required for the construction of a new cell. The amount has been estimated based on an interest rate of 3.25%, a 5 year repayment schedule, and the assumption that the debt would be issued on January 1, 2021. This loan would be repaid in 2025. Reserve Source : Sanitation Improvement Fund	\$0	\$699.3	\$0	\$699.3
2023 sub-total						\$0	\$1,499.3	\$0	\$1,499.3

2024

12	1	Sanitation	Yes	Collection	Automated Waste Collection Truck - Replacement of Unit #66 Detail : Replacement of Unit #66, a 2014 Freightliner with a Heil Rapid-Rail Automated collection system Purpose : Unit #66 has been identified for replacement in 2024. The Fleet Manager reviews a list of criteria from the City's Fleet Replacement Program before determining which units should be replaced. Unit #66 will have approximately 14,500 hours on it and is at a stage when a total rebuild is uneconomical. Reserve Source : Equipment and Fleet Reserve	\$0	\$400.0	\$0	\$400.0
13	1	Sanitation	No	Landfill	Landfill Expansion - Loan Repayment Detail : Long term debt loan repayment. Purpose : Principal payment for long term debt required for the construction of a new cell. The amount has been estimated based on an interest rate of 3.25%, a 5 year repayment schedule, and the assumption that the debt would be issued on January 1, 2021.	\$0	\$722.0	\$0	\$722.0

2020 Capital Budget :: Simplified Detail Report

						* in thousands of dollars			
Ref#	Pri	Fund	E.F.	Location	Item Description	Cap.	Res..	Ext.	Total



APPENDIX D

CAPITAL CARRYFORWARD SCHEDULES

2019 Sanitation Fund Capital Projects						
	<u>BUDGET</u>	<u>2019 Spending to Oct 22</u>	<u>VARIANCE</u>	<u>C/F TO 2020</u>	<u>FUNDING</u>	<u>TIMELINES</u>
Sanitation Improvement Reserve						
New Kiosk Building and Weigh Scales	\$340,000.00	\$343,358.18	\$3,358.18		Sanitation Improvement Reserve	The Kiosk and Scales project is completed.
TOTAL SANITATION IMPROVEMENT RESERVE	\$340,000.00	\$343,358.18	\$3,358.18	\$0.00		
Equipment and Fleet Reserve						
Automated Waste Collection Truck - Replacement of Unit #67	\$385,000.00	\$0.00	-\$385,000.00	\$385,000.00	Equipment and Fleet Reserve	City Council, at its meeting of February 25, 2019, approved the following motion: "That Tender No. 77 of 2018 for the purchase of a new Sanitation Truck be awarded to Superior Truck at a cost of \$327,608, plus applicable taxes, funded from the Equipment Replacement Reserve Fund." Truck was ordered after the City Council meeting and the expected delivery is possibly April 2020. The truck has been delayed three months due to factory move. Carry Forward to Year 2020.
TOTAL EQUIPMENT AND FLEET RESERVE	\$385,000.00	\$0.00	-\$385,000.00	\$385,000.00		
TOTAL 2019 SANITATION CAPITAL	\$725,000.00	\$343,358.18	-\$381,641.82	\$385,000.00		

2018 Carry Forward Projects - Sanitation Capital						
	<u>BUDGET</u>	<u>2019 Spending to Oct 22</u>	<u>VARIANCE</u>	<u>C/F TO 2020</u>	<u>FUNDING</u>	<u>TIMELINES</u>
Sanitation Improvement Reserve						
New Kiosk Building and Weigh Scales	\$664,624.89	\$664,624.89	\$0.00		Sanitation Improvement Reserve	The Kiosk and Scales project is completed.
TOTAL SANITATION IMPROVEMENT RESERVE	\$664,624.89	\$664,624.89	\$0.00	\$0.00		
TOTAL 2018 CARRY FORWARDS	\$664,624.89	\$664,624.89	\$0.00	\$0.00		
TOTAL 2019 SANITATION FUND CAPITAL	\$1,389,624.89	\$1,007,983.07	-\$381,641.82	\$385,000.00		

-\$381,641.82



City of
**Prince
Albert**

APPENDIX E

2018 LANDFILL OPERATING REPORT



2018 LANDFILL OPERATING REPORT

City of Prince Albert Regional Landfill

Submitted by:

The City of Prince Albert
1084 Central Avenue
Prince Albert, SK, S6V 7P3

This report contains the following operational information:

- ❖ Introduction
- ❖ Operational updates
- ❖ Review of the Operating Permit and Emergency Response Plan with Employees.
- ❖ Quantities of recycled paper products that were diverted from the Landfill.
- ❖ Quantities of batteries that were collected and diverted from the Landfill.
- ❖ Perimeter fence inspections and repair.
- ❖ Litter control.
- ❖ Summary of Scrap Metal Management.
- ❖ Yard Waste Collection
- ❖ Annual Quantities of Waste Received
- ❖ Site map.
- ❖ Description of cover practices and compaction.
- ❖ Receipt and treatment of hydrocarbon impacted soils.
- ❖ Receipt and disposal of asbestos.
- ❖ Scrape Tires.
- ❖ Volume of waste oil and number of filters / containers removed.
- ❖ Summary of the number of animal carcasses.
- ❖ Collection and management of leachate.
- ❖ Summary of halocarbon (Freon) removal from appliances.
- ❖ Household hazardous material
- ❖ Concrete and asphalt from the waste diversion area.
- ❖ Groundwater Monitoring.
- ❖ Closing.

Introduction:

This report presents a summary of operating activities during 2018 at the Prince Albert Landfill. In 2018 the Prince Albert Landfill received 87,381.828 metric tons (MT) of waste material. During this same timeframe, 1,086 MT of recyclable paper were diverted from the landfill as part of the City's involvement with the North Central Saskatchewan Waste Management Corporation (NCSWMC).

The City will continue with its recycling efforts in 2019 and anticipate with the continuation and education of Single Stream Recycling and further diversion of recyclable materials from the Landfill will be realized.

The City has been implementing additional tipping fees on cardboard and recycling materials at the landfill and our goal is to see more materials recycled at the Material Recycling Facility.

Operational Updates:

- ❖ City of Prince Albert Waste Collection and Disposal Bylaw addresses yearly tipping fees and to promote more recycling in the city.
- ❖ The city has bought three 20 yard bins for transfer station located at the landfill in order to provide convenience and safety to residents with small waste loads intended for disposal at the landfill.
- ❖ New directional signs at the landfill for proper material disposal and to get around the landfill.
- ❖ Garbage and recycling bins inventory completed in 2018, this inventory would help in keeping the bin count in track.
- ❖ The City has teamed up with local Repair Café Organization to hold a monthly event for repairing and fixing items to reuse in order to divert them from the landfill. Ninety five items were fixed and our average repair rate stood at 64% last year.
- ❖ Minimized active working face of the landfill in order to maintain it properly.
- ❖ With MOE approval the contaminated soil cell1B has been split into 2 portions in order to share one portion for bio solid composting.

