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Honeywell 2020 Energy and Operational Savings Report Information Report to Council

Report Number: INFO-2021-15

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In accordance with the Procedure By-law, any member of Council may make a request to the Town Clerk that this Report be placed on an upcoming Committee of the Whole agenda for discussion.

Executive Summary

Since November 2014, cumulative savings for the Phase 2 Honeywell energy efficiency projects have amounted to \$6,550,833, which is \$2,509,047 higher than the cumulative savings guarantee determined at the beginning of the projects. For 2020, part of the utility savings was attributed to facilities closure due to COVID-19.

Purpose

The purpose of this report is to provide an update on energy and operational savings from the Phase 2 Honeywell Retrofit Program that was initiated in 2014.

Background

In an effort to lower greenhouse gas emissions, improve facility comfort, address deferred maintenance and reduce utility costs, the Town of Newmarket partnered with Honeywell Canada Energy and Environmental Services (EES) in 2007 to perform a comprehensive energy and facility renewal (EFR) study and subsequent retrofit of various Town facilities. Given the success of the Phase 1 EFR program, Community Services Information Report 2012-11 provided staff with authority to review the program's applicability to the Magna Centre and/or other facilities in the future. As a

result, staff implemented and completed a Phase 2 Honeywell Retrofit Program including streetlights in 2015.

Each year, Honeywell provides the Town with an annual energy and operational savings report for the Retrofit Program. The Phase 1 utility and operational savings guarantee ended in 2018 (see details in Honeywell 2019 Energy & Operational Savings Report 2020 -20).

The Phase 2 project straight utility cost savings guarantee is approximately \$583,000 per year from November 2015 to October 2031. To the end of October 2020, Phase 2 cumulative achieved savings (utility savings and operational savings together) amounted to \$6,550,833, which is \$2,509,047 higher than the cumulative savings guarantee. Total costs for the Phase 2 project are \$7.3 million, funded through an internal loan from reserve funds. This loan is being paid back through utility savings starting in 2017.

Discussion

The cost savings achieved during the period of November 2019 to October 2020 by Facility and Utility are provided in the following summary:

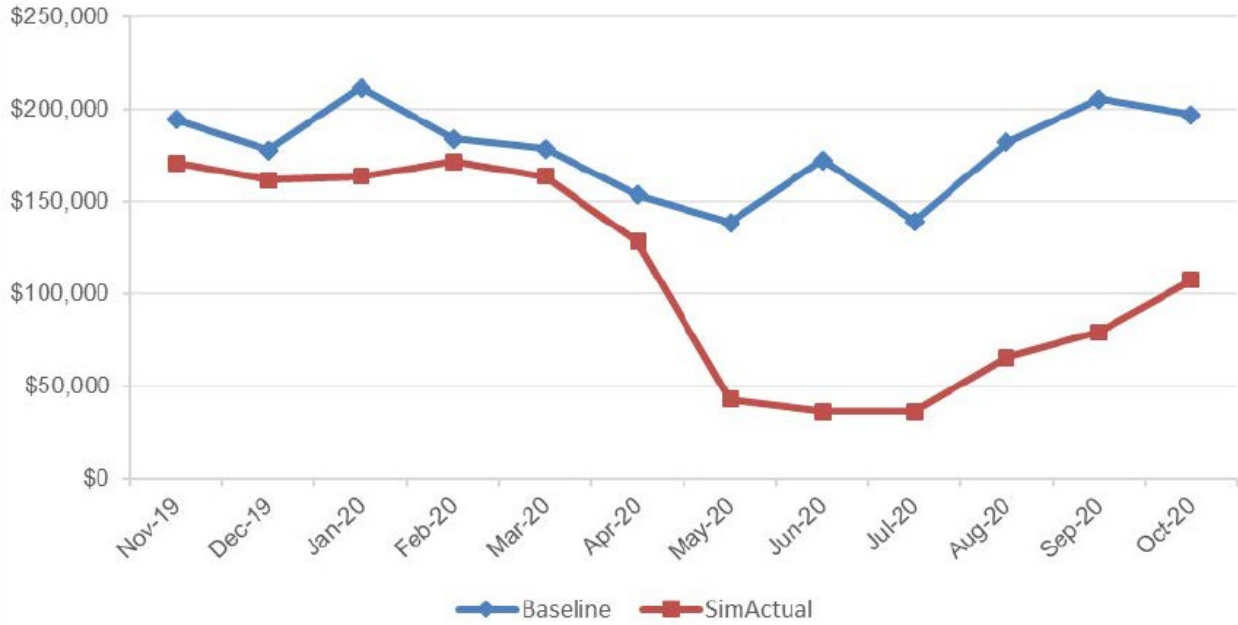
| Building Name | Electricity, \$ | Natural Gas, \$ | Water, \$ | Total Savings, \$ |
|-----------------------|------------------|-----------------|------------------|--------------------|
| Municipal Office | \$96,349 | \$20,793 | n/a | \$117,142 |
| Ray Twinney Rec | \$155,995 | \$64,624 | \$108,857 | \$329,476 |
| Seniors Meeting Place | \$10,228 | \$2,469 | n/a | \$12,697 |
| Magna Centre | \$544,377 | n/a | n/a | \$544,377 |
| Total | \$806,949 | \$87,886 | \$108,857 | \$1,003,692 |

