

LIGHTING RETROFIT PROPOSAL

Prepared for

Chris

Drey

Village of Romeoville



Site Information

Name: Village of Romeoville

Address: Public Works Facility,
615 Anderson Drive Romeoville IL
60446

Proposal Date

April 24, 2021

Proposal Expires

June 30, 2021





Public Works Facility
615 Anderson Drive
Romeoville, IL, 60446

April 24, 2021

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Village of Romeoville

Many businesses are searching for various means to reduce their operating expenses. In many cases, the search need not be any more tedious than simply looking at the something most of us take for granted – our lighting systems. By carefully analyzing the equipment and usage patterns of these systems, we can uncover hidden expenditures that are draining a company's resources. To assist you in disclosing these hidden costs, we are pleased to offer you this detailed analysis of your lighting system based on our preliminary audit of your facility with your team.

This proposal illustrates energy saving measures that we recommend and the financial benefits of investing in a lighting retrofit project at your facility. Please let me know if there are any questions you have about this proposal or any of the recommendations. We are looking forward to working with you.

William Haberkorn
President
Phone: 630-594-4948
Email: bill@extraelectricled.com

PROJECT SUMMARY



	Existing	After Retrofit
Number of Fixtures	120	120
Lighting System Energy Consumption	140,760 kWh	9,635 kWh

ANNUAL SAVING SUMMARY

(Energy Rate \$0.1000 /kWh)

Energy Reduction	Energy Savings	Maintenance Savings	Carbon Savings
131,125 kWh REDUCED	\$14,690 SAVED	\$1,336 SAVED	92,549 kgCO2e GASES REDUCED

FINANCIAL SUMMARY

(10 Year Analysis Period)

Project Cost	\$10,677
Tax	\$0
Less Rebates and Incentives	\$(10,677)
Net Project Cost	\$0

PAYBACK 0	ROI 0.00%	NPV \$119,806	IRR NA%

COST OF WAITING

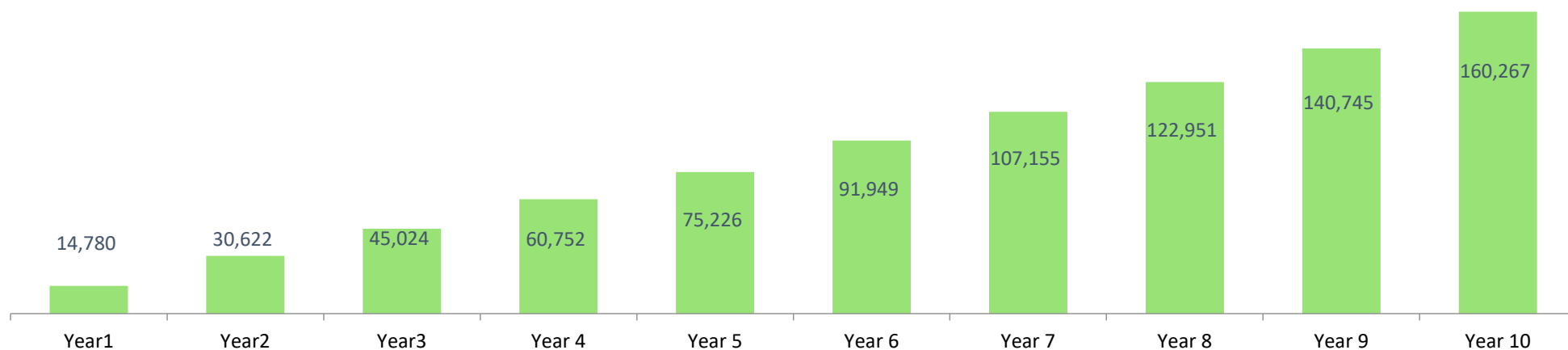
Postpone for one month	\$1,336
Postpone for six months	\$8,013
Postpone for one year	\$16,027

