Honeywell

Revised Annual Energy and Operational Savings Report for Guarantee Year 2 October 2020 – September 2021

Prepared For:
Town of Fort Frances
March 17, 2022

Prepared By:
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Acceptance Sheet

By

Town of Fort Frances

This Energy and Operational Savings Report dated March 17, 2022, covering the Year 2 Savings, October 2020 – September 2021 satisfies the requirements of the Energy Performance Contract.

This report will be considered by Honeywell Limited to be accepted in full, unless Town of Fort Frances of advises the undersigned otherwise in writing by April 30, 2022.

Thank you for your continued support.

Sincerely,

Kenneth Menezes, C.E.T., C.E.M., C.M.V.P.
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1. Overview

Honeywell has completed a comprehensive energy retrofit and facility renewal upgrade project for Town of Fort Frances as per the Energy & Facility Renewal (EFR) Report dated June 7, 2012. The installation and upgrades have maintained comfort conditions within the buildings while permanently reducing the facility's utility and operating costs.

Program Year:	Guarantee Year 2
Report Date:	March 17, 2022
Construction Period:	January 2013 to September 2019
Current Report Period	October 1, 2020 to September 30, 2021
Commencement Date:	October 1, 2019
Type of Utility:	Electricity and Natural Gas
Prepared By:	Kenneth Menezes, Measurement & Verification Specialist
Account Manager:	Michael Pringle
Project Manager:	Wayne Sunohara

Honeywell utilized both Retrofit Isolation (RI) method and Whole Building (WB) method to measure and verify the proposed savings. The results of measured savings and collected data are summarized below and detailed in Section 5.

1.1 Achieved Savings Year 2

The achieved savings for the Year 2 reporting period are summarized below:

Table 1 – Total Savings for year 2

	Year 2	
	Achieved Utility Savings	Achieved Cost Savings
Verified Whole Building Savings		
Electricity	1,040,877 kWh	$150,416
Natural Gas	(23,296) m^3	-$22,945
Sub-total	-	**$137,356**
Verified Retrofit Isolation Savings		
Electricity	1,160,718 kWh	**$167,366**
Deemed Savings		
Electricity	109,921 kWh	$10,904
Natural Gas	5,546 m^3	$2,041
Sub-total	-	**$12,945**
Operational Savings	-	$67,639
	Total Savings for year 2	**$375,421**
	Total Savings Guarantee*	**$243,551**
	% on Plan	**154%**

*The savings guarantee has been reduced to reflect of the removal of Daycare facility from the Town's portfolio.

Guaranteed Utility and Operational Cost Savings were presented in section 2 of the EFR report. Due to the removal of scope, **Table 2** below is the updated savings guarantee table.

Table 2 – Total Guaranteed Project Cost Savings

Guarantee year		Utility Savings Guarantee ($)	Operational Savings ($)	Total Savings Guarantee ($)	Cumulative Savings Guarantee ($)	Achieved Savings ($)	Cumulative Excess (Shortfall) ($)	**CO2 eq [tonnes] Reduction**
CP	Jan 2013 to Sep 2019	n/a	n/a	n/a	n/a	993,612		596
Year 1	Oct 2019 to Sep 2020	170,869	67,639	238,508	238,508	351,960	1,107,064	110
Year 2	Oct 2020 to Sep 2021	175,912	67,639	243,551	482,060	375,421	1,238,933	36
Year 3	Oct 2021 to Sep 2022	180,955	67,639	248,594	730,654			
Year 4	Oct 2022 to Sep 2023	185,998	67,639	253,637	984,291			
Year 5	Oct 2023 to Sep 2024	191,041	67,639	258,680	1,242,972			
Year 6	Oct 2024 to Sep 2025	196,084	67,639	263,723	1,506,695			
Year 7	Oct 2025 to Sep 2026	201,127	67,639	268,767	1,775,462			
Year 8	Oct 2026 to Sep 2027	206,170	67,639	273,810	2,049,272			
Year 9	Oct 2027 to Sep 2028	211,213	67,639	278,853	2,328,124			
Year 10	Oct 2028 to Sep 2029	216,256	67,639	283,896	2,612,020			
Year 11	Oct 2029 to Sep 2030	221,299	67,639	288,939	2,900,958			
Year 12	Oct 2030 to Sep 2031	226,342	67,639	293,982	3,194,940			
Year 13	Oct 2031 to Sep 2032	231,386	67,639	299,025	3,493,965			
Year 14	Oct 2032 to Sep 2033	236,429	67,639	304,068	3,798,033			
Year 15	Oct 2033 to Sep 2034	241,472	67,639	309,111	4,107,144			
					Cumulative Total	**1,720,993**		

The graphical representation of the guaranteed term is shown in **Figure 1** below.

Figure 1 – Comparison of Achieved vs. Guaranteed Cost Savings

Honeywell's Home & Building Control provides an array of products, services, and programs to conserve energy and increase the operating efficiency of your building. When Honeywell applies advanced control and maintenance techniques to your existing environmental control or mechanical systems, substantial savings result. We are delighted to contribute to your conservation efforts.

THANK YOU FOR CHOOSING HONEYWELL.

1.2 Environmental Impact

It is well-known that CO_2, CH_4 and N_2O gases are emitted as by-products of power generation and fossil fuel burning. These gases are classified by the United Nations Framework Convention on Climate Change and Kyoto Protocol as greenhouse gases (GHG). GHGs cause long-term weather pattern changes leading to rising temperatures and sea levels, and extreme weather events. Given the environmental impact of GHGs, Canada tracks emissions via the National GHG Emissions Inventory Report.

The Town, their staff and the surrounding communities will all benefit from GHG reductions generated through the implemented facility improvements. **Table 3** shows the average emission rates used for the current year reporting per unit of energy. These rates are based on Environment Canada data for electricity generation and fossil fuel burning in Ontario.

Table 3 – Year 2 GHG Emission Rates

	Electricity	Natural Gas
CO_2 equivalent1 (Kg)	0.03	1.90

The upgrades at the Town facilities have had a positive effect on both the internal and external environments. Project measures have reduced CO_2 emission by 38.12 tonnes in the current reporting year. A summary of GHG reductions is shown in **Table 4**.

Table 4 – Year 2 GHG Reduction

	Electricity (kWh)	Natural Gas (m3)	Total
CO_2 equivalent (tonnes)	69.35	-33.71	35.63

2. Retrofit Highlights

Honeywell implemented specific measures for upgrading and sustaining the Town's facility systems. Numerous opportunities for cost reductions through carefully integrated equipment and modernization upgrades have been installed and commissioned. The following is a list of the measures Honeywell implemented at your facilities:

Lighting Systems Upgrades and Controls

- Replaced incandescent, PL-lamp or non-LED existing exit signs with new LED EXIT signs
- Replaced incandescent light with compact fluorescent light
- Replaced electromagnetic ballast with high efficiency electronic ballast
- Installed Occupancy sensors
- Group re-lamping for the fluorescent fixtures

Fine Bubble Aeration System

- Replaced existing jet aeration system with a fine bubble system

Control System Upgrades and Scheduling

- Installed new DDC control system
- Implemented control strategy and schedule for equipment
- Implemented demand control ventilation

Heating Plant Upgrades

- Replaced existing boilers with Dietrich thermique eutectic cast iron boilers

Ice Refrigeration Plant Upgrades

- Installed new central automation system
- Modified sequence of operation

Install New VFDs and HE Motors on High Lift Pumps

- Replaced existing motors with high efficiency motors and drives

Car Plug Controls

- Upgraded manually controlled duplex car plugs with IPLC duplex programmable outlets

Building Envelope

- Weather stripping
- Sealed plumbing, electrical and duct penetration

Street Lighting Upgrade

- Replaced high intensity discharge high pressure sodium with new energy efficient light emitting diode (LED) type.

HVAC Upgrades

- Replaced existing furnaces with packaged gas-fired heat/cool unit

3. M&V Methodology

3.1 Option A: Retrofit Isolation (RI) Method with Key Parameters Measured

In the Retrofit Isolation Method (RIM), the subsystem on which each CSM operates is isolated, and its utility use before and after implementation of the CSM is evaluated by physical measurement, whenever possible. Subsystem utility use is determined by observation of physical variables such as current, voltage, power, volume, temperature and time.

Energy consumed by most building subsystems can be isolated - analyzed independently from other facility systems. Examples include temperature setback, ventilation reduction, boiler plant replacements and lighting controls. Although they interact with other subsystems, utility usage can be determined by direct measurement of physical variables.

Subsystem utility usage before and after implementing CSMs is obtained by analyzing physical data collected using varied tools and procedures including:

- Building Automation System data acquisition feature
- Portable data acquisition equipment
- Metering and recording equipment
- Maintenance logs

The engineering formulae commonly accepted by the HVAC industry are applied to determine pre and post implementation utility usage and savings.

In each case, the sample points, measured variables, measurement methods and engineering analyses are selected to accurately reflect subsystem operation.

3.2 Option C: Whole Building Approach (WBA)

In WB method, utility bills before and after the measure installation are compared using **Metrix Utility Accounting System** software. Metrix is a utility management program customized to track, analyze, and print reports on energy usage. Utility billing data is entered, tuned and translated into a linear regression model, correlating the load and peak variation with the key parameters. The regression model is then applied to the current conditions to account for the difference in the key parameters between the base year period and the current period, that affect utility consumption. Examples of these parameters are number of days, heating degree days, cooling degree days and base load. The linear regression model is then applied against the current conditions of each reporting period and compared to post installation usage pattern. The difference is avoided cost, or savings, due entirely to the performance of the installed CSMs.

Honeywell has implemented specific measures for upgrading and sustaining the facilities' building systems. The following **Table 5** lists all the CSMs along M&V method used for validating the savings for each utility.

Refer to **Section 6** of the EFR Report for the detailed M&V Plan.