- ❖ New landfill compactor purchased in order to achieve a desired compaction rate at the working face.
- ❖ Landfill equipment operators comprehensive training provided by AECOM to help in learning techniques for the safe, efficient and effective operation of the landfill equipment.

Review of the Operating Permit with Employees:

Permit to operate an Industrial Waste Works (PO16-041) was issued on May 12, 2016 and expires on the 1st day of June 2021. Copies of the operating permit have been provided to the staff responsible for overseeing all the activities associated with waste management operation. A copy of the Permit to Operate a Waste Disposal Ground is attached for your reference.

Quantities of recycled products that were diverted from the Landfill:

In 2018, the volume of recycled material diverted from the Prince Albert Landfill to the North Central Saskatchewan Waste Management Corporation (NCSWMC) by the City's trucks was 1,086 MT, and a record monthly broken down as follows:

MONTH	Weight (in MT.)
January	118.56
February	74.50
March	67.87
April	98.67
May	111.67
June	82.77
July	93.12
August	85.15
September	81.11
October	92.23
November	86.82
December	93.53
Total:	1,086 MT

The volume of recycled material diverted from the landfill by commercial haulers in 2018 was 2,217.1 metric tons. Monthly breakdown follows:

MONTH	Weight (in MT.)
January	186.9
February	150.4
March	180.8
April	207.1
May	224.3
June	206.9
July	224.5
August	225.4
September	145.7
October	153.6
November	165.7
December	145
Total:	2,217.1

The volume of recycled material diverted from the landfill by using the roll off bins in 2018 was 7,860 kg or 7.86 metric tons. Following is the monthly breakdown:

MONTH	Weight (in KG.)
January	500
February	400
March	200
April	660
May	700
June	500
July	550
August	900
September	900
October	920
November	510
December	1,120
Total:	7,860

In 2018, the total volume of recycled material diverted from the Prince Albert Landfill to the North Central Saskatchewan Waste Management Corporation (NCSWMC) was 3,310.96 metric tons.

Batteries collected and diverted from the Landfill:

The total weight of materials (recycled batteries) was 332 kilograms in 2018. The information below is from a summary provided by Call2Recycle.



Recharging the planet. Recycling your batteries.™

Parent Summary Report

City Of Prince Albert

Call2Recycle ID: 154184
Enrolled: February 19, 2013

Location ID: Landfill location
140 15th St. NW + Hwy #2
Prince Albert, SK S0J 2N0

Batteries / Cell Phones Collected From 01/01/2018 To 31/12/2018

Rechargeable Batteries	Weight (kg)
Nickel Cadmium (Ni-Cd)	16
Lithium Ion (Li-Ion)	5
Nickel Metal Hydride (Ni-MH)	12
Small Sealed Lead Acid (SSLA/Pb)	42
Total:	75

Non-Rechargeable Batteries / Cell Phones	Weight (kg)
Alkaline	248
Lithium	4
Wet Cell Nickel Cadmium	3
Other	1
Total:	257

For the Reporting Period:

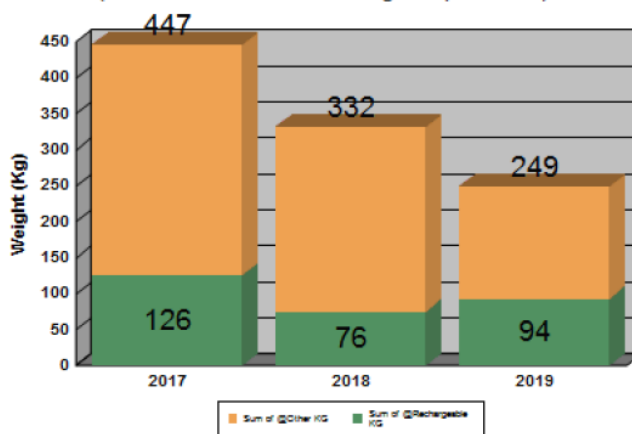
1 Sites Sent 14 Boxes (100% of 1 Enrolled Sites)

Totaling 332 kg

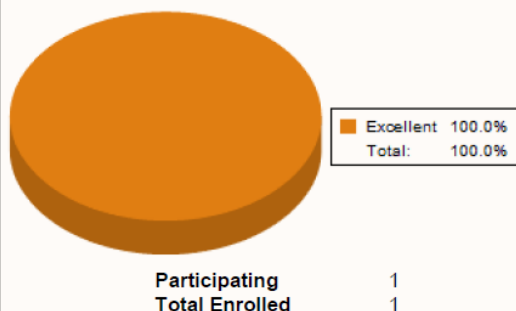
And Returned 0 Cell Phones

3 Year Total Collections

(Current Year's Total Through Report Date)



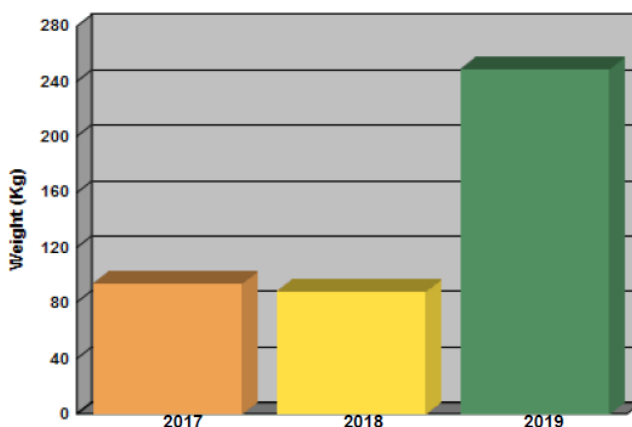
Current Call2Recycle Participation



Excellent - Sites have returned collections to Call2Recycle within the past 3 months
Good - Sites have returned collections to Call2Recycle within the past 3 months to 1 year
Fair - Sites have not returned collections to Call2Recycle in over a year
None - Sites have never returned collections to Call2Recycle

Year To Date Collection Trend

Through February 27



Call2Recycle Account Manager: Heather Lee
HLee@call2recycle.ca

Perimeter Fence Inspections and Repair:

The City conducts inspections of the perimeter including fence biweekly throughout 2018 and repairs to the fence are performed as required. The Landfill has a swamp area on the north east side that has created challenges to fencing repairs. We have also created a daily, weekly monthly report sheet to assist in record keeping for the landfill inspections. These sheets are available upon request.

Litter Control:

Litter control is part of the function of all Landfill staff. Our staff cleans up the litter around the landfill on the daily basis and the daily working face cover is also helpful in litter control and prevents it from blowing away.

Summary of Scrap Metal Management:

In 2018 all scrap metal was managed by B & N Steel. A record of scrap metal management at the Prince Albert Landfill for 2018 is available upon request. Approximately 700 propane cylinders were recycled.

Yard Waste Collection:

Yard waste collection occurs during the months of May till November. The City brought up a change couple years ago, to accept yard waste only in compostable paper bags in order to produce a good quality uncontaminated compost to be used for community gardens around the city.

The City diverted approximately 1,800 MT of yard waste from the landfill in 2018.