EXECUTIVE SUMMARY

Itemized Cash Flow

	Year 01	Year 02	Year 03	Year 04	Year 05	Year 06	Year 07	Year 08	Year 09	Year 10
Project Cost	\$(10,677)	-	-	-	-	-	-	-	-	-
Rebates	\$10,677	-	-	-	-	-	-	-	-	-
Energy Savings	\$13,112	\$13,440	\$13,776	\$14,121	\$14,474	\$14,836	\$15,206	\$15,587	\$15,976	\$16,376
Maintenance Savings	\$1,668	\$2,402	\$626	\$1,607	\$0	\$1,887	\$0	\$209	\$1,818	\$3,146
Net Cash Flow	\$14,780	\$15,842	\$14,402	\$15,728	\$14,474	\$16,723	\$15,206	\$15,796	\$17,794	\$19,522

Aggregate Cash Flow Over Ten Years (\$)



CASH FLOW

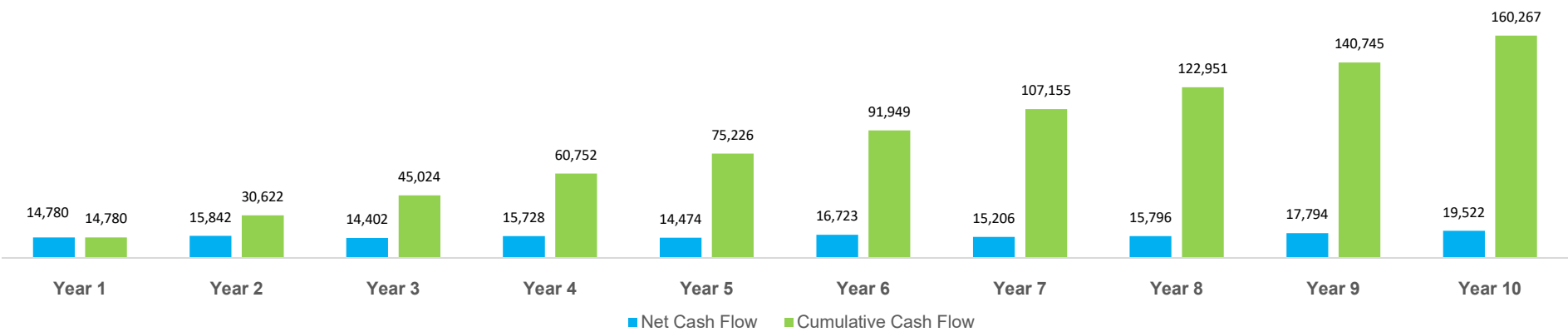


We understand that finalizing a project like this often takes time. However, each day you delay your upgrade, you are missing out on the opportunity to reduce your operating expenses. As shown below, the lost opportunity continues to compound over time.

10 Year Cash Flow Analysis

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Project Cost	\$(10,677)	-	-	-	-	-	-	-	-	-	\$(10,677)
Rebates	\$10,677	-	-	-	-	-	-	-	-	-	\$10,677
Energy Savings	\$13,112	\$13,440	\$13,776	\$14,121	\$14,474	\$14,836	\$15,206	\$15,587	\$15,976	\$16,376	\$146,904
Maintenance Savings	\$1,668	\$2,402	\$626	\$1,607	\$0	\$1,887	\$0	\$209	\$1,818	\$3,146	\$13,364
Net Cash Flow	\$14,780	\$15,842	\$14,402	\$15,728	\$14,474	\$16,723	\$15,206	\$15,796	\$17,794	\$19,522	\$160,267
Cum Cash Flow	\$14,780	\$30,622	\$45,024	\$60,752	\$75,226	\$91,949	\$107,155	\$122,951	\$140,745	\$160,267	\$160,267