Table 5 – List of Selected M&V Method by CSM

Site Name - Measure ID	ECM	Electricity	Gas
Airport			
IIM-1	Lighting Systems Upgrade & Controls - Airport	Deemed	-
IIM-10	Building Envelope - Airport	Deemed	-
Civic Centre			
IIM-1	Lighting Systems Upgrade & Controls - Civic Centre	C	C
IIM-4	Control System Upgrades & Scheduling - Civic Centre	C	C
IIM-8	Car Plug Controls - Civic Centre	C	-
IIM-5	Heating Plant Upgrades - Civic Centre	-	C
IIM-10	Building Envelope - Civic Centre	-	C
Daycare			
IIM-1	Lighting Systems Upgrade & Controls - Daycare	Deemed	Deemed
IIM-10	Building Envelope - Daycare	Deemed	-
East End Hall			
IIM-1	Lighting Systems Upgrade & Controls - East End Hall	Deemed	Deemed
IIM-11	Improve Building Insulation - East End Hall	-	Deemed
IIM-10	Building Envelope - East End Hall	Deemed	-
	FF Cemetery		
Memorial Sports Centre			
IIM-1	Lighting Systems Upgrade & Controls - Memorial Sports Centre	C	C
IIM-4	Control System Upgrades & Scheduling - Memorial Sports Centre	C	C
IIM-6	Ice Refrigeration Plant Upgrades - Memorial Sports Centre	C	-
IIM-10	Building Envelope - Memorial Sports Centre	-	C
IIM-8	Pool Dry-O-Tron Upgrade - Memorial Sports Centre	-	C
Museum			
IIM-1	Lighting Systems Upgrade & Controls - Museum	Deemed	Deemed
IIM-4	Control System Upgrades & Scheduling - Museum	-	-
IIM-10	Building Envelope - Museum	Deemed	-
Public Works Garage			
IIM-1	Lighting Systems Upgrade & Controls - Public Works Garage	C	Deemed
IIM-8	Car Plug Controls - Public Works Garage	C	-
IIM-10	Building Envelope - Public Works Garage	-	Deemed

Site Name - Measure ID	ECM	Electricity	Gas
RV Cemetery			
IIM-1	Lighting Systems Upgrade & Controls - RV Cemetery	Deemed	-
IIM-10	Building Envelope - RV Cemetery	Deemed	-
Sister Kennedy Centre			
IIM-1	Lighting Systems Upgrade & Controls - Sister Kennedy Centre	Deemed	Deemed
IIM-10	Building Envelope - Sister Kennedy Centre	Deemed	-
Sorting Gap Marina			
IIM-1	Lighting Systems Upgrade & Controls - Sorting Gap Marina	Deemed	-
IIM-10	Building Envelope - Sorting Gap Marina	Deemed	-
WWTP			
IIM-1	Lighting Systems Upgrade & Controls - WWTP	Deemed	Deemed
IIM-2A	Install Fine Bubble Aeration System (No Blower Replacement) - WWTP	A	-
IIM-10	Building Envelope - WWTP	-	Deemed
WTP			
IIM-1	Lighting Systems Upgrade & Controls - WTP	Deemed	Deemed
IIM-5	Heating Plant Upgrades - WTP	-	Deemed
IIM-7B	Install New High Lift Pumps - WTP	A	-
IIM-10	Building Envelope - WTP	-	Deemed
City Wide			
IIM-12	Streetlighting Upgrade (LED)	A	-
Facility Renewal Measures			
IIM-10	HVAC Upgrade - Daycare	Deemed	-

A – Option A: Retrofit Isolation, Key Parameter Measurement

C – Option C: Whole Building

4. Adjustments

4.1 Base Year Adjustments

Adjustments are made to accommodate changes in operation of the facility between the base year and the current reporting period. Such changes may include changes to the floor area or schedules of the facility, and addition or removal of equipment that affect building loads and energy consumption. The utility consumption effects of such changes are normally calculated by standard engineering formulae using equipment size, building load, energy cost and hours of operation. Refer Appendix B for Base Year Adjustment details.

Table 6 – Base Year Adjustments Summary

Building	Meter Code	Utility	Description	KWh	KW
Civic Centre	CIC E1	Electric	Lighting Retrofit done by Customer (Town)	(82,915)	(16)
			Total	**(82,915)**	**(16)**

Note- Previous Adjustments identified in Yr-1 has been removed. In Yr-2 only Lighting is considered in Metrix software as negative Base Year Adjustment.

4.2 Utility Rates

Energy cost savings are determined by multiplying the energy savings by the greater of the current utility rates or the escalated base year utility rates. The base year, current year utility rates & applied rates are listed below in **Table 7, Table 8 & Table 9**.

Table 7 – Base Year Rates

	Year 2 Rate		
Building	**Electricity $/kWh**	**Electricity $/kW**	**Natural Gas $/m3**
Airport Terminal & Garage	$0.125	-	-
Civic Centre	$0.070	$6.636	$0.367
Daycare Centre*	-	-	-
East End Hall	$0.082	-	$0.395
Fort Frances Cemetery	$0.082	-	-
Memorial Sport Centre (primary)	$0.068	$6.636	$0.367
Memorial Sport Centre (secondary)	$0.069	$6.017	$0.395
Museum	$0.082	-	$0.398
Public Works Shop	$0.082	-	$0.395
Riverview Cemetery	$0.082	-	-
Sorting Gap Marina	$0.082	-	-
Sister Kennedy 1	$0.082	-	$0.395
Sister Kennedy 2	$0.082	-	$0.402
Sew age Treatment Plant	$0.072	$6.636	$0.395
Water Treatment Plant	$0.070	$6.636	$0.367
Street Lighting	$0.068	$5.363	-

*The Daycare facility is no longer owned by the Town and has been removed from the guarantee as per the request from Travis Rob. Future reporting will remove the reference to this building.

Table 8 – Current Utility Rates

	Year 2 Rate		
Building	**Electricity $/kWh**	**Electricity $/kW**	**Natural Gas $/m^3**
Airport Terminal & Garage	-	-	-
Civic Centre	$0.118	$8.481	$0.391
Daycare Centre*	-	-	-
East End Hall	-	-	-
Fort Frances Cemetery	-	-	-
Memorial Sport Centre (primary)	$0.123	$7.412	$0.359
Memorial Sport Centre (secondary)	$0.120	$8.199	$0.380
Museum	-	-	-
Public Works Shop	$0.124	-	-
Riverview Cemetery	-	-	-
Sorting Gap Marina	-	-	-
Sister Kennedy 1	-	-	-
Sister Kennedy 2	-	-	-
Sew age Treatment Plant	$0.118	$8.940	-
Water Treatment Plant	$0.118	$8.192	-
Street Lighting	$0.112	$13.463	-

*The Daycare facility is no longer owned by the Town and has been removed from the guarantee as per the request from Travis Rob. Future reporting will remove the reference to this building.

Table 9 – Selected Rates

	Year 2 Rate		
Building	**Electricity $/kWh**	**Electricity $/kW**	**Natural Gas $/m^3**
Airport Terminal & Garage	$0.125	-	-
Civic Centre	$0.118	$8.481	$0.391
Daycare Centre*	-	-	-
East End Hall	$0.082	-	$0.395
Fort Frances Cemetery	$0.082	-	-
Memorial Sport Centre (primary)	$0.123	$7.412	$0.367
Memorial Sport Centre (secondary)	$0.120	$8.199	$0.395
Museum	$0.082	-	$0.398
Public Works Shop	$0.124	-	$0.395
Riverview Cemetery	$0.082	-	-
Sorting Gap Marina	$0.082	-	-
Sister Kennedy 1	$0.082	-	$0.395
Sister Kennedy 2	$0.082	-	$0.402
Sew age Treatment Plant	$0.118	$8.940	$0.395
Water Treatment Plant	$0.118	$8.192	$0.367
Street Lighting	$0.112	$13.463	-

*The Daycare facility is no longer owned by the Town and has been removed from the guarantee as per the request from Travis Rob. Future reporting will remove the reference to this building.

5. Utility and Operational Cost Savings Summary

5.1 Verified Utility Savings – Retrofit Isolation

With Retrofit Isolation, the project savings are determined by isolating facility sub-systems associated with the measures and quantifying pre-and post-implementation utility consumption. Whenever possible, physical measurements such as current, voltage, power, demand and time are used to determine utility usage. Some operating parameters have been stipulated based on observations during facility audits and interviews with facilities staff and building occupants. Stipulated parameters have previously been approved by the Town of Fort Frances.

Facilities where Retrofit Isolation is being used are:

- Wastewater Treatment Plant
- Water Treatment Plant
- Street Lighting (Town wide)

Measures that will be verified using Retrofit Isolation methodology include:

- IIM-2A - Install Fine Bubble Aeration System (No Blower Replacement) – WWTP
- IIM-7B - Install New High Lift Pumps – WTP
- IIM-12 - Streetlighting Upgrade (LED) – Town wide

Utility savings have been applied at the applicable utility rates to determine the Annual Savings at the end of each Guaranteed Year starting at Year 2. **Table 10** is a cumulative summary of Option A savings.

Table 10 – Option A Savings

IIM-12 - Streetlighting Upgrade (LED) - City Wide

	Elec (kW/Month)	Elec (kWh)	Utility ($)	Operational ($)	Total ($)
Achieved total	161	690,180	$103,518	$54,500	$158,019
Original target	160	686,916	$55,462	$54,500	$109,963
% of Plan	100%	100%	187%	100%	144%

IIM-2A - Install Fine Bubble Aeration System (No Blower Replacement) - WWTP

Annual Savings	Elec (kW/Month)	Elec (kWh)	Utility ($)	Operational ($)	Total ($)
Achieved total	77	376,221	$52,715	$(4,000)	$48,715
Original target	41	263,518	$21,598	$(4,000)	$17,598
% of Plan	190%	143%	244%	100%	277%

IIM-7B - Install New High Lift Pumps - WTP

Annual Savings	Elec (kW/Month)	Elec (kWh)	Utility ($)	Operational ($)	Total ($)
Achieved total	-	94,318	$11,132	$1,200	$12,332
Original target	-	66,588	$5,327	$1,200	$6,527
% of Plan	-	142%	209%	100%	189%

5.2 Deemed Utility Savings

Deemed utility savings refers to measures where savings represent <10% of the annual bills. Once installation of the measure is complete, the savings will be considered achieved (deemed) for the term of the guarantee with no further validation required.

The following list identifies all the deemed utility accounts:

- Airport Terminal and Garage: electricity
- Daycare Centre: electricity and natural gas
- East End Hall: electricity and natural gas
- Fort Frances Cemetery: electricity and natural gas
- Museum: electricity and natural gas
- Public Works Shop: natural gas
- Riverview Cemetery: electricity and natural gas
- Sister Kennedy: electricity and natural gas
- Sorting Gap Marina: electricity
- Street lighting: electricity
- Water Treatment Plant: electricity and natural gas
- Waste Water Treatment Plant: electricity and natural gas

Table 11, **Table 12** & **Table 13** below are a summary of the Deemed savings.

