

# LIGHTING RETROFIT PROPOSAL

Prepared for

**Chris Drey**

**Director of Public Works**

**Village of Romeoville**



## Site Information

Name: Recreation Center

Address: 900 West Romeo Road  
Romeoville IL 60446

Proposal Date

April 24, 2021

Proposal Expires

June 30, 2021





900 West Romeo Road  
Romeoville, IL, 60446

April 24, 2021

Chris Drey  
Director of Public Works  
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 G. Haberkorn  
President  
Phone: 630-594-4948  
Email: [bill@extraelectricled.com](mailto:bill@extraelectricled.com)

# PROJECT SUMMARY



	Existing	After Retrofit
Number of Fixtures	117	117
Lighting System Energy Consumption	186,960 kWh	19,652 kWh

# ANNUAL SAVING SUMMARY

(Energy Rate \$0.1000 /kWh)

Energy Reduction	Energy Savings	Maintenance Savings	Carbon Savings
<b>167,308 kWh</b> REDUCED	<b>\$16,731</b> SAVED	<b>\$863</b> SAVED	<b>118,088 kgCO2e</b> GASES REDUCED

# FINANCIAL SUMMARY

(10 Year Analysis Period)

Project Cost	\$18,398
Tax	\$0
Less Rebates and Incentives	\$(18,397)
<b>Net Project Cost</b>	<b>\$1</b>

<b>PAYBACK</b> <b>0</b>	<b>ROI</b> <b>0.00%</b>	<b>NPV</b> <b>\$133,460</b>	<b>IRR</b> <b>NA%</b>

# COST OF WAITING

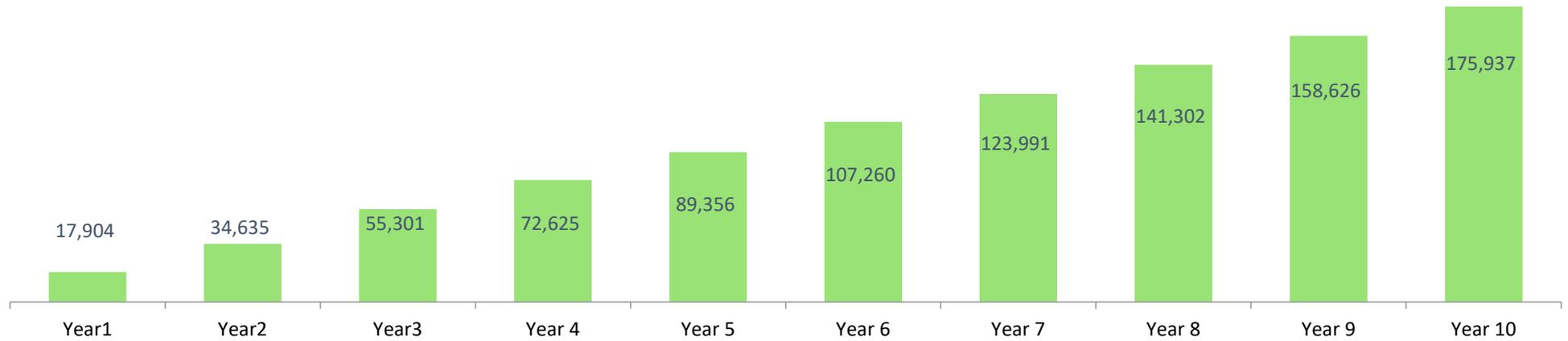
Postpone for one month	\$1,466
Postpone for six months	\$8,797
Postpone for one year	\$17,593

# 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	\$(18,397)	-	-	-	-	-	-	-	-	-
Rebates	\$18,397	-	-	-	-	-	-	-	-	-
Energy Savings	\$16,731	\$16,731	\$16,731	\$16,731	\$16,731	\$16,731	\$16,731	\$16,731	\$16,731	\$16,731
Maintenance Savings	\$1,173	\$0	\$3,935	\$593	\$0	\$1,173	\$0	\$580	\$593	\$580
Net Cash Flow	\$17,904	\$16,731	\$20,666	\$17,324	\$16,731	\$17,904	\$16,731	\$17,311	\$17,324	\$17,311