10 Year Net & Cumulative Cash Flow (\$)

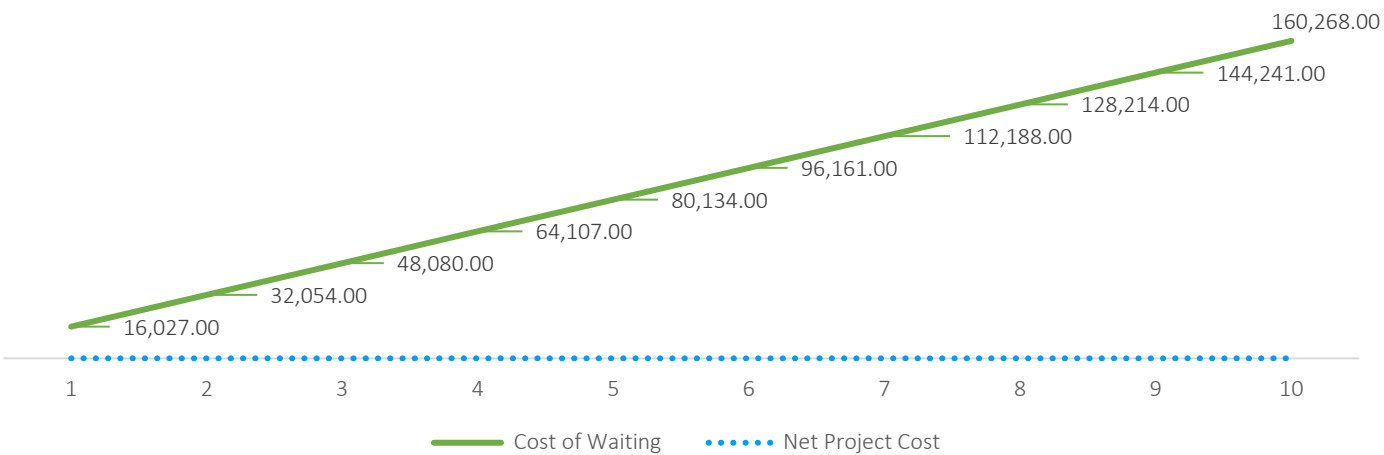


COST OF WAITING



The cost of waiting shows the amount of cash your company will be losing if you delay the proposed lighting upgrade.

Monthly	Yearly	10 Years
\$1,336	\$16,027	\$160,268



Cost of waiting includes energy savings and maintenance savings applied as an average annual amount over a 10 year analysis period

OPERATIONAL OVERVIEW

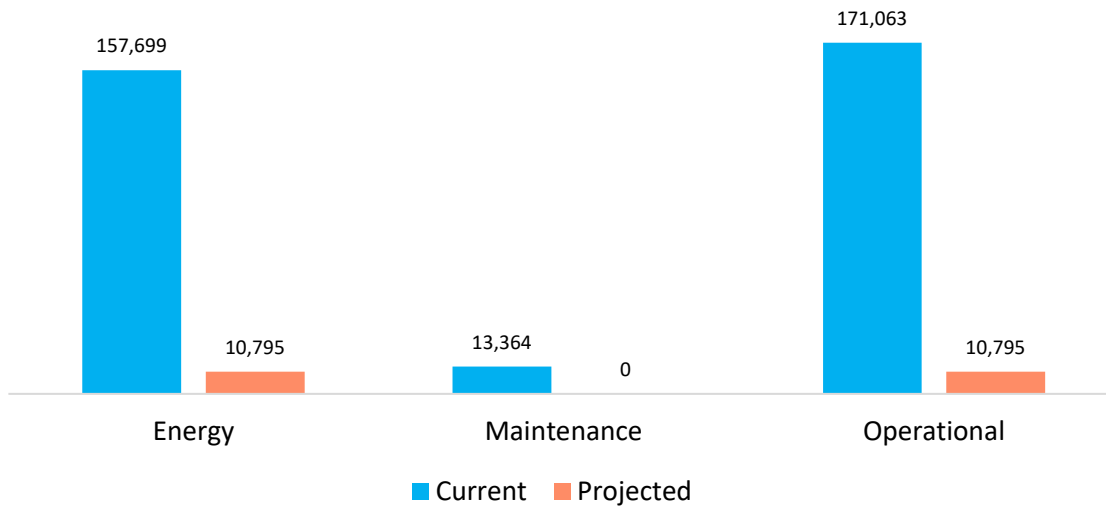
While energy is the largest long-term cost of lighting, the cost for maintaining your lighting system can also be a significant expense of your overall budget. Understanding the impact of longer lasting lighting systems on your maintenance costs is critical to understanding the true ROI of your project.

