WAUPUN WISCONSIN

AMENDED AGENDA
CITY OF WAUPUN BOARD OF PUBLIC WORKS
Waupun City Hall – 201 E. Main Street, Waupun WI
Tuesday, November 13, 2018 at 4:30 PM

CALL TO ORDER

ROLL CALL

PERSONS WISHING TO ADDRESS THE BOARD OF PUBLIC WORKS--*State name, address, and subject of comments. (2 Minutes)*

No Public Participation after this point.

FUTURE MEETINGS AND GATHERING INVOLVING THE BOARD OF PUBLIC WORKS

CONSIDERATION - ACTION

1. Discuss / Approve minutes of the October 9, 2018 meeting (will be distributed at the meeting)
2. Discuss Energy Savings Resolution
3. Discuss lighting upgrade proposals at City buildings.
4. Discuss / Approve handicapped parking stalls at the baseball complex
5. Discuss / Approve ordinance for sidewalk assessments for street projects. (Ordinance changed from previous Agenda)
6. Discuss / Approve Ordinance to update snow removal rates.

ADJOURNMENT

Upon reasonable notice, efforts will be made to accommodate disabled individuals through appropriate aids and services. For additional information, contact the City Clerk at 920-324-7915.

2

LIGHTING RETROFIT PROPOSAL

Prepared for

Jeff Daane.

Site Information

Name	City of Waupun City Garage
Address	903 N Madison St Waupun WI 53963

Proposal Date	Proposal Expires

Dale Baeten
920-418-0153
dale@ncledlighting.com

516 N. 8th St., Unit D De Pere WI
54115
www.ncledlighting.com

Executive Summary

Project Costs

Total Project Cost	$23,138
Sales Tax	$0
Value of Incentives	$2,088
Turnkey Project Cost	$21,050

Financial Metrics

Payback Period (yrs)	4.92
Avg. Annual Return	21%
10 Yr Operating Savings	$43,300
Net Present Value	$11,686

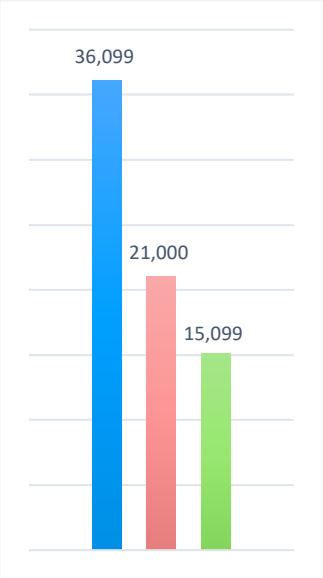
Cost of Waiting

Postpone for one month	$360
Postpone for six months	$2,165
Postpone for one year	$4,330

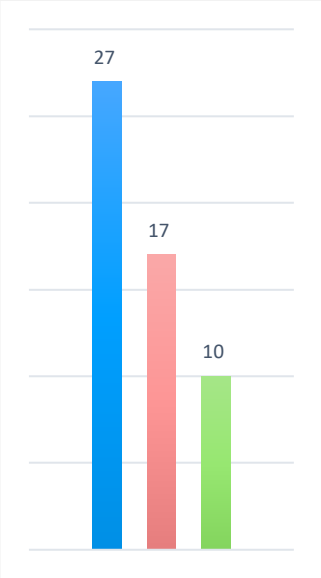
Assumptions

Energy Rate ($/kWh)	0.1169
Annual Utility Rate Increase	0.00%
Discount Rate	6.00%

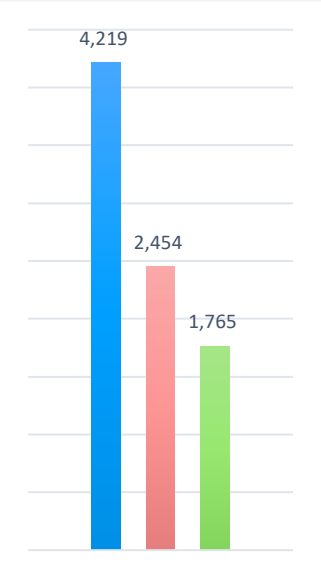
Usage (kWh)



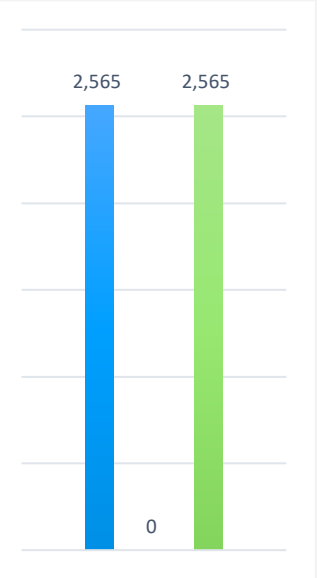
Demand (kW)

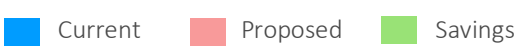


Energy Cost ($)



Maintenance Cost ($)





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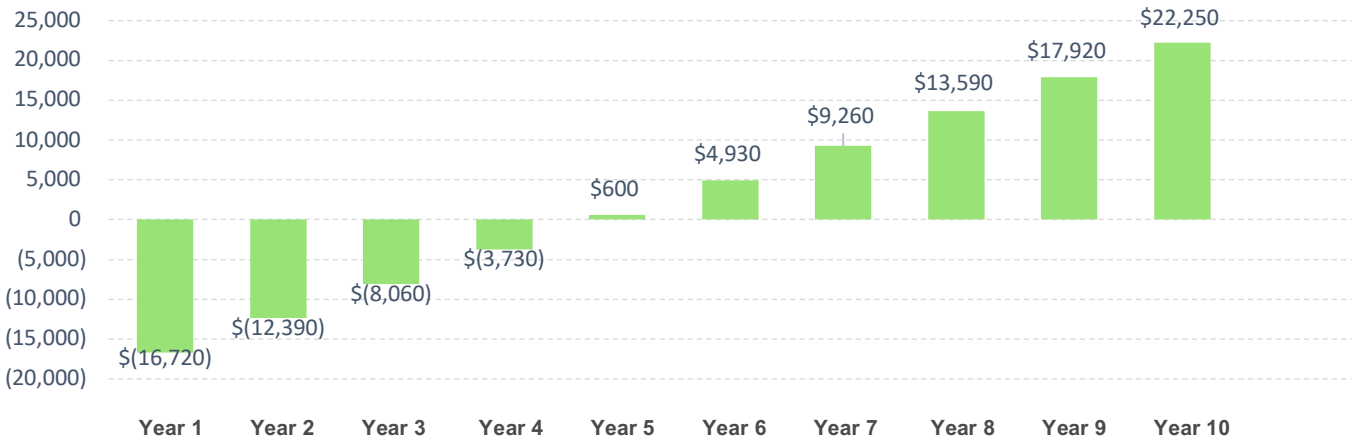
Impact of New Lighting

Energy Reduction	42%
Avg. Annual Maintenance Savings	100%
Avg. Annual Operating Savings	64%

Aggregate Operating Savings

Saving Area	Year 1	Year 5	Year 10
Energy	$1,765	$8,825	$17,650
Maintenance	$2,565	$12,825	$25,650
Total	$4,330	$21,650	$43,300

Aggregate Cash Flow Over Ten Years



Itemized Cash Flow

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Project Cost	$(23,138)	-	-	-	-	-	-	-	-	-
Incentives	$2,088	$0	$0	$0	$0	$0	$0	$0	$0	$0
Energy Savings	$1,765	$1,765	$1,765	$1,765	$1,765	$1,765	$1,765	$1,765	$1,765	$1,765
Maintenance	$2,565	$2,565	$2,565	$2,565	$2,565	$2,565	$2,565	$2,565	$2,565	$2,565
Net Cash Flow	$(16,720)	$4,330	$4,330	$4,330	$4,330	$4,330	$4,330	$4,330	$4,330	$4,330

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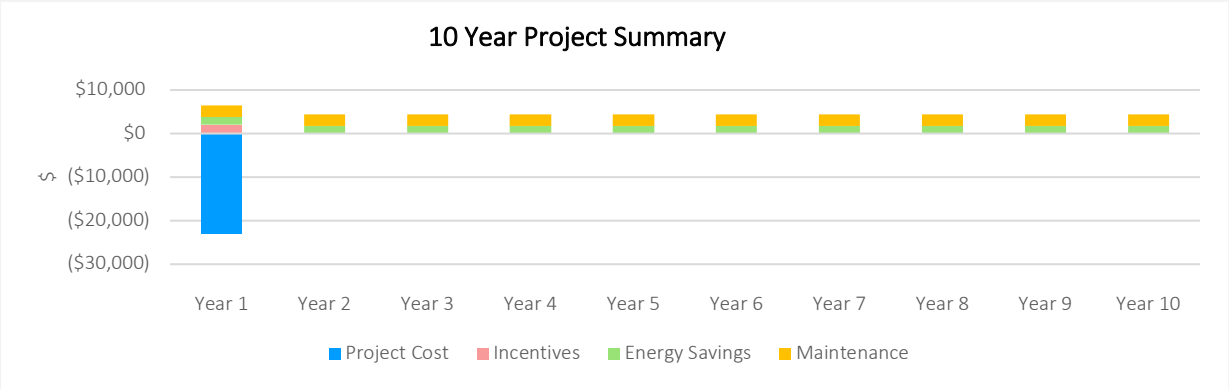
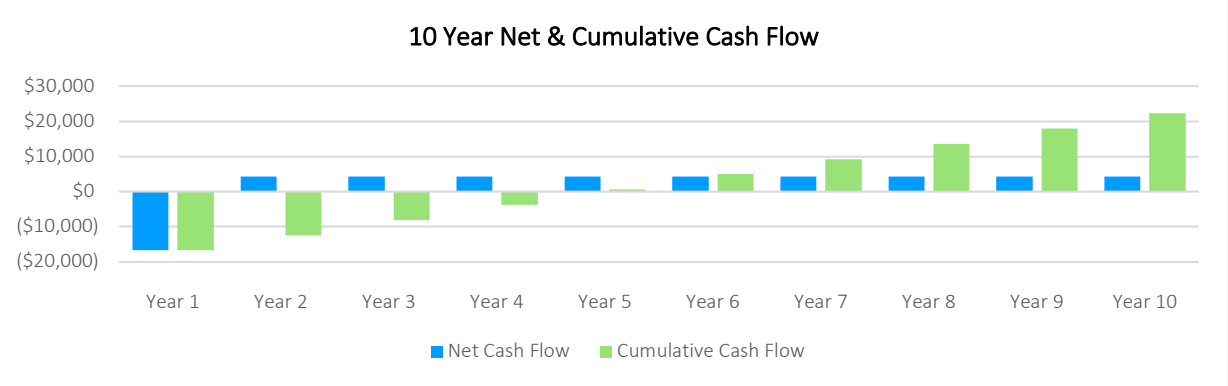
Cash Flow

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	$(23,138)	-	-	-	-	-	-	-	-	-	$(23,138)
Incentives	$2,088	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,088
Energy Savings	$1,765	$1,765	$1,765	$1,765	$1,765	$1,765	$1,765	$1,765	$1,765	$1,765	$17,650
Maintenance	$2,565	$2,565	$2,565	$2,565	$2,565	$2,565	$2,565	$2,565	$2,565	$2,565	$25,650
Net Cash Flow	$(16,720)	$4,330	$4,330	$4,330	$4,330	$4,330	$4,330	$4,330	$4,330	$4,330	$22,250
Cum Cash Flow	$(16,720)	$(12,390)	$(8,060)	$(3,730)	$600	$4,930	$9,260	$13,590	$17,920	$22,250	$22,250





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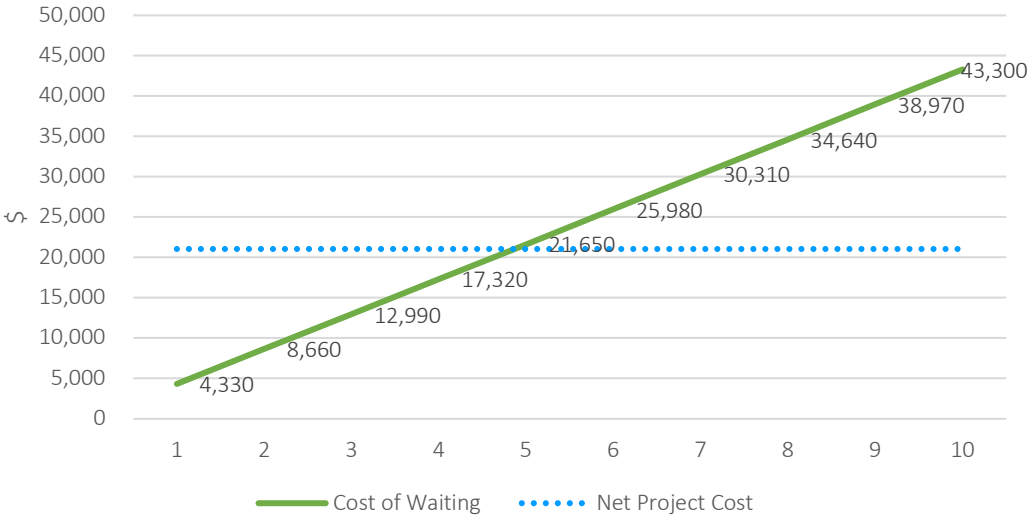
Cost Of Waiting

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
$360	$4,330	$43,300



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

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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

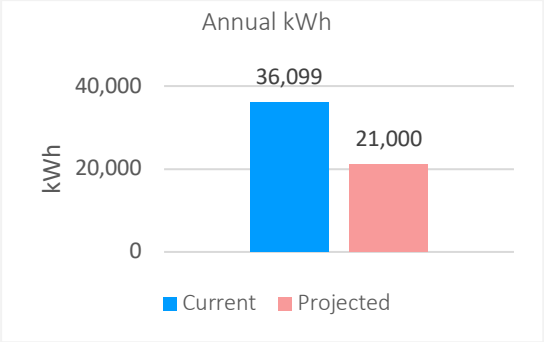
Current Usage (kWh)	Projected Usage (kWh)	Reduction	Current Cost	Projected Cost	Financial Savings	Percent Saved
36,099	21,000	42%	$4,219	$2,454	$1,765	42%

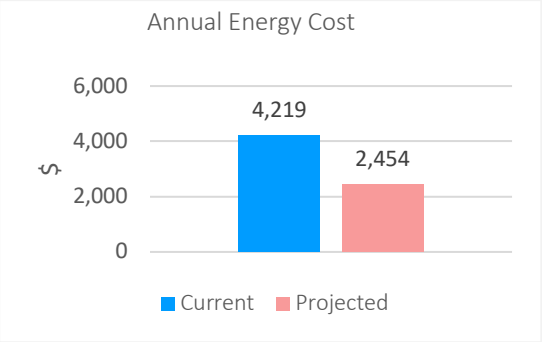
1. *Energy cost = $0.1169/kWh; Annual energy cost escalation = 0.00%*
2. *Energy costs are averaged over 10 year analysis period*
3. *Projected Usage (kWh) includes savings from controls if applicable*

Annual Energy Usage Reduction

Current Usage (kWh)	Projected Usage (kWh)	Reduction (kWh)	Reduction
36,099	21,000	15,099	42%

Energy Comparison





1. *Energy Cost = $0.1169/kWh; Annual energy cost escalation = 0.00%*
2. *Energy costs are averaged over 10 year analysis period*

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Watts Summary

Existing Watts	Proposed Watts	Reduced Watts	Reduction
27,186	16,758	10,428	42%

1. *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
Area light	Area Light/Metal Halide/150.0W/1 Lamp	1	185.0	185	Part No: stonco Area Light	1	36.0	36	4,380
Flood light	Flood Light/Metal Halide/100.0W/1 Lamp	6	130.0	780	Wisdom Part No: FL 45 Flood Light	6	45.0	270	4,380
Wallack	Wallpack/Metal Halide/250.0W/1 Lamp	1	295.0	295	Wisdom Part No: STD WP 100 Wallpack	1	100.0	100	4,380
Wallack	Wallpack/Metal Halide/70.0W/1 Lamp	1	95.0	95	Wisdom Part No: STD WP 50 Wallpack	1	50.0	50	4,380
Total			**705.0**	**1,355**			**231.0**	**456**	