Annual Quantities of Waste Received:

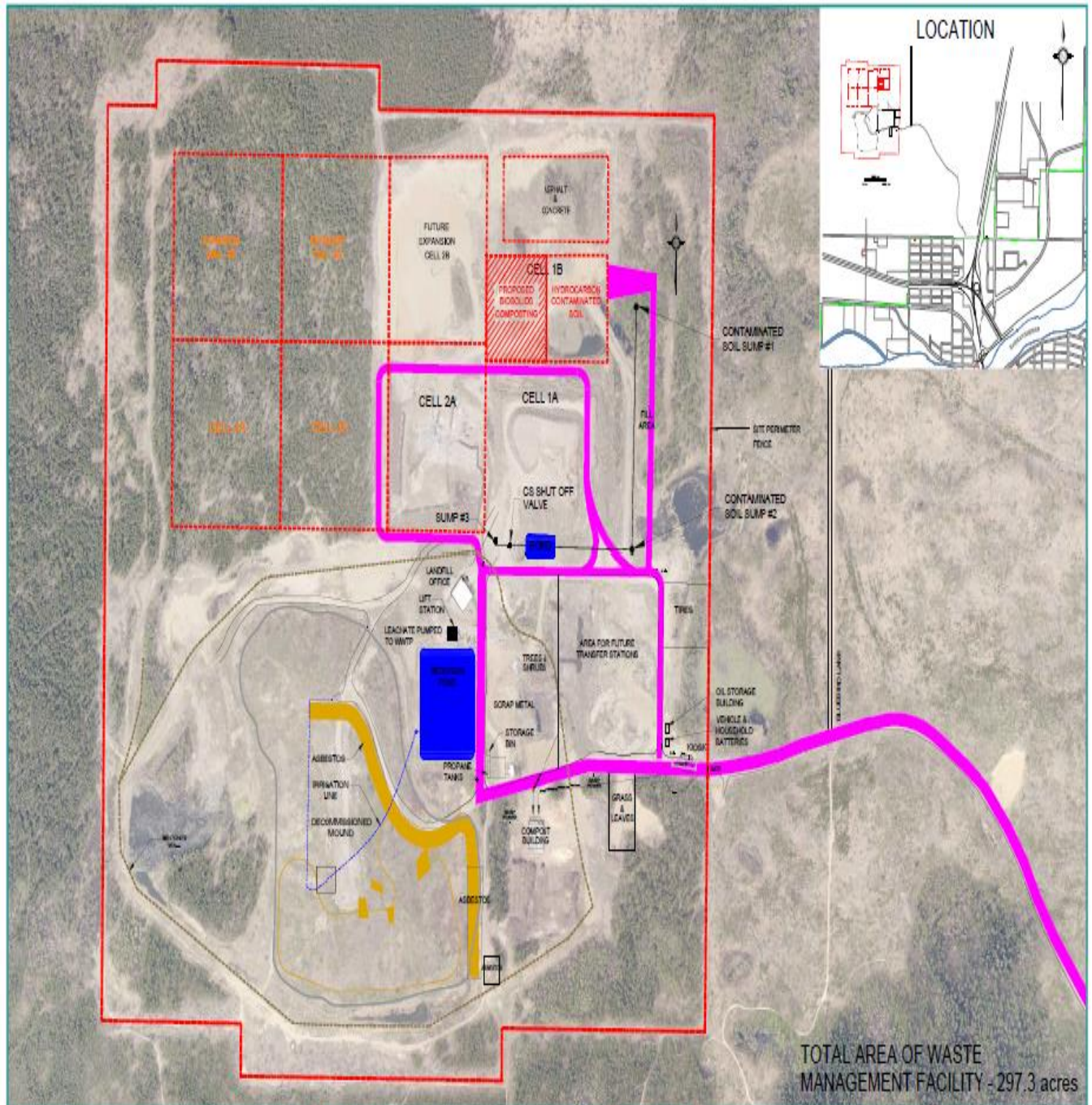
The annual quantities of waste received at the Landfill were obtained from the scale house software (Paradigm software) for the year 2018. These quantities are summarized below :

Description	Weight (in kg)
Asbestos	67,485.00
Asphalt & Concrete	31,918,253
Special Items	22,335
Carcasses (Large and Small)	51,600
Yard waste Compost	1,787,455
Contaminated Soil	1,072,270
Construction Demolition	7,946,960
Mixed Destinations	1,814,045
Paper and Cardboard	61,710
Scrap Metal	324,020
Tires	5,695
Trees & Shrubs	186,990
Waste Oil containers	38,820
Bushes & clean wood	186,990
Residual waste	30,029,045
Contaminated mud	2,704,155
Not specified items	10,895,225
	87,381.828.00

Site Map:

Please find an updated site map of the Prince Albert Landfill that includes:

- ❖ Site Perimeter Fence
- ❖ Gate
- ❖ Kiosk and Scale
- ❖ Roadway Information
- ❖ Oil Storage Building and Antifreeze
- ❖ Batteries storage area
- ❖ Tin can storage area
- ❖ Glass storage area
- ❖ Tire storage area
- ❖ Asphalt and Concrete storage area
- ❖ Trees and Shrub collection area
- ❖ Asbestos Disposal area
- ❖ Former Historical Mound
- ❖ Cell 1A
- ❖ Cell 2A
- ❖ Cell 1B
- ❖ 2003 Cut Off Wall
- ❖ 2012 Cut Off Wall
- ❖ Leachate Retention Pond
- ❖ Irrigation Line for leachate irrigation and evapotranspiration
- ❖ Former Bailing Facility
- ❖ Compost Building
- ❖ The Grass and Leaves Collection area
- ❖ Shingle Disposal area
- ❖ Future Landfill Cell expansion area



Landfill Site Map

Cover Practices and Daily compaction:

The cover practices at the landfill in 2018 have been improved and are discussed below in terms of daily cover, interim cover and final cover and daily compaction. Record sheets are available upon request.

Daily Cover:

The primary purposes of daily cover are to control vectors, windblown debris, odor, flies, scavenging, and to promote surface water runoff from the fill area. The City currently uses daily cover with native soil at the end of each day.

Approved cover materials include native soils, remediated hydrocarbon contaminated soil, and crushed asphalt and concrete, with the minimum thickness of 150mm or up to 5 inches.

Interim Cover:

Interim cover is used to address any drainage issues, to allow for equipment access, cover completed areas, and prevents exposure of wastes and to minimize the potential for windblown debris and water infiltration.

Interim cover is placed on areas that will remain inactive for an extended period of time. Interim cover will consist of 900 mm of cover material and/or soil.

Final Cover:

Progressive final cover placement is carried out in areas that have reached final elevation contours. The final surface is graded for positive drainage, fertilized and seeded.

Final cover will consist of regulation or best practice methods as approved including topsoil with a good vegetation cover.

Compaction is done with a wheeled packer as required daily to achieve desired waste compaction and stability on the working face.

Details will be provided upon request.

Receipt and treatment of Hydrocarbon Impacted Soil:

All hydrocarbon impacted soil has been analyzed coming into the Landfill. Contaminated soil samples have been recorded. This new cell and operation will test and remediate hydro contaminated soil to Provincial standards as per its operation report. Once the materials from this cell are tested and released they will be used as future cover materials on any existing cells.