Operational Savings Summary

Operational Area	Current Annual	Projected Annual	Reduction	Current 10 Year	Projected 10 Year	Reduction
Energy	\$15,770	\$1,080	93%	\$157,699	\$10,795	93%
Maintenance	\$1,336	\$0	100%	\$13,364	\$0	100%
Total	\$17,106	\$1,080	94%	\$171,063	\$10,795	94%

1. Energy cost = \$0.1000/kWh; Annual energy cost escalation = 2.50%
2. Energy costs are averaged over 10 analysis period
3. Maintenance costs are averaged over 10 analysis period

10 Year Operational Comparison (\$)



1. Energy cost = \$0.1000/kWh; Annual energy cost escalation = 2.50%
2. Energy costs are averaged over 10 analysis period
3. Maintenance costs are averaged over 10 analysis period



ENERGY USAGE

The following set of information evaluates your current energy usages and costs and compares that to the projected energy usage and costs your facility will see after the proposed lighting upgrade.

Annual Energy Usage

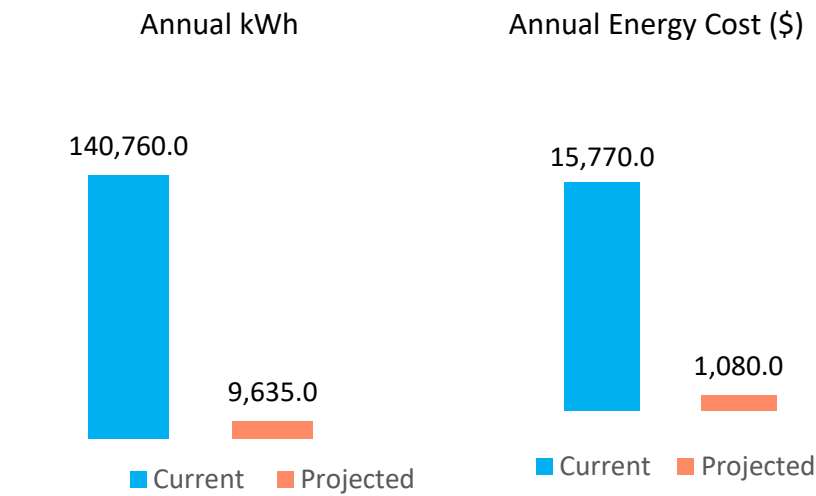
Current Usage (kWh)	Projected Usage (kWh)	Reduction	Current Cost	Projected Cost	Financial Savings	Percent Saved
140,760	9,635	93%	\$15,770	\$1,080	\$14,690	93%

- 1. Energy cost = \$0.1000/kWh; Annual energy cost escalation = 2.50%
- 2. Energy costs are averaged over 10 analysis period
- 3. Projected Usage (kWh) includes savings from controls if applicable

Annual Energy Usage Reduction

Current Usage (kWh)	Projected Usage (kWh)	Reduction (kWh)	Reduction
140,760	9,635	131,125	93%

Energy Comparison



- 1. Energy Cost = \$0.1000/kWh; Annual energy cost escalation = 2.50%
- 2. Energy costs are averaged over 10 analysis period

WATTS SUMMARY



Existing Watts	Proposed Watts	Reduced Watts	Reduction
25,415	2,583	22,832	93%

The calculations in this table take into account the existing fixtures that are being replaced, upgraded, and/or have new lighting controls being proposed for them.

Lighting Wattage Comparison

Building #1

Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Shop	Highbay/Light Emitting Diode/100.0W/1 Lamp	20	100.0	2,000	Wisdom / WL-3LH2FT100D-50K Highbay/LED/120-277V	20	100.0	2,000	5,640
Shop	Strip/T12 Fluorescent/8 ft/110.0W/2 Lamp	83	257.0	21,331	Wisdom / WL-RTST230D(5000K) Linear/LED/Retrofit Kit/4 ft+/1 in+/5000K/80+/0-10V Dimming	83	30.0	2,490	5,640
Shop	Troffer/Light Emitting Diode/36.0W/1 Lamp	1	36.0	36	Wisdom Light Co. / WL=TRRS2436D(5000K) Troffer/2x4 ft/LED/Retrofit Kit/5000K/100-277V/0-10V Dimming/Center Basket	1	36.0	36	5,640
Total			393.0	23,367			166.0	4,526	

Exterior

Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Bldgs. #1, #5 & #6	Wallpack/Metal Halide/100.0W/1 Lamp	16	128.0	2,048	Torshare / TS-WPK03-20W Wallpack/LED/120-277V	16	20.0	320	4,380