Interior

Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Breakroom	Decorative Indoor/Incandescent/60.0W/1 Lamp	2	60.0	120	SYLVANIA Part No: 9W A19 A-Type/A19	2	9.0	18	1,043
Breakroom	Strip/T8 Fluorescent/32.0W/2 Lamp	1	62.0	62	ETECH Part No: 12W A/B TUBE Tube/T8	2	12.0	24	1,043
Breakroom	Vapor Tight/T8 Fluorescent/32.0W/2 Lamp	1	62.0	62	VIKING Part No: 4LK 12W Troffer/Retrofit Kit	1	48.0	48	1,043
Breakroom	Wrap/T8 Fluorescent/32.0W/2 Lamp	3	62.0	186	ETECH Part No: 12W A/B TUBE Tube/T8	6	12.0	72	1,043
Garage hour	Strip/T8 Fluorescent/32.0W/4 Lamp	126	106.7	13,444	ETECH Part No: 18W A/B TUBE Tube/T8	504	18.0	9,072	1,043
Mezzanine	Strip/T8 Fluorescent/32.0W/4 Lamp	14	106.7	1,494	ETECH Part No: 12W A/B TUBE Tube/T8	56	12.0	672	1,043
Office area	Troffer/T8 Fluorescent/32.0W/2 Lamp	14	62.0	868	ETECH Part No: 12W A/B TUBE Tube/T8	28	12.0	336	1,043
Restroom	Wrap/T8 Fluorescent/32.0W/2 Lamp	2	62.0	124	ETECH Part No: 12W A/B TUBE Tube/T8	4	12.0	48	1,043
Shop	Highbay/T8 Fluorescent/32.0W/6 Lamp	32	172.0	5,504	ETECH Part No: 18W A/B TUBE Tube/T8	192	18.0	3,456	2,086

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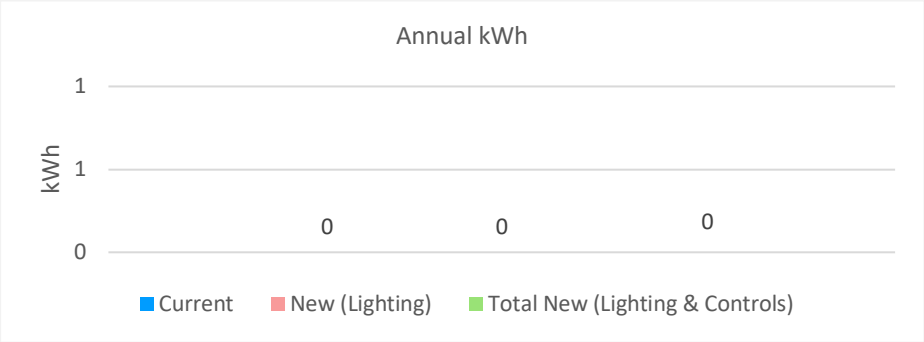
Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Wash bay	Highbay/T8 Fluorescent/32.0W/ 6 Lamp	15	172.0	2,580	ETECH Part No: 18W A/B TUBE Tube/T8	90	18.0	1,620	261
Wash bay	Vapor Tight/T8 Fluorescent/32.0W/ 4 Lamp	6	106.7	640	ETECH Part No: 18W A/B TUBE Tube/T8	24	18.0	432	261
Welding area	Strip/T8 Fluorescent/32.0W/ 4 Lamp	7	106.7	747	ETECH Part No: 18W A/B TUBE Tube/T8	28	18.0	504	1,043
Total			**1,140.8**	**25,831**			**207.0**	**16,302**	

Annual Controls Energy Comparison



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Upgrade Analysis

11

LIGHTING RETROFIT PROPOSAL

Prepared for

Jeff Daane

Site Information

Name	City of Waupun City Hall Bldg
Address	201 E Main St Waupun WI 53963

Proposal Date	Proposal Expires

Dale Baeten
920-418-0153
dale@ncledlighting.com

516 N. 8th St., Unit D De Pere WI
54115
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Executive Summary

Project Costs

Total Project Cost	$8,323
Sales Tax	$0
Value of Incentives	$666
Turnkey Project Cost	$7,657

Financial Metrics

Payback Period (yrs)	2.42
Avg. Annual Return	42%
10 Yr Operating Savings	$32,454
Net Present Value	$16,879

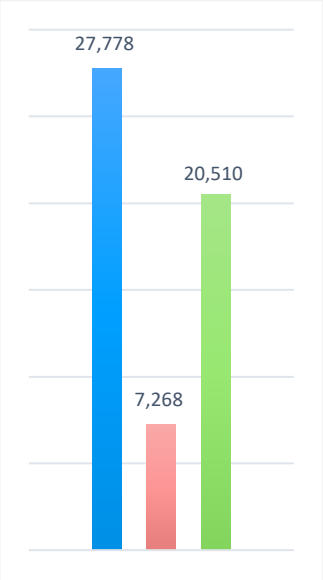
Cost of Waiting

Postpone for one month	$270
Postpone for six months	$1,622
Postpone for one year	$3,245

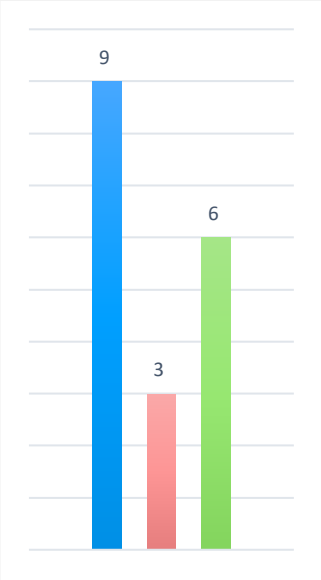
Assumptions

Energy Rate ($/kWh)	0.1204
Annual Utility Rate Increase	0.00%
Discount Rate	6.00%

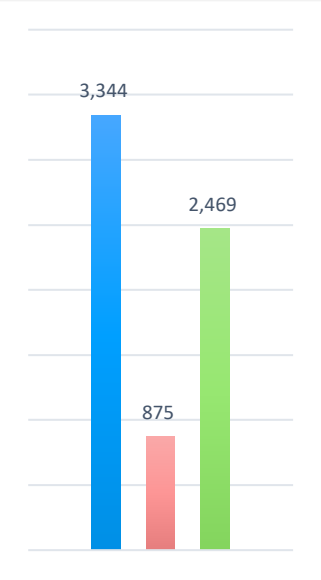
Usage (kWh)



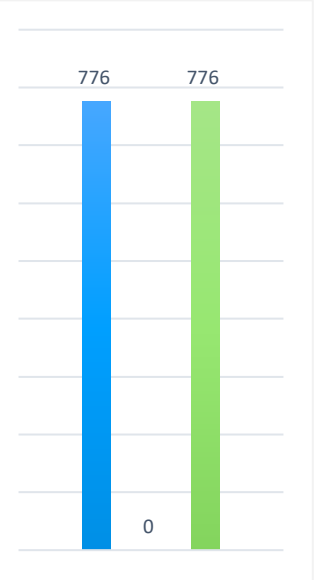
Demand (kW)

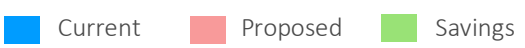


Energy Cost ($)



Maintenance Cost ($)





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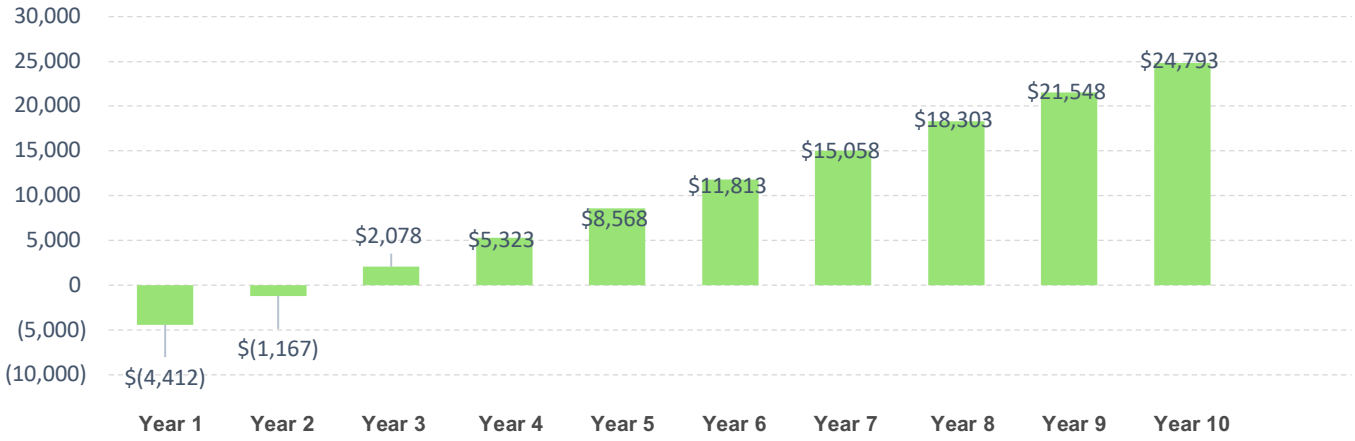
Impact of New Lighting

Energy Reduction	74%
Avg. Annual Maintenance Savings	100%
Avg. Annual Operating Savings	79%

Aggregate Operating Savings

Saving Area	Year 1	Year 5	Year 10
Energy	$2,469	$12,345	$24,690
Maintenance	$776	$3,880	$7,760
Total	$3,245	$16,225	$32,450

Aggregate Cash Flow Over Ten Years



Itemized Cash Flow

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Project Cost	$(8,323)	-	-	-	-	-	-	-	-	-
Incentives	$666	$0	$0	$0	$0	$0	$0	$0	$0	$0
Energy Savings	$2,469	$2,469	$2,469	$2,469	$2,469	$2,469	$2,469	$2,469	$2,469	$2,469
Maintenance	$776	$776	$776	$776	$776	$776	$776	$776	$776	$776
Net Cash Flow	$(4,412)	$3,245	$3,245	$3,245	$3,245	$3,245	$3,245	$3,245	$3,245	$3,245

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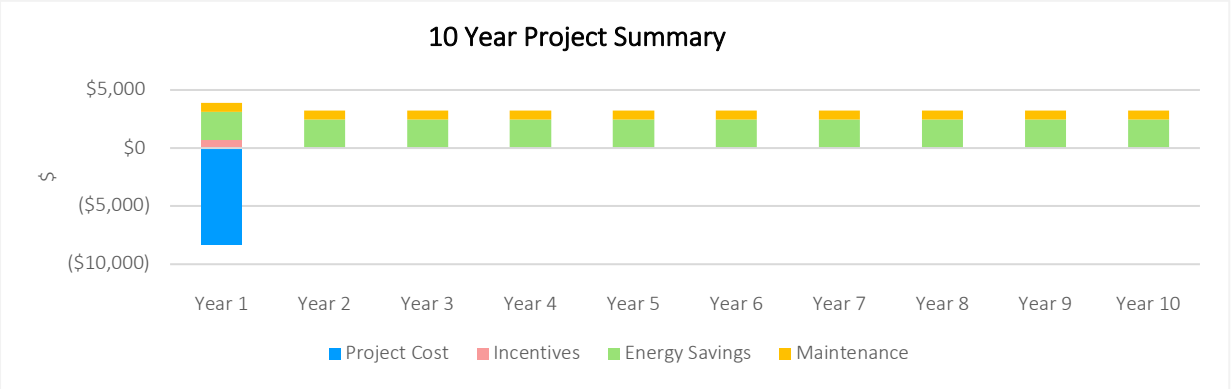
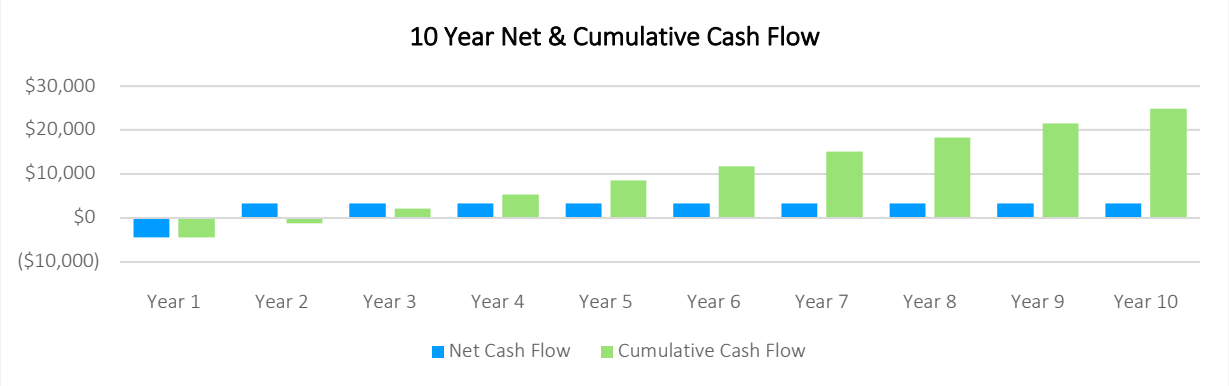
Cash Flow

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	$(8,323)	-	-	-	-	-	-	-	-	-	$(8,323)
Incentives	$666	$0	$0	$0	$0	$0	$0	$0	$0	$0	$666
Energy Savings	$2,469	$2,469	$2,469	$2,469	$2,469	$2,469	$2,469	$2,469	$2,469	$2,469	$24,690
Maintenance	$776	$776	$776	$776	$776	$776	$776	$776	$776	$776	$7,760
Net Cash Flow	$(4,412)	$3,245	$3,245	$3,245	$3,245	$3,245	$3,245	$3,245	$3,245	$3,245	$24,793
Cum Cash Flow	$(4,412)	$(1,167)	$2,078	$5,323	$8,568	$11,813	$15,058	$18,303	$21,548	$24,793	$24,793





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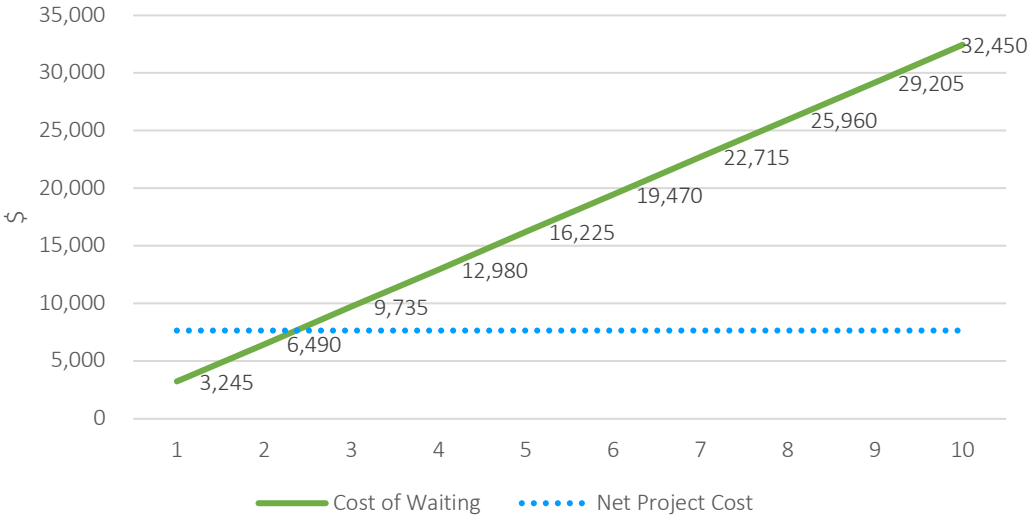
Cost Of Waiting

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
$270	$3,245	$32,450



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

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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

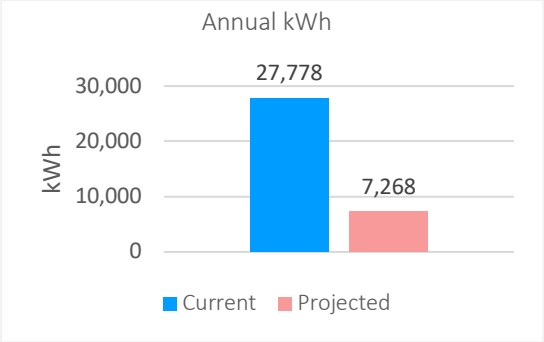
Current Usage (kWh)	Projected Usage (kWh)	Reduction	Current Cost	Projected Cost	Financial Savings	Percent Saved
27,778	7,268	74%	$3,344	$875	$2,469	74%

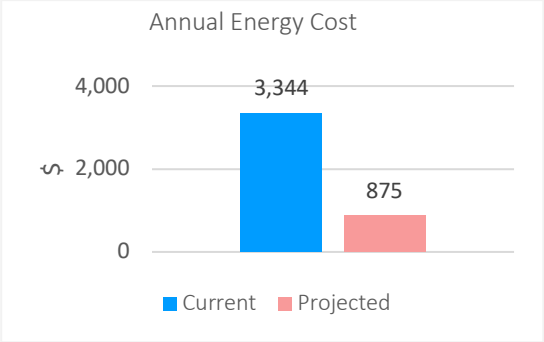
1. *Energy cost = $0.1204/kWh; Annual energy cost escalation = 0.00%*
2. *Energy costs are averaged over 10 year analysis period*
3. *Projected Usage (kWh) includes savings from controls if applicable*

Annual Energy Usage Reduction

Current Usage (kWh)	Projected Usage (kWh)	Reduction (kWh)	Reduction
27,778	7,268	20,510	74%

Energy Comparison





1. *Energy Cost = $0.1204/kWh; Annual energy cost escalation = 0.00%*
2. *Energy costs are averaged over 10 year analysis period*