Following is a graphical representation of the simulated actual utility consumption against the baseline utilities as established at the beginning of the project:

Electricity Consumption Cost (Excluding Streetlights*)

Electricity cost savings for the period is \$806,949.

Electricity Performance

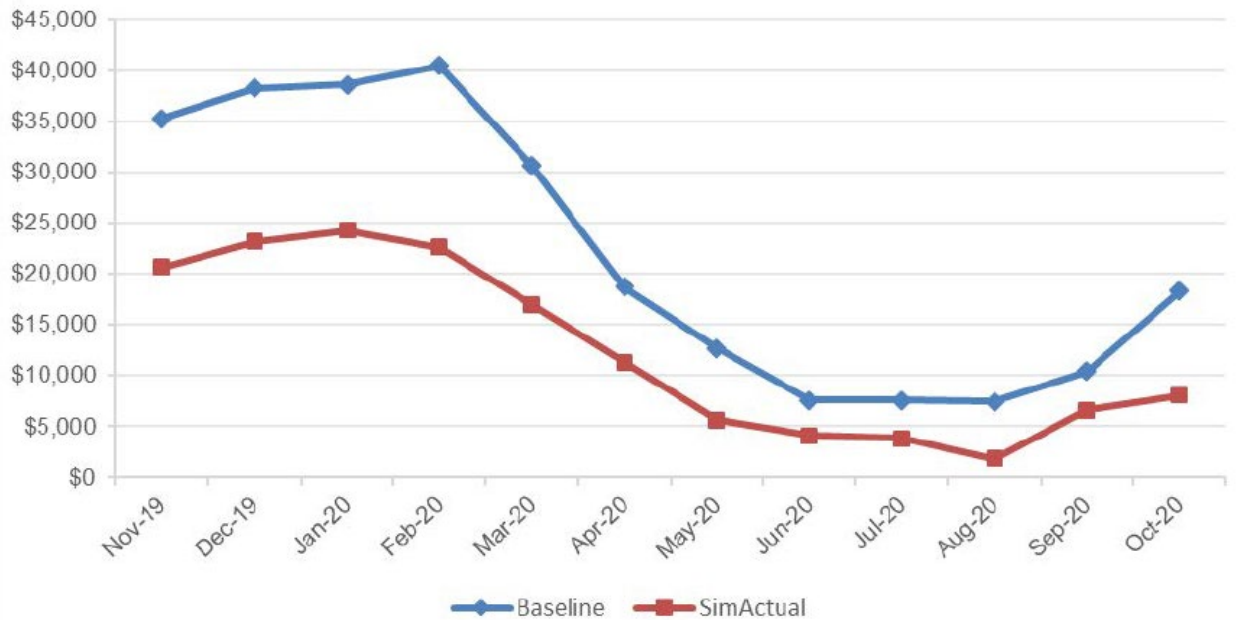


*Electricity cost savings for Streetlights for the period is \$565,839.