Table 11 – Deemed savings - Lighting Systems

IIM-1 - Lighting Systems Upgrade & Controls

Building	Elec (kW/Month)	Elec (kWh)	Gas (m^3)	Utility ($)	Operational ($)	Total ($)
Airport	0	17,437	0	$2,179	$176	$2,355
Daycare*	0	0	0	$0	$0	$0
East End Hall	0	1,014	2	$73	$70	$142
Museum	0	15,181	(135)	$1,190	$0	$1,190
Public Works Garage	-	-	(1,482)	-$586	$0	-$586
RV Cemetery	0	2,079	0	$170	$80	$250
Sister Kennedy Centre	0	13,223	(316)	$959	$307	$1,266
Sorting Gap Marina	0	1,382	0	$113	$137	$250
WTP	5	13,814	(355)	$1,611	$405	$2,016
WWTP	3	5,985	(154)	$572	$23	$595
Achieved total	**8**	**70,115**	**(2,440)**	**$6,281**	**$1,198**	**$7,478**
Original target	**8**	**70,115**	**(2,440)**	**$6,281**	**$1,198**	**$7,478**
% of Plan	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

*The Daycare facility is no longer owned by the Town and therefore has been removed from the guarantee as per the request from Travis Rob.

Table 12 – Deemed savings - Building Envelope

IIM-10 - Building Envelope

Building	Elec (kW/Month)	Elec (kWh)	Gas (m^3)	Utility ($)	Operational ($)	Total ($)
Airport	-	9,333	0	$1,166	-	$1,166
Daycare*	-	0	0	$0	-	$0
East End Hall	-	4,200	0	$344	-	$344
Museum	-	6,300	0	$516	-	$516
Public Works Garage	-	-	3,412	$1,349	-	$1,349
RV Cemetery	-	10,500	0	860	-	$860
Sister Kennedy Centre	-	4,667	0	382	-	$382
Sorting Gap Marina	-	4,806	0	394	-	$394
WTP	-	0	1,465	513	-	$513
WWTP	-	0	477	189	-	$189
Achieved total	-	**39,806**	**5,354**	**$5,714**	-	**$5,714**
Original target	-	**39,806**	**5,354**	**$5,714**	-	**$5,714**
% of Plan	**-**	**100%**	**100%**	**100%**	-	**100%**

*The Daycare facility is no longer owned by the Town and therefore has been removed from the guarantee as per the request from Travis Rob.

Table 13 – Deemed savings- Natural Gas

IIM-11 - Improve Building Insulation - East End Hall

	Gas (m^3)	Utility ($)	Operational ($)	Total ($)
Achieved total	648	$256	$0	$256
Original target	648	$256	$0	$256
% of Plan	100%	100%		100%

IIM-5 - Heating Plant Upgrades - WTP

	Gas (m^3)	Utility ($)	Operational ($)	Total ($)
Achieved total	1,983	$694	$1,388	$2,082
Original target	1,983	$694	$1,388	$2,082
% of Plan	100%	100%	100%	100%

5.3 Verified Utility Savings – Whole Building

5.3.1 Monitored Utility Accounts

Table 14 below gives a summary of all the monitored utility accounts for the Town of Fort Frances that follow the Whole Building Approach. This list has also been outlined on EFF Report Section 6.10.1

Table 14 – List of Monitored Utility Accounts

Building Name	Utility Type	Meter Code	Account number	Service address	Utility name
Civic Centre	Electricity	CIC E1	757187-856990	320 Portage Ave.	Fort Frances Power Corp.
Civic Centre	Natural gas	CIC G1	142-9884 104-6549	320 Portage Ave.	Union Gas
Memorial Sport Centre	Electricity	MSC E1	752921-857660	720 Scott St.	Fort Frances Power Corp.
Memorial Sport Centre	Electricity	MSC E2	752933-857664	720 A Scott St.	Fort Frances Power Corp.
Memorial Sport Centre	Natural gas	MSC G1	142-9884 104-6550	720 Gillon St	Union Gas
Memorial Sport Centre	Natural gas	MSC G2	142-9884 104-6551	730 Gillon St	Union Gas
Public Works Shop	Electricity	PWS E1	756319-857570	900 Wright Ave. N.	Fort Frances Power Corp.

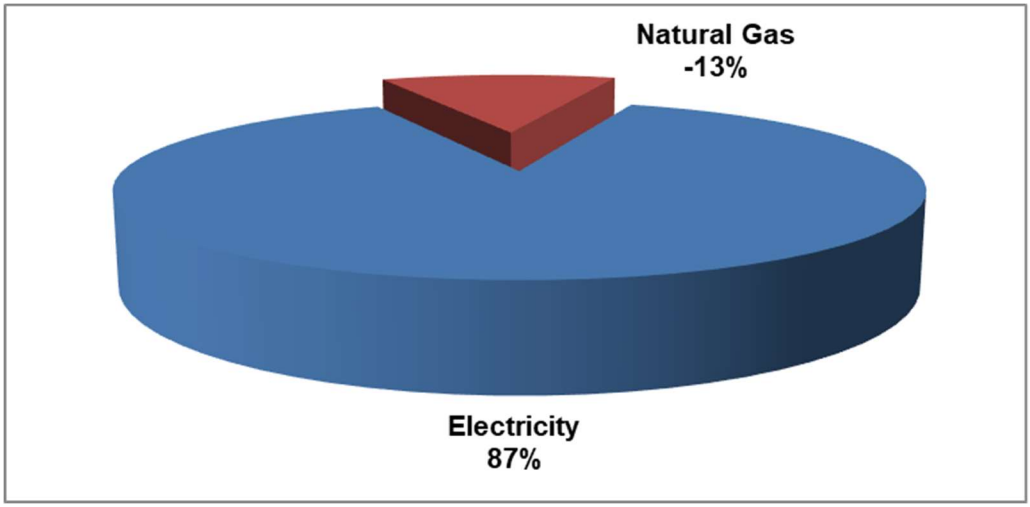
5.3.2 Verified Whole Building savings

Table 15 below, summarizes the verified whole building utility cost savings for the year 2. The detailed consumption and cost savings reports are presented in **Appendix A.**

Table 15 – Whole Building – Utility Cost Savings Summary

Facility	Electricity	Natural Gas	Total
Civic Centre	$25,509	-$225	$25,284
Memorial Sport Centre	$115,674	-$22,721	$92,953
Public Works Shop	$9,223	-	$9,223
Total	**$150,416**	**-$22,945**	**$127,470**

Figure 2 Utility Savings Distribution for Monitored Meters



5.3.3 Whole Building – Achieved Electricity Cost Savings

The Baseline and Actual Electricity Cost is shown in Figure 3 below. **Table 16** shows the cumulative Electricity Cost Savings for October 2020 to September 2021 is **$ 150,416.**

Figure 3 Comparison of Baseline vs. Actual Electricity Costs

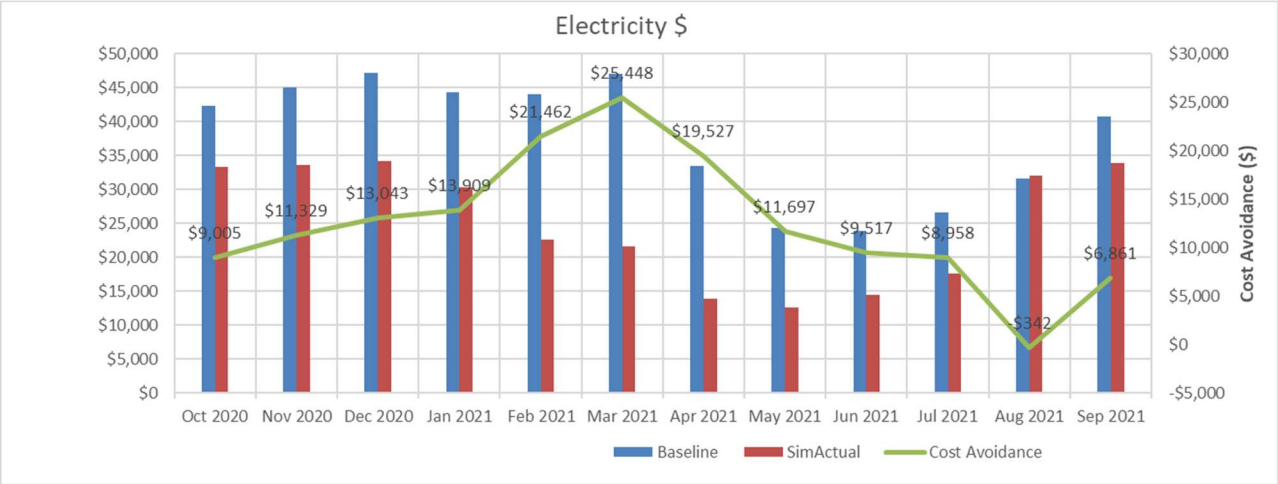


Table 16 – Electricity Cost Saving Summary

Scenario	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Baseline	$42,371	$44,983	$47,240	$44,295	$44,100	$47,013	$33,479	$24,287	$23,927	$26,623	$31,652	$40,791	**$450,761**
SimActual	$33,366	$33,654	$34,197	$30,386	$22,638	$21,565	$13,952	$12,590	$14,411	$17,665	$31,993	$33,930	**$300,346**
Cost Avoidance	$9,005	$11,329	$13,043	$13,909	$21,462	$25,448	$19,527	$11,697	$9,517	$8,958	-$342	$6,861	**$150,416**

5.3.4 Whole Building – Achieved Natural Gas Cost Savings

The Baseline and Actual Natural Gas Cost is shown in **Figure 4** below. **Table 17** shows that the cumulative Natural Gas Cost Savings for October 2020 to September 2021 is **-$ 22,945.**

Figure 4 Comparison of Baseline vs. Actual Natural Gas Costs

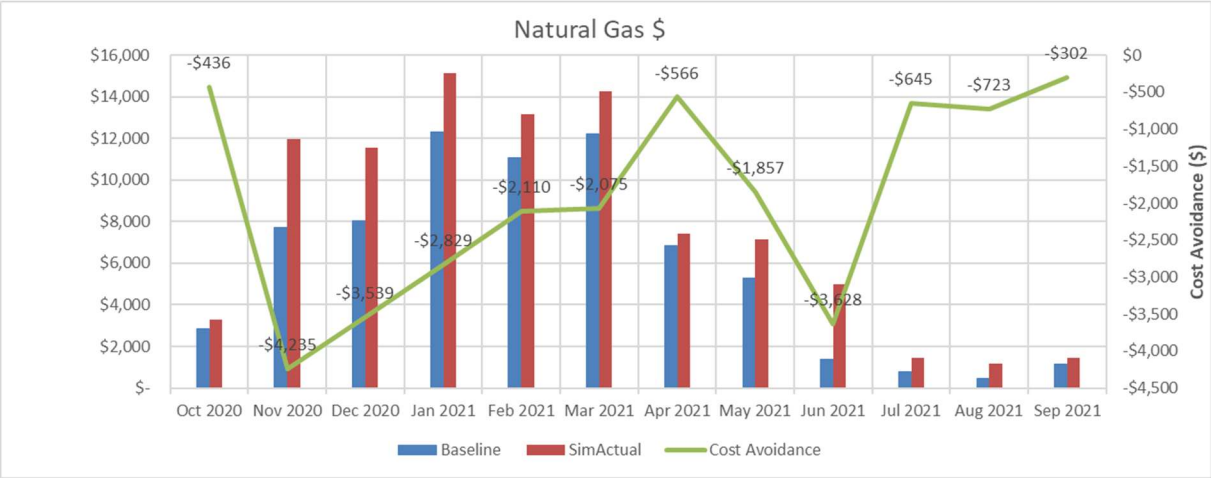


Table 17 – Natural Gas Cost Saving Summary

Scenario	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Baseline	$2,853	$7,717	$8,023	$12,321	$11,067	$12,196	$6,830	$5,283	$1,378	$793	$463	$1,169	**$70,092**
SimActual	$3,288	$11,951	$11,562	$15,149	$13,177	$14,272	$7,396	$7,140	$5,007	$1,438	$1,186	$1,471	**$93,037**
Cost Avoidance	-$436	-$4,235	-$3,539	-$2,829	-$2,110	-$2,075	-$566	-$1,857	-$3,628	-$645	-$723	-$302	**-$22,945**

5.4 Operational Cost Savings

Given the level of granularity required, operational savings are difficult to measure cost effectively. Once installation of the related measure is complete, the operational savings will be considered achieved (deemed) for the term of the guarantee with no further validation required. The deemed operational Savings are summarized and shown in **Table 18** below.