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Watts Summary

Existing Watts	Proposed Watts	Reduced Watts	Reduction
9,196	3,120	6,076	74%

1. *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
Canopy	Decorative Outdoor/Incandescent/100.0W/1 Lamp	3	100.0	300	Wisdom Part No: FL 30 Flood Light	3	30.0	90	4,380
Wallpack	Wallpack/Metal Halide/400.0W/1 Lamp	1	460.0	460	Wisdom Part No: STD WP 100 Wallpack	1	100.0	100	4,380
Wallpack	Wallpack/Metal Halide/70.0W/1 Lamp	4	95.0	380	Wisdom Part No: STD WP 50 Wallpack	4	50.0	200	4,380
Total			**655.0**	**1,140**			**180.0**	**390**	

Interior

Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Auditorium lobby and stairwell	Downlight/Incandescent/100.0W/1 Lamp	6	100.0	600	SYLVANIA Part No: 9W A19 A-Type/A19	6	9.0	54	8,760
Auditorium lobby and stairwell	Downlight/Incandescent/100.0W/3 Lamp	2	300.0	600	SYLVANIA Part No: 9W A19 A-Type/A19	6	9.0	54	8,760
Boiler room	Strip/T8 Fluorescent/32.0W/2 Lamp	6	62.0	372	ETECH Part No: 12W A/B TUBE Tube/T8	12	12.0	144	52
First floor back hall	Downlight/Incandescent/100.0W/1 Lamp	3	100.0	300	SYLVANIA Part No: 9W A19 A-Type/A19	3	9.0	27	417
First floor back hall	Troffer/T8 Fluorescent/32.0W/2 Lamp	4	62.0	248	ETECH Part No: 12W A/B TUBE Tube/T8	8	12.0	96	417
Front hall entry way	Troffer/T8 Fluorescent/32.0W/2 Lamp	1	62.0	62	ETECH Part No: 12W A/B TUBE Tube/T8	2	12.0	24	8,760
Front lobby area	Troffer/T8 Fluorescent/32.0W/2 Lamp	5	62.0	310	ETECH Part No: 12W A/B TUBE Tube/T8	10	12.0	120	2,346
Front lobby area	Troffer/T8U Fluorescent/24.0W/2 Lamp	2	45.7	91	ETECH Part No: 15W ULAMP Tube/ULAMP	4	15.0	60	2,346
Office hallway	Troffer/T8 Fluorescent/32.0W/2 Lamp	6	62.0	372	ETECH Part No: 12W A/B TUBE Tube/T8	12	12.0	144	2,346
Room 103	Troffer/T8 Fluorescent/32.0W/2 Lamp	6	62.0	372	ETECH Part No: 12W A/B TUBE Tube/T8	12	12.0	144	2,086

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Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Room 106	Troffer/T8 Fluorescent/32.0W/ 2 Lamp	4	62.0	248	ETECH Part No: 12W A/B TUBE Tube/T8	8	12.0	96	2,086
Room 106	Troffer/T8U Fluorescent/24.0W/ 2 Lamp	1	45.7	46	ETECH Part No: 15W ULAMP Tube/ULAMP	2	15.0	30	2,086
Room 107	Troffer/T8 Fluorescent/32.0W/ 2 Lamp	6	62.0	372	ETECH Part No: 12W A/B TUBE Tube/T8	12	12.0	144	2,086
Room 109	Troffer/T8 Fluorescent/32.0W/ 2 Lamp	12	62.0	744	ETECH Part No: 12W A/B TUBE Tube/T8	24	12.0	288	2,086
Room 111	Troffer/T8 Fluorescent/32.0W/ 2 Lamp	3	62.0	186	ETECH Part No: 12W A/B TUBE Tube/T8	6	12.0	72	2,086
Room 113	Troffer/T8 Fluorescent/32.0W/ 2 Lamp	4	62.0	248	ETECH Part No: 12W A/B TUBE Tube/T8	8	12.0	96	521
Room 114	Troffer/T8 Fluorescent/32.0W/ 2 Lamp	3	62.0	186	ETECH Part No: 12W A/B TUBE Tube/T8	6	12.0	72	261
Room 116	Troffer/T8 Fluorescent/32.0W/ 2 Lamp	8	62.0	496	ETECH Part No: 12W A/B TUBE Tube/T8	16	12.0	192	782
Room 116	Wrap/T8 Fluorescent/32.0W/ 4 Lamp	6	106.7	640	ETECH Part No: 12W A/B TUBE Tube/T8	24	12.0	288	782
Room 118	Troffer/T8 Fluorescent/32.0W/ 2 Lamp	6	62.0	372	ETECH Part No: 12W A/B TUBE Tube/T8	12	12.0	144	417
Room 120	Troffer/T8 Fluorescent/32.0W/ 2 Lamp	4	62.0	248	ETECH Part No: 12W A/B TUBE Tube/T8	8	12.0	96	521
Room 124	Troffer/T8 Fluorescent/32.0W/ 2 Lamp	4	62.0	248	ETECH Part No: 12W A/B TUBE Tube/T8	8	12.0	96	782
Room 125	Troffer/T8 Fluorescent/32.0W/ 2 Lamp	4	62.0	248	ETECH Part No: 12W A/B TUBE Tube/T8	8	12.0	96	417
Stairway	Downlight/Incandescent/75.0W/1 Lamp	1	75.0	75	SYLVANIA Part No: 9W A19 A-Type/A19	1	9.0	9	8,760
Stairway	Vapor Tight/T8 Fluorescent/32.0W/ 2 Lamp	6	62.0	372	ETECH Part No: 12W A/B TUBE Tube/T8	12	12.0	144	8,760
Total			**1,889.1**	**8,056**			**294.0**	**2,730**	

Controls Energy Comparison

Interior

Space	Existing Fixture	Existing kWh	Proposed Solution	New kWh (Lighting)	Proposed Control	Reduction		Total New kWh
						Sched	Watt	
Room 118	Troffer/T8 Fluorescent/32.0 W/2 Lamp	155	ETECH Part No: 12W A/B TUBE Tube/T8	60	Part No: OCC SENSOR Occupancy Sensor	65	0	21
Total		**155**		**60**				**21**

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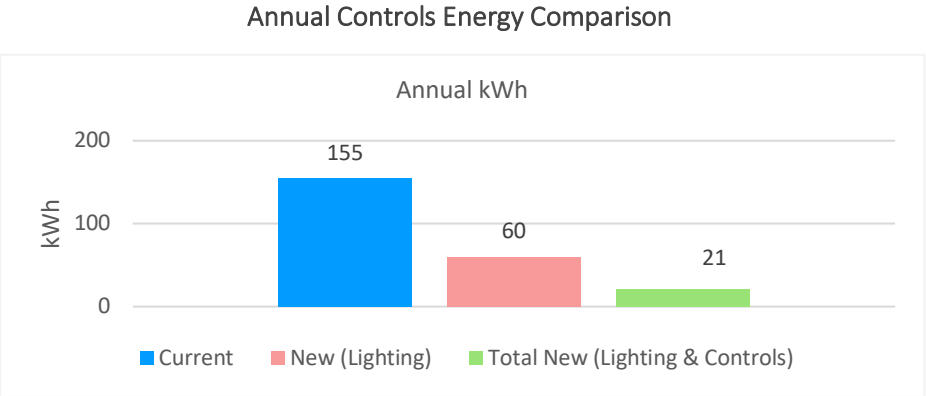
1. *Proposed kWh (Lighting) is lighting usage and does not include controls savings*
2. *Total Proposed kWh is lighting usage that includes savings from controls*



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Upgrade Analysis

Controls Upgrade Summary

Proposed Control	Qty
Part No: OCC SENSOR Occupancy Sensor	1

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LIGHTING RETROFIT PROPOSAL

Prepared for

Jeff Daane dpw

Site Information

Name	City of Waupun library
Address	123 S Forest St Waupun WI 53963

Proposal Date	Proposal Expires

Dale Baeten
920-418-0153
dale@ncledlighting.com

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Executive Summary

Project Costs

Total Project Cost	$3,444
Sales Tax	$0
Value of Incentives	$374
Turnkey Project Cost	$3,070

Financial Metrics

Payback Period (yrs)	2.33
Avg. Annual Return	43%
10 Yr Operating Savings	$13,177
Net Present Value	$6,892

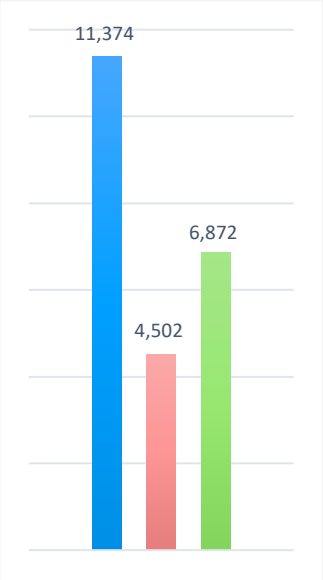
Cost of Waiting

Postpone for one month	$109
Postpone for six months	$658
Postpone for one year	$1,317

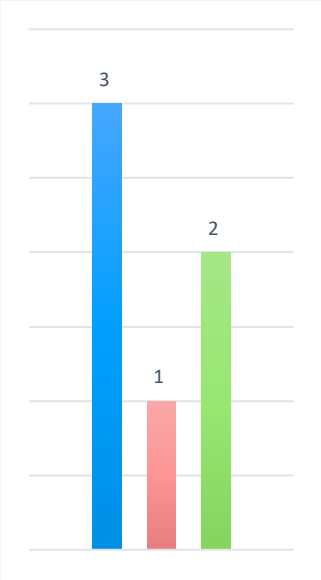
Assumptions

Energy Rate ($/kWh)	0.1190
Annual Utility Rate Increase	0.00%
Discount Rate	6.00%

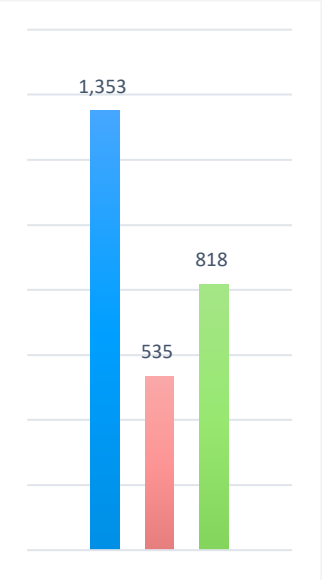
Usage (kWh)



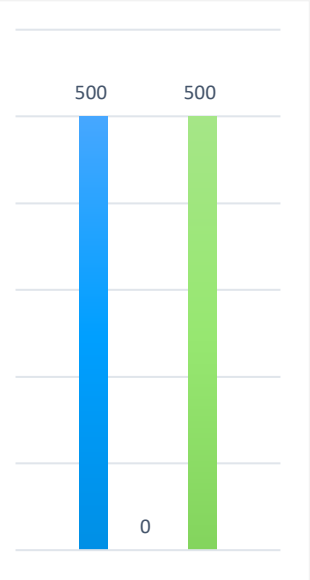
Demand (kW)



Energy Cost ($)



Maintenance Cost ($)



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Impact of New Lighting

Energy Reduction	60%
Avg. Annual Maintenance Savings	100%
Avg. Annual Operating Savings	71%

Aggregate Operating Savings

Saving Area	Year 1	Year 5	Year 10
Energy	$818	$4,088	$8,177
Maintenance	$500	$2,500	$5,000
Total	$1,318	$6,588	$13,177

Aggregate Cash Flow Over Ten Years

Itemized Cash Flow

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Project Cost	$(3,444)	-	-	-	-	-	-	-	-	-
Incentives	$374	$0	$0	$0	$0	$0	$0	$0	$0	$0
Energy Savings	$818	$818	$818	$818	$818	$818	$818	$818	$818	$818
Maintenance Savings	$500	$500	$500	$500	$500	$500	$500	$500	$500	$500
Net Cash Flow	$(1,752)	$1,318	$1,318	$1,318	$1,318	$1,318	$1,318	$1,318	$1,318	$1,318

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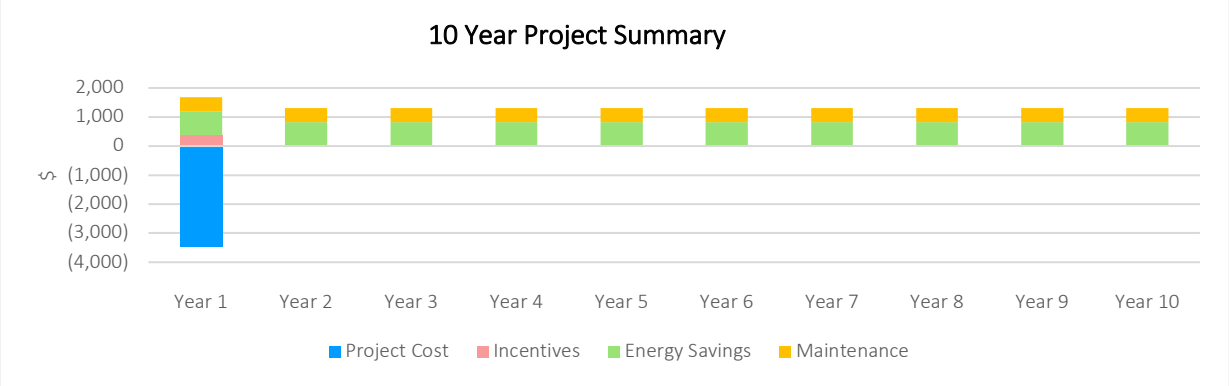
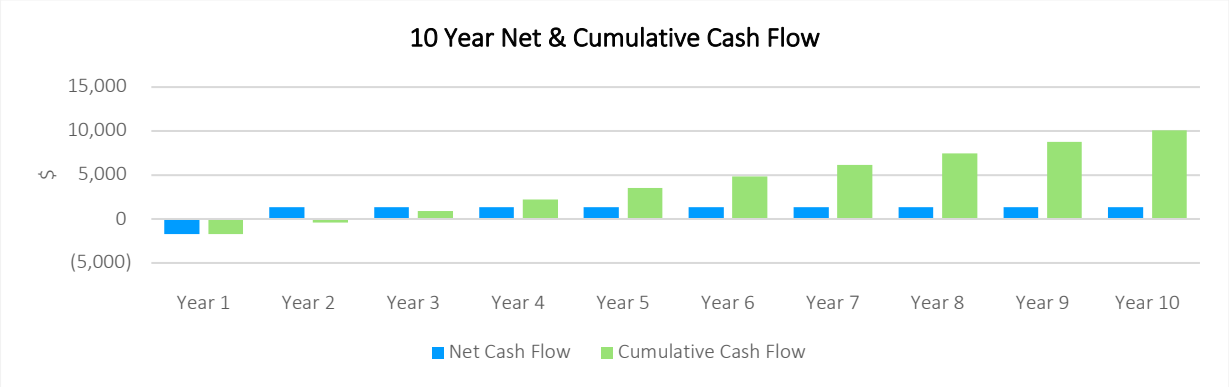
Cash Flow

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	$(3,444)	-	-	-	-	-	-	-	-	-	$(3,445)
Incentives	$374	$0	$0	$0	$0	$0	$0	$0	$0	$0	$374
Energy Savings	$818	$818	$818	$818	$818	$818	$818	$818	$818	$818	$8,177
Maintenance Savings	$500	$500	$500	$500	$500	$500	$500	$500	$500	$500	$5,000
Net Cash Flow	$(1,752)	$1,318	$1,318	$1,318	$1,318	$1,318	$1,318	$1,318	$1,318	$1,318	$10,110
Cum Cash Flow	$(1,752)	$(434)	$884	$2,202	$3,520	$4,838	$6,156	$7,474	$8,792	$10,110	$10,110





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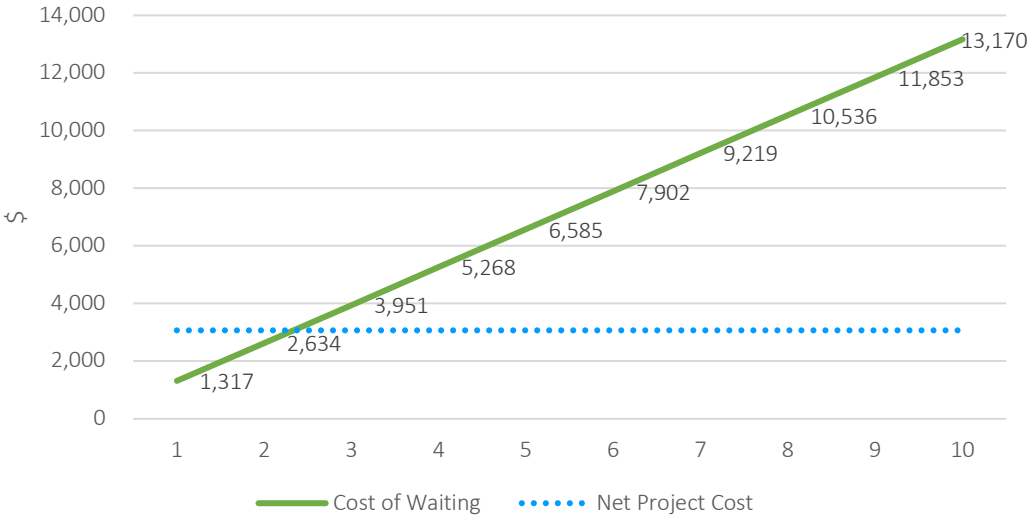
Cost Of Waiting