Natural Gas Consumption Costs

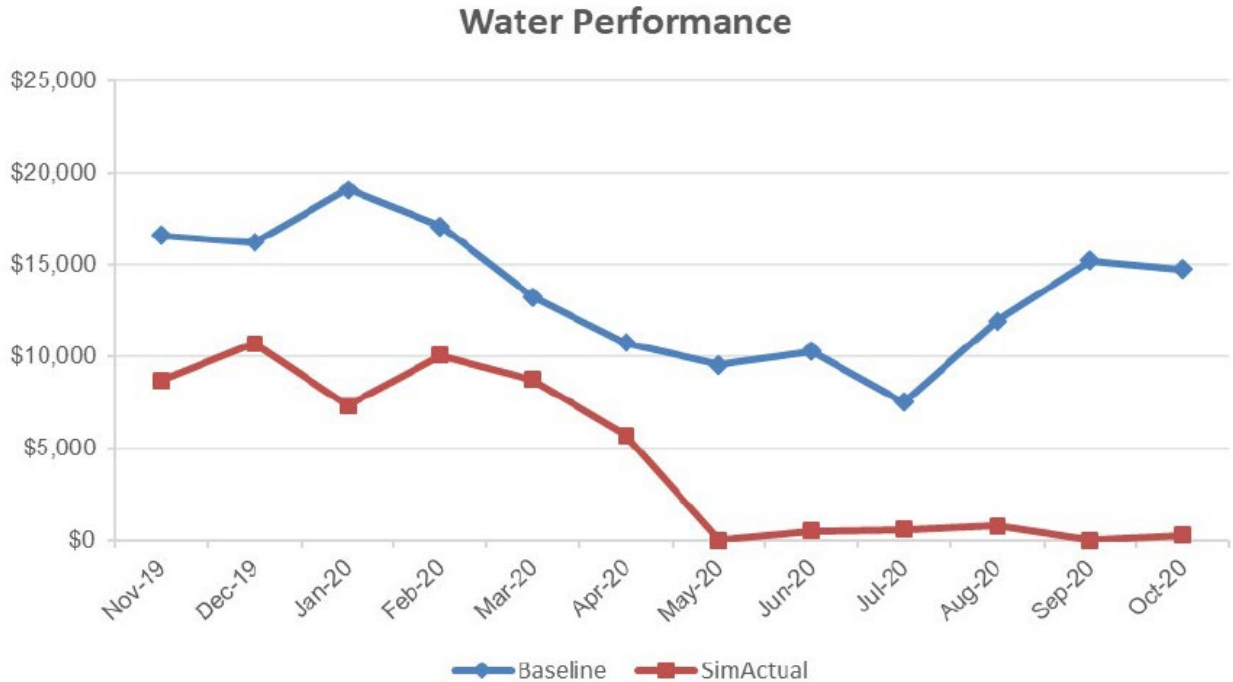
Natural gas cost savings for the period is \$87,886. There is an additional \$11,117 in natural gas cost savings as a result of the installation of VFD in Magna Centre.

Natural Gas Performance



Water Consumption Costs

Water cost savings for the period is \$108,857.



In addition to the utility cost avoidance indicated above, operational cost savings were identified as \$329,802 due to lower maintenance activities indicated in the following chart:

| Measure | Description of Savings | Average Maintenance Savings |
|--------------------------------------|---|-----------------------------|
| Streetlighting Upgrade (LED) | Savings result from increased life expectancy of new LED street lights, and reduced forecasted maintenance cost as developed by Newmarket Hydro, Honeywell and the Town. Includes a 10 year warranty on new LED fixtures (material). See section 4.3.1 for more detail. Maintenance saving is based upon table 3.7 in the EFRR. | \$311,518 |
| Lighting System Upgrades | The lamp and ballast lighting material savings are due to replacement. The new equipment is under warranty, and has a longer rated operating life. | \$15,188 |
| Control System Upgrades & Scheduling | Measures result in reduced: wear and tear on scheduled motors; less frequent filter changes due to lower annual operating hours and wear on valves and dampers due to stable control and reduced hunting. | \$1,867 |
| HVAC Upgrades | Less wear and tear and change out of pool cooling compressor due to shorter operating hours | \$1,129 |
| Heating Plant Upgrades | Reduced maintenance costs due to less frequent repairs on linkages | \$100 |
| Total | | \$329,802 |

Conclusion

In conclusion, to the end of October 2020, cumulative savings and/or cost avoidance realized is \$6,550,833, which is \$2,509,047 more than the cumulative savings anticipated at the beginning of the projects. The cumulative savings report ending October 2020 is provided in Appendix A for reference.

Business Plan and Strategic Plan Linkages

Consistent with Council's Strategic Priority for Environmental stewardship, this initiative supports reducing energy consumption and greenhouse gases. The Town is fiscally responsible and operates as efficiently and effectively as possible to maximize savings. The Town wishes to provide facilities that are well maintained and efficiently operated according to established operational and health standards. It is also the Town's goal to reduce annual energy consumption.