Total	128.0	2,048	20.0	320
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UPGRADE ANALYSIS



Fixture Replacement by Space

Building #1

Space	Existing Fixture	Qty	Proposed Solution	Qty
Shop	Highbay/Light Emitting Diode/100.0W/1 Lamp	20	Wisdom / WL-3LH2FT100D-50K Highbay/LED/120-277V	20
Shop	Strip/T12 Fluorescent/8 ft/110.0W/2 Lamp	83	Wisdom / WL-RTST230D(5000K) Linear/LED/Retrofit Kit/4 ft+/1 in+/5000K/80+/0-10V Dimming	83
Shop	Troffer/Light Emitting Diode/36.0W/1 Lamp	1	Wisdom Light Co. / WL=TRRS2436D(5000K) Troffer/2x4 ft/LED/Retrofit Kit/5000K/100-277V/0-10V Dimming/Center Basket	1

Exterior

Space	Existing Fixture	Qty	Proposed Solution	Qty
Bldgs. #1, #5 & #6	Wallpack/Metal Halide/100.0W/1 Lamp	16	Torshare / TS-WPK03-20W Wallpack/LED/120-277V	16

Replacement by Fixture

Existing Fixture	Qty	Proposed Solution	Qty
Highbay/Light Emitting Diode/100.0W/1 Lamp	20	Wisdom / WL-3LH2FT100D-50K Highbay/LED/120-277V	20
Strip/T12 Fluorescent/8 ft/110.0W/2 Lamp	83	Wisdom / WL-RTST230D(5000K) Linear/LED/Retrofit Kit/4 ft+/1 in+/5000K/80+/0-10V Dimming	83
Troffer/Light Emitting Diode/36.0W/1 Lamp	1	Wisdom Light Co. / WL=TRRS2436D(5000K) Troffer/2x4 ft/LED/Retrofit Kit/5000K/100-277V/0-10V Dimming/Center Basket	1
Wallpack/Metal Halide/100.0W/1 Lamp	16	Torshare / TS-WPK03-20W Wallpack/LED/120-277V	16

Controls Upgrade Summary

Proposed Control

Proposed Control	Qty
Intermatic / 4021 Button Type Photocell	16

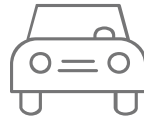
Sharkward / ANT-4C	1
Troffer Retrofit Occupanct Sensor w/ Daylight Control	
Sharkward / ANT-6	20
Occupancy P.I.R. Sensor w/ Daylight Function for Linear High Bay	

ENVIRONMENTAL SUMMARY



Gallons of Gasoline Saved

10,414



Fewer Cars on the Road

19



Barrels of Oil not Consumed

215



Acres of Trees Saved

76



of Household's Annual Electricity Usage

16



Tons of Coal not Burned

51

APPENDIX



Qualifications & Clarifications:

- **Utility Incentives are based on Proposed Year Incentive Rates
- **If Utility approves less / more Incentives then proposed in our report, this will not effect customer's proposed costs or incentive amounts
- **eCurrent LED will receive Customer Incentives directly from Utility Company as part of Customers Final Payment
- **A 75% Deposit of Customer's portion is required at time of Utility Company's Approval of Project
- **Customer Delay in Scheduling Project after Acceptance of Project may result in additional charges
- **Product is ordered at time of customer acceptance and subject to special import tariffs if imposed
- **Extra work added above what is included in this proposal will be billed additionally
- **Overtime Work is Not Included
- **Installation Interruption, or Stoppage, by Customer may result in additional charges
- **All lamps to be Recycled by eCurrent LED
- **Customer's Existing Fixtures, that are to be replaced, will be left with the customer for disposal

Financial Assumptions

Analysis Period (Years)	10
Payback Calculation Method	Cash Flow Payback
Cost of Capital	6.00%
Average Cost of Electricity	0.1000 \$/kWh
Annual Energy Inflation	2.50%
Annual Material Inflation	2.50%
Annual Service Inflation	2.50%
Product Tax Rate	0.00%
Service Tax Rate	0.00%

Schedules

Schedule Name	Hours/Week	Hours/Year
Continuous (24x7)	168	8,760
Dusk to Dawn	84	4,380
Public Works	108	5,640
Weekdays (9-6)	45	2,346