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
$109	$1,317	$13,170



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

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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

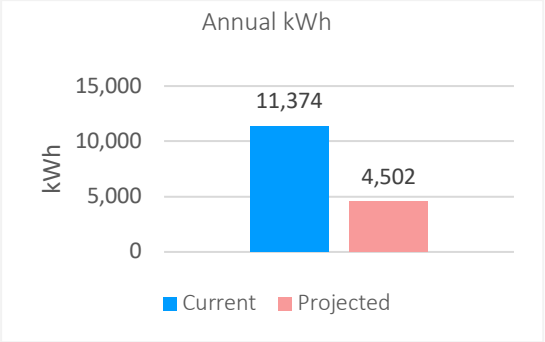
Current Usage (kWh)	Projected Usage (kWh)	Reduction	Current Cost	Projected Cost	Financial Savings	Percent Saved
11,374	4,502	60%	$1,353	$535	$817	60%

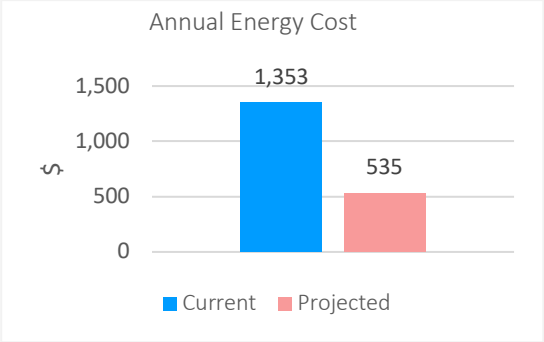
1. *Energy cost = $0.1190/kWh; Annual energy cost escalation = 0.00%*
2. *Energy costs are averaged over 10 year analysis period*
3. *Projected Usage (kWh) includes savings from controls if applicable*

Annual Energy Usage Reduction

Current Usage (kWh)	Projected Usage (kWh)	Reduction (kWh)	Reduction
11,374	4,502	6,872	60%

Energy Comparison





1. *Energy Cost = $0.1190/kWh; Annual energy cost escalation = 0.00%*
2. *Energy costs are averaged over 10 year analysis period*

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Watts Summary

Existing Watts	Proposed Watts	Reduced Watts	Reduction
2,597	1,028	1,569	60%

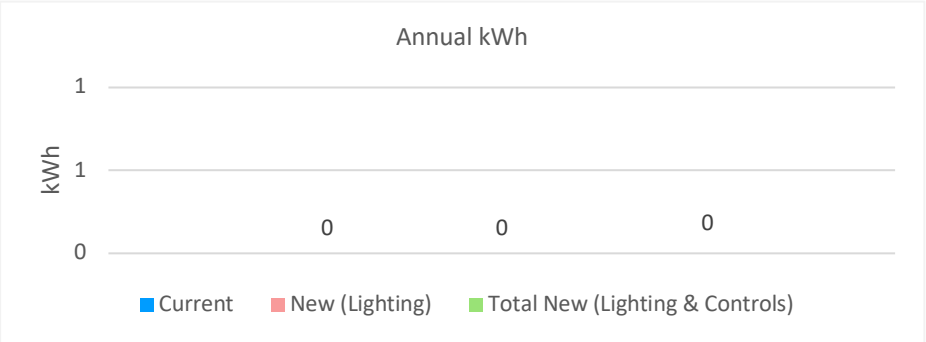
1. *The calculations in this table take into account the existing fixtures that are being replaced, upgraded, and/or have new lighting controls being proposed for them*

Lighting Wattage Comparison

Exterior

Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Canopy	Canopy/CFL Screw In/26.0W/1 Lamp	12	26.0	312	Part No: 6 Can Screw Downlight/Retrofit Kit	12	12.0	144	4,380
Canopy	Canopy/Metal Halide/70.0W/1 Lamp	1	95.0	95	Part No: CC45 Canopy	1	45.0	45	4,380
Canopy	Decorative Outdoor/Halogen/75.0W/1 Lamp	2	75.0	150	Part No: 6 Can Screw Downlight/Retrofit Kit	2	12.0	24	4,380
Flagpole	Flood Light/Metal Halide/150.0W/1 Lamp	3	185.0	555	Wisdom Part No: FL70 Flood Light	3	70.0	210	4,380
Parking Lot	Parking And Garage/Metal Halide/400.0W/1 Lamp	2	460.0	920	Wisdom Part No: SB 200 Area Light	2	200.0	400	4,380
Wallpack	Wallpack/Incandescent/60.0W/2 Lamp	1	120.0	120	Wisdom Part No: FOOTBALL FULL-CUTOFF WP 45 Wallpack	1	45.0	45	4,380
Wallpack	Wallpack/Metal Halide/100.0W/1 Lamp	2	130.0	260	Wisdom Part No: FOOTBALL FULL-CUTOFF WP 45 Wallpack	2	45.0	90	4,380
Wallpack	Wallpack/Metal Halide/150.0W/1 Lamp	1	185.0	185	Wisdom Part No: FULL-CUTOFF WP 70 Wallpack	1	70.0	70	4,380
Total			**1,276.0**	**2,597**			**499.0**	**1,028**	

Annual Controls Energy Comparison



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Upgrade Analysis

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LIGHTING RETROFIT PROPOSAL

Prepared for

Jeff Daane dpw

Site Information

Name	City of Waupun library
Address	123 S Forest St Waupun WI 53963

Proposal Date	Proposal Expires

Dale Baeten
920-418-0153
dale@ncledlighting.com

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Executive Summary

Project Costs

Total Project Cost	$36,916
Sales Tax	$0
Value of Incentives	$7,368
Turnkey Project Cost	$29,548

Financial Metrics

Payback Period (yrs)	2.33
Avg. Annual Return	43%
10 Yr Operating Savings	$128,075
Net Present Value	$67,281

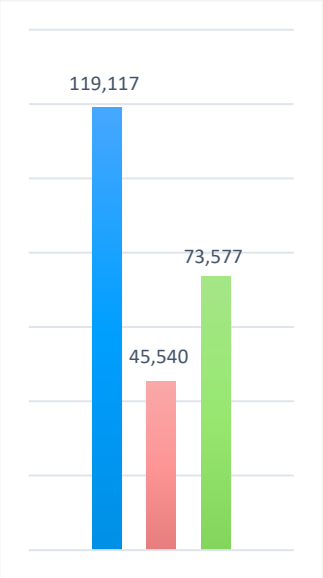
Cost of Waiting

Postpone for one month	$1,067
Postpone for six months	$6,403
Postpone for one year	$12,807

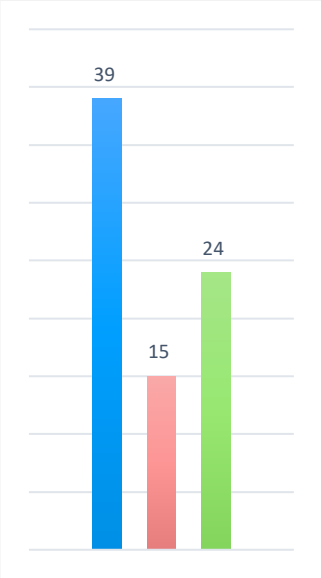
Assumptions

Energy Rate ($/kWh)	0.1190
Annual Utility Rate Increase	0.00%
Discount Rate	6.00%

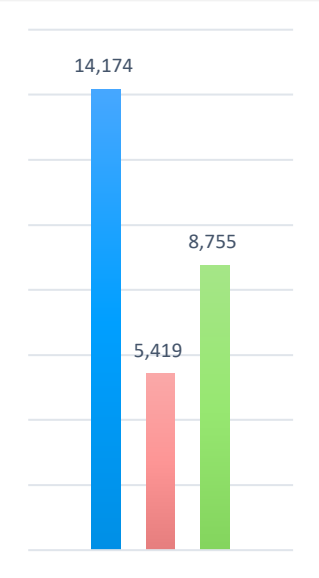
Usage (kWh)



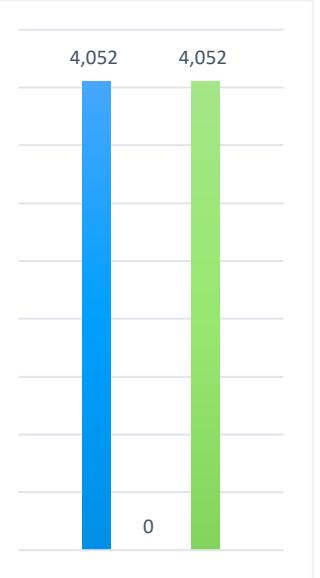
Demand (kW)

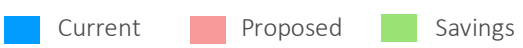


Energy Cost ($)



Maintenance Cost ($)





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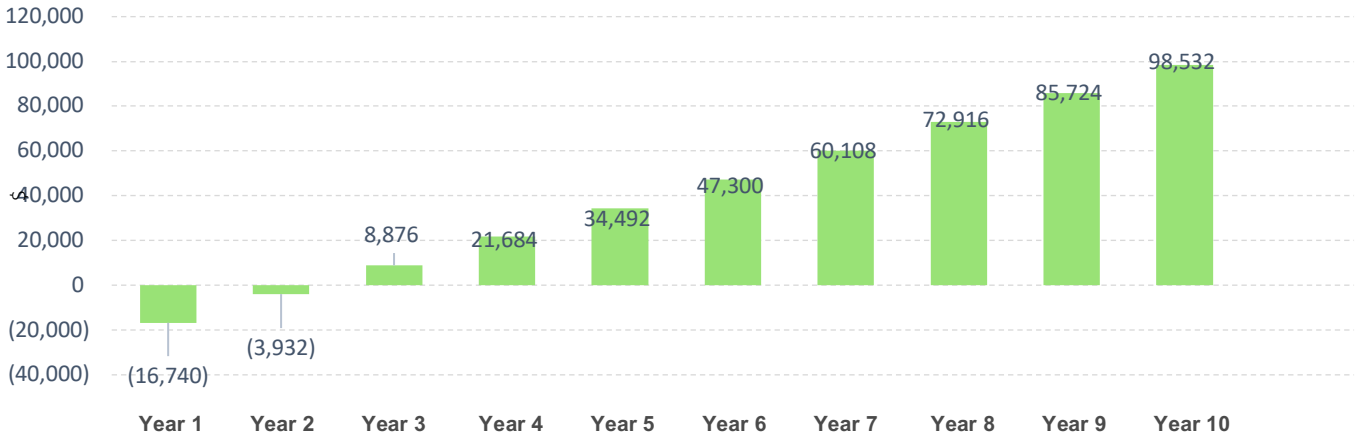
Impact of New Lighting

Energy Reduction	62%
Avg. Annual Maintenance Savings	100%
Avg. Annual Operating Savings	70%

Aggregate Operating Savings

Saving Area	Year 1	Year 5	Year 10
Energy	$8,756	$43,777	$87,555
Maintenance	$4,052	$20,260	$40,520
Total	$12,808	$64,037	$128,075

Aggregate Cash Flow Over Ten Years



Itemized Cash Flow

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Project Cost	$(36,916)	-	-	-	-	-	-	-	-	-
Incentives	$7,367	$0	$0	$0	$0	$0	$0	$0	$0	$0
Energy Savings	$8,756	$8,756	$8,756	$8,756	$8,756	$8,756	$8,756	$8,756	$8,756	$8,756
Maintenance Savings	$4,052	$4,052	$4,052	$4,052	$4,052	$4,052	$4,052	$4,052	$4,052	$4,052
Net Cash Flow	$(16,740)	$12,808	$12,808	$12,808	$12,808	$12,808	$12,808	$12,808	$12,808	$12,808

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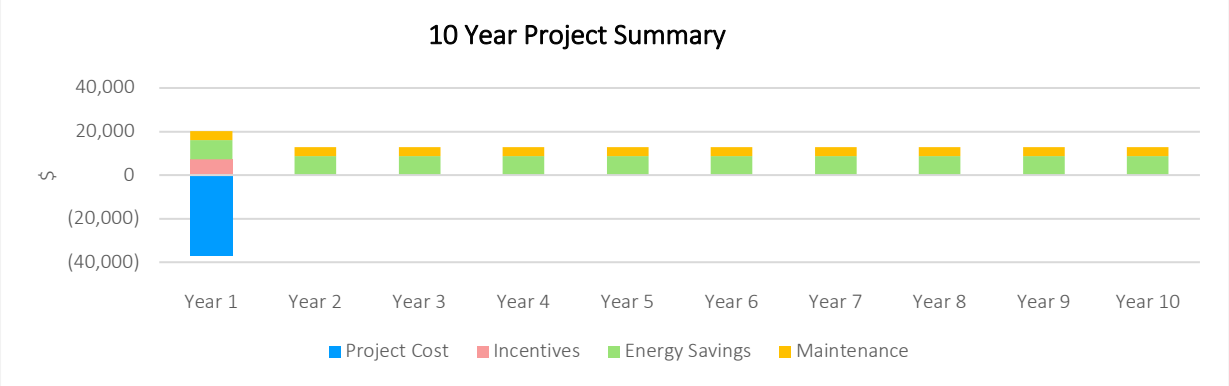
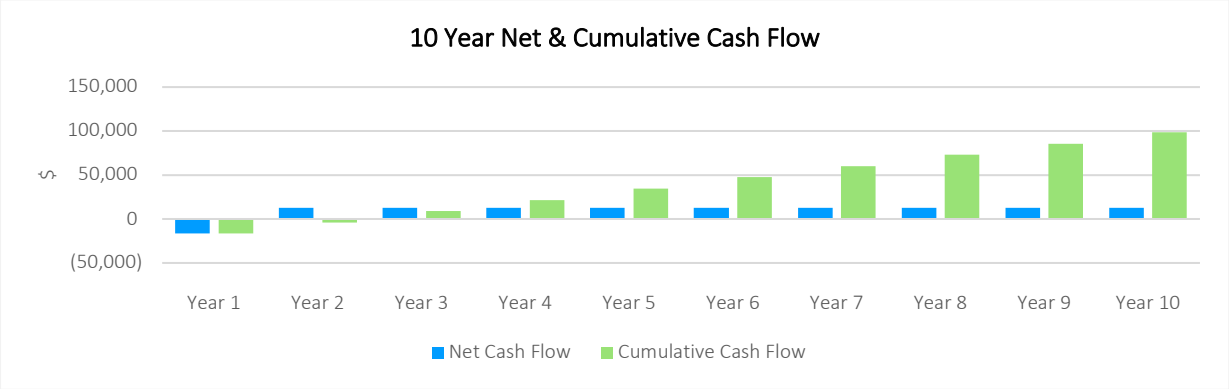
Cash Flow

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	$(36,916)	-	-	-	-	-	-	-	-	-	$(36,916)
Incentives	$7,367	$0	$0	$0	$0	$0	$0	$0	$0	$0	$7,367
Energy Savings	$8,756	$8,756	$8,756	$8,756	$8,756	$8,756	$8,756	$8,756	$8,756	$8,756	$87,555
Maintenance Savings	$4,052	$4,052	$4,052	$4,052	$4,052	$4,052	$4,052	$4,052	$4,052	$4,052	$40,520
Net Cash Flow	$(16,740)	$12,808	$12,808	$12,808	$12,808	$12,808	$12,808	$12,808	$12,808	$12,808	$98,532
Cum Cash Flow	$(16,740)	$(3,932)	$8,876	$21,684	$34,492	$47,300	$60,108	$72,916	$85,724	$98,532	$98,532





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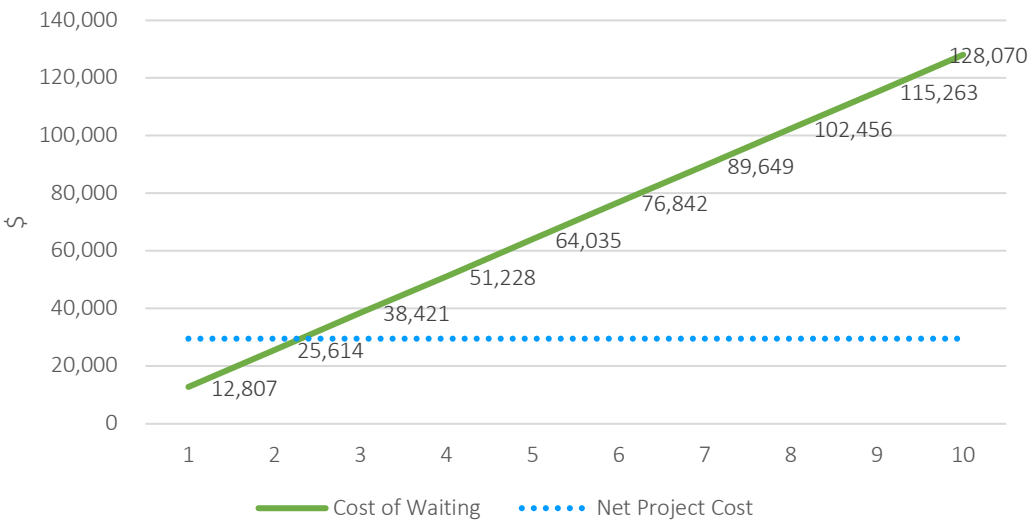
Cost Of Waiting