## Aggregate Cash Flow Over Ten Years (\$)



# CASH FLOW

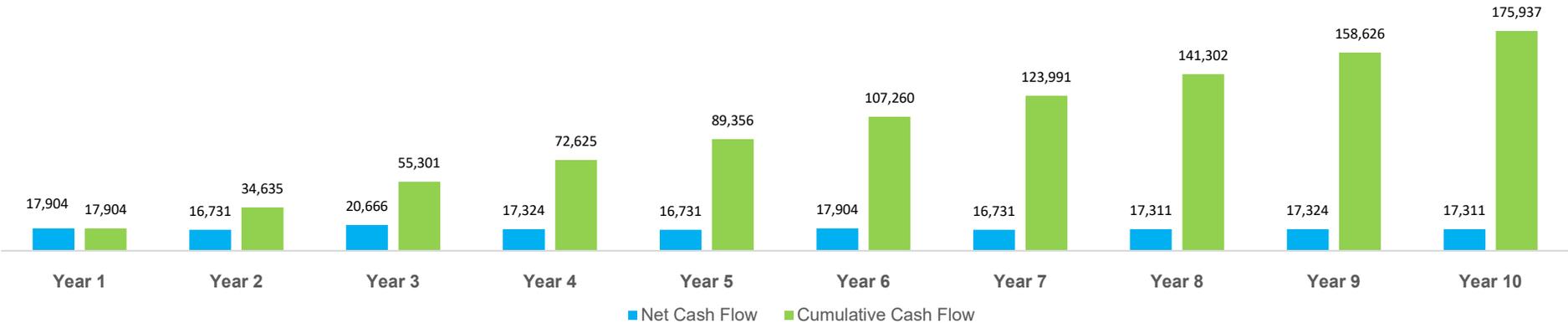


We understand that finalizing a project like this often takes time. However, each day you delay your upgrade, you are missing out on the opportunity to reduce your operating expenses. As shown below, the lost opportunity continues to compound over time.

## 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	\$(18,397)	-	-	-	-	-	-	-	-	-	\$(18,397)
Rebates	\$18,397	-	-	-	-	-	-	-	-	-	\$18,397
Energy Savings	\$16,731	\$16,731	\$16,731	\$16,731	\$16,731	\$16,731	\$16,731	\$16,731	\$16,731	\$16,731	\$167,308
Maintenance Savings	\$1,173	\$0	\$3,935	\$593	\$0	\$1,173	\$0	\$580	\$593	\$580	\$8,626
Net Cash Flow	\$17,904	\$16,731	\$20,666	\$17,324	\$16,731	\$17,904	\$16,731	\$17,311	\$17,324	\$17,311	\$175,937
Cum Cash Flow	\$17,904	\$34,635	\$55,301	\$72,625	\$89,356	\$107,260	\$123,991	\$141,302	\$158,626	\$175,937	\$175,937