Receipt and Disposal of Asbestos:

The City accepts asbestos at the designated area at the landfill along the Northern face of the old mound and gets buried immediately.

Burial location for the active asbestos disposal is shown on the site map
Bills of landing are available upon request. These loads of asbestos were buried

Scrape Tires:

Tire recycling is the process of converting end-of-life or unwanted old tires into material that can be utilized in new products. End-of-life tires typically become candidates for recycling when they become no longer functional due to wear or damage, and can no longer be re-treaded or re-grooved. The City has recycled 3,808 scrape tires since 2017 with help of Saskatchewan Scrape Tire Corporation. The City recycle scrape tires as needed.

Volume of waste oil and number of filters / containers removed:

Below please find Green for Life (GFL) summary for the volume of waste oil and the number of filters and oil containers diverted from the landfill and sent to SARRC for recycling. The following numbers confirmed by SARRC.

OIL SUMMARY			
Year	Oil (liters)	Filters (drums)	Containers (kg)
2004	18,876	9	1,119
2005	29,669	17.5	2,293
2006	28,750	19	2,223
2007	35,100	19	1,839
2008	32,625	17.5	2,353
2009	30,710	20	1,769
2010	33,700	20	2,203
2011	30,455	22	1,543
2012	26,015	18	1,621
2013	25,770	19	1,705
2014	14,920	10	1,363
2015	28,845	19	2,046
2016	28,960	11	2,449
2017	26,810	21	2,335
2018	28,820	23	2,890

The above summary shows that the volume of oil recycled in 2018 is consistent with previous years. In addition to the above oil, the Site recycled 23 drums of filters (a drum holds approximately 135 filters, approximately 3,105 filters in total) and 2,890 kg of containers.

1,025 liters of antifreeze has been collected and Recycled in 2018.

summary of the Number of Animal Carcasses:

Below is a 2018 summary of the number of carcasses received at the Prince Albert Landfill.

- ❖ Large Carcasses with a total weight of approximately 10,260kg
- ❖ Small Carcasses with a total weight of 41,340 kg

Due to Bovine Spongiform Encephalopathy (BSE), concerns that had been identified in previous years, the City has made a concrete effort to track the larger carcasses. We are now tracking the smaller carcasses in the same manner as we do the larger carcasses.

Tickets for these carcasses are available for review upon request.

Collection and Management of Leachate:

Leachate is currently collected from the two lined cells on Site, Cell 1A and Cell 2A. Leachate from Cells 1A and 2A flows to a common leachate sump from which it is pumped into the leachate storage pond (See Site Map).

The maximum volume in the leachate storage pond 26,495 m³ (7,000,000 gallons) but the level is maintained lower to ensure that there is freeboard available in the pond.

We have added a hydrocarbon contaminated soil cell that will produce additional water into the large pond but will only be discharged in accordance to our operations plan for Cell 1B.

In the leachate storage pond the leachate is mixed with groundwater from a groundwater collection well located immediately west of the pond.

The volume of leachate generated by Cells 1A and 2A are estimated based on pump run times from the pump in the sump. While the volume of leachate generated is variable due to the effect of recent precipitation events and spring melt, the average volume of leachate generated per day was approximately 6.85 pumps. Using this average rate, the estimated annual rate of leachate generation is about 2500 pumps per year.

The second Leachate collection pond for the hydrocarbon contaminated soil Cell 1B which will after testing and confirmation of water quality will only then be released into the larger pond. This will be done per the approved operational plan. It will be included in the total amount of Leachate pumped.

In 2016 a 4" forced sewer main was installed up to the repurposed Bailer building and a 2" city water main. These are connected and will provide water and sewer to the landfill site.

Water Security Agency (WSA) accepted the city's proposal to dispose of the leachate into the sewer line that runs from the Landfill to the Waste Water Treatment Plant (WWTP). Thus in 2019 we will be pumping a portion of the leachate in the pond into the City's sewer system for treatment at the WWTP. This method will substitute for the previous leachate disposal method where the leachate was disposed of on top of the Old Mound through a sprinkler system.

Halocarbon (Freon) Removal from Appliances:

The City has a contract with PA Appliance Clinic to remove and dispose halocarbon (Freon) from the appliances. Four hundred and sixty nine units were cleaned of Freon and disposed in an environmentally friendly way in 2018,

Household hazardous material:

Sanitation department held household hazardous public drop off event in 2018 and diverted 9,000 Kg of hazardous material from the landfill.

Concrete and asphalt:

Approximately 31,918,253 kg has been diverted from the working face of the landfill and placed in designated area intended for recycling with in the landfill.

Groundwater, Surface Water, and Leachate Monitoring:

During the 2018 season Arcadis Canada Inc. completed several environmental activities at the Prince Albert Landfill in order to address outstanding concerns from the Ministry of Environment regarding the 2003 and 2012 cut-off walls and to conduct annual groundwater monitoring as outlined in Section 4.7 and Appendix B of the Saskatchewan MOE Permit to Operate and Industrial Waste Works (Permit No: PO16-041, File No: S24040-50/L/ML/PA/03) and as per the letter received from the Ministry on November 27, 2018 (re: Request for Modifications to Existing Groundwater Monitoring Program for the Prince Albert Landfill).

The following list summarizes the activities completed by Arcadis on behalf of the City of Prince Albert at the Prince Albert Landfill in the fall of 2018:

- ❖ Completed annual groundwater monitoring and sampling event in accordance with the Ministerial Approval.
- ❖ During the groundwater sampling event, groundwater samples were collected and analyzed for groundwater physical observations (static water elevation, depth to well bottom, water temperature, etc.), routine water chemistry, dissolved metals, TKN, ammonia, COD, TOC, VOC and BTEX, F1-F4 (petroleum hydrocarbon) content.
- ❖ Completed annual surface water and leachate sampling. The analyses of samples included; routine water quality, total CCME metals, COD, TOC and total phenolics, TKN and total ammonia, fecal and total coliforms, BTEX and PHC F1 to F4, and polycyclic aromatic hydrocarbons (PAH) for leachate samples.

- ❖ Installed additional 5 monitoring wells to provide additional groundwater data onsite and off-site.
- ❖ As part of the 2018 monitoring work plan, a groundwater pumping test will be conducted to determine the feasibility of utilizing groundwater pumping well(s) for hydraulic control at the site. The test will be performed in 2019.

The Groundwater Monitoring Report for 2018 will be submitted to the Ministry as soon as completed.

Closing:

This is the annual operating report for the City of Prince Albert Regional Landfill for 2018.

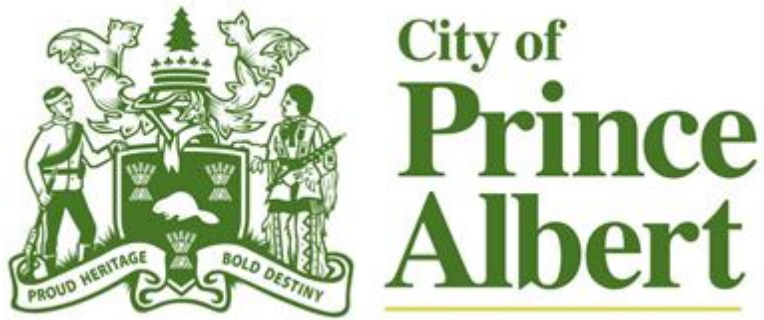
If you have any questions or comments regarding this letter please do not hesitate to contact the undersigned at (306) 953-4900.