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
$1,067	$12,807	$128,070



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

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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

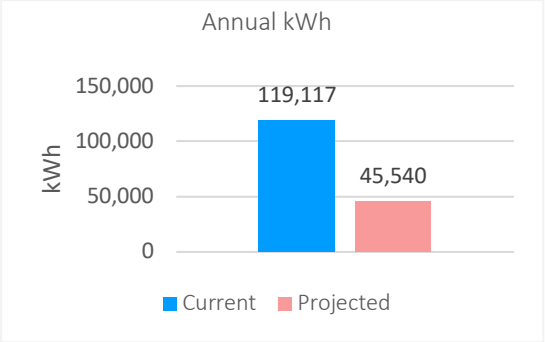
Current Usage (kWh)	Projected Usage (kWh)	Reduction	Current Cost	Projected Cost	Financial Savings	Percent Saved
119,117	45,540	62%	$14,174	$5,419	$8,755	62%

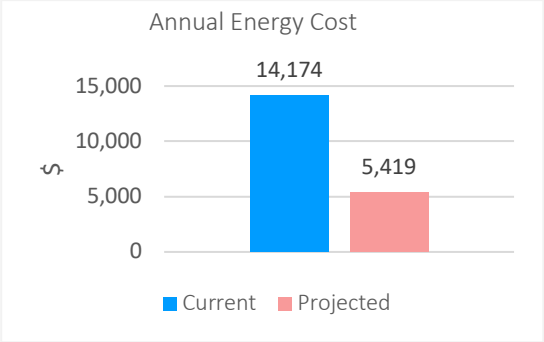
1. *Energy cost = $0.1190/kWh; Annual energy cost escalation = 0.00%*
2. *Energy costs are averaged over 10 year analysis period*
3. *Projected Usage (kWh) includes savings from controls if applicable*

Annual Energy Usage Reduction

Current Usage (kWh)	Projected Usage (kWh)	Reduction (kWh)	Reduction
119,117	45,540	73,577	62%

Energy Comparison





1. *Energy Cost = $0.1190/kWh; Annual energy cost escalation = 0.00%*
2. *Energy costs are averaged over 10 year analysis period*

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Watts Summary

Existing Watts	Proposed Watts	Reduced Watts	Reduction
39,176	15,069	24,107	62%

1. *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

Interior

Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Back hallway	Troffer/T5 Fluorescent/28.0W/ 2 Lamp	4	64.0	256	Part No: 2 ft tube Tube/T8 Linear	8	15.0	120	3,076
Back work area	Troffer/T8 Fluorescent/32.0W/ 3 Lamp	9	86.2	776	ETECH Part No: 12W A/B TUBE Tube/T8	27	12.0	324	3,076
Bathroom by break room	Downlight/CFL Pin Base/26.0W/1 Lamp	1	26.0	26	Part No: 4 inch can Downlight	1	12.0	12	1,564
Bathroom by break room	Strip/T8 Fluorescent/17.0W/ 2 Lamp	1	33.0	33	Part No: 2 ft tube Tube/T8 Linear	2	15.0	30	1,564
Break room	Downlight/CFL Pin Base/54.0W/1 Lamp	4	54.0	216	VIKING Part No: CAN TRIM 6 WIRED Downlight/Retrofit Kit	4	17.0	68	3,076
Break room	Strip/T8 Fluorescent/32.0W/ 3 Lamp	8	86.2	690	ETECH Part No: 12W A/B TUBE Tube/T8	24	12.0	288	3,076
Elevator	Strip/T8 Fluorescent/32.0W/ 2 Lamp	1	62.0	62	ETECH Part No: 12W A/B TUBE Tube/T8	2	12.0	24	3,076
Entry way	Downlight/CFL Pin Base/54.0W/1 Lamp	7	54.0	378	VIKING Part No: CAN TRIM 6 WIRED Downlight/Retrofit Kit	7	17.0	119	3,076
Foyer	Downlight/CFL Pin Base/54.0W/1 Lamp	15	54.0	810	VIKING Part No: CAN TRIM 6 WIRED Downlight/Retrofit Kit	15	17.0	255	3,076
Foyer	Troffer/T5 Fluorescent/28.0W/ 2 Lamp	5	64.0	320	Part No: 2 ft tube Tube/T8 Linear	10	15.0	150	3,076
Hallway first floor	Downlight/CFL Pin Base/54.0W/1 Lamp	1	54.0	54	VIKING Part No: CAN TRIM 6 WIRED Downlight/Retrofit Kit	1	17.0	17	3,076
Hallway first floor	Troffer/T8 Fluorescent/32.0W/ 3 Lamp	3	86.2	259	ETECH Part No: 12W A/B TUBE Tube/T8	9	12.0	108	3,076
Kitchen	Troffer/T8 Fluorescent/32.0W/ 3 Lamp	1	86.2	86	ETECH Part No: 12W A/B TUBE Tube/T8	3	12.0	36	3,076
Library area	Downlight/CFL Pin Base/13.0W/1 Lamp	4	17.6	70	Part No: 2 pin solution Downlight	4	6.0	24	3,076
Library area	Downlight/CFL Pin Base/26.0W/1 Lamp	4	26.0	104	Part No: 4 inch can Downlight	4	12.0	48	3,076
Library area	Downlight/CFL Pin Base/26.0W/1 Lamp	60	26.0	1,560	Part No: 4 inch can Downlight	60	12.0	720	3,076
Library area	Downlight/CFL Pin Base/26.0W/1 Lamp	5	26.0	130	Part No: 4 inch can Downlight	5	12.0	60	3,076

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Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Library area	Downlight/Incandescent/60.0W/1 Lamp	1	60.0	60	Part No: 4 inch can Downlight	1	12.0	12	3,076
Library area	Strip/T8 Fluorescent/32.0W/1 Lamp	4	33.2	133	ETECH Part No: 12W A/B TUBE Tube/T8	4	12.0	48	3,076
Library area	Strip/T8 Fluorescent/32.0W/3 Lamp	117	86.2	10,085	ETECH Part No: 12W A/B TUBE Tube/T8	351	12.0	4,212	3,076
Library area	Tracklight/Incandescent/75.0W/1 Lamp	2	75.0	150	Part No: par30 PAR/PAR30	2	15.0	30	3,076
Library area	Troffer/T5 Fluorescent/28.0W/2 Lamp	2	64.0	128	Part No: 2 ft tube Tube/T8 Linear	4	15.0	60	3,076
Library area	Troffer/T8 Fluorescent/17.0W/3 Lamp	4	48.1	192	Part No: 2 ft tube Tube/T8 Linear	12	15.0	180	3,076
Library area	Troffer/T8 Fluorescent/32.0W/2 Lamp	53	62.0	3,286	ETECH Part No: 12W A/B TUBE Tube/T8	106	12.0	1,272	3,076
Library area	Troffer/T8 Fluorescent/32.0W/3 Lamp	74	86.2	6,379	ETECH Part No: 12W A/B TUBE Tube/T8	222	12.0	2,664	3,076
Library area	Wrap/T8 Fluorescent/32.0W/3 Lamp	33	86.2	2,845	ETECH Part No: 12W A/B TUBE Tube/T8	99	12.0	1,188	3,076
Library bathroom and maintenence	Downlight/CFL Pin Base/26.0W/1 Lamp	2	26.0	52	Part No: 4 inch can Downlight	2	12.0	24	3,076
Library bathroom and maintenence	Strip/T8 Fluorescent/32.0W/2 Lamp	3	62.0	186	ETECH Part No: 12W A/B TUBE Tube/T8	6	12.0	72	3,076
Maintenance	Troffer/T8 Fluorescent/32.0W/2 Lamp	3	62.0	186	ETECH Part No: 12W A/B TUBE Tube/T8	6	12.0	72	52
Restroom	Downlight/CFL Pin Base/26.0W/1 Lamp	6	26.0	156	Part No: 4 inch can Downlight	6	12.0	72	1,564
Restroom	Strip/T8 Fluorescent/32.0W/1 Lamp	10	33.2	332	ETECH Part No: 12W A/B TUBE Tube/T8	10	12.0	120	1,564
Room 112	Downlight/Incandescent/60.0W/1 Lamp	11	60.0	660	Part No: 4 inch can Downlight	11	12.0	132	3,076
Room 112	Tracklight/Incandescent/75.0W/1 Lamp	15	75.0	1,125	Part No: par 20 PAR/PAR20	15	8.0	120	3,076
Room 112	Troffer/T8 Fluorescent/32.0W/3 Lamp	9	86.2	776	ETECH Part No: 12W A/B TUBE Tube/T8	27	12.0	324	3,076
Room 102	Strip/T8 Fluorescent/32.0W/3 Lamp	6	86.2	517	ETECH Part No: 12W A/B TUBE Tube/T8	18	12.0	216	3,076
Room 103	Downlight/CFL Pin Base/54.0W/1 Lamp	7	54.0	378	VIKING Part No: CAN TRIM 6 WIRED Downlight/Retrofit Kit	7	17.0	119	3,076
Room 103	Strip/T8 Fluorescent/32.0W/3 Lamp	8	86.2	690	ETECH Part No: 12W A/B TUBE Tube/T8	24	12.0	288	3,076
Room 107	Troffer/T8 Fluorescent/17.0W/3 Lamp	6	48.1	289	Part No: 2 ft tube Tube/T8 Linear	18	15.0	270	3,076

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Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Room 109	Troffer/T8 Fluorescent/32.0W/ 3 Lamp	6	86.2	517	ETECH Part No: 12W A/B TUBE Tube/T8	18	12.0	216	3,076
Room 110	Troffer/T8 Fluorescent/32.0W/ 1 Lamp	1	33.2	33	ETECH Part No: 12W A/B TUBE Tube/T8	1	12.0	12	3,076
Room 120	Strip/T12 Fluorescent/40.0W/ 1 Lamp	2	40.8	82	ETECH Part No: 12W A/B TUBE Tube/T8	2	12.0	24	3,076
Room 121	Strip/T8 Fluorescent/32.0W/ 2 Lamp	4	62.0	248	ETECH Part No: 12W A/B TUBE Tube/T8	8	12.0	96	3,076
Room 202	Downlight/Incandescent/75.0W/1 Lamp	4	75.0	300	VIKING Part No: CAN TRIM 8 WIRED Downlight/Retrofit Kit	4	24.0	96	3,076
Room 202	Troffer/T8 Fluorescent/32.0W/ 3 Lamp	2	86.2	172	ETECH Part No: 12W A/B TUBE Tube/T8	6	12.0	72	3,076
Room 204	Downlight/Incandescent/100.0W/1 Lamp	4	100.0	400	SYLVANIA Part No: 9W A19 A-Type/A19	4	9.0	36	3,076
Room 208b	Troffer/T8 Fluorescent/17.0W/ 3 Lamp	2	48.1	96	Part No: 2 ft tube Tube/T8 Linear	6	15.0	90	3,076
Room 214	Strip/T8 Fluorescent/32.0W/ 2 Lamp	2	62.0	124	ETECH Part No: 12W A/B TUBE Tube/T8	4	12.0	48	3,076
Stair way	Decorative Indoor/Incandescent/100.0W/1 Lamp	1	100.0	100	SYLVANIA Part No: 9W A19 A-Type/A19	1	9.0	9	3,076
Stair way	Downlight/CFL Pin Base/54.0W/4 Lamp	8	220.0	1,760	VIKING Part No: CAN TRIM 6 WIRED Downlight/Retrofit Kit	8	17.0	136	3,076
Stair way	Downlight/CFL Pin Base/54.0W/4 Lamp	3	220.0	660	Part No: PLL LED SOL CFL Series/PLL	12	20.0	240	3,076
Stair way	Strip/T8 Fluorescent/32.0W/ 2 Lamp	1	62.0	62	ETECH Part No: 12W A/B TUBE Tube/T8	2	12.0	24	3,076
Stair way	Troffer/T8 Fluorescent/32.0W/ 2 Lamp	2	62.0	124	ETECH Part No: 12W A/B TUBE Tube/T8	4	12.0	48	3,076
Stair way	Wrap/T8 Fluorescent/32.0W/ 2 Lamp	1	64.0	64	ETECH Part No: 12W A/B TUBE Tube/T8	2	12.0	24	3,076
Total			**3,532.7**	**39,176**			**694.0**	**15,069**	

Controls Energy Comparison

Interior

Space	Existing Fixture	Existing kWh	Proposed Solution	New kWh (Lighting)	Proposed Control	Reduction		Total New kWh
						Sched	Watt	
Back hallway	Troffer/T5 Fluorescent/28.0 W/2 Lamp	787	Part No: 2 ft tube Tube/T8 Linear	369	Part No: 65% Occupancy Sensor	65	0	129
Total		**787**		**369**				**129**

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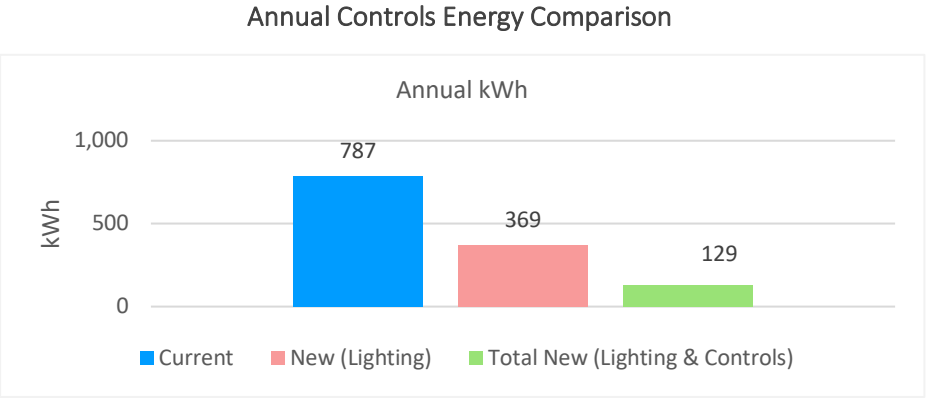
1. *Proposed kWh (Lighting) is lighting usage and does not include controls savings*
2. *Total Proposed kWh is lighting usage that includes savings from controls*



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Upgrade Analysis

Controls Upgrade Summary

Proposed Control	Qty
Part No: 65% Occupancy Sensor	1

40

LIGHTING RETROFIT PROPOSAL

Prepared for

Jeff Daane DPW

Site Information

Name	City of Waupun Museum
Address	22 S Madison St Waupun WI 53963

Proposal Date	Proposal Expires

Dale Baeten
920-418-0153
dale@ncledlighting.com

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Executive Summary

Project Costs

Total Project Cost	$4,369
Sales Tax	$0
Value of Incentives	$314
Turnkey Project Cost	$4,055

Financial Metrics

Payback Period (yrs)	7.92
Avg. Annual Return	13%
10 Yr Operating Savings	$5,172
Net Present Value	$(145)

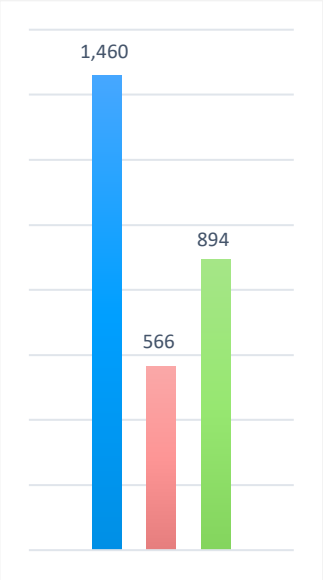
Cost of Waiting

Postpone for one month	$43
Postpone for six months	$258
Postpone for one year	$517

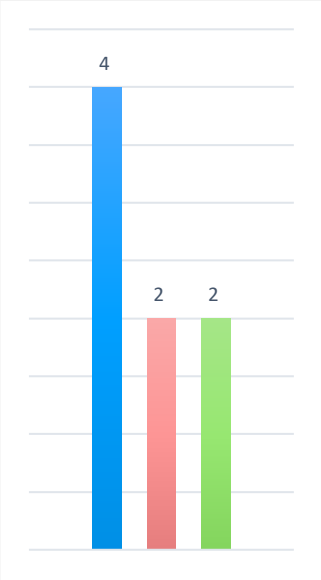
Assumptions

Energy Rate ($/kWh)	0.1300
Annual Utility Rate Increase	0.00%
Discount Rate	6.00%