# 10 Year Net & Cumulative Cash Flow (\$)

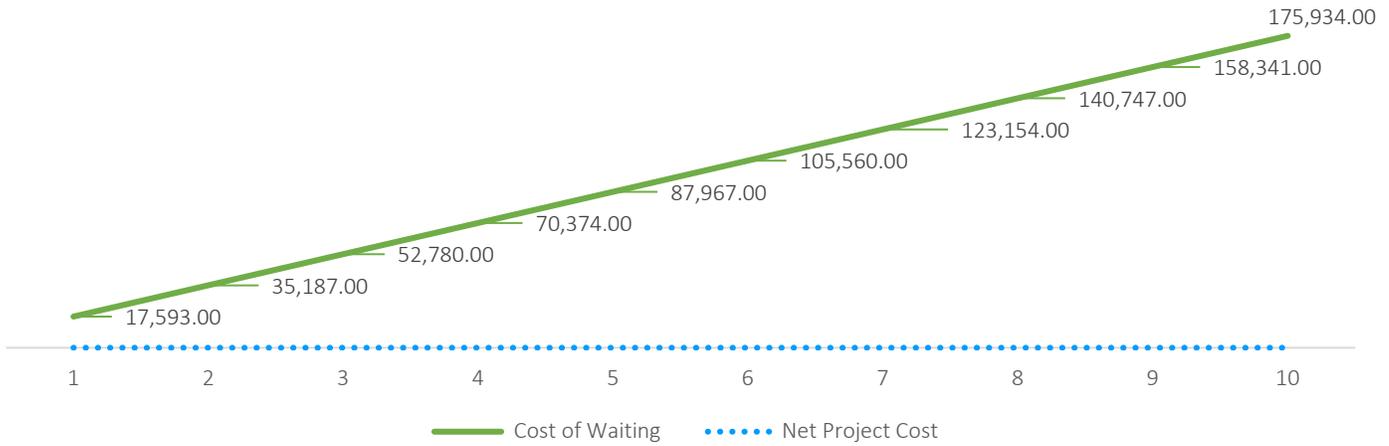


# COST OF WAITING



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
\$1,466	\$17,593	\$175,934



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



# OPERATIONAL OVERVIEW

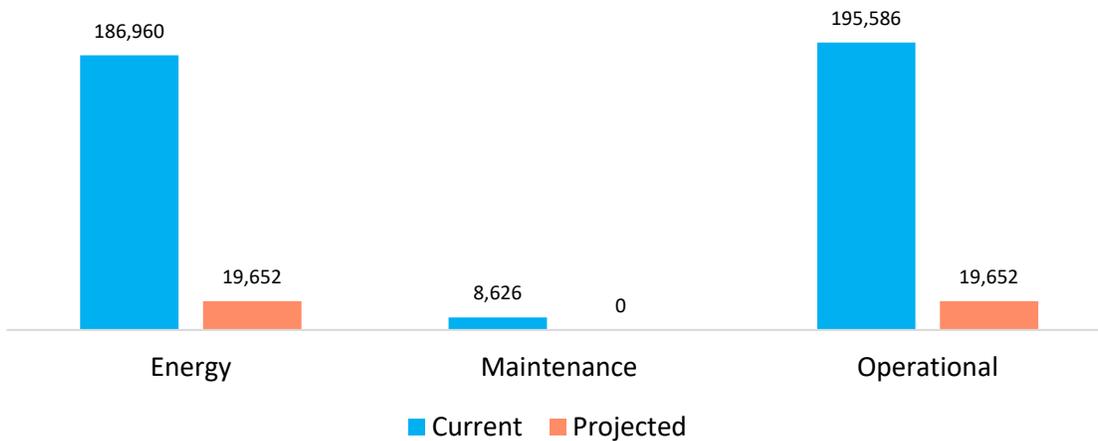
While energy is the largest long-term cost of lighting, the cost for maintaining your lighting system can also be a significant expense of your overall budget. Understanding the impact of longer lasting lighting systems on your maintenance costs is critical to understanding the true ROI of your project.

## Operational Savings Summary

Operational Area	Current Annual	Projected Annual	Reduction	Current 10 Year	Projected 10 Year	Reduction
Energy	\$18,696	\$1,965	89%	\$186,960	\$19,652	89%
Maintenance	\$863	\$0	100%	\$8,626	\$0	100%
<b>Total</b>	<b>\$19,559</b>	<b>\$1,965</b>	<b>90%</b>	<b>\$195,586</b>	<b>\$19,652</b>	<b>90%</b>

1. Energy cost = \$0.1000/kWh; Annual energy cost escalation = 0.00%
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 = 0.00%
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

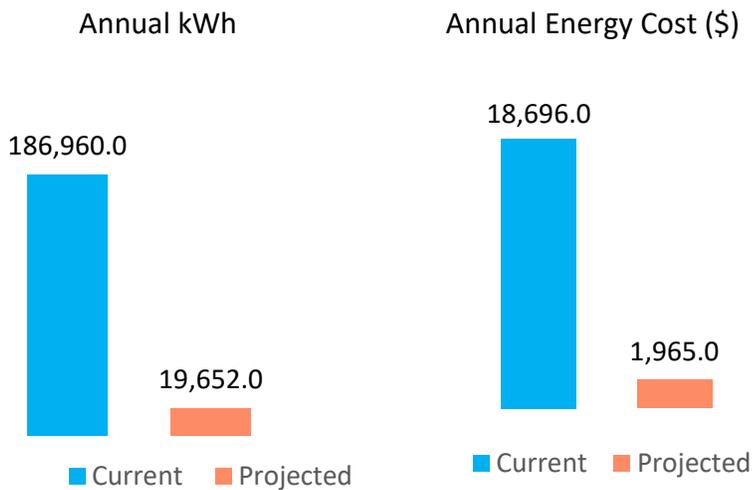
Current Usage (kWh)	Projected Usage (kWh)	Reduction	Current Cost	Projected Cost	Financial Savings	Percent Saved
186,960	19,652	89%	\$18,696	\$1,965	\$16,731	89%

1. Energy cost = \$0.1000/kWh; Annual energy cost escalation = 0.00%
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
186,960	19,652	167,308	89%

## Energy Comparison



1. Energy Cost = \$0.1000/kWh; Annual energy cost escalation = 0.00%
2. Energy costs are averaged over 10 analysis period

# WATTS SUMMARY



Existing Watts	Proposed Watts	Reduced Watts	Reduction
45,009	8,119	36,890	89%

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

### Exterior

Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Exterior Lighting	Area Light/Metal Halide/250.0W/1 Lamp	1	295.0	295	Wisdom / WL-SBAL075WDUV-50K-A-T4-P 75W LED Shoebox	1	75.0	75	4,380
Exterior Lighting	Area Light/Metal Halide/400.0W/1 Lamp	46	455.0	20,930	Wisdom / WL-SBAL100WDUV-50K-A-T3-P 100W LED Shoebox	46	100.0	4,600	4,380
<b>Total</b>			<b>750.0</b>	<b>21,225</b>			<b>175.0</b>	<b>4,675</b>	

