



# CITY OF CONCORD

*New Hampshire's Main Street™*

## Finance

Brian G. LeBrun  
Deputy City Manager  
Finance

**DATE:** April 30, 2020

**TO:** Honorable Mayor and Members of the City Council

**FROM:** Brian LeBrun, Deputy City Manager – Finance

**SUBJECT:** Report on Light-emitting diode (LED) Street Lighting Program

### **Recommendation:**

Accept this report and authorize the City Manager to enter into a Memorandum of Understanding (“MOU”) with Unitil relative to Unitil’s petition to the Public Utilities Commission (“PUC”) to provide a 0% loan to the City in excess of \$150,000 under Unitil’s Non-Residential Energy Efficiency Loan Program to support the replacement of the City’s existing outdoor street lights with LED lights under the City’s LED Street Lighting Program. Although this MOU is non-binding between Unitil and the City, it shows the Parties’ mutual commitment in moving forward with the City’s LED Street Lighting Program.

### **Discussion:**

The City of Concord has been in discussion with Unitil for several years about replacing existing streetlights throughout the City with LED lights. Both parties have worked on an agreement for the execution of the LED streetlight conversion project which includes direct financial incentives from Unitil for a portion of the project (50% of the project or \$325,000 whichever is lower) and on-bill financing for the remaining balance of the overall project cost.

### **Conclusion:**

The attached Memorandum of Understanding is intended to be used as the City’s interest in pursuing the LED streetlight conversion project so that Unitil can petition the Public Utilities Commission to waive a requirement in the utility tariff which limits on-bill financing to a maximum of \$150,000 a year. With the City’s support, Unitil will have a stronger case to waive this limitation and increase the amount of on-bill financing, at zero percent, to the amount needed.

Beacon Integrated Solutions was engaged to conduct a cost-benefit analysis of the LED streetlight conversion project contemplated by the City. Table 1 below presents the project implementation costs, along with offsetting incentives expected from Unitil.

**Table 1: Project Costs and Incentives:**

Cost RackUp	
Indicative Pricing	\$613,785
City Contingency [3]	\$21,482
Total Cost	\$635,267
Estimated Unutil Incentives	(\$317,634)
Net Cost to City	\$317,634
City Purchase of Existing Unutil Lights	\$56,817

Tables 2, 3 and 4 below present the estimated net benefits over varying on-bill financing terms. As shown in the Tables below, while the overall economic benefits over the 10-year period are the same, the timing of the savings are distributed differently. Table 2 below presents the estimated net benefit over a 10-year payment term. Table 3 below presents the estimated net benefit over a 7.5-year payment term. Table 4 below presents the estimated net benefit over a 5-year payment term.

**Table 2: Net Benefit Over 10-Year Financing Term**

PERIOD	ESTIMATED BENEFITS			ESTIMATED COSTS			ESTIMATED NET BENEFIT
	BASELINE COST [1]	ESTIMATED COST [1]	ESTIMATED SAVINGS	UNITIL LOAN PAYMENT-NEW EQUIPMENT	UNITIL LOAN PAYMENT-BUYOUT	ESTIMATED O&M [2]	
YEAR 1	\$487,615	\$384,287	\$103,328	\$31,763	\$11,363	\$0	\$60,201
YEAR 2	\$492,491	\$388,130	\$104,361	\$31,763	\$11,363	\$0	\$61,235
YEAR 3	\$497,416	\$392,011	\$105,405	\$31,763	\$11,363	\$9,207	\$53,072
YEAR 4	\$502,390	\$395,931	\$106,459	\$31,763	\$11,363	\$9,391	\$53,941
YEAR 5	\$507,414	\$399,890	\$107,524	\$31,763	\$11,363	\$9,579	\$54,818
YEAR 6	\$512,488	\$403,889	\$108,599	\$31,763	\$0	\$9,770	\$67,065
YEAR 7	\$517,613	\$407,928	\$109,685	\$31,763	\$0	\$9,966	\$67,956
YEAR 8	\$522,789	\$412,007	\$110,782	\$31,763	\$0	\$10,165	\$68,853
YEAR 9	\$528,017	\$416,127	\$111,890	\$31,763	\$0	\$10,368	\$69,758
YEAR 10	\$533,297	\$420,289	\$113,008	\$31,763	\$0	\$10,576	\$70,669
<b>TOTAL</b>	<b>\$5,101,530</b>	<b>\$4,020,489</b>	<b>\$1,081,041</b>	<b>\$317,634</b>	<b>\$56,817</b>	<b>\$79,021</b>	<b>\$627,569</b>

**NOTES:**

- [1]. Baseline and Estimated Costs use lower contracted 3-year supply rate of \$0.0614/kWh and current Unutil LED tariff effective 1/1/2020. Costs escalated annually at 1%.
- [2]. Estimated Operations and Maintenance costs assume a 2-year labor warranty, plus 10-year fixture warranty. In Year 3, O&M costs are estimated at 1.5% of indicative capital cost, escalated annually at 2%. Unutil tariff charge per-fixture per-visit charge is \$115.00 plus material cost.
- [3]. Contingency estimated at 3.5% of the Indicative Pricing.