Sincerely,



Nisar Ghani

Sanitation manager
City of Prince Albert



APPENDIX F

SANITATION FUND ORGANIZATIONAL CHART

Permanent Out of Scope FTE Total: 1.0

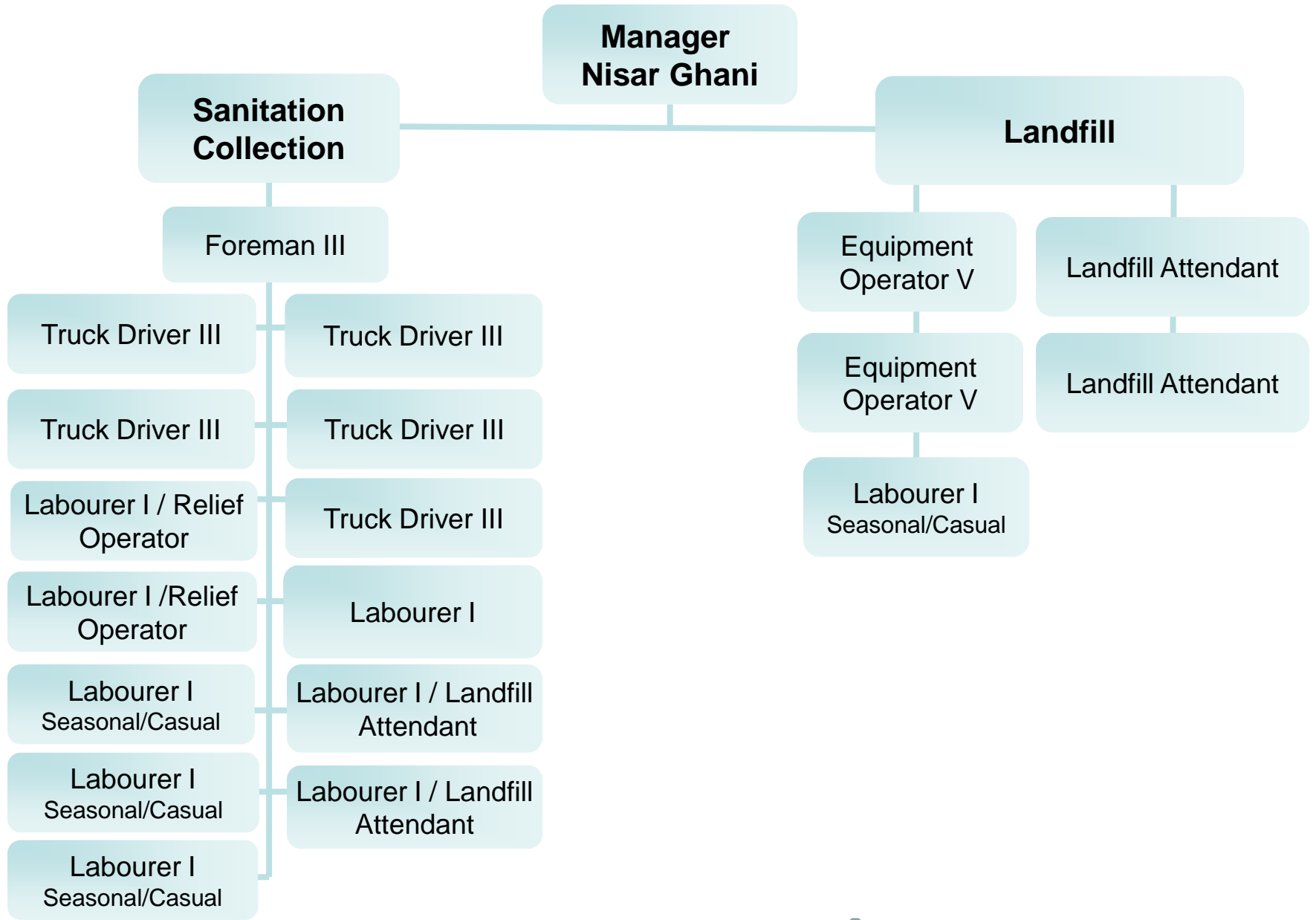
Permanent In Scope FTE Total: 15.0

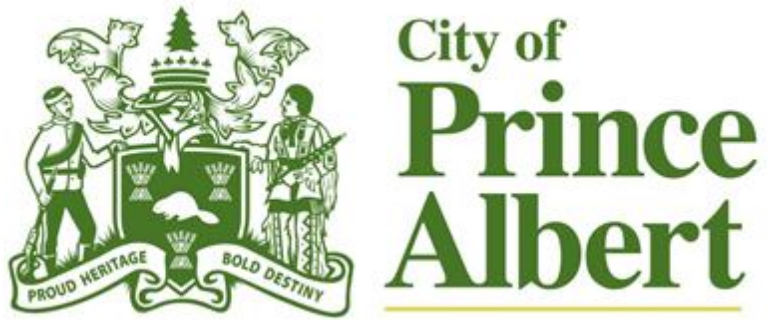
Summer Casual In Scope FTE: 4.0

(FTE: Full Time Equivalent)

PUBLIC WORKS

Sanitation





APPENDIX G

ADMINISTRATION REPORTS

Items Referred to 2020 Budget from City Council / Executive Committee / Budget Committee ~ Sanitation Fund Budget

Date Referred	Report Title	Council's Instruction	Status
October 22, 2019	Landfill Cells Status and Requirement (RPT 19-509)	That Report 19-509 – Landfill Cells Status and Requirement be forwarded to the Budget Committee for consideration during the 2020 Budget Deliberations.	Attached to the 2020 Sanitation Fund Budget Document is this report.
September 16, 2019 Executive Committee	Waste Incineration and Organic Compost Program (RPT 19-425)	That the following requested information be forwarded to the 2020 Budget deliberations for consideration: 1. That City Administration continue to assess the feasibility of options like waste incineration, organic compost programs and the use of plastics into fuel including discussions with Federal, Provincial and First Nation Governments; 2. That an organic compost program be considered at the 2020 Budget deliberations; 3. That Administration provide a cost breakdown of the feasibility of the first year toward an organic compost program city wide and also a graduated start for part of the City; 4. That Administration provide options in charging additional fees to commercial entities that are disposing of compostable items like food waste in the landfill; and, 5. That Administration provide information about grants available for these landfill initiatives including Federation of Canadian Municipality grants.	Attached to the 2020 Sanitation Fund Budget Document is this report.