Consultation

No consultation was required for this report.

Human Resource Considerations

There are no Human Resource considerations as a result of this report.

Budget Impact

No budget impact (operational/capital/tax levy)

Attachments

Appendix - The Phase 2 Project Cost Savings Summary

Contact

For more information on this report, please contact Frank Wu, Business Performance Specialist, at 905-716-7530 or fwu@Newmarket.ca.

Approval

Frank Wu
Business Performance Specialist

Mark Agnoletto
Director, Public Works Services

Peter Noehammer, Commissioner
Development & Infrastructure Services

Appendix The Phase 2 Project Cost Savings Summary

| Guarantee Year | | Utility Savings Guarantee | Operational Savings | Total Savings Guarantee | Cumulative Savings Guarantee |
|----------------|---------------------|---------------------------|---------------------|-------------------------|------------------------------|
| Phase 2 CP | Nov 2014 - Oct 2015 | n/a | n/a | n/a | n/a |
| Phase 2 Yr 1 | Nov 2015 - Oct 2016 | \$477,662 | \$276,533 | \$754,195 | \$754,195 |
| Phase 2 Yr 2 | Nov 2016 - Oct 2017 | \$491,737 | \$288,929 | \$780,666 | \$1,534,861 |
| Phase 2 Yr 3 | Nov 2017 - Oct 2018 | \$505,813 | \$301,920 | \$807,733 | \$2,342,594 |
| Phase 2 Yr 4 | Nov 2018 - Oct 2019 | \$519,889 | \$315,535 | \$835,424 | \$3,178,018 |
| Phase 2 Yr 5 | Nov 2019 - Oct 2020 | \$533,965 | \$329,803 | \$863,768 | \$4,041,786 |
| Phase 2 Yr 6 | Nov 2020 - Oct 2021 | \$548,041 | \$344,755 | \$892,796 | \$4,934,582 |
| Phase 2 Yr 7 | Nov 2021 - Oct 2022 | \$562,116 | \$360,426 | \$922,542 | \$5,857,124 |
| Phase 2 Yr 8 | Nov 2022 - Oct 2023 | \$576,192 | \$376,849 | \$953,041 | \$6,810,165 |
| Phase 2 Yr 9 | Nov 2023 - Oct 2024 | \$590,268 | \$394,060 | \$984,328 | \$7,794,493 |
| Phase 2 Yr 10 | Nov 2024 - Oct 2025 | \$604,344 | \$412,097 | \$1,016,441 | \$8,810,934 |
| Phase 2 Yr 11 | Nov 2025 - Oct 2026 | \$618,419 | \$290,241 | \$908,660 | \$9,719,594 |
| Phase 2 Yr 12 | Nov 2026 - Oct 2027 | \$632,495 | \$303,295 | \$935,790 | \$10,655,384 |
| Phase 2 Yr 13 | Nov 2027 - Oct 2028 | \$646,571 | \$316,975 | \$963,546 | \$11,618,930 |
| Phase 2 Yr 14 | Nov 2028 - Oct 2029 | \$660,647 | \$331,313 | \$991,960 | \$12,610,890 |
| Phase 2 Yr 15 | Nov 2029 - Oct 2030 | \$674,722 | \$346,338 | \$1,021,060 | \$13,631,950 |
| Phase 2 Yr 16 | Nov 2030 - Oct 2031 | \$688,798 | \$362,084 | \$1,050,882 | \$14,682,832 |

| Achieved Savings | Cumulative Achieved Savings | Cumulative Excess (Shortfall) |
|-------------------------|------------------------------------|--------------------------------------|
| \$284,669 | \$284,669 | \$284,669 |
| \$972,385 | \$1,257,054 | \$502,859 |
| \$1,113,445 | \$2,370,499 | \$835,638 |
| \$1,016,278 | \$3,386,777 | \$1,044,183 |
| \$1,253,010 | \$4,639,787 | \$1,461,769 |
| \$1,911,046 | \$6,550,833 | \$2,509,047 |
| n/a | n/a | n/a |
| n/a | n/a | n/a |
| n/a | n/a | n/a |
| n/a | n/a | n/a |
| n/a | n/a | n/a |
| n/a | n/a | n/a |
| n/a | n/a | n/a |
| n/a | n/a | n/a |
| n/a | n/a | n/a |
| n/a | n/a | n/a |
| n/a | n/a | n/a |
| n/a | n/a | n/a |

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\$9,147,040 \$3,491,929