

DMS Lighting Retrofit Justification Document

Produced 12/22/18 by James Braye ("Kinosh")

Electric Cost Savings

These calculations only incorporate electrical cost savings for lamps lit 24/7. Environmental, light quality, and space heating effects are ignored.

Inputs	#	Unit
Electrical Cost	0.04	\$
# Fixtures	122	unitless
Old Lighting	0.16	kilowatts
New Lighting	0.04	kilowatts

Calculations	#	Unit
Δ Power/light	0.12	kilowatts
Δ\$/light*hr	0.0048	\$/hr
Δ\$ x lights	0.5856	\$/hr

0.1152	\$/day
14.0544	\$/day

3.456	\$/month
421.632	\$/month

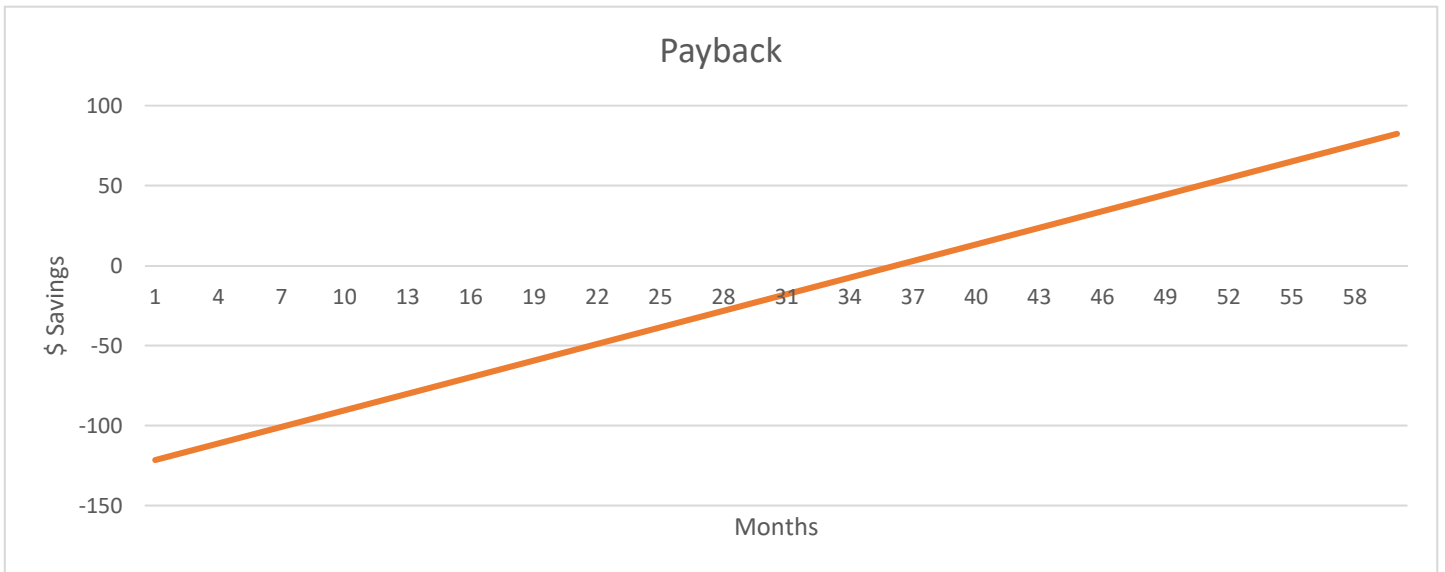
Installation Cost

Inputs	#	Unit
Unit Cost/light	75	\$
Labor Cost/light	50	\$

Calculations	#	Unit
Total/light	125	\$

Total/light cost range payback times:
 Cheap fixture/volunteer install (\$50): 15 months
 Expensive fixture/high cost install (\$250): 73 months

Payback



Conclusion

A lighting retrofit project with a modest amount of volunteer labor (total per fixture cost of \$125/per) would pay back within 3 years with conservative assumptions and ignoring other lighting quality, carbon emissions, maintenance, and space heating effects.