Items Referred to 2020 Budget from City Council / Executive Committee / Budget Committee ~ Sanitation Fund Budget

Date Referred	Report Title	Council's Instruction	Status
September 9, 2019 City Council	Motion – Councillor B. Edwards – Benefits to Converting Plastic Waste to Diesel Fuel (MOT 19-19)	That Administration investigate the concept of converting plastic waste to diesel fuel and how purchasing this technology could benefit the City including profits, employment, and overall benefits to the landfill, for consideration by members of Council prior to the 2020 Budget deliberations.	This was addressed by Report “Waste Incineration and Organic Compost Program (RPT 19-425)” forwarded to the September 16, 2019 Executive Committee meeting.
September 9, 2019 City Council	Motion – Councillor D. Cody – Feasibility of Incinerating Garbage (MOT 19-18)	That Administration investigate the feasibility of incinerating garbage and provide a report for consideration during Budget deliberations.	This was addressed by Report “Waste Incineration and Organic Compost Program (RPT 19-425)” forwarded to the September 16, 2019 Executive Committee meeting.
Nov 20, 2017 City Council	Midtown Garbage Bin Issue (RPT-2017-211)	That each year the Sanitation Department allocate \$44,000 in the Sanitation Budget to complete the conversion process in five (5) years.	This is included in the 2020 Sanitation Budget.



City of Prince Albert

RPT 19-509

TITLE: Landfill Cells Status and Requirement

DATE: October 10, 2019

TO: City Council

PUBLIC: X

INCAMERA:

RECOMMENDATION:

That this report be received and considered during 2020 Budget Deliberations.

TOPIC & PURPOSE:

The purpose of this report is to provide Council with the status of the current Landfill waste cells and introduce the need for a new waste cell in the near future.

PROPOSED APPROACH AND RATIONALE:

The City has been operating the Landfill since it was licensed and commissioned in 1974. Since its inception, it has contained three main waste disposal areas and one hydrocarbon contaminated soil disposal area. More details on these disposal areas are as follows:

1. The Old Mound Landfill: This area was not lined and it was used until it reached capacity in 2002.
2. Cell 1A: This was the first lined waste cell and it was built in 2002. It was mainly used until 2012. A small portion of this cell was partially left unfilled because it was utilized as a road leading to the top of the disposal area. Waste has been placed in this unfilled portion (old road area) in 2019.
3. Cell 2A: This lined waste cell was built and utilized in 2012 when Cell 1A approached the end of its waste capacity.
4. Cell 1B: This lined cell was built in 2015 for the purpose of accepting hydrocarbon contaminated soil.

The attached Landfill Map shows the areas/cells discussed above.

The City conducts waste volume survey for the waste cells every year to evaluate their capacity and progress. The last survey conducted by City's surveyors was in December 2018 to collect waste volume data until that time. Waste cells 1A and 2A are combined together and their design waste capacity is 950,593 cubic meter. At the time of the survey (December 2018), the remaining waste capacity was calculated to be 185,244 cubic meter.

The Landfill receives variable waste tonnage each year. However, the average yearly tonnage that gets disposed of at the waste cells is approximately 42,000 tonnes which occupies between 60,000 to 65,000 cubic meter a year. In addition to the waste being placed in the cell, the department utilizes small portion of sand and treated compost as daily and intermediate cover material that also occupies a small percentage of the cells volume. The use of cover material is a standard practice for all landfills as per environmental regulations.

Based on the design and remaining capacity and the yearly waste tonnage the Landfill receives, it is anticipated that the existing waste cells have a remaining life span of 2.8 years (the year of 2019 is included). This means that the City needs to construct a new waste cell by fall 2021 to ensure proper and adequate space is available for waste disposal.

The development of a new waste cell involves two main stages. The design stage and the construction stage. To meet waste disposal requirements, the design for a new waste cell is required to occur in 2020 followed by the construction stage in 2021. The estimated budget needed for the engineering design is approximately \$300,000 which includes a decommissioning and reclamation plan as well as an overall review of the landfill cells. During the Landfill inspection that was conducted by the Ministry of Environment in August 2019, the decommissioning and reclamation plan was identified as a requirement. The City was instructed to submit the plan by March 2020. It is essential that these plans and designs be undertaken by an environmental Qualified Professional (QP) to meet the Ministry's permit and standards.

The construction stage is required to start in 2021 to ensure the new cell is ready when the current waste cell reaches its maximum capacity. It is estimated that the construction cost for a new waste cell is approximately 3.5 million dollar.

Budget request for the design stage will be presented to Council during the 2020 Budget Deliberations for its review and approval. Administration will present the budget request for the construction stage to Council in 2021 Budget Deliberations.

PUBLIC NOTICE:

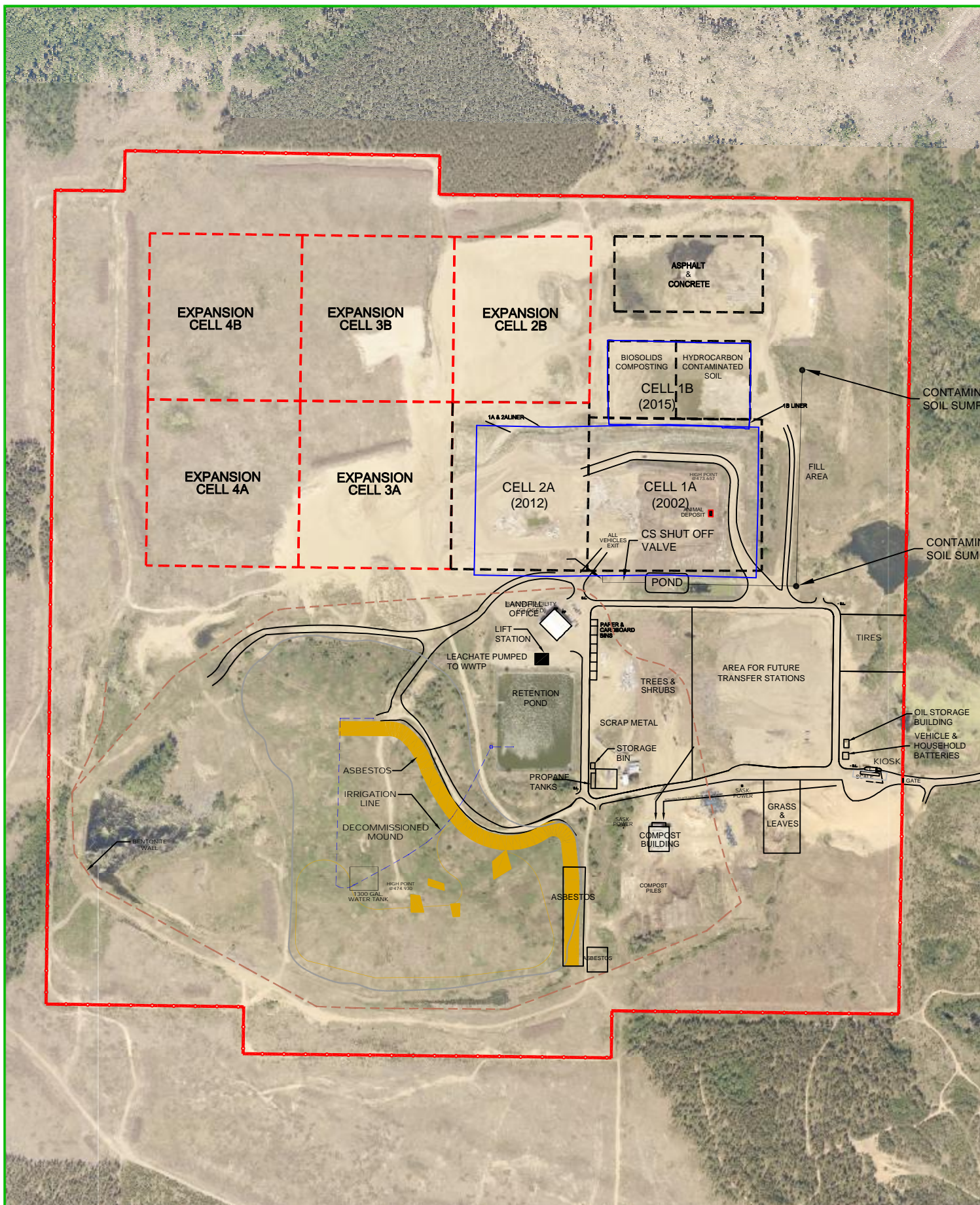
Public Notice pursuant to Public Notice Bylaw No. 24 of 2015 is not required.