### Interior

Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Gymnasium	Highbay/Light Emitting Diode/100.0W/1 Lamp	18	100.0	1,800	Wisdom / WL-3LH2FT100D-50K Highbay/LED/120-277V	18	100.0	1,800	3,952
Gymnasium	Highbay/Metal Halide/400.0W/1 Lamp	48	455.0	21,840	Nibbe / NB-EPL03-100 Highbays & Lowbays/LED/Round/12 in+/5000K/80+	48	100.0	4,800	3,952
<b>Total</b>			<b>555.0</b>	<b>23,640</b>			<b>200.0</b>	<b>6,600</b>	

## Restrooms

Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Restrooms	Troffer/Light Emitting Diode/36.0W/1 Lamp	4	36.0	144	eCurrent LED / EC-TRRS2436D(5000K) Troffer/LED/120-277V	4	36.0	144	3,952
<b>Total</b>			<b>36.0</b>	<b>144</b>			<b>36.0</b>	<b>144</b>	

# UPGRADE ANALYSIS



## Fixture Replacement by Space

### Exterior

Space	Existing Fixture	Qty	Proposed Solution	Qty
Exterior Lighting	Area Light/Metal Halide/250.0W/1 Lamp	1	Wisdom / WL-SBAL075WDUV-50K-A-T4-P 75W LED Shoebox	1
Exterior Lighting	Area Light/Metal Halide/400.0W/1 Lamp	46	Wisdom / WL-SBAL100WDUV-50K-A-T3-P 100W LED Shoebox	46

### Interior

Space	Existing Fixture	Qty	Proposed Solution	Qty
Gymnasium	Highbay/Light Emitting Diode/100.0W/1 Lamp	18	Wisdom / WL-3LH2FT100D-50K Highbay/LED/120-277V	18
Gymnasium	Highbay/Metal Halide/400.0W/1 Lamp	48	Nibbe / NB-EPL03-100 Highbays & Lowbays/LED/Round/12 in+/5000K/80+	48

### Restrooms

Space	Existing Fixture	Qty	Proposed Solution	Qty
Restrooms	Troffer/Light Emitting Diode/36.0W/1 Lamp	4	eCurrent LED / EC-TRRS2436D(5000K) Troffer/LED/120-277V	4

### Replacement by Fixture

Existing Fixture	Qty	Proposed Solution	Qty
Area Light/Metal Halide/250.0W/1 Lamp	1	Wisdom / WL-SBAL075WDUV-50K-A-T4-P 75W LED Shoebox	1
Area Light/Metal Halide/400.0W/1 Lamp	46	Wisdom / WL-SBAL100WDUV-50K-A-T3-P 100W LED Shoebox	46
Highbay/Light Emitting Diode/100.0W/1 Lamp	18	Wisdom / WL-3LH2FT100D-50K Highbay/LED/120-277V	18
Highbay/Metal Halide/400.0W/1 Lamp	48	Nibbe / NB-EPL03-100 Highbays & Lowbays/LED/Round/12 in+/5000K/80+	48
Troffer/Light Emitting Diode/36.0W/1 Lamp	4	eCurrent LED / EC-TRRS2436D(5000K) Troffer/LED/120-277V	4

## Controls Upgrade Summary

### Proposed Control

	<b>Qty</b>
eCurrent LED / WOS-W	
Wall Mtd. Occupancy Switch	3
Intermatic / 4021	
Button Type Photocell	0
Sharkward / ANT-4C	
Troffer Retrofit Occupanct Sensor w/ Daylight Control	4
Sharkward / ANT-6	
Occupancy P.I.R. Sensor w/ Daylight Function for Linear High Bay	66
SL-J Technology / JL-207	
Twist Lock Photocell	47

# ENVIRONMENTAL SUMMARY



Gallons of Gasoline Saved

**13,288**



Fewer Cars on the Road

**25**



Barrels of Oil not Consumed

**275**



Acres of Trees Saved

**97**



# of Household's Annual Electricity Usage

**21**



Tons of Coal not Burned

**65**



# APPENDIX



## Qualifications & Clarifications:

- \*\*Utility Incentives are based on Proposed Year Incentive Rates
- \*\*If Utility approves less / more Incentives than proposed in our report, this will not affect customer's proposed costs or incentive amounts
- \*\*eCurrent LED will receive Customer Incentives directly from Utility Company as part of Customer's 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	0.00%
Annual Material Inflation	0.00%
Annual Service Inflation	0.00%
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
Rec Center	76	3,952
Weekdays (9-6)	45	2,346