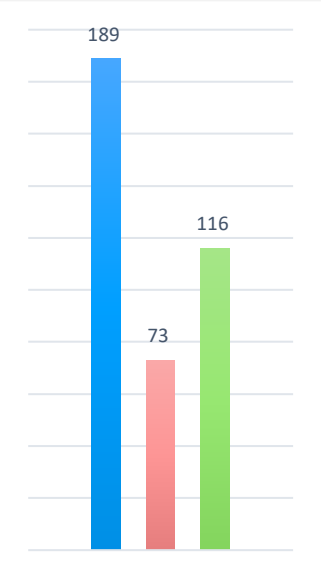
Usage (kWh)



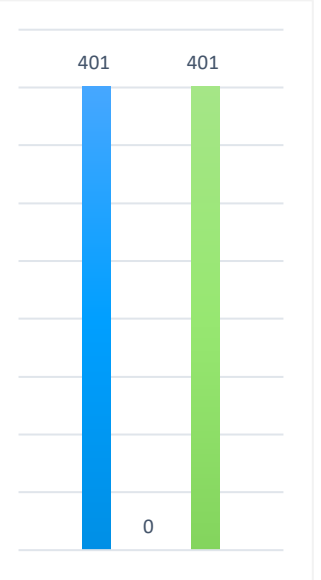
Demand (kW)



Energy Cost ($)



Maintenance Cost ($)



Current Proposed Savings

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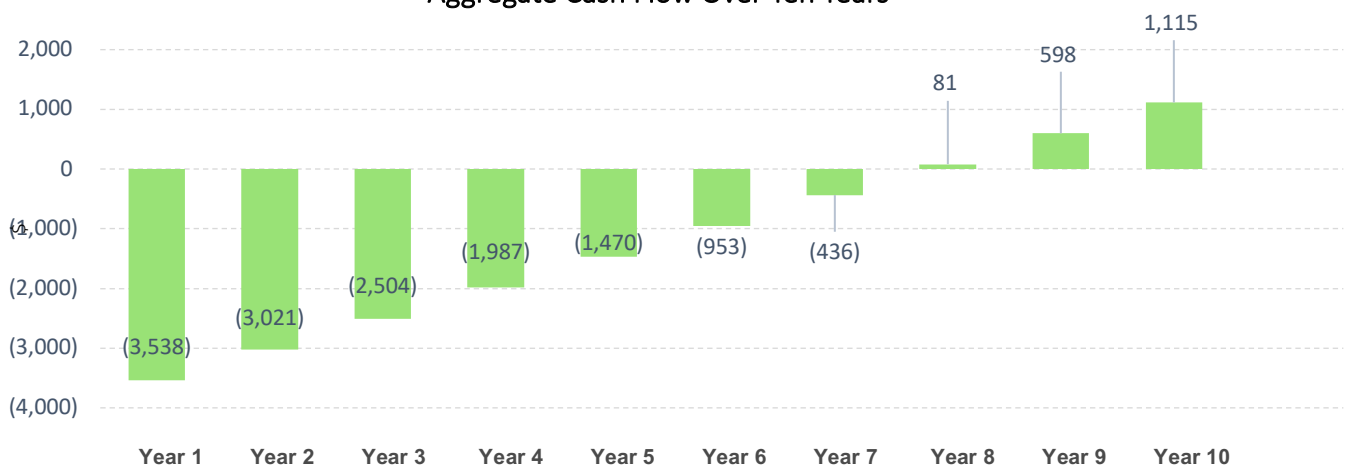
Impact of New Lighting

Energy Reduction	61%
Avg. Annual Maintenance Savings	100%
Avg. Annual Operating Savings	88%

Aggregate Operating Savings

Saving Area	Year 1	Year 5	Year 10
Energy	$116	$581	$1,162
Maintenance	$401	$2,005	$4,010
Total	$517	$2,586	$5,172

Aggregate Cash Flow Over Ten Years



Itemized Cash Flow

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Project Cost	$(4,369)	-	-	-	-	-	-	-	-	-
Incentives	$314	$0	$0	$0	$0	$0	$0	$0	$0	$0
Energy Savings	$116	$116	$116	$116	$116	$116	$116	$116	$116	$116
Maintenance Savings	$401	$401	$401	$401	$401	$401	$401	$401	$401	$401
Net Cash Flow	$(3,538)	$517	$517	$517	$517	$517	$517	$517	$517	$517

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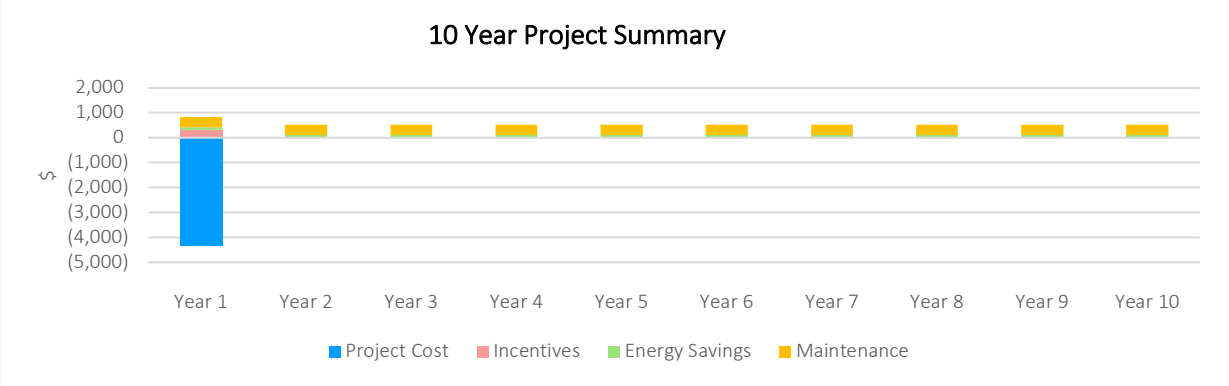
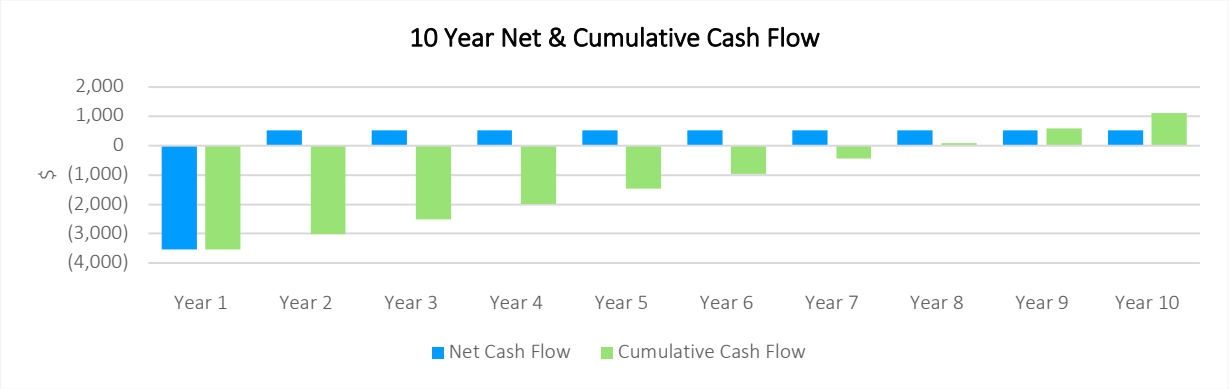
Cash Flow

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	$(4,369)	-	-	-	-	-	-	-	-	-	$(4,369)
Incentives	$314	$0	$0	$0	$0	$0	$0	$0	$0	$0	$314
Energy Savings	$116	$116	$116	$116	$116	$116	$116	$116	$116	$116	$1,162
Maintenance Savings	$401	$401	$401	$401	$401	$401	$401	$401	$401	$401	$4,010
Net Cash Flow	$(3,538)	$517	$517	$517	$517	$517	$517	$517	$517	$517	$1,115
Cum Cash Flow	$(3,538)	$(3,021)	$(2,504)	$(1,987)	$(1,470)	$(953)	$(436)	$81	$598	$1,115	$1,115





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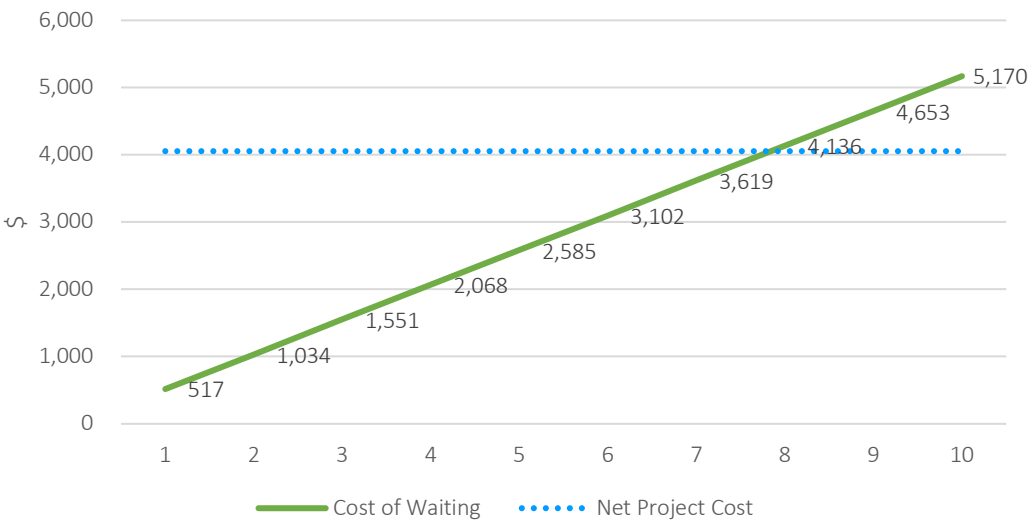
Cost Of Waiting

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
$43	$517	$5,170



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

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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

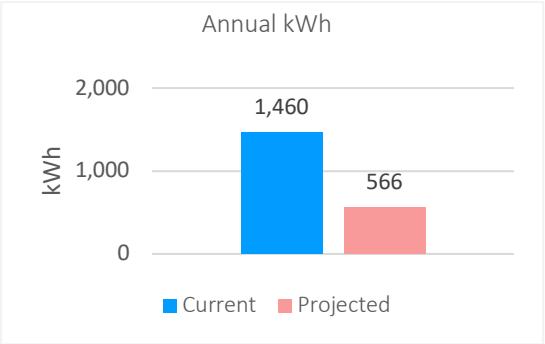
Current Usage (kWh)	Projected Usage (kWh)	Reduction	Current Cost	Projected Cost	Financial Savings	Percent Saved
1,460	566	61%	$189	$73	$116	61%

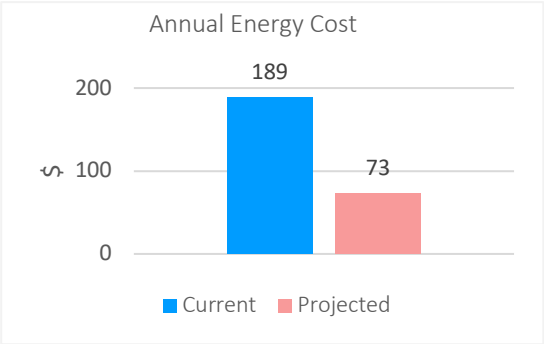
1. *Energy cost = $0.1300/kWh; Annual energy cost escalation = 0.00%*
2. *Energy costs are averaged over 10 year analysis period*
3. *Projected Usage (kWh) includes savings from controls if applicable*

Annual Energy Usage Reduction

Current Usage (kWh)	Projected Usage (kWh)	Reduction (kWh)	Reduction
1,460	566	894	61%

Energy Comparison





1. *Energy Cost = $0.1300/kWh; Annual energy cost escalation = 0.00%*
2. *Energy costs are averaged over 10 year analysis period*

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Watts Summary

Existing Watts	Proposed Watts	Reduced Watts	Reduction
4,183	1,845	2,338	61%

1. *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
Area light	Area Light/Metal Halide/70.0W/1 Lamp	1	95.0	95	Part No: STONCO Area Light	1	36.0	36	4,380
Flood light	Flood Light/Metal Halide/100.0W/1 Lamp	1	130.0	130	Wisdom Part No: FL 45 Flood Light	1	45.0	45	4,380
Total			**225.0**	**225**			**81.0**	**81**	

Interior

Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Basement	Strip/T8 Fluorescent/32.0W/ 1 Lamp	1	33.2	33	ETECH Part No: 12W A/B TUBE Tube/T8	1	12.0	12	120
Basement	Strip/T8 Fluorescent/32.0W/ 4 Lamp	13	106.7	1,387	ETECH Part No: 12W A/B TUBE Tube/T8	52	12.0	624	120
Entryway	Strip/T8 Fluorescent/32.0W/ 2 Lamp	2	62.0	124	ETECH Part No: 12W A/B TUBE Tube/T8	4	12.0	48	120
Main floor	Strip/T8 Fluorescent/32.0W/ 1 Lamp	2	33.2	66	ETECH Part No: 12W A/B TUBE Tube/T8	2	12.0	24	120
Main floor	Strip/T8 Fluorescent/32.0W/ 4 Lamp	22	106.7	2,347	ETECH Part No: 12W A/B TUBE Tube/T8	88	12.0	1,056	120
Total			**341.8**	**3,958**			**60.0**	**1,764**	

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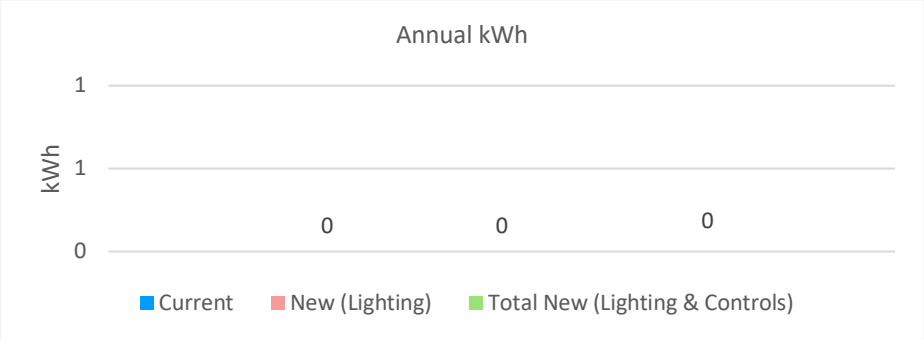
Annual Controls Energy Comparison



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Upgrade Analysis

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LIGHTING RETROFIT PROPOSAL

Prepared for

Jeff

Site Information

Name	Waupun community center
Address	510 E Spring St Waupun WI

Proposal Date	Proposal Expires

Jay Polena
920-655-2468 ext 101
Jay@ncledlighting.com

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Executive Summary

Project Costs

Total Project Cost	$16,980
Sales Tax	$0
Value of Incentives	$1,440
Turnkey Project Cost	$15,540

Financial Metrics

Payback Period (yrs)	3.83
Avg. Annual Return	26%
10 Yr Operating Savings	$40,790
Net Present Value	$15,299

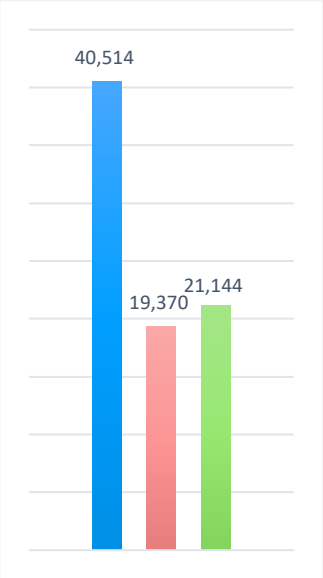
Cost of Waiting

Postpone for one month	$339
Postpone for six months	$2,039
Postpone for one year	$4,079

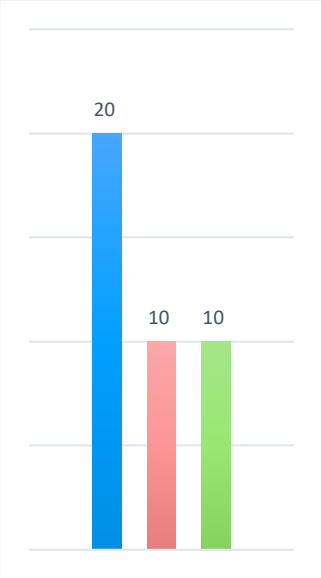
Assumptions

Energy Rate ($/kWh)	0.1338
Annual Utility Rate Increase	0.00%
Discount Rate	6.00%

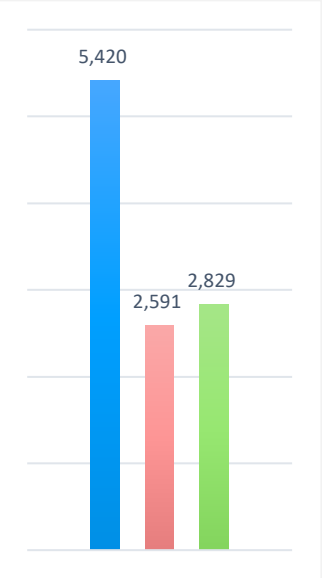
Usage (kWh)