ATTACHMENTS:

1. Landfill Map

Written by: Mohammad Kraishan, Operations Manager

Approved by: Director of Public Works & City Manager



CITY OF PRINCE ALBERT
PUBLIC WORKS DEPARTMENT

LANDFILL CELL EXPANSION

DESIGNED N. MILLER	DATE OCT 2019
DRAWN S. NUMDAHL	DWG. FILE NO. LANDFILL CELLS.dwg
CHECKED	HORIZ N.T.S.
APPROVED	SCALE VERT. N.T.S.



RPT 19-425

TITLE: Waste Incineration and Organic Compost Program

DATE: September 6, 2019

TO: Executive Committee

PUBLIC: X

INCAMERA:

RECOMMENDATION:

That this report be received as information and filed.

TOPIC & PURPOSE:

The purpose of this report is to provide City Council with information and details regarding a few landfill topics. These topics are as follows:

1. Organics collection program.
2. Garbage incineration.
3. Conversion of plastic waste or waste in general to diesel fuel.

PROPOSED APPROACH AND RATIONALE:

There are three main topics discussed in this report. Each topic will be discussed in its own section below.

1. Organics Collection Program

Administration sent the report called Organic Composting Update (RPT # 19-199) to City Council Executive Committee meeting on May 27, 2019 outlining the requirements for an organics collection program in the city. City Council during its meeting made the following motions:

- i. *That Administration provide a further report regarding the financial costs and savings of an Organic Composting Pickup Program*
- ii. *That Administration prepare a report on ways that the City could extend the lifespan of the Cells at the Landfill.*

In response to the above motions, Administration has studied the organics collection program further to determine the capital and operating costs needed for the program as well as the cost savings if the program was implemented. The following table shows the approximate cost requirements for the program:

Cost Type	Amount (\$)	Details
Capital Cost	\$1,600,000	This cost includes a windrow turner, one extra collection truck, containers, and working pad. The composting method used for this estimate is Windrow Composting.
Annual Operating Cost	\$570,000 per year	This includes cost for employees, fleet, and operating supplies. It is assumed that organic waste is collected every two weeks except in the summer it is collected every week.

Adopting an organics collection program in the city means all collected organic waste will possibly be diverted away from the landfill garbage cells. According to the Waste Characterization Study the city undertook in late 2017, the overall waste that is hauled and disposed of in the garbage cells contains 35% organic waste by weight. This statistic indicates that the City will be able to divert up to 35% of the currently received waste from the cells if the program gets implemented. However, the actual organic waste diversion rate will highly depend on the users' participation and capture rates.

The capture rate for organic waste means the quantity of the organics that is being placed in the organic collection bin as a percentage of the total weight of all materials that is placed in the bin. For example, if an organic collection bin contains 60 kg organics but the overall weight of the bin's content is 100 kg (assuming the extra 40 kg is a mix of garbage and recycle), then the capture rate is 60%. If organic waste bins are contaminated with other materials (garbage, recycle, etc.), the load will be considered contaminated and will have to be sorted out, if applicable, or treated as garbage.

The participation rate for organic waste means the number of residents who chose to participate in the organic collection program and utilized the service. This number is normally expressed as a percentage.

However, it is important to mention that a 100% participation rate and/or a 100% capture rate for the organics collection are impossible. For the sake of this report, Administration will focus on the participation rate rather than the capture rate as the latest is more difficult to predict. According to Environment Canada, an organic curbside collection program can typically divert 50 to 75% of the organics material which means not all organic waste can realistically be captured through the program and diverted from the cells.

To better understand possible cost savings resulting from the implementation of a city wide organic collection program, the lifespan and cost of a landfill garbage cell need to be considered in the discussion. A typical landfill garbage cell has an average lifespan of 10 years and cost of \$3.0 million.

Administration presents the following participation rates scenarios along with potential savings to the City, if any.

Participation Rate	Percentage of Current Landfilled Organic Waste	Total Operating Cost Over 10 Years	Landfill Cell Lifespan Extended By	Cost Saving in Capital Cost of Landfill Cell (over a period of 10 years)	Net Cost Saving (over a period of 10 years – Capital cost not included)	Net Cost Saving (over a period of 10 years – Capital cost included)
25 %	35 %	\$5,700,000	10.5 months	\$262,500	- \$2,880,400	- \$4,480,400
50 %	35 %	\$5,700,000	21 months	\$525,000	- \$2,617,900	- \$4,217,900
75 %	35 %	\$5,700,000	31.5 months	\$787,500	- \$2,355,400	- \$3,955,400
100 %	35 %	\$5,700,000	42 months	\$1,050,000	- \$2,092,900	- \$3,692,900

Considered notes in the above calculations:

- Annual operating cost for organic collection program is \$570,000.
- Cost of a landfill cell is 3.0 million dollars.
- Average landfill cell lifespan is 10 years or 120 months. Thus, each month cost \$25,000 in capital cost.
- The current annual Yard Waste Collection Program (\$112, 310/year) will be terminated as the proposed organic collection program includes yard waste.
- Landfill operations cost will be reduced by 10% annually. This is assumed to reflect the reduction in operations cost for garbage cell because the diversion of organics will result in less work needed on the garbage cell. Currently, average landfill operations cost is \$1,434,000 per year.
- No inflation adjustment.

As indicated in the table above, a participation rate of 25% will result in a net cost saving of negative \$4,480,400 which means the program will not be economically beneficial. Furthermore, all other participation rates also showed negative cost savings as the operations cost over a period of 10 years and the capital cost outweigh any potential savings resulting from the life extension of garbage cells and other savings explained above.

If City Council proceeds with the implementation of the program, Administration assumes the participation rate will be between 25 to 50% at the start of the program and will increase gradually to approximately 60%. A participation rate of 60% is anticipated to result in a negative cost saving of \$4,112,900 over a period of 10 years.

