



# Farmington Parking Lot B LED Upgrade

Farmington School  
300 N. Lightfoot Rd.  
Farmington, IL 61531

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*For:*

Scott Mallicoat

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*Prepared By:*

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## Introduction

As with all technology in today's working world, lighting and energy savings are a paramount opportunity for everyone to reduce their existing costs. Revenue generation is always a challenge for every business for numerous reasons, so every time that the daily operating expenses can be managed and reduced there is direct benefit to the NET bottom line.

We acknowledge and appreciate that you understand this and that you have turned to us to assist and guide you through the various decisions that this process will involve.

## Executive Summary

### Project Overview

Total Material Cost and Labor	\$16,511
Less Rebates and Incentives	\$7,828
<b>Net Cost of Project</b>	<b>\$8,683</b>
Annual Operating Savings	
Energy Savings <sup>1, 2</sup>	\$2,392
Maintenance Savings <sup>3</sup>	\$0
<b>Total Annual Operating Savings</b>	<b>\$2,392</b>
Operating Savings Over 10 Years	
Energy Savings <sup>1, 2</sup>	\$23,929
Maintenance Savings <sup>3</sup>	\$0
<b>Total Operating Savings Over 10 Years</b>	<b>\$23,929</b>
Payback Period(Yrs)	4.0
Net Present Value <sup>4</sup>	\$15,246
Internal Rate of Return	23%

1. Energy cost = \$0.0800/kWh; Annual energy cost escalation = 3%

2. Energy savings are averaged over 10 year analysis period

3. Maintenance costs are averaged over 10 year analysis period



### Financial Summary

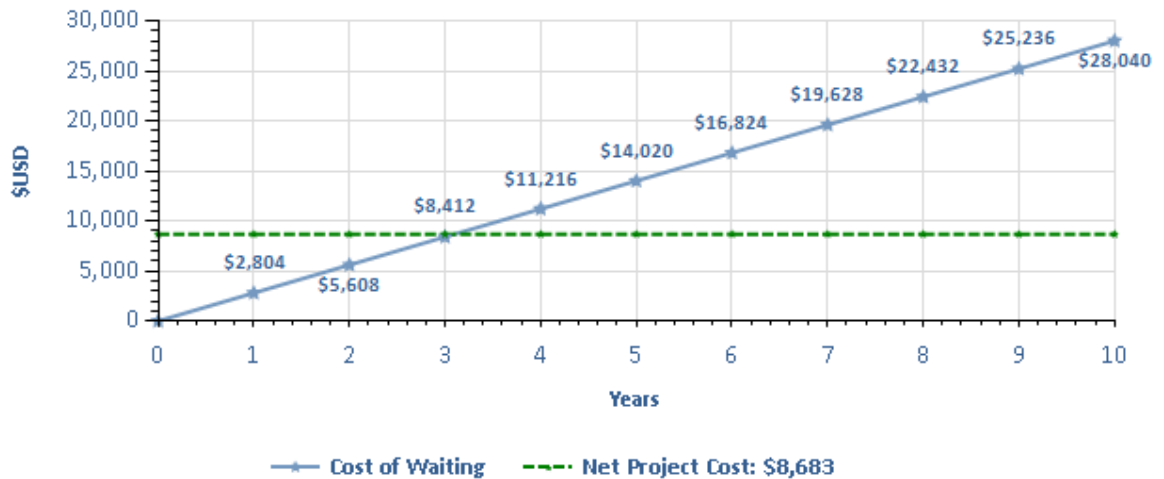
Total Project Cost	Net Project Cost	10 Yr Operating Savings <sup>1, 2</sup>	Payback Period (yrs)	NPV <sup>3</sup>	IRR
\$16,511	\$8,683	\$23,929	4.0	\$15,246	23%

1. Energy cost = \$0.0800/kWh; Annual energy cost escalation = 3%
2. Operating Savings equals the energy cost savings plus the maintenance savings averaged over the analysis period

### Cost of Waiting

#### Cost of Waiting

Monthly	Yearly	5 Years	10 Years	15 Years	20 Years
\$233	\$2,804	\$14,020	\$28,040	\$42,060	\$56,080





## Energy Usages and Costs

### Annual Energy Usage

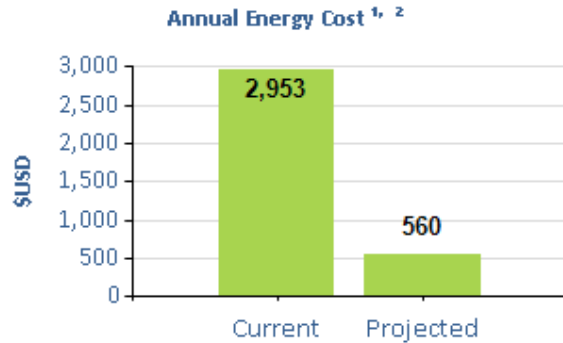
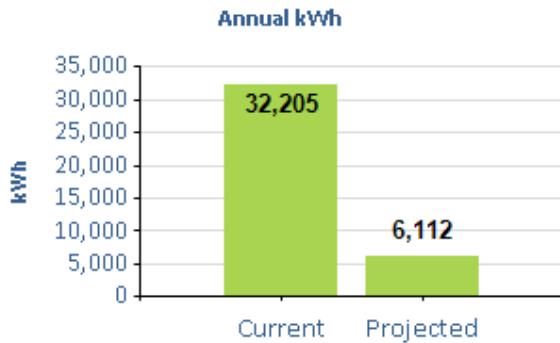
Current Usage (kWh)	Projected Usage (kWh)	Reduction	Current Cost <sup>1,2</sup>	Projected Cost <sup>1,2</sup>	Savings	Cost Savings
32,205	6,112	81%	\$2,953	\$560	\$2,392	81%