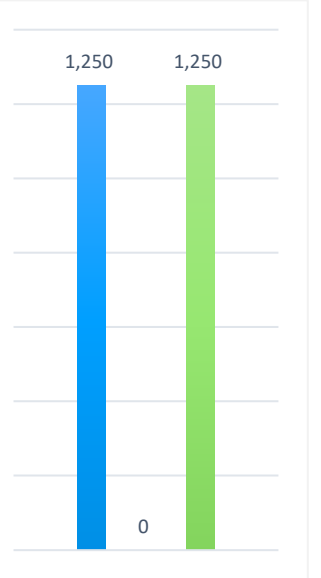
Demand (kW)

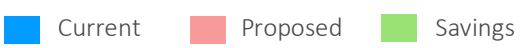


Energy Cost ($)



Maintenance Cost ($)





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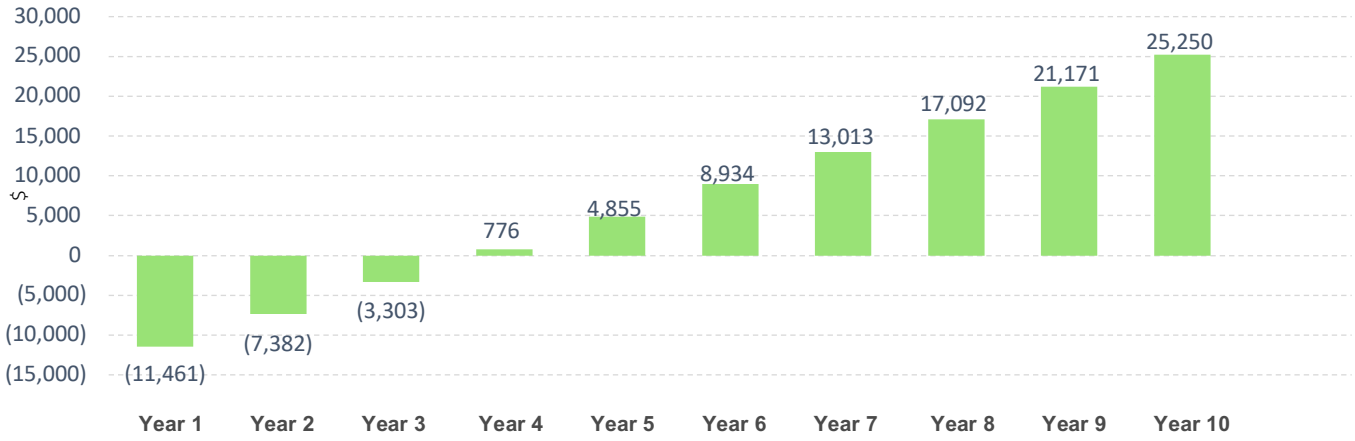
Impact of New Lighting

Energy Reduction	52%
Avg. Annual Maintenance Savings	100%
Avg. Annual Operating Savings	61%

Aggregate Operating Savings

Saving Area	Year 1	Year 5	Year 10
Energy	$2,829	$14,145	$28,290
Maintenance	$1,250	$6,250	$12,500
Total	$4,079	$20,395	$40,790

Aggregate Cash Flow Over Ten Years



Itemized Cash Flow

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Project Cost	$(16,980)	-	-	-	-	-	-	-	-	-
Incentives	$1,440	$0	$0	$0	$0	$0	$0	$0	$0	$0
Energy Savings	$2,829	$2,829	$2,829	$2,829	$2,829	$2,829	$2,829	$2,829	$2,829	$2,829
Maintenance Savings	$1,250	$1,250	$1,250	$1,250	$1,250	$1,250	$1,250	$1,250	$1,250	$1,250
Net Cash Flow	$(11,461)	$4,079	$4,079	$4,079	$4,079	$4,079	$4,079	$4,079	$4,079	$4,079

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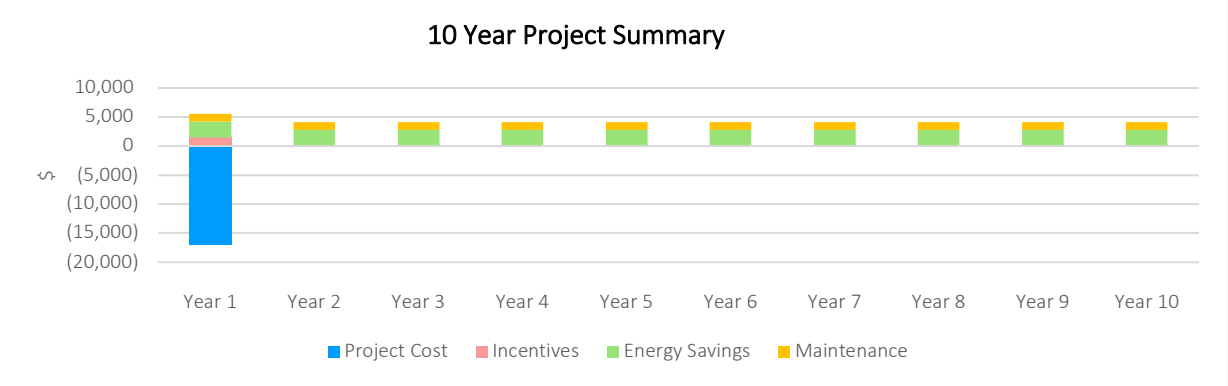
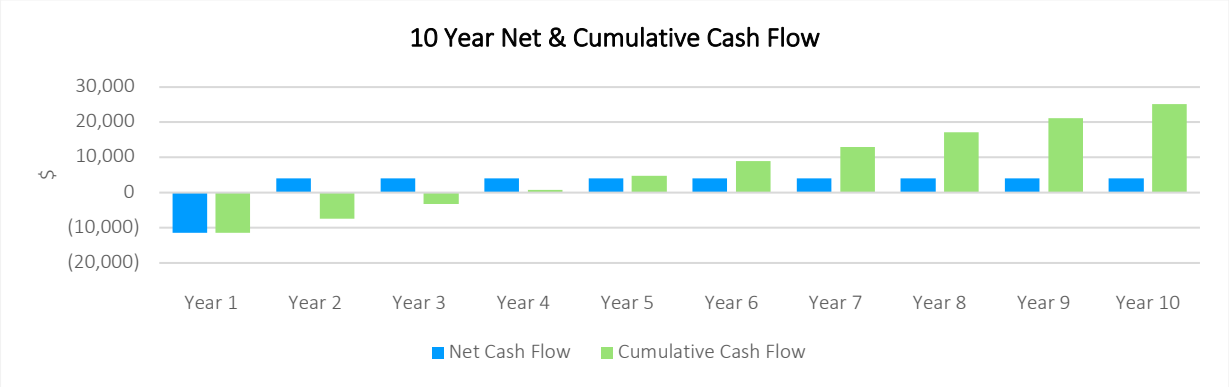
Cash Flow

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	$(16,980)	-	-	-	-	-	-	-	-	-	$(16,980)
Incentives	$1,440	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,440
Energy Savings	$2,829	$2,829	$2,829	$2,829	$2,829	$2,829	$2,829	$2,829	$2,829	$2,829	$28,290
Maintenance Savings	$1,250	$1,250	$1,250	$1,250	$1,250	$1,250	$1,250	$1,250	$1,250	$1,250	$12,500
Net Cash Flow	$(11,461)	$4,079	$4,079	$4,079	$4,079	$4,079	$4,079	$4,079	$4,079	$4,079	$25,250
Cum Cash Flow	$(11,461)	$(7,382)	$(3,303)	$776	$4,855	$8,934	$13,013	$17,092	$21,171	$25,250	$25,250





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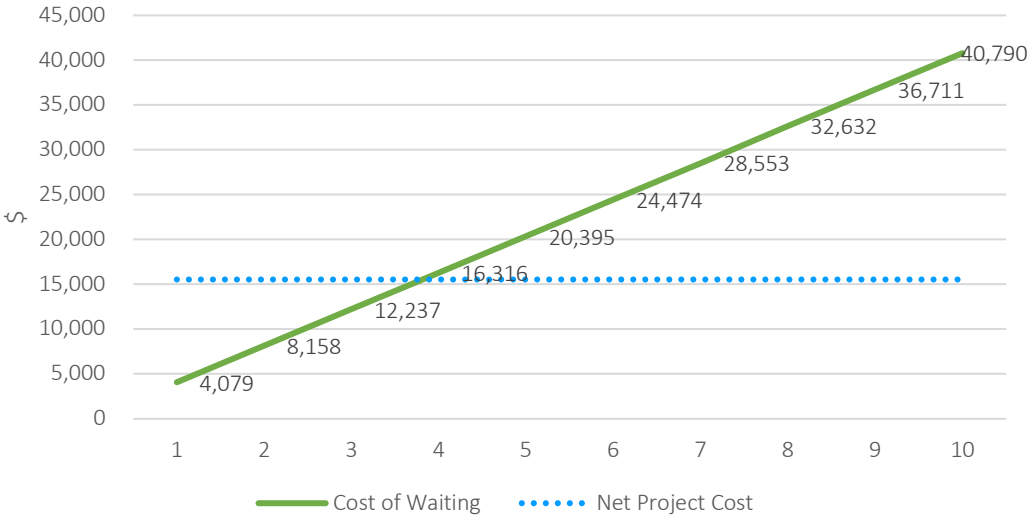
Cost Of Waiting

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
$339	$4,079	$40,790



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

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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

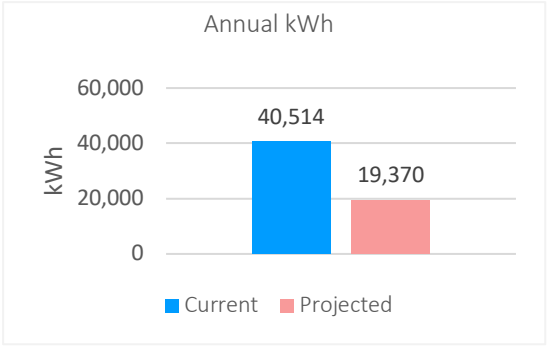
Current Usage (kWh)	Projected Usage (kWh)	Reduction	Current Cost	Projected Cost	Financial Savings	Percent Saved
40,514	19,370	52%	$5,420	$2,591	$2,829	52%

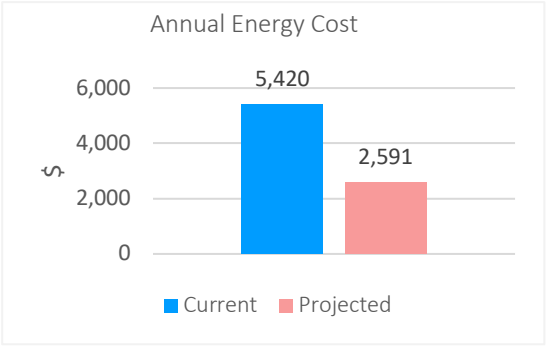
1. *Energy cost = $0.1338/kWh; Annual energy cost escalation = 0.00%*
2. *Energy costs are averaged over 10 year analysis period*
3. *Projected Usage (kWh) includes savings from controls if applicable*

Annual Energy Usage Reduction

Current Usage (kWh)	Projected Usage (kWh)	Reduction (kWh)	Reduction
40,514	19,370	21,144	52%

Energy Comparison





1. *Energy Cost = $0.1338/kWh; Annual energy cost escalation = 0.00%*
2. *Energy costs are averaged over 10 year analysis period*

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Watts Summary

Existing Watts	Proposed Watts	Reduced Watts	Reduction
19,555	10,444	9,111	52%

1. *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

Exrerior

Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Walls	Decorative Outdoor/Incandescent/100.0W/1 Lamp	6	100.0	600	SYLVANIA Part No: 9W A19 A-Type/A19	6	9.0	54	4,380
Walls	Flood Light/Metal Halide/400.0W/1 Lamp	2	400.0	800	Part No: ev-100bc2 Flood Light	2	200.0	400	4,380
Walls	Wallpack/Metal Halide/250.0W/1 Lamp	2	295.0	590	Wisdom Part No: STD WP 100 Wallpack	2	100.0	200	4,380
Walls	Wallpack/Metal Halide/50.0W/1 Lamp	1	70.0	70	Wisdom Part No: MINI 20 WP Wallpack	1	20.0	20	4,380
Total			**865.0**	**2,060**			**329.0**	**674**	

Interior

Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
2 nd floor	Troffer/T8 Fluorescent/32.0W/4 Lamp	11	106.7	1,174	ETECH Part No: 12W A/B TUBE Tube/T8	44	12.0	528	1,800
2 nd floor	Troffer/T8U Fluorescent/25.0W/2 Lamp	2	49.0	98	ETECH Part No: 15W ULAMP Tube/ULAMP	4	15.0	60	1,800
Compressor room	Strip/T8 Fluorescent/32.0W/4 Lamp	4	106.7	427	ETECH Part No: 12W A/B TUBE Tube/T8	16	12.0	192	1,800
Concessions	Troffer/T8 Fluorescent/32.0W/4 Lamp	4	106.7	427	ETECH Part No: 12W A/B TUBE Tube/T8	16	12.0	192	1,800
Hallway	Troffer/T8 Fluorescent/32.0W/3 Lamp	9	86.2	776	ETECH Part No: 12W A/B TUBE Tube/T8	27	12.0	324	1,800
Hallway	Troffer/T8 Fluorescent/32.0W/4 Lamp	7	106.7	747	ETECH Part No: 12W A/B TUBE Tube/T8	28	12.0	336	1,800
Hallway	Troffer/T8U Fluorescent/25.0W/2 Lamp	5	49.0	245	ETECH Part No: 15W ULAMP Tube/ULAMP	10	15.0	150	1,800
Ice rink	Highbay/T8 Fluorescent/32.0W/6 Lamp	61	172.0	10,492	ETECH Part No: 18W A/B TUBE Tube/T8	366	18.0	6,588	1,800
Locker room	Strip/T8 Fluorescent/32.0W/4 Lamp	10	106.7	1,067	ETECH Part No: 12W A/B TUBE Tube/T8	40	12.0	480	1,800

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Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Office	Strip/T8 Fluorescent/32.0W/ 4 Lamp	5	106.7	534	ETECH Part No: 12W A/B TUBE Tube/T8	20	12.0	240	1,800
Restroom	Strip/T8 Fluorescent/32.0W/ 4 Lamp	4	106.7	427	ETECH Part No: 12W A/B TUBE Tube/T8	16	12.0	192	1,800
Restroom	Troffer/T8 Fluorescent/32.0W/ 3 Lamp	4	86.2	345	ETECH Part No: 12W A/B TUBE Tube/T8	12	12.0	144	1,800
Ticket window	Troffer/T8U Fluorescent/25.0W/ 2 Lamp	2	49.0	98	ETECH Part No: 15W ULAMP Tube/ULAMP	4	15.0	60	1,800
Warming room	Troffer/T8 Fluorescent/32.0W/ 4 Lamp	4	106.7	427	ETECH Part No: 12W A/B TUBE Tube/T8	16	12.0	192	1,800
Zamboni	Strip/T8 Fluorescent/32.0W/ 4 Lamp	2	106.7	213	ETECH Part No: 12W A/B TUBE Tube/T8	8	12.0	96	1,800
Total			**1,451.7**	**17,495**			**195.0**	**9,774**	

Controls Energy Comparison

Interior

Space	Existing Fixture	Existing kWh	Proposed Solution	New kWh (Lighting)	Proposed Control	Reduction		Total New kWh
						Sched	Watt	
Hallway	Troffer/T8 Fluorescent/32.0 W/3 Lamp	1,396	ETECH Part No: 12W A/B TUBE Tube/T8	583		65	0	204
Hallway	Troffer/T8 Fluorescent/32.0 W/4 Lamp	1,344	ETECH Part No: 12W A/B TUBE Tube/T8	605		65	0	212
Hallway	Troffer/T8U Fluorescent/25.0 W/2 Lamp	441	ETECH Part No: 15W ULAMP Tube/ULAMP	270		65	0	95
Warming room	Troffer/T8 Fluorescent/32.0 W/4 Lamp	768	ETECH Part No: 12W A/B TUBE Tube/T8	346		65	2	119
Total		**3,950**		**1,804**				**629**

1. *Proposed kWh (Lighting) is lighting usage and does not include controls savings*
2. *Total Proposed kWh is lighting usage that includes savings from controls*