**Table 3: Net Benefit Over 7.5-Year Financing Term**

PERIOD	ESTIMATED BENEFITS			ESTIMATED COSTS			ESTIMATED NET BENEFIT
	BASELINE COST [1]	ESTIMATED COST [1]	ESTIMATED SAVINGS	UNITIL LOAN PAYMENT-NEW EQUIPMENT	UNITIL LOAN PAYMENT-BUYOUT	ESTIMATED O&M [2]	
YEAR 1	\$487,615	\$384,287	\$103,328	\$42,351	\$11,363	\$0	\$49,614
YEAR 2	\$492,491	\$388,130	\$104,361	\$42,351	\$11,363	\$0	\$50,647
YEAR 3	\$497,416	\$392,011	\$105,405	\$42,351	\$11,363	\$9,207	\$42,484
YEAR 4	\$502,390	\$395,931	\$106,459	\$42,351	\$11,363	\$9,391	\$43,354
YEAR 5	\$507,414	\$399,890	\$107,524	\$42,351	\$11,363	\$9,579	\$44,230
YEAR 6	\$512,488	\$403,889	\$108,599	\$42,351	\$0	\$9,770	\$56,477
YEAR 7	\$517,613	\$407,928	\$109,685	\$42,351	\$0	\$9,966	\$57,368
YEAR 8	\$522,789	\$412,007	\$110,782	\$21,176	\$0	\$10,165	\$79,441
YEAR 9	\$528,017	\$416,127	\$111,890	\$0	\$0	\$10,368	\$101,521
YEAR 10	\$533,297	\$420,289	\$113,008	\$0	\$0	\$10,576	\$102,433
<b>TOTAL</b>	<b>\$5,101,530</b>	<b>\$4,020,489</b>	<b>\$1,081,041</b>	<b>\$317,634</b>	<b>\$56,817</b>	<b>\$79,021</b>	<b>\$627,569</b>

**NOTES:**

- [1]. Baseline and Estimated Costs use lower contracted 3-year supply rate of \$0.0614/kWh and current Unutil LED tariff effective 1/1/2020. Costs escalated annually at 1%.
- [2]. Estimated Operations and Maintenance costs assume a 2-year labor warranty, plus 10-year fixture warranty. In Year 3, O&M costs are estimated at 1.5% of indicative capital cost, escalated annually at 2%. Unutil tariff charge per-fixture per-visit charge is \$115.00 plus material cost.
- [3]. Contingency estimated at 3.5% of the Indicative Pricing.

**Table 4: Net Benefit Over 5-Year Financing Term**

PERIOD	ESTIMATED BENEFITS			ESTIMATED COSTS			ESTIMATED NET BENEFIT
	BASELINE COST [1]	ESTIMATED COST [1]	ESTIMATED SAVINGS	UNITIL LOAN PAYMENT-NEW EQUIPMENT	UNITIL LOAN PAYMENT-BUYOUT	ESTIMATED O&M [2]	
YEAR 1	\$487,615	\$384,287	\$103,328	\$63,527	\$11,363	\$0	\$28,438
YEAR 2	\$492,491	\$388,130	\$104,361	\$63,527	\$11,363	\$0	\$29,471
YEAR 3	\$497,416	\$392,011	\$105,405	\$63,527	\$11,363	\$9,207	\$21,308
YEAR 4	\$502,390	\$395,931	\$106,459	\$63,527	\$11,363	\$9,391	\$22,178
YEAR 5	\$507,414	\$399,890	\$107,524	\$63,527	\$11,363	\$9,579	\$23,055
YEAR 6	\$512,488	\$403,889	\$108,599	\$0	\$0	\$9,770	\$98,829
YEAR 7	\$517,613	\$407,928	\$109,685	\$0	\$0	\$9,966	\$99,719
YEAR 8	\$522,789	\$412,007	\$110,782	\$0	\$0	\$10,165	\$100,617
YEAR 9	\$528,017	\$416,127	\$111,890	\$0	\$0	\$10,368	\$101,521
YEAR 10	\$533,297	\$420,289	\$113,008	\$0	\$0	\$10,576	\$102,433
<b>TOTAL</b>	<b>\$5,101,530</b>	<b>\$4,020,489</b>	<b>\$1,081,041</b>	<b>\$317,634</b>	<b>\$56,817</b>	<b>\$79,021</b>	<b>\$627,569</b>

**NOTES:**

[1]. Baseline and Estimated Costs use lower contracted 3-year supply rate of \$0.0614/kWh and current Unitil LED tariff effective 1/1/2020. Costs escalated annually at 1%.

[2]. Estimated Operations and Maintenance costs assume a 2-year labor warranty, plus 10-year fixture warranty. In Year 3, O&M costs are estimated at 1.5% of indicative capital cost, escalated annually at 2%. Unitil tariff charge per-fixture per-visit charge is \$115.00 plus material cost.

[3]. Contingency estimated at 3.5% of the Indicative Pricing.

As shown in the analysis, the City will be responsible for ongoing maintenance and replacement of the streetlights after warranty period has expired. While the City has accounted for annual costs in excess of \$9,000, escalating at 2% per year, it is understood that such expenses would occur on a per-outage basis. LED streetlights generally do not require a substantial amount of maintenance over their twenty-year life span.

Once Unitil secures approval from the PUC to waive the limitations in the tariff of the total amount of on-bill financing available to the City, all agreements have been finalized, and the appropriate supplemental resolution has been approved by City Council that provides funding entirely from Unitil cash incentive and on-bill financing, it is anticipated that this project will have a completion date of December 31, 2020.