Table 18 – Annual Operational Cost Savings

Building	Operational Saving ($)
Airport	$176
Civic Centre	$7,151
Daycare*	-
East End Hall	$70
Memorial Sports Centre	$5,015
Public Works Garage	$286
RV Cemetery	$80
Sister Kennedy Centre	$307
Sorting Gap Marina	$137
WWTP	$(3,977)
WTP	$2,994
City Wide	$54,500
Facility Renewal Measures	$1,700
Total	**$67,639**

5.5 Metrix Analysis and Reports

5.5.1 Metrix Utility Accounting Software

The first step in reducing building energy consumption and cutting operating expenses is to accurately summarize building energy use by tracking and analyzing utility consumption and cost. *METRIX* Utility Accounting Software is an industry recognized utility management program customized to track, analyze, and print reports on energy usage. Utility billing data is entered in METRIX allowing the Energy Analyst to "tune" the data, in order to best simulate building performance over the specific billing period. This data "tuning" generates energy coefficients that will be used to compare future energy use against the energy used during the Base Year. This data is "tuned" using *METRIX*, in order to identify **Base Load** versus **Weather Sensitive** (or production sensitive) energy usage.

Base Load includes lighting, fans, pumps, elevators, domestic hot water, and office equipment (plug load).

Weather Sensitive loads include space heating and humidification, space cooling and de-humidification, condenser use, and additional winter lighting due to shorter sunlight hours.

Tuning also includes varying the building Balance Point Temperature (BPT) - selecting the outside air temperature when neither heating nor cooling is required in the building. Determination of the BPT requires understanding of basic building parameters, such as heating and cooling loads, types and operation of HVAC systems, building function and occupancy, as well as other similar buildings. Proper selection of the base temperature improves the accuracy of the tuning required to determine energy coefficients used in cost avoidance calculations.

5.6 Meter Tuning – Regression Analysis Results

The *METRIX* Meter Tuning tabulates basic meter information, but is used primarily to show the direct results of the Linear Regression Analysis on the Base Year energy values to derive the Baseline energy use. Each of the actual monthly utility bills is tabulated, with the corresponding heating and cooling degree days.

The Multiplier and Offset columns indicate the factors applied to the baseline value used in the calculation of the monthly Baseline energy use. Modifications to the Linear Regression formula are based on actual deviations in building energy use that cannot be accounted for in the regression formula. The Modification capabilities of METRIX allow the Energy Analyst to more accurately tune the meter to represent actual building operation.

The result of the energy analysis is to develop energy coefficients that will be used when comparing the pre-retrofit and post retrofit energy use. These values, in energy units per day, and units per heating and/or cooling degree days are derived from the Linear Regression model.

5.7 Verified Whole Building – Utility and Cost Savings Report

The detailed utility and cost savings for the individual building are presented in **Appendix A**. This report tabulates for each month of the current analysis period, the costs for both the Baseline energy use, and the Current or SimActual energy costs. Cost calculations are based on the Base Year utility rates. The difference in costs is the cost savings.

Appendix A – Meter Performance Report

Metrix4
Utility Accounting System

Meter Detail Report for Town of Fort Frances Project

Reference: Actual usage and costs for past Year.
SimActual: Actual usage and calculated costs for current Year.

Baseline: Current usage and costs based upon historic patterns of Unit use.

Meter: CIC E1

Reference

	Oct 2010	Nov 2010	Dec 2010	Jan 2011	Feb 2011	Mar 2011	Apr 2011	May 2011	Jun 2011	Jul 2011	Aug 2011	Sep 2011
Month Use	46,827	48,575	52,946	65,808	51,073	61,812	48,076	45,329	43,705	50,573	53,195	66,307
YTD Use	46,827	95,402	148,348	214,155	265,228	327,040	375,116	420,444	464,149	514,722	567,918	634,225
Meter Demand	98	107	109	113	106	102	94	106	97	123	131	123
Month CAD	CAD 4,094	CAD 4,711	CAD 5,239	CAD 5,766	CAD 5,156	CAD 6,046	CAD 4,838	CAD 4,435	CAD 4,672	CAD 5,587	CAD 5,880	CAD 6,081
YTD CAD	CAD 4,094	CAD 8,806	CAD 14,045	CAD 19,811	CAD 24,967	CAD 31,013	CAD 35,851	CAD 40,286	CAD 44,958	CAD 50,545	CAD 56,425	CAD 62,506
BP Length	28	30	27	34	25	32	27	28	28	30	28	35
HDD	3	79	474	667	569	469	166	48	-	-	-	-
CDD	6	-	-	-	-	-	-	-	22	78	162	118
Month Rate	CAD 0.087	CAD 0.097	CAD 0.099	CAD 0.088	CAD 0.101	CAD 0.098	CAD 0.101	CAD 0.098	CAD 0.107	CAD 0.110	CAD 0.111	CAD 0.092
YTD Rate	CAD 0.087	CAD 0.092	CAD 0.095	CAD 0.093	CAD 0.094	CAD 0.095	CAD 0.096	CAD 0.096	CAD 0.097	CAD 0.098	CAD 0.099	CAD 0.099

Baseline

	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021
Month Use	45,459	44,990	50,833	51,786	49,655	45,971	42,381	45,818	48,906	53,601	52,701	43,907
YTD Use	45,459	90,449	141,282	193,068	242,723	288,694	331,074	376,892	425,798	479,399	532,100	576,007
Meter Demand	100	101	105	106	108	103	100	116	120	129	133	113
YTD Meter Demand	100	201	306	412	519	622	723	838	959	1,088	1,221	1,334
Bill Demand	-	-	-	-	-	-	-	-	-	-	-	-
YTD Bill Demand	-	-	-	-	-	-	-	-	-	-	-	-
Month CAD	CAD 6,212	CAD 6,165	CAD 6,889	CAD 7,010	CAD 6,775	CAD 6,298	CAD 5,849	CAD 6,390	CAD 6,789	CAD 7,419	CAD 7,347	CAD 6,139
YTD CAD	CAD 6,212	CAD 12,378	CAD 19,266	CAD 26,276	CAD 33,051	CAD 39,349	CAD 45,199	CAD 51,589	CAD 58,377	CAD 65,796	CAD 73,143	CAD 79,282
BP Length	31	30	31	31	28	31	30	31	30	31	31	30
HDD	136	187	411	459	596	163	61	7	-	-	-	-
CDD	-	3	-	-	-	-	-	52	139	194	178	49
Month Rate	CAD 0.137	CAD 0.137	CAD 0.136	CAD 0.135	CAD 0.136	CAD 0.137	CAD 0.138	CAD 0.139	CAD 0.139	CAD 0.138	CAD 0.139	CAD 0.140
YTD Rate	CAD 0.137	CAD 0.137	CAD 0.136	CAD 0.136	CAD 0.136	CAD 0.136	CAD 0.137	CAD 0.137	CAD 0.137	CAD 0.137	CAD 0.137	CAD 0.138

SimActual

	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021
Month Use	31,787	30,907	32,038	32,415	31,787	31,787	27,892	29,525	36,813	41,210	37,943	30,656
YTD Use	31,787	62,694	94,732	127,147	158,934	190,721	218,613	248,138	284,951	326,161	364,104	394,760
Meter Demand	76	64	63	63	63	65	61	75	79	82	82	75
Month CAD	CAD 4,395	CAD 4,190	CAD 4,315	CAD 4,359	CAD 4,285	CAD 4,302	CAD 3,809	CAD 4,120	CAD 5,014	CAD 5,558	CAD 5,173	CAD 4,253
YTD CAD	CAD 4,395	CAD 8,585	CAD 12,900	CAD 17,259	CAD 21,544	CAD 25,847	CAD 29,655	CAD 33,775	CAD 38,789	CAD 44,347	CAD 49,520	CAD 53,774
BP Length	31	30	31	31	28	31	30	31	30	31	31	30
HDD	136	187	411	459	596	163	61	7	-	-	-	-
CDD	-	3	-	-	-	-	-	52	139	194	178	49
Month Rate	CAD 0.138	CAD 0.136	CAD 0.135	CAD 0.134	CAD 0.135	CAD 0.135	CAD 0.137	CAD 0.140	CAD 0.136	CAD 0.135	CAD 0.136	CAD 0.139
YTD Rate	CAD 0.138	CAD 0.137	CAD 0.136	CAD 0.136	CAD 0.136	CAD 0.136	CAD 0.136	CAD 0.136	CAD 0.136	CAD 0.136	CAD 0.136	CAD 0.136