2. Waste Incineration (Waste-to-Energy Facility)

Another inquiry made by City Council was to investigate the feasibility of incinerating the collected Waste as opposed to the current landfilling process. Incineration is a thermal treatment method that is utilized to burn a wide range of wastes and produce energy.

As part of investigating this method, Administration has contacted a number of municipalities/ operating companies that owns and operates incinerators (also called waste-to-energy facilities). The findings of the studies are summarized below.

Metro Vancouver Waste-to-Energy Facility (operating company is Covanta)

Metro Vancouver has started its waste incineration in Burnaby in 1988 to treat the region's waste and produce energy. It incinerates 260,000 tonnes of garbage per year which is a quarter of Metro Vancouver garbage. This amount of incineration is able to produce electricity that is enough to power about 16,000 homes a year. The City of Vancouver recovers some of the operational cost from generating electricity and metal collected but it does not cover all operational costs. The facility includes 3 lines of waste intake so that there is redundancy and each line can be shut down for maintenance. To efficiently run the facility, a minimum waste tonnage of 150,000 tonnes per year is required. The incinerated garbage volume is reduced by 80% and the remaining 20% is fly ash that can be used in concrete or be landfilled.

The waste tipping fees are \$142/ton for the any weight from 1 to 1000 kg and \$90/ton for larger loads. The City of Vancouver has recently looked at building another facility but the cost was very significant, over \$400 million and the City chose not to proceed at that time. The operating company (Covanta) and the City of Vancouver are not aware of any facility that is small enough to meet Prince Albert waste stream needs.

Durham York Energy Centre, Ontario

The waste-to-energy facility was constructed in 2009 in Clarington, Ontario. It handles 140,000 tonnes of residential garbage per year and produces energy that is sufficient to power approximately 10,000 homes. The facility operates on continuous basis 24/7. The capital cost of the facility was \$248.2 million, approximately \$29.0 million of the total cost was spent on Environmental Assessment. The Annual operating costs are approximately \$14.7 million, and approximately \$9.0 million is recovered from generating electricity and collected metals. The facility is capable of reducing the overall volume of residential garbage being sent to landfill by up to 90% which means only 10% of Durham and York Regions garbage goes to landfill.

Sustane Tech Waste-to-Energy Facility in Nova Scotia

The municipality of Chester in Nova Scotia has partnered up with Sustane Technologies in 2016 to start establishing their waste-to-energy facility. The facility was to be operational last winter but it was delayed to the spring and now it is scheduled to become operational this fall. The delay in the project is due to commissioning issues. The facility in Chester is smaller than the facilities discussed above (Metro Vancouver and Clarington, Ontario). However, it is designed to treat 70,000 tonnes of waste per year and serve a population of 150,000. According Sustane (the owner of technology and operating company) the cost of the facility was between \$20 and \$30 million. The Facility is owner operated, thus if a municipality decides to proceed with this technology, it would need to enter into a contract for a minimum of 20 years.

The Sustane waste-to-energy facility can reduce waste volume down by 83%. The products of the treatment process consist of 53% biomass pellets, 23% diesel, and 24% ash that gets landfilled or used for other applications if applicable. This facility treats waste applying consistent heat at slow rate until the waste is converted to biomass that is compressed into pellets (this facility is slightly different than an incinerator). The products are sold and used for industrial heat and power generation. It was learned that the tipping fees range from \$70 to \$100 per tonne.

In conclusion, the waste-to-energy facilities (incineration) are more beneficial and efficient when a municipality can secure massive amount of waste in order to constantly feed the facility. In most studied cases, the waste quantity required to efficiently run an incinerator ranges from 70,000 to over 260,000 tonnes. The City's Landfill generates approximately 33,000 tonnes of residential and organic waste that can be used to feed an incinerator which is considered a small amount of waste. Another concern is the significantly high capital cost for the incineration facility. Based on some research, a proper incineration facility could cost the City up to \$40 million.

3. Plastic and Municipal Waste to Diesel Fuel

As part of looking at different ways and technologies to extend the lifespan of the landfill, Administration has explored the technology of converting plastic and some other municipal waste into energy (specifically diesel and naphtha fuel). Cielo Waste Solutions is a Canadian company that has been investigating several technologies to convert waste to fuel for the last 15 years. Administration contacted Cielo Waste Solutions to explore the technology. The following points summarize the findings:

- Cielo opened up its first plant in October 2018 just south of Calgary. The plant receives waste from the surrounding areas to treat it and convert it to 90% diesel and 10% naphtha fuels.
- The plant can process/treat plastic waste, tires, power posts, organics, and some residential waste that has fibers in nature.
- Cielo is discussing the marketing of its products with major Canadian petroleum companies (Esso, Shell, Husky Energy, etc.). However, it does not currently have business/dealing with these companies.
- If adequate waste feedstocks are available, the plant can produce up to 2000 liter per hour. Cielo requires at least 25,000 tons of accepted uncontaminated material to start a plant in a community.
- The landfill owner/municipality is responsible for sorting/preparing collected waste and ensuring the material sent to the plant for processing is acceptable and not contaminated. Contaminated loads cannot be accepted. Cielo normally pays \$25-\$40 per tonne for the owner to prepare the waste.
- For building a plant in a community, Cielo requires approximately 24 acres of land. The costs of the land and plant are covered by Cielo. Approximate capital cost of plant is \$25 million.
- The owner/municipality has to enter into a 20 to 25 years agreement with Cielo and ensure adequate waste feedstock is available.
- Cielo does not have any contracts with any municipality yet. They are discussing opportunities with City of Lethbridge, Grand Prairie and Medicine Hat. However, there is not established business with any of these cities.
- Cielo had discussed their technology with the City of Saskatoon and City of Regina a few years ago. But neither one of these cities was interested. Administration believes it is because the technology may have not been well tested and may have not been proven as an effective method of converting waste to fuel.

In conclusion, Administration believes this technology of converting plastic and waste to fuel is at its beginning stages and does not have a convincing history of success. It is noteworthy that the plastic quantity the City collected through its recycle program does not exceed 3,000 tonnes per year. This means that the City does not have sufficient feedstock of plastic to ensure the plant runs efficiently and be economically feasible. However, some municipal solid waste can be accepted under this method of treatment but the quantity of accepted material may also not be enough to provide adequate feedstock of at least 25,000 tonnes.

Administration does not recommend proceeding with this technology of converting plastics and waste to fuel until this method becomes more proven and stable. It is believed that this technology is undergoing more experimentation and testing to assess its efficiency. The review showed Canadian municipalities are careful with adopting such technologies yet.

Despite the capital cost of \$ 3.0 million for a new landfill cell, it still remains the most economical way for the City of Prince Albert to handle municipal waste in the same conventional manner.

PUBLIC NOTICE:

Public Notice pursuant to Public Notice Bylaw No. 24 of 2015 is not required.

PRESENTATION:

Verbal presentation by Mohammad Kraishan

ATTACHMENTS: None

Written by: Mohammad Kraishan, Operations Manager

Approved by: Director of Public Works & City Manager