

**courtesy of: Energy Works US**

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**LED Street Light Cost Savings Calculator**

Number of lights installed	1
Price per kWh for the application	0.08
Highest price paid per kWh for other class of consumer	0.12
Average number of hours in operation per day	10

This calculator compares Metal Halide and High Pressure Sodium lamps to LED. The power used in the ballast is added to the nominal power of the lamp. This calculation also considers that the energy saved by the LED can be sold for a higher price reducing the investment in the LED.

		MH bulbs	Sodium bulbs	LED lights
Watts per lamp (nominal)	W	250	250	120
Watts per fixture (lamp plus ballast)	W	330	313	120
Price per fixture (includes house, lamp and ballast)		\$275	\$250	\$876
Maintenance cost per light per year per application		\$95	\$125	\$35
Number of visits for maintenance per light, per year		2	2	1
Average lifetime (in hours)	Hr	8,000	15,000	60,000
Average cost of bulb / ballast emergency repair		\$30	\$25	\$0
Percentage of emergency repair per year	%	5.0%	5.0%	0.0%
Total electricity cost for all lights per year		\$96	\$91	\$35
Total maintenance cost for all lights per year		\$190	\$250	\$35
Total emergency cost for all lights per year		\$1.50	\$1.25	\$0.00
Total operating cost per year		\$288	\$343	\$70
Average lifetime for each light (in years)	Yr	2.19	4.11	16.44
Total operating cost during the LED lifetime		\$4,732	\$5,633	\$1,151
CO2 emissions (lbs per year)	lb/Yr	1,975	1,874	718

**Comparison of savings in Electricity, Maintenance, and CO2 Emissions**

		MH light vs LED lamp	Sodium light vs. LED lamp
Energy saved in kWh per year	kWh	767	704
Savings per year		\$218	\$273
Savings during LED lifetime		\$3,581	\$4,481
Percentage saving		76%	80%
Reduced CO2 emissions (lbs per year)		1,257	1,155
Percentage annual reduction in CO2 emissions		64%	62%

**ROI**

		LED vs MH light	LED vs Sodium light
Incremental investment (single unit)		\$601	\$626
Total investment in LED for above number of lamps		\$601	\$626
Total savings per year		\$218	\$273
Profit for selling saved energy at a higher rate per year		\$31	\$28
Total savings over LED lifetime		\$4,085	\$4,944
Payback on new investment (years)	Yr	2.42	2.08
Payback on retrofitting only (years)	Yr	3.53	2.91