SimActual vs. Baseline

	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021
Month Use	-30.1%	-31.3%	-37.0%	-37.4%	-36.0%	-30.9%	-34.2%	-35.6%	-24.7%	-23.1%	-28.0%	-30.2%
YTD Use	-30.1%	-30.7%	-32.9%	-34.1%	-34.5%	-33.9%	-34.0%	-34.2%	-33.1%	-32.0%	-31.6%	-31.5%
Meter Demand	-24.3%	-36.3%	-40.1%	-40.3%	-41.4%	-36.9%	-39.2%	-35.3%	-34.2%	-36.5%	-38.4%	-33.5%
YTD Meter Demand	-24.3%	-30.3%	-33.7%	-35.4%	-36.6%	-36.7%	-37.0%	-36.8%	-36.5%	-36.5%	-36.7%	-36.4%
Month CAD	-29.2%	-32.0%	-37.4%	-37.8%	-36.8%	-31.7%	-34.9%	-35.5%	-26.1%	-25.1%	-29.6%	-30.7%
YTD CAD	-29.2%	-30.6%	-33.0%	-34.3%	-34.8%	-34.3%	-34.4%	-34.5%	-33.6%	-32.6%	-32.3%	-32.2%
BP Length	-	-	-	-	-	-	-	-	-	-	-	-
HDD	-	-	-	-	-	-	-	-	-	-	-	-
CDD	-	-	-	-	-	-	-	-	-	-	-	-

Use Avoidance

Month Use	13,672	14,083	18,795	19,371	17,868	14,184	14,489	16,293	12,093	12,391	14,758	13,251
YTD Use	13,672	27,755	46,550	65,921	83,789	97,973	112,461	128,754	140,847	153,238	167,996	181,247

Demand Avoidance

Meter Demand	24	37	42	43	45	38	39	41	41	47	51	38

Cost Avoidance

Month Use CAD	CAD 1,817	CAD 1,976	CAD 2,574	CAD 2,650	CAD 2,490	CAD 1,996	CAD 2,040	CAD 2,270	CAD 1,775	CAD 1,861	CAD 2,174	CAD 1,886
YTD CAD	CAD 1,817	CAD 3,792	CAD 6,366	CAD 9,017	CAD 11,507	CAD 13,503	CAD 15,543	CAD 17,814	CAD 19,588	CAD 21,449	CAD 23,623	CAD 25,509

Metrix4 Utility Accounting System

Meter Detail Report for Town of Fort Frances Project

Reference: Actual usage and costs for past Year.
SimActual: Actual usage and calculated costs for current Year.

Baseline: Current usage and costs based upon historic patterns of Unit use.

Meter: CIC G1

Reference

	Oct 2010	Nov 2010	Dec 2010	Jan 2011	Feb 2011	Mar 2011	Apr 2011	May 2011	Jun 2011	Jul 2011	Aug 2011	Sep 2010
Month Use	1,383	4,685	8,095	10,151	10,479	9,258	6,468	3,833	-	-	3	47
YTD Use	1,383	6,067	14,162	24,313	34,792	44,049	50,517	54,350	54,350	54,350	54,353	54,401
Month CAD	CAD 687	CAD 1,977	CAD 3,119	CAD 3,881	CAD 3,988	CAD 3,538	CAD 2,549	CAD 1,691	CAD 79	CAD 79	CAD 80	CAD 100
YTD CAD	CAD 687	CAD 2,664	CAD 5,783	CAD 9,663	CAD 13,651	CAD 17,189	CAD 19,738	CAD 21,430	CAD 21,509	CAD 21,588	CAD 21,668	CAD 21,769
BP Length	29	32	29	31	31	29	29	30	32	30	33	29
HDD	126	253	592	903	959	787	473	276	106	17	1	31
CDD	-	-	-	-	-	-	-	-	1	19	68	37
Month Rate	CAD 0.497	CAD 0.422	CAD 0.385	CAD 0.382	CAD 0.381	CAD 0.382	CAD 0.394	CAD 0.441	CAD -	CAD -	CAD 28.861	CAD 2.122
YTD Rate	CAD 0.497	CAD 0.439	CAD 0.408	CAD 0.397	CAD 0.392	CAD 0.390	CAD 0.391	CAD 0.394	CAD 0.396	CAD 0.397	CAD 0.399	CAD 0.400

Baseline

	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021
Month Use	1,500	5,037	5,946	9,055	8,552	9,328	4,659	3,322	704	194	104	265
YTD Use	1,500	6,537	12,483	21,538	30,089	39,417	44,077	47,399	48,103	48,297	48,401	48,666
Month CAD	CAD 587	CAD 1,969	CAD 2,325	CAD 3,541	CAD 3,344	CAD 3,647	CAD 1,822	CAD 1,299	CAD 275	CAD 76	CAD 41	CAD 104
YTD CAD	CAD 587	CAD 2,556	CAD 4,881	CAD 8,421	CAD 11,765	CAD 15,412	CAD 17,234	CAD 18,533	CAD 18,808	CAD 18,884	CAD 18,925	CAD 19,028
BP Length	28	34	28	34	27	29	34	29	29	35	30	33
HDD	119	419	498	761	720	785	387	274	51	6	-	13
CDD	1	-	-	-	-	-	-	-	34	59	65	50
Month Rate	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391
YTD Rate	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391

SimActual

	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021
Month Use	515	5,077	5,589	8,854	8,039	8,354	5,408	3,978	1,004	765	373	1,285
YTD Use	515	5,592	11,181	20,035	28,074	36,428	41,836	45,814	46,818	47,583	47,956	49,241
Month CAD	CAD 201	CAD 1,985	CAD 2,185	CAD 3,462	CAD 3,143	CAD 3,266	CAD 2,115	CAD 1,555	CAD 393	CAD 299	CAD 146	CAD 502
YTD CAD	CAD 201	CAD 2,186	CAD 4,372	CAD 7,834	CAD 10,977	CAD 14,243	CAD 16,358	CAD 17,913	CAD 18,306	CAD 18,605	CAD 18,751	CAD 19,253
BP Length	28	34	28	34	27	29	34	29	29	35	30	33
HDD	119	419	498	761	720	785	387	274	51	6	-	13
CDD	1	-	-	-	-	-	-	-	34	59	65	50
Month Rate	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391
YTD Rate	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391	CAD 0.391

SimActual vs. Baseline

	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021
Month Use	-65.7%	0.8%	-6.0%	-2.2%	-6.0%	-10.4%	16.1%	19.7%	42.7%	294.4%	258.1%	384.3%
YTD Use	-65.7%	-14.5%	-10.4%	-7.0%	-6.7%	-7.6%	-5.1%	-3.3%	-2.7%	-1.5%	-0.9%	1.2%
Month CAD	-65.7%	0.8%	-6.0%	-2.2%	-6.0%	-10.4%	16.1%	19.7%	42.7%	294.4%	258.1%	384.3%
YTD CAD	-65.7%	-14.5%	-10.4%	-7.0%	-6.7%	-7.6%	-5.1%	-3.3%	-2.7%	-1.5%	-0.9%	1.2%
BP Length	-	-	-	-	-	-	-	-	-	-	-	-
HDD	-	-	-	-	-	-	-	-	-	-	-	-
CDD	-	-	-	-	-	-	-	-	-	-	-	-

Use Avoidance

Month Use	985	(40)	357	201	513	974	(749)	(656)	(300)	(571)	(269)	(1,020)
YTD Use	985	945	1,302	1,503	2,015	2,989	2,241	1,585	1,285	714	445	(575)

Cost Avoidance

Month Use CAD	CAD 385	CAD (16)	CAD 139	CAD 79	CAD 200	CAD 381	CAD (293)	CAD (256)	CAD (117)	CAD (223)	CAD (105)	CAD (399)
YTD CAD	CAD 385	CAD 369	CAD 509	CAD 588	CAD 788	CAD 1,169	CAD 876	CAD 620	CAD 502	CAD 279	CAD 174	CAD (225)

Metrix4 Utility Accounting System

Meter Detail Report for Town of Fort Frances Project

Reference: Actual usage and costs for past Year.
SimActual: Actual usage and calculated costs for current Year.

Baseline: Current usage and costs based upon historic patterns of Unit use.

Meter: MSC E1

Reference

	Oct 2010	Nov 2010	Dec 2010	Jan 2011	Feb 2011	Mar 2011	Apr 2011	May 2011	Jun 2011	Jul 2011	Aug 2011	Sep 2010
Month Use	67,684	74,174	64,594	76,029	66,448	72,011	53,158	15,453	11,435	14,217	20,398	14,526
YTD Use	67,684	141,858	206,452	282,481	348,929	420,940	474,098	489,551	500,986	515,203	535,601	550,127
Meter Demand	211	215	198	153	160	191	184	55	71	58	81	81
Month CAD	CAD 5,704	CAD 7,151	CAD 6,717	CAD 6,799	CAD 6,398	CAD 7,460	CAD 5,678	CAD 1,798	CAD 1,680	CAD 1,949	CAD 2,617	CAD 1,545
YTD CAD	CAD 5,704	CAD 12,856	CAD 19,572	CAD 26,371	CAD 32,769	CAD 40,229	CAD 45,907	CAD 47,704	CAD 49,384	CAD 51,333	CAD 53,951	CAD 55,496
BP Length	28	30	27	34	27	30	27	28	28	34	28	30
HDD	241	416	750	1,167	974	931	572	399	238	120	28	159
CDD	-	-	-	-	-	-	-	-	-	10	35	18
Month Rate	CAD 0.084	CAD 0.096	CAD 0.104	CAD 0.089	CAD 0.096	CAD 0.104	CAD 0.107	CAD 0.116	CAD 0.147	CAD 0.137	CAD 0.128	CAD 0.106
YTD Rate	CAD 0.084	CAD 0.091	CAD 0.095	CAD 0.093	CAD 0.094	CAD 0.096	CAD 0.097	CAD 0.097	CAD 0.099	CAD 0.100	CAD 0.101	CAD 0.101

Baseline

	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021
Month Use	63,124	69,244	72,123	64,257	65,067	73,844	42,195	17,351	16,014	21,544	62,389	70,157
YTD Use	63,124	132,367	204,490	268,748	333,814	407,658	449,853	467,204	483,218	504,762	567,151	637,308
Meter Demand	172	207	176	155	180	200	124	74	75	93	204	221
Month CAD	CAD 9,039	CAD 10,051	CAD 10,176	CAD 9,053	CAD 9,337	CAD 10,565	CAD 6,109	CAD 2,683	CAD 2,526	CAD 3,339	CAD 9,186	CAD 10,267
YTD CAD	CAD 9,039	CAD 19,090	CAD 29,266	CAD 38,318	CAD 47,656	CAD 58,221	CAD 64,330	CAD 67,013	CAD 69,538	CAD 72,878	CAD 82,063	CAD 92,331
BP Length	31	30	31	31	28	31	30	31	30	31	31	30
HDD	533	573	841	890	985	576	450	249	48	21	45	126
CDD	-	-	-	-	-	-	-	7	19	43	52	3
Month Rate	CAD 0.143	CAD 0.145	CAD 0.141	CAD 0.141	CAD 0.144	CAD 0.143	CAD 0.145	CAD 0.155	CAD 0.158	CAD 0.155	CAD 0.147	CAD 0.146
YTD Rate	CAD 0.143	CAD 0.144	CAD 0.143	CAD 0.143	CAD 0.143	CAD 0.143	CAD 0.143	CAD 0.143	CAD 0.144	CAD 0.144	CAD 0.145	CAD 0.145