1. Energy cost = \$0.0800/kWh; Annual energy cost escalation = 3%
2. Energy costs are averaged over 10-year analysis period

### Annual Energy Usage Reduction

Current Usage (kWh)	Projected Usage (kWh)	Reduction (kWh)	Reduction
32,205	6,112	26,092	81%

### Energy Comparison



1. Energy Cost = \$0.0800/kWh; Annual energy cost escalation = 3%
2. Energy costs are averaged over 10-year analysis period

### Watts Summary

Existing Watts <sup>1</sup>	Proposed Watts <sup>1</sup>	Reduced Watts	Reduction
5,964	1,132	4,832	81%

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

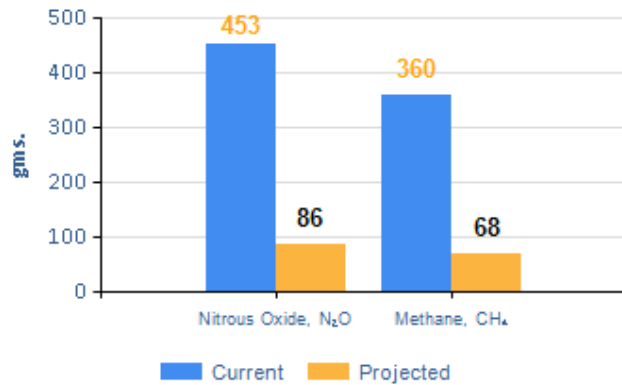
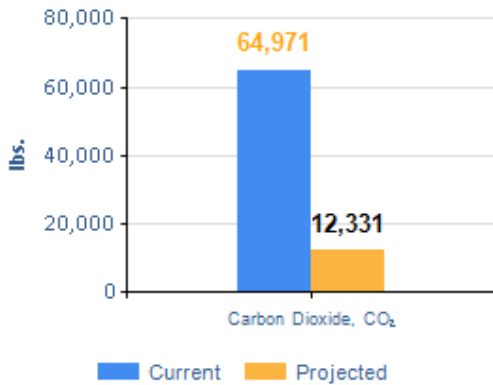
## Environmental Impact

### Greenhouse Gas Analysis

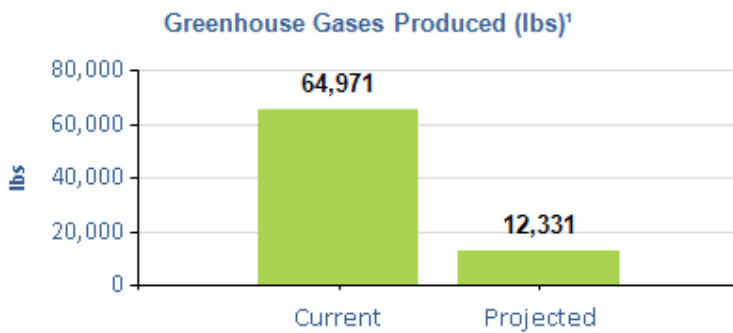
Greenhouse Gas Comparisons

Greenhouse Gas	Current <sup>1</sup>	Projected <sup>1</sup>	Avoided	Environmental Effect
Carbon Dioxide, CO <sub>2</sub>	64,971	12,331	52,641	Greenhouse Gas, Global Warming
Nitrous Oxide, N <sub>2</sub> O	453	86	367	Acid Rain, Global Warming
Methane, CH <sub>4</sub>	360	68	292	Greenhouse Gas, Global Warming

1. Average emission rates per kWh are based on EPA estimates for IL



### Greenhouse Gas Comparables



#### Comparable Metrics

- Trees Saved: 1,974
- Acres of trees planted: 5
- Fewer cars on the road: 7

1. Average emission rates per kWh are based on EPA estimates for IL



## Upgrade Analysis

### Fixture Replacement by Space

Area	Space	Existing Fixture	Qty	Proposed Fixture	Qty	Scheduled Hours
Parking Lot B	175w MH	FLOOD MH 175	2	LITH LED 53w	2	5,400
Parking Lot B	350w MH	FLOOD MH 350	14	LITH LED 73w	14	5,400
Total(s)			16		16	

## Bill of Materials

### Additional Items

Part Number	Short Description	Qty	Cost	Extended
HID Lamp Recycle	HID Lamp Recycle	16	\$0.97	\$15.52
HID Ballast Recycle	HID Ballast Recycle	16	\$5.46	\$87.36
Total(s)				\$102.88



## Appendix

### Incentives

Description	Amount	Est. Receipt Date
DCEO Exterior LED = \$.30/kwh reduced (Pre-Approval Req.)	\$7,325.64	6 Months
DCEO Exterior LED = \$.30/kwh reduced (Pre-Approval Req.)	\$502.20	6 Months
Total(s)	\$7,827.84	

### Project Assumptions

Based on 5400 Operating Hours/year

### Disclaimer

The figures and calculations used in this analysis are for project estimations only and not a guarantee of total project cost for an entire area or facility. The fixture counts could vary +/-5%; operating hours will fluctuate with production/operational demand; total applied rebate values are the sole discretion of the issuing body and its specific requirements; final installation costs will be determined by existing equipment conditions and any additional hardware and resulting time spent to complete project. Any supplied labor figures are for analysis calculations only. Final labor costs are negotiated and handled by the end-users electrical contractor.