SimActual

	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021
Month Use	53,483	54,416	54,416	44,155	50,996	44,777	15,858	9,329	8,085	7,463	12,749	32,961
YTD Use	53,483	107,899	162,315	206,470	257,466	302,243	318,101	327,430	335,515	342,978	355,727	388,688
Meter Demand	146	146	155	153	162	156	37	27	23	25	37	143
Month CAD	CAD 7,661	CAD 7,775	CAD 7,842	CAD 6,565	CAD 7,473	CAD 6,664	CAD 2,225	CAD 1,348	CAD 1,165	CAD 1,103	CAD 1,842	CAD 5,114
YTD CAD	CAD 7,661	CAD 15,436	CAD 23,278	CAD 29,843	CAD 37,316	CAD 43,980	CAD 46,205	CAD 47,552	CAD 48,717	CAD 49,821	CAD 51,663	CAD 56,777
BP Length	31	30	31	31	28	31	30	31	30	31	31	30
HDD	533	573	841	890	985	576	450	249	48	21	45	126
CDD	-	-	-	-	-	-	-	7	19	43	52	3
Month Rate	CAD 0.143	CAD 0.143	CAD 0.144	CAD 0.149	CAD 0.147	CAD 0.149	CAD 0.140	CAD 0.144	CAD 0.144	CAD 0.148	CAD 0.145	CAD 0.155
YTD Rate	CAD 0.143	CAD 0.143	CAD 0.143	CAD 0.145	CAD 0.145	CAD 0.146	CAD 0.145	CAD 0.145	CAD 0.145	CAD 0.145	CAD 0.145	CAD 0.146

SimActual vs. Baseline

	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021
Month Use	-15.3%	-21.4%	-24.6%	-31.3%	-21.6%	-39.4%	-62.4%	-46.2%	-49.5%	-65.4%	-79.6%	-53.0%
YTD Use	-15.3%	-18.5%	-20.6%	-23.2%	-22.9%	-25.9%	-29.3%	-29.9%	-30.6%	-32.1%	-37.3%	-39.0%
Meter Demand	-15.1%	-29.5%	-12.1%	-1.1%	-10.0%	-21.8%	-70.1%	-63.4%	-69.3%	-73.2%	-81.9%	-35.2%
YTD Meter Demand	-15.1%	-23.0%	-19.5%	-15.5%	-14.4%	-15.8%	-21.3%	-23.7%	-26.2%	-29.2%	-35.7%	-35.7%
Month CAD	-15.3%	-22.6%	-22.9%	-27.5%	-20.0%	-36.9%	-63.6%	-49.8%	-53.9%	-67.0%	-79.9%	-50.2%
YTD CAD	-15.3%	-19.1%	-20.5%	-22.1%	-21.7%	-24.5%	-28.2%	-29.0%	-29.9%	-31.6%	-37.0%	-38.5%
BP Length	-	-	-	-	-	-	-	-	-	-	-	-
HDD	-	-	-	-	-	-	-	-	-	-	-	-
CDD	-	-	-	-	-	-	-	-	-	-	-	-

Use Avoidance

Month Use	9,641	14,828	17,707	20,102	14,071	29,067	26,337	8,022	7,929	14,081	49,640	37,196
YTD Use	9,641	24,468	42,175	62,278	76,348	105,415	131,752	139,774	147,703	161,784	211,424	248,620

Demand Avoidance

Meter Demand	26	61	21	2	18	44	87	47	52	68	167	78

Cost Avoidance

Month Use CAD	CAD 1,379	CAD 2,276	CAD 2,334	CAD 2,487	CAD 1,864	CAD 3,901	CAD 3,884	CAD 1,335	CAD 1,361	CAD 2,236	CAD 7,344	CAD 5,153
YTD CAD	CAD 1,379	CAD 3,654	CAD 5,988	CAD 8,475	CAD 10,340	CAD 14,241	CAD 18,125	CAD 19,460	CAD 20,821	CAD 23,057	CAD 30,400	CAD 35,554

Metrix4 Utility Accounting System

Meter Detail Report for Town of Fort Frances Project

Reference: Actual usage and costs for past Year.
SimActual: Actual usage and calculated costs for current Year.

Baseline: Current usage and costs based upon historic patterns of Unit use.

Meter: MSC E2

Reference

	Oct 2010	Nov 2010	Dec 2010	Jan 2011	Feb 2011	Mar 2011	Apr 2011	May 2011	Jun 2011	Jul 2011	Aug 2011	Sep 2010
Month Use	182,313	196,299	178,317	214,780	185,310	203,292	175,820	128,368	79,918	95,402	95,402	193,302
YTD Use	182,313	378,612	556,929	771,709	957,019	1,160,311	1,336,130	1,464,499	1,544,417	1,639,819	1,735,221	1,928,523
Meter Demand	411	411	419	425	432	426	420	401	289	226	406	456
Month CAD	CAD 13,638	CAD 17,284	CAD 17,003	CAD 18,439	CAD 17,031	CAD 19,663	CAD 16,786	CAD 12,381	CAD 8,439	CAD 10,315	CAD 11,167	CAD 13,218
YTD CAD	CAD 13,638	CAD 30,922	CAD 47,926	CAD 66,365	CAD 83,395	CAD 103,058	CAD 119,844	CAD 132,225	CAD 140,664	CAD 150,979	CAD 162,146	CAD 175,363
BP Length	28	30	27	34	27	30	27	28	28	34	28	30
HDD	216	389	726	1,137	950	905	548	374	213	97	18	139
CDD	-	-	-	-	-	-	-	-	-	22	68	30
Month Rate	CAD 0.075	CAD 0.088	CAD 0.095	CAD 0.086	CAD 0.092	CAD 0.097	CAD 0.095	CAD 0.096	CAD 0.106	CAD 0.108	CAD 0.117	CAD 0.068
YTD Rate	CAD 0.075	CAD 0.082	CAD 0.086	CAD 0.086	CAD 0.087	CAD 0.089	CAD 0.090	CAD 0.090	CAD 0.091	CAD 0.092	CAD 0.093	CAD 0.091

Baseline

	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021
Month Use	184,896	196,575	204,259	188,679	184,340	207,668	142,999	96,053	92,009	95,662	95,662	166,469
YTD Use	184,896	381,472	585,731	774,410	958,751	1,166,418	1,309,417	1,405,470	1,497,479	1,593,141	1,688,803	1,855,271
Meter Demand	404	427	429	409	428	433	357	284	279	373	282	381
Month CAD	CAD 25,500	CAD 27,090	CAD 28,028	CAD 25,995	CAD 25,630	CAD 28,470	CAD 20,087	CAD 13,855	CAD 13,329	CAD 14,538	CAD 13,792	CAD 23,100
YTD CAD	CAD 25,500	CAD 52,590	CAD 80,618	CAD 106,613	CAD 132,243	CAD 160,714	CAD 180,801	CAD 194,655	CAD 207,984	CAD 222,522	CAD 236,313	CAD 259,413
BP Length	31	30	31	31	28	31	30	31	30	31	31	30
HDD	506	547	814	862	960	549	423	226	36	12	31	102
CDD	-	-	-	-	-	-	-	16	48	82	82	7
Month Rate	CAD 0.138	CAD 0.138	CAD 0.137	CAD 0.138	CAD 0.139	CAD 0.137	CAD 0.140	CAD 0.144	CAD 0.145	CAD 0.152	CAD 0.144	CAD 0.139
YTD Rate	CAD 0.138	CAD 0.138	CAD 0.138	CAD 0.138	CAD 0.138	CAD 0.138	CAD 0.138	CAD 0.138	CAD 0.139	CAD 0.140	CAD 0.140	CAD 0.140

SimActual

	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021
Month Use	152,276	154,286	155,794	133,681	70,861	71,866	51,764	46,738	54,276	71,866	177,906	177,404
YTD Use	152,276	306,562	462,356	596,037	666,898	738,764	790,528	837,266	891,542	963,408	1,141,314	1,318,718
Meter Demand	284	288	286	264	142	126	114	96	116	193	342	316
Month CAD	CAD 20,602	CAD 20,876	CAD 21,040	CAD 18,206	CAD 9,668	CAD 9,657	CAD 7,146	CAD 6,396	CAD 7,464	CAD 10,206	CAD 24,153	CAD 23,879
YTD CAD	CAD 20,602	CAD 41,477	CAD 62,517	CAD 80,724	CAD 90,391	CAD 100,048	CAD 107,195	CAD 113,590	CAD 121,055	CAD 131,261	CAD 155,414	CAD 179,293
BP Length	31	30	31	31	28	31	30	31	30	31	31	30
HDD	506	547	814	862	960	549	423	226	36	12	31	102
CDD	-	-	-	-	-	-	-	16	48	82	82	7
Month Rate	CAD 0.135	CAD 0.135	CAD 0.135	CAD 0.136	CAD 0.136	CAD 0.134	CAD 0.138	CAD 0.137	CAD 0.138	CAD 0.142	CAD 0.136	CAD 0.135
YTD Rate	CAD 0.135	CAD 0.135	CAD 0.135	CAD 0.135	CAD 0.136	CAD 0.135	CAD 0.136	CAD 0.136	CAD 0.136	CAD 0.136	CAD 0.136	CAD 0.136

SimActual vs. Baseline

	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021
Month Use	-17.6%	-21.5%	-23.7%	-29.1%	-61.6%	-65.4%	-63.8%	-51.3%	-41.0%	-24.9%	86.0%	6.6%
YTD Use	-17.6%	-19.6%	-21.1%	-23.0%	-30.4%	-36.7%	-39.6%	-40.4%	-40.5%	-39.5%	-32.4%	-28.9%
Meter Demand	-29.7%	-32.6%	-33.3%	-35.4%	-66.9%	-70.9%	-68.0%	-66.2%	-58.5%	-48.3%	21.4%	-17.1%
YTD Meter Demand	-29.7%	-31.2%	-31.9%	-32.8%	-39.7%	-45.1%	-47.9%	-49.5%	-50.3%	-50.1%	-45.2%	-42.8%
Month CAD	-19.2%	-22.9%	-24.9%	-30.0%	-62.3%	-66.1%	-64.4%	-53.8%	-44.0%	-29.8%	75.1%	3.4%
YTD CAD	-19.2%	-21.1%	-22.5%	-24.3%	-31.6%	-37.7%	-40.7%	-41.6%	-41.8%	-41.0%	-34.2%	-30.9%
BP Length	-	-	-	-	-	-	-	-	-	-	-	-
HDD	-	-	-	-	-	-	-	-	-	-	-	-
CDD	-	-	-	-	-	-	-	-	-	-	-	-

Use Avoidance

Month Use	32,620	42,289	48,465	54,998	113,479	135,802	91,235	49,315	37,733	23,796	(82,244)	(10,935)
YTD Use	32,620	74,910	123,375	178,373	291,853	427,654	518,889	568,204	605,937	629,733	547,489	536,553

Demand Avoidance

Meter Demand	120	139	143	145	286	307	243	188	163	180	(60)	65

Cost Avoidance

Month Use CAD	CAD 4,898	CAD 6,214	CAD 6,988	CAD 7,789	CAD 15,962	CAD 18,813	CAD 12,941	CAD 7,459	CAD 5,864	CAD 4,331	CAD (10,361)	CAD (779)
YTD CAD	CAD 4,898	CAD 11,113	CAD 18,101	CAD 25,890	CAD 41,852	CAD 60,665	CAD 73,606	CAD 81,065	CAD 86,929	CAD 91,261	CAD 80,900	CAD 80,120

Metrix4 Utility Accounting System

Meter Detail Report for Town of Fort Frances Project

Reference: Actual usage and costs for past Year.
SimActual: Actual usage and calculated costs for current Year.

Baseline: Current usage and costs based upon historic patterns of Unit use.

Meter: MSC G1

Reference

	Oct 2010	Nov 2010	Dec 2010	Jan 2011	Feb 2011	Mar 2011	Apr 2011	May 2011	Jun 2011	Jul 2011	Aug 2011	Sep 2010
Month Use	6,225	9,381	13,457	17,467	19,634	9,714	10,967	3,988	1,110	884	858	2,577
YTD Use	6,225	15,606	29,063	46,530	66,164	75,877	86,845	90,832	91,942	92,826	93,684	96,261
Month CAD	CAD 2,742	CAD 3,837	CAD 5,088	CAD 6,536	CAD 7,309	CAD 3,708	CAD 4,294	CAD 1,756	CAD 557	CAD 462	CAD 453	CAD 1,211
YTD CAD	CAD 2,742	CAD 6,579	CAD 11,666	CAD 18,202	CAD 25,512	CAD 29,219	CAD 33,513	CAD 35,269	CAD 35,826	CAD 36,288	CAD 36,741	CAD 37,952
BP Length	32	29	33	30	29	28	32	29	30	32	30	29
HDD	246	370	918	976	1,033	822	604	361	210	58	26	106
CDD	-	-	-	-	-	-	-	-	1	24	63	31
Month Rate	CAD 0.440	CAD 0.409	CAD 0.378	CAD 0.374	CAD 0.372	CAD 0.382	CAD 0.392	CAD 0.440	CAD 0.502	CAD 0.522	CAD 0.528	CAD 0.470
YTD Rate	CAD 0.440	CAD 0.422	CAD 0.401	CAD 0.391	CAD 0.386	CAD 0.385	CAD 0.386	CAD 0.388	CAD 0.390	CAD 0.391	CAD 0.392	CAD 0.394

Baseline

	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021
Month Use	4,003	10,331	10,288	16,278	13,814	16,325	8,782	7,211	1,523	658	172	1,388
YTD Use	4,003	14,334	24,623	40,901	54,714	71,040	79,822	87,033	88,556	89,214	89,387	90,775
Month CAD	CAD 1,469	CAD 3,792	CAD 3,776	CAD 5,974	CAD 5,070	CAD 5,991	CAD 3,223	CAD 2,647	CAD 559	CAD 241	CAD 63	CAD 509
YTD CAD	CAD 1,469	CAD 5,261	CAD 9,036	CAD 15,011	CAD 20,080	CAD 26,072	CAD 29,295	CAD 31,941	CAD 32,500	CAD 32,742	CAD 32,805	CAD 33,314
BP Length	29	35	27	35	25	31	32	31	28	36	32	31
HDD	227	586	584	923	784	926	498	409	86	37	9	78
CDD	1	-	-	-	-	-	-	-	40	53	78	36
Month Rate	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367
YTD Rate	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367

SimActual

	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021
Month Use	6,947	22,581	20,935	25,130	20,876	24,116	10,155	11,808	10,917	1,089	996	740
YTD Use	6,947	29,528	50,463	75,593	96,469	120,585	130,740	142,548	153,465	154,554	155,550	156,290
Month CAD	CAD 2,550	CAD 8,287	CAD 7,683	CAD 9,223	CAD 7,661	CAD 8,851	CAD 3,727	CAD 4,334	CAD 4,007	CAD 400	CAD 366	CAD 272
YTD CAD	CAD 2,550	CAD 10,837	CAD 18,520	CAD 27,743	CAD 35,404	CAD 44,255	CAD 47,982	CAD 52,315	CAD 56,322	CAD 56,721	CAD 57,087	CAD 57,359
BP Length	29	35	27	35	25	31	32	31	28	36	32	31
HDD	227	586	584	923	784	926	498	409	86	37	9	78
CDD	1	-	-	-	-	-	-	-	40	53	78	36
Month Rate	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367
YTD Rate	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367	CAD 0.367

SimActual vs. Baseline

	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021
Month Use	73.6%	118.6%	103.5%	54.4%	51.1%	47.7%	15.6%	63.7%	616.7%	65.5%	477.8%	-46.7%
YTD Use	73.6%	106.0%	104.9%	84.8%	76.3%	69.7%	63.8%	63.8%	73.3%	73.2%	74.0%	72.2%
Month CAD	73.6%	118.6%	103.5%	54.4%	51.1%	47.7%	15.6%	63.7%	616.7%	65.5%	477.8%	-46.7%
YTD CAD	73.6%	106.0%	104.9%	84.8%	76.3%	69.7%	63.8%	63.8%	73.3%	73.2%	74.0%	72.2%
BP Length	-	-	-	-	-	-	-	-	-	-	-	-
HDD	-	-	-	-	-	-	-	-	-	-	-	-
CDD	-	-	-	-	-	-	-	-	-	-	-	-

Use Avoidance

Month Use	(2,944)	(12,250)	(10,647)	(8,852)	(7,062)	(7,791)	(1,373)	(4,597)	(9,394)	(431)	(824)	648
YTD Use	(2,944)	(15,194)	(25,841)	(34,693)	(41,755)	(49,546)	(50,919)	(55,515)	(64,909)	(65,340)	(66,164)	(65,516)

Cost Avoidance

Month Use CAD	CAD (1,081)	CAD (4,496)	CAD (3,907)	CAD (3,249)	CAD (2,592)	CAD (2,859)	CAD (504)	CAD (1,687)	CAD (3,448)	CAD (158)	CAD (302)	CAD 238
YTD CAD	CAD (1,081)	CAD (5,576)	CAD (9,484)	CAD (12,732)	CAD (15,324)	CAD (18,183)	CAD (18,687)	CAD (20,374)	CAD (23,822)	CAD (23,980)	CAD (24,282)	CAD (24,044)

Metrix4 Utility Accounting System

Meter Detail Report for Town of Fort Frances Project

Reference: Actual usage and costs for past Year.
SimActual: Actual usage and calculated costs for current Year.

Baseline: Current usage and costs based upon historic patterns of Unit use.

Meter: MSC G2

Reference

	Oct 2010	Nov 2010	Dec 2010	Jan 2011	Feb 2011	Mar 2011	Apr 2011	May 2011	Jun 2011	Jul 2011	Aug 2011	Sep 2010
Month Use	2,056	3,438	6,393	6,885	6,935	7,992	5,661	4,409	2,348	804	476	1,586
YTD Use	2,056	5,494	11,887	18,771	25,706	33,698	39,359	43,769	46,116	46,920	47,396	48,982
Month CAD	CAD 958	CAD 1,512	CAD 2,624	CAD 2,816	CAD 2,825	CAD 3,252	CAD 2,366	CAD 1,966	CAD 1,061	CAD 382	CAD 238	CAD 752
YTD CAD	CAD 958	CAD 2,470	CAD 5,094	CAD 7,910	CAD 10,735	CAD 13,987	CAD 16,352	CAD 18,318	CAD 19,379	CAD 19,762	CAD 20,000	CAD 20,752
BP Length	32	29	33	30	29	28	32	29	30	32	30	29
HDD	246	370	918	976	1,033	822	604	361	210	58	26	106
CDD	-	-	-	-	-	-	-	-	1	24	63	31
Month Rate	CAD 0.466	CAD 0.440	CAD 0.411	CAD 0.409	CAD 0.407	CAD 0.407	CAD 0.418	CAD 0.446	CAD 0.452	CAD 0.476	CAD 0.501	CAD 0.474
YTD Rate	CAD 0.466	CAD 0.450	CAD 0.429	CAD 0.421	CAD 0.418	CAD 0.415	CAD 0.415	CAD 0.419	CAD 0.420	CAD 0.421	CAD 0.422	CAD 0.424

Baseline

	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021
Month Use	2,018	4,951	4,868	7,105	6,718	6,475	4,519	3,385	1,377	1,205	908	1,406
YTD Use	2,018	6,969	11,837	18,941	25,659	32,134	36,653	40,038	41,416	42,620	43,528	44,934
Month CAD	CAD 797	CAD 1,956	CAD 1,923	CAD 2,806	CAD 2,653	CAD 2,558	CAD 1,785	CAD 1,337	CAD 544	CAD 476	CAD 359	CAD 555
YTD CAD	CAD 797	CAD 2,753	CAD 4,675	CAD 7,482	CAD 10,135	CAD 12,693	CAD 14,478	CAD 15,815	CAD 16,359	CAD 16,835	CAD 17,194	CAD 17,749
BP Length	25	35	28	34	27	29	34	29	29	35	31	32
HDD	196	586	602	905	877	833	526	380	86	37	9	78
CDD	1	-	-	-	-	-	-	-	42	51	70	44
Month Rate	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395
YTD Rate	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395

SimActual

	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021
Month Use	1,360	4,251	4,287	6,240	6,006	5,455	3,936	3,166	1,538	1,872	1,708	1,764
YTD Use	1,360	5,611	9,898	16,138	22,144	27,599	31,535	34,701	36,239	38,111	39,819	41,583
Month CAD	CAD 537	CAD 1,679	CAD 1,693	CAD 2,465	CAD 2,372	CAD 2,155	CAD 1,555	CAD 1,251	CAD 608	CAD 739	CAD 675	CAD 697
YTD CAD	CAD 537	CAD 2,216	CAD 3,910	CAD 6,375	CAD 8,747	CAD 10,902	CAD 12,456	CAD 13,707	CAD 14,315	CAD 15,054	CAD 15,729	CAD 16,425
BP Length	25	35	28	34	27	29	34	29	29	35	31	32
HDD	196	586	602	905	877	833	526	380	86	37	9	78
CDD	1	-	-	-	-	-	-	-	42	51	70	44
Month Rate	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395
YTD Rate	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395	CAD 0.395

SimActual vs. Baseline

	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021
Month Use	-32.6%	-14.1%	-11.9%	-12.2%	-10.6%	-15.8%	-12.9%	-6.5%	11.7%	55.4%	88.1%	25.5%
YTD Use	-32.6%	-19.5%	-16.4%	-14.8%	-13.7%	-14.1%	-14.0%	-13.3%	-12.5%	-10.6%	-8.5%	-7.5%
Month CAD	-32.6%	-14.1%	-11.9%	-12.2%	-10.6%	-15.8%	-12.9%	-6.5%	11.7%	55.4%	88.1%	25.5%
YTD CAD	-32.6%	-19.5%	-16.4%	-14.8%	-13.7%	-14.1%	-14.0%	-13.3%	-12.5%	-10.6%	-8.5%	-7.5%
BP Length	-	-	-	-	-	-	-	-	-	-	-	-
HDD	-	-	-	-	-	-	-	-	-	-	-	-
CDD	-	-	-	-	-	-	-	-	-	-	-	-

Use Avoidance

Month Use	657	700	581	865	712	1,020	583	219	(161)	(667)	(800)	(358)
YTD Use	657	1,358	1,938	2,803	3,514	4,535	5,118	5,337	5,176	4,509	3,709	3,351

Cost Avoidance

Month Use CAD	CAD 260	CAD 277	CAD 229	CAD 342	CAD 281	CAD 403	CAD 230	CAD 87	CAD (64)	CAD (264)	CAD (316)	CAD (141)
YTD CAD	CAD 260	CAD 536	CAD 766	CAD 1,107	CAD 1,388	CAD 1,791	CAD 2,021	CAD 2,108	CAD 2,045	CAD 1,781	CAD 1,465	CAD 1,324

Metrix4 Utility Accounting System

Meter Detail Report for Town of Fort Frances Project

Reference: Actual usage and costs for past Year.
SimActual: Actual usage and calculated costs for current Year.

Baseline: Current usage and costs based upon historic patterns of Unit use.

Meter: PWS E1

Reference

	Oct 2010	Nov 2010	Dec 2010	Jan 2011	Feb 2011	Mar 2011	Apr 2011	May 2011	Jun 2011	Jul 2011	Aug 2010	Sep 2010
Month Use	7,600	26,057	21,062	19,314	18,315	14,735	11,988	10,073	10,406	9,740	9,490	9,324
YTD Use	7,600	33,657	54,718	74,032	92,346	107,081	119,069	129,142	139,548	149,288	158,778	168,102
Meter Demand	29	42	45	48	44	40	37	38	-	-	37	36
Month CAD	CAD 817	CAD 2,636	CAD 2,008	CAD 1,722	CAD 1,634	CAD 1,319	CAD 1,099	CAD 973	CAD 1,004	CAD 941	CAD 976	CAD 959
YTD CAD	CAD 817	CAD 3,454	CAD 5,461	CAD 7,183	CAD 8,817	CAD 10,136	CAD 11,236	CAD 12,208	CAD 13,212	CAD 14,153	CAD 15,129	CAD 16,088
BP Length	28	59	32	27	32	25	31	28	30	28	28	30
HDD	2	574	651	649	523	189	61	0	-	-	-	-
CDD	-	-	-	-	-	-	-	1	18	62	46	28
Month Rate	CAD 0.108	CAD 0.101	CAD 0.095	CAD 0.089	CAD 0.089	CAD 0.090	CAD 0.092	CAD 0.097	CAD 0.096	CAD 0.097	CAD 0.103	CAD 0.103
YTD Rate	CAD 0.108	CAD 0.103	CAD 0.100	CAD 0.097	CAD 0.095	CAD 0.095	CAD 0.094	CAD 0.095	CAD 0.095	CAD 0.095	CAD 0.095	CAD 0.096

Baseline

	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021
Month Use	13,062	13,521	17,316	18,044	19,009	13,543	11,567	10,959	10,360	10,706	10,706	10,360
YTD Use	13,062	26,583	43,899	61,942	80,951	94,493	106,060	117,020	127,380	138,086	148,792	159,152
Meter Demand	39	39	44	44	46	42	39	37	36	36	36	36
Month CAD	CAD 1,620	CAD 1,677	CAD 2,147	CAD 2,237	CAD 2,357	CAD 1,679	CAD 1,434	CAD 1,359	CAD 1,285	CAD 1,328	CAD 1,328	CAD 1,285
YTD CAD	CAD 1,620	CAD 3,296	CAD 5,443	CAD 7,681	CAD 10,038	CAD 11,717	CAD 13,151	CAD 14,510	CAD 15,795	CAD 17,123	CAD 18,450	CAD 19,735
BP Length	31	30	31	31	28	31	30	31	30	31	31	30
HDD	157	211	442	490	624	190	81	17	-	-	-	-
CDD	-	-	-	-	-	-	-	14	43	75	77	6
Month Rate	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124
YTD Rate	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124

SimActual

	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021
Month Use	5,709	6,561	8,067	10,123	9,773	7,593	6,229	5,857	6,190	6,428	6,657	5,508
YTD Use	5,709	12,270	20,337	30,460	40,233	47,826	54,055	59,912	66,102	72,530	79,187	84,695
Meter Demand	-	-	-	-	-	-	-	-	-	-	-	-
Month CAD	CAD 708	CAD 814	CAD 1,000	CAD 1,255	CAD 1,212	CAD 942	CAD 772	CAD 726	CAD 768	CAD 797	CAD 825	CAD 683
YTD CAD	CAD 708	CAD 1,521	CAD 2,522	CAD 3,777	CAD 4,989	CAD 5,930	CAD 6,703	CAD 7,429	CAD 8,197	CAD 8,994	CAD 9,819	CAD 10,502
BP Length	31	30	31	31	28	31	30	31	30	31	31	30
HDD	157	211	442	490	624	190	81	17	-	-	-	-
CDD	-	-	-	-	-	-	-	14	43	75	77	6
Month Rate	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124
YTD Rate	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124	CAD 0.124

SimActual vs. Baseline

	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021
Month Use	-56.3%	-51.5%	-53.4%	-43.9%	-48.6%	-43.9%	-46.1%	-46.6%	-40.3%	-40.0%	-37.8%	-46.8%
YTD Use	-56.3%	-53.8%	-53.7%	-50.8%	-50.3%	-49.4%	-49.0%	-48.8%	-48.1%	-47.5%	-46.8%	-46.8%
Meter Demand	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%
YTD Meter Demand	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%
Month CAD	-56.3%	-51.5%	-53.4%	-43.9%	-48.6%	-43.9%	-46.1%	-46.6%	-40.3%	-40.0%	-37.8%	-46.8%
YTD CAD	-56.3%	-53.8%	-53.7%	-50.8%	-50.3%	-49.4%	-49.0%	-48.8%	-48.1%	-47.5%	-46.8%	-46.8%
BP Length	-	-	-	-	-	-	-	-	-	-	-	-
HDD	-	-	-	-	-	-	-	-	-	-	-	-
CDD	-	-	-	-	-	-	-	-	-	-	-	-

Use Avoidance

Month Use	7,353	6,960	9,249	7,921	9,236	5,950	5,338	5,102	4,170	4,278	4,049	4,852
YTD Use	7,353	14,313	23,562	31,482	40,718	46,667	52,005	57,108	61,278	65,556	69,605	74,457

Demand Avoidance

Meter Demand	39	39	44	44	46	42	39	37	36	36	36	36

Cost Avoidance

Month Use CAD	CAD 912	CAD 863	CAD 1,147	CAD 982	CAD 1,145	CAD 738	CAD 662	CAD 633	CAD 517	CAD 530	CAD 502	CAD 602
YTD CAD	CAD 912	CAD 1,775	CAD 2,922	CAD 3,904	CAD 5,049	CAD 5,787	CAD 6,449	CAD 7,081	CAD 7,598	CAD 8,129	CAD 8,631	CAD 9,233

Appendix B – Base Year Adjustments

Fixture Description	Fixture Count	Lamp Count per Fixture	Pre-Retrofit Wattage per	Post-Retrofit Wattage per	Connected Wattage Reduction (kW)	Daily Hours	Operating Days per Year	Annual Hours	Annual Energy Savings (kWh)	Annual Energy Cost Savings
4' T8's 4bulb 25w (10hrs)	143	4	25	15	5.72	10	260	2,600	14,872	$2,337
4' T8's 4bulb 25w (24hrs)	90	4	25	15	3.60	24	365	8,760	31,536	$4,088
4' T8's 2bulb 25w (10hrs)	94	2	25	15	1.88	10	260	2,600	4,888	$768
4' T8's 2bulb 25w (24hrs)	64	2	25	15	1.28	24	365	8,760	11,213	$1,453
4' T8's 1bulb 25w (10hrs)	18	1	25	15	0.18	10	260	2,600	468	$74
4' T8's 1bulb 25w (24hrs)	3	1	25	15	0.03	24	365	8,760	263	$34
4' T5's 2bulb 28w (24hrs)	12	2	28	18	0.24	24	365	8,760	2,102	$273
2' T8's 4bulb (10hrs)	26	4	17	9	0.83	10	260	2,600	2,163	$340
2' T8's 4bulb (24hrs)	16	4	17	9	0.51	24	365	8,760	4,485	$581
2' T8's 2bulb (10hrs)	0	2	17	9	0.00	10			0	$0
2' T8's 2bulb (24hrs)	5	2	17	9	0.08	24	365	8,760	701	$91
Potlights 60 watt floods (10hrs)	18	1	60	10	0.90	10	260	2,600	2,340	$368
Potlights 60 watt floods (24hrs)	18	1	60	10	0.90	24	365	8,760	7,884	$1,022
Double T8's (17w)	0	2	17	9	0.00	12			0	
CFL (7w)	0	1	7	4	0.00	24			0	
Tracklights (3 bulb 60w incand.)	0	3	60	10	0.00	12			0	
Double T12's	0	2	34	15	0.00	12			0	
4 Tube T8's (32w)	0	4	32	15	0.00	12			0	
Incand. Spots (65w)	0	1	65	8.5	0.00	10			0	
Incand. Wall lights (60w)	0	1	60	10	0.00	24			0	

Year 2 Unit Cost	$0.118	per kWh
	$8.48	per kW-month

End of Report