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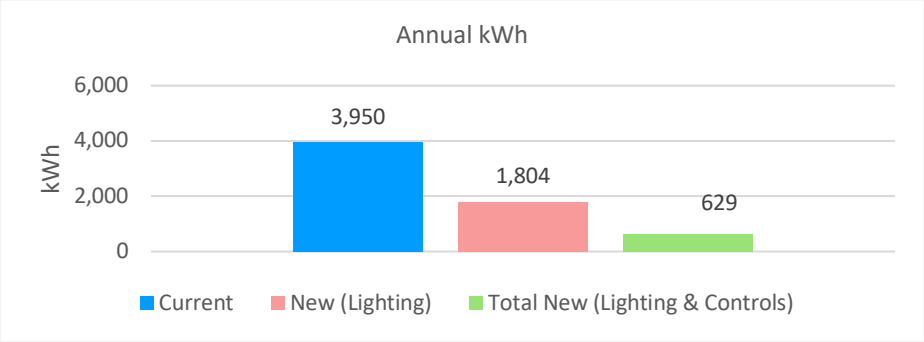
Annual Controls Energy Comparison



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Upgrade Analysis

Controls Upgrade Summary

Proposed Control	Qty
Part No: 65% Occupancy Sensor	0

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LIGHTING RETROFIT PROPOSAL

Prepared for

Jeff

Site Information

Name	Waupun community center
Address	510 E Spring St Waupun WI

Proposal Date	Proposal Expires

Jay Polena
920-655-2468 ext 101
Jay@ncledlighting.com

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Executive Summary

Project Costs

Total Project Cost	$28,029
Sales Tax	$0
Value of Incentives	$2,538
Turnkey Project Cost	$25,491

Financial Metrics

Payback Period (yrs)	5.5
Avg. Annual Return	18%
10 Yr Operating Savings	$46,383
Net Present Value	$9,576

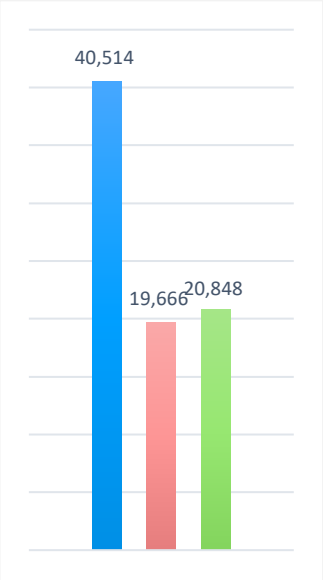
Cost of Waiting

Postpone for one month	$386
Postpone for six months	$2,319
Postpone for one year	$4,638

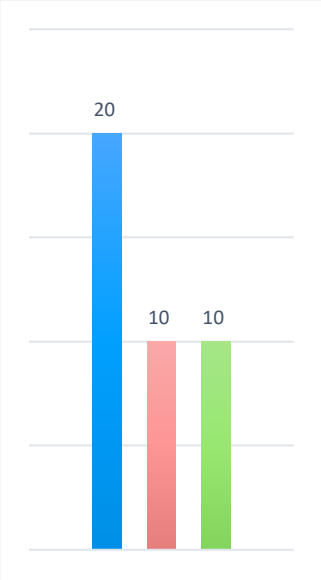
Assumptions

Energy Rate ($/kWh)	0.1338
Annual Utility Rate Increase	0.00%
Discount Rate	6.00%

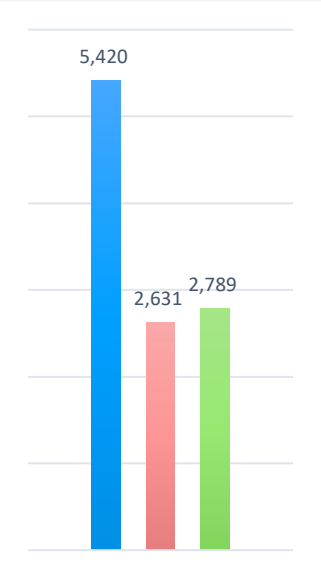
Usage (kWh)



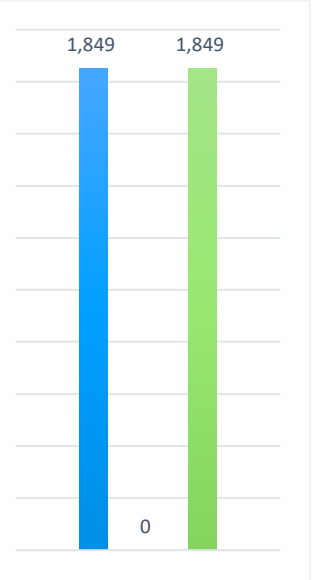
Demand (kW)



Energy Cost ($)



Maintenance Cost ($)



Current Proposed Savings

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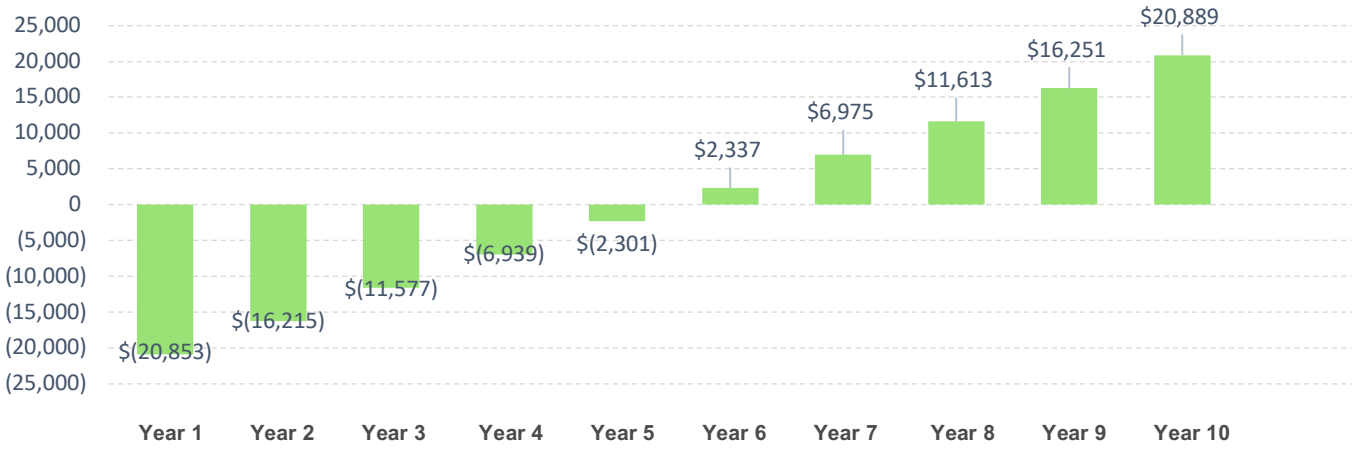
Impact of New Lighting

Energy Reduction	51%
Avg. Annual Maintenance Savings	100%
Avg. Annual Operating Savings	64%

Aggregate Operating Savings

Saving Area	Year 1	Year 5	Year 10
Energy	$2,789	$13,945	$27,890
Maintenance	$1,849	$9,245	$18,490
Total	$4,638	$23,190	$46,380

Aggregate Cash Flow Over Ten Years



Itemized Cash Flow

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Project Cost	$(28,029)	-	-	-	-	-	-	-	-	-
Incentives	$2,538	$0	$0	$0	$0	$0	$0	$0	$0	$0
Energy Savings	$2,789	$2,789	$2,789	$2,789	$2,789	$2,789	$2,789	$2,789	$2,789	$2,789
Maintenance	$1,849	$1,849	$1,849	$1,849	$1,849	$1,849	$1,849	$1,849	$1,849	$1,849
Net Cash Flow	$(20,853)	$4,638	$4,638	$4,638	$4,638	$4,638	$4,638	$4,638	$4,638	$4,638

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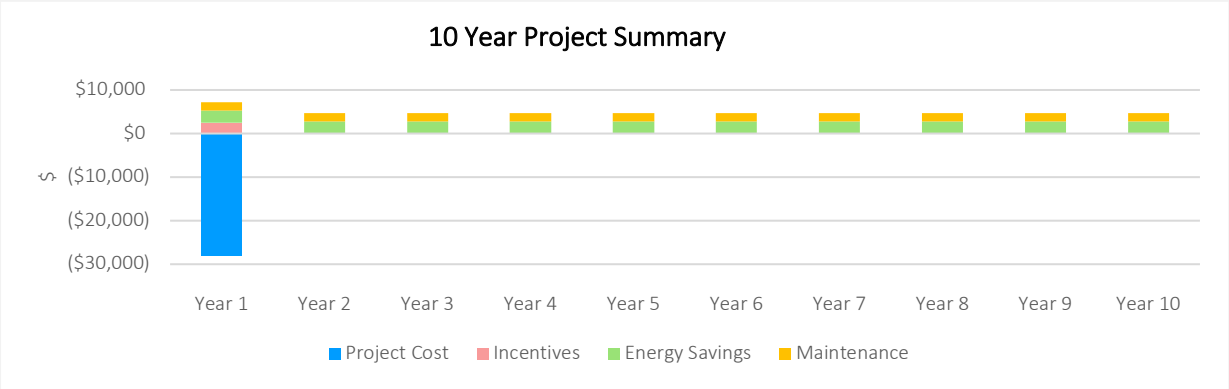
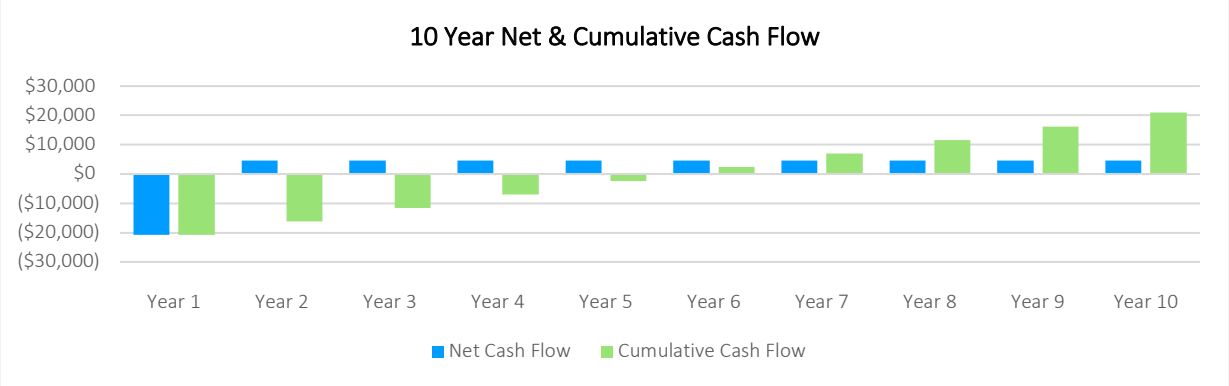
Cash Flow

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	$(28,029)	-	-	-	-	-	-	-	-	-	$(28,029)
Incentives	$2,538	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,538
Energy Savings	$2,789	$2,789	$2,789	$2,789	$2,789	$2,789	$2,789	$2,789	$2,789	$2,789	$27,890
Maintenance	$1,849	$1,849	$1,849	$1,849	$1,849	$1,849	$1,849	$1,849	$1,849	$1,849	$18,490
Net Cash Flow	$(20,853)	$4,638	$4,638	$4,638	$4,638	$4,638	$4,638	$4,638	$4,638	$4,638	$20,889
Cum Cash Flow	$(20,853)	$(16,215)	$(11,577)	$(6,939)	$(2,301)	$2,337	$6,975	$11,613	$16,251	$20,889	$20,889





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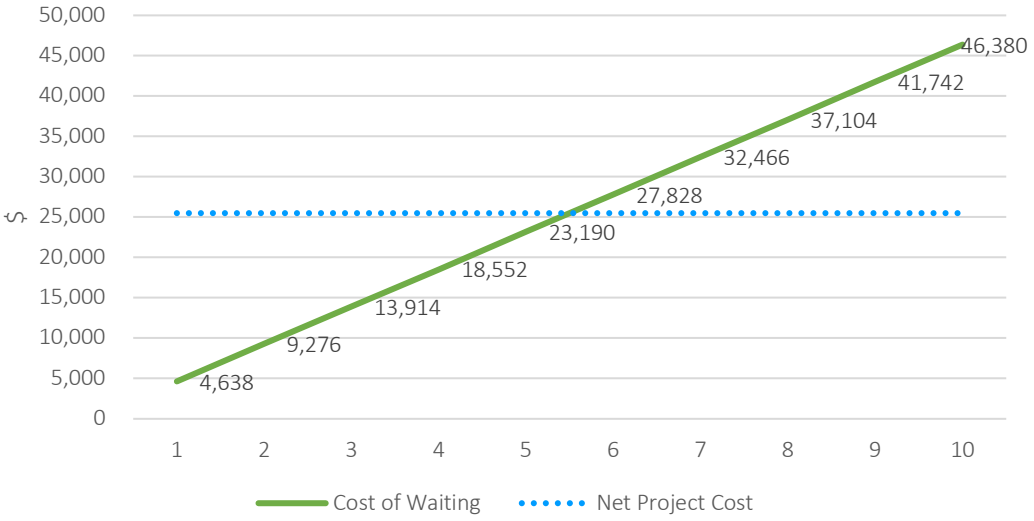
Cost Of Waiting

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
$386	$4,638	$46,380



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

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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

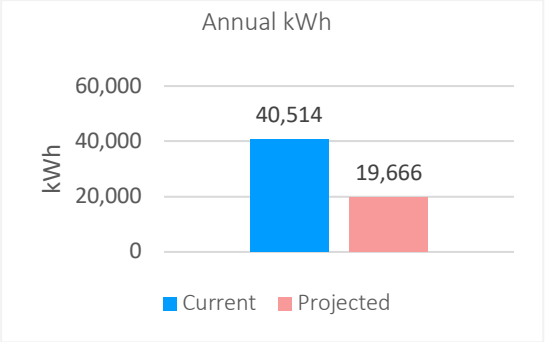
Current Usage (kWh)	Projected Usage (kWh)	Reduction	Current Cost	Projected Cost	Financial Savings	Percent Saved
40,514	19,666	51%	$5,420	$2,631	$2,789	51%

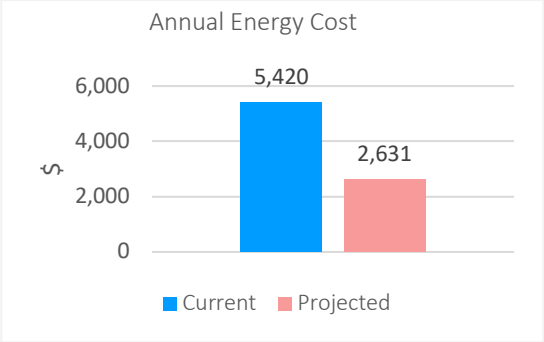
1. *Energy cost = $0.1338/kWh; Annual energy cost escalation = 0.00%*
2. *Energy costs are averaged over 10 year analysis period*
3. *Projected Usage (kWh) includes savings from controls if applicable*

Annual Energy Usage Reduction

Current Usage (kWh)	Projected Usage (kWh)	Reduction (kWh)	Reduction
40,514	19,666	20,848	51%

Energy Comparison





1. *Energy Cost = $0.1338/kWh; Annual energy cost escalation = 0.00%*
2. *Energy costs are averaged over 10 year analysis period*

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Watts Summary

Existing Watts	Proposed Watts	Reduced Watts	Reduction
19,555	9,960	9,595	51%

1. *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

Exrerior

Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Walls	Decorative Outdoor/Incandescent/100.0W/1 Lamp	6	100.0	600	SYLVANIA Part No: 9W A19 A-Type/A19	6	9.0	54	4,380
Walls	Flood Light/Metal Halide/400.0W/1 Lamp	2	400.0	800	Part No: ev-100bc2 Flood Light	2	200.0	400	4,380
Walls	Wallpack/Metal Halide/250.0W/1 Lamp	2	295.0	590	Wisdom Part No: STD WP 100 Wallpack	2	100.0	200	4,380
Walls	Wallpack/Metal Halide/50.0W/1 Lamp	1	70.0	70	Wisdom Part No: MINI 20 WP Wallpack	1	20.0	20	4,380
Total			**865.0**	**2,060**			**329.0**	**674**	

Interior

Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
2 nd floor	Troffer/T8 Fluorescent/32.0W/4 Lamp	11	106.7	1,174	ETECH Part No: 12W A/B TUBE Tube/T8	44	12.0	528	1,800
2 nd floor	Troffer/T8U Fluorescent/25.0W/2 Lamp	2	49.0	98	ETECH Part No: 15W ULAMP Tube/ULAMP	4	15.0	60	1,800
Compressor room	Strip/T8 Fluorescent/32.0W/4 Lamp	4	106.7	427	ETECH Part No: 12W A/B TUBE Tube/T8	16	12.0	192	1,800
Concessions	Troffer/T8 Fluorescent/32.0W/4 Lamp	4	106.7	427	ETECH Part No: 12W A/B TUBE Tube/T8	16	12.0	192	1,800
Hallway	Troffer/T8 Fluorescent/32.0W/3 Lamp	9	86.2	776	ETECH Part No: 12W A/B TUBE Tube/T8	27	12.0	324	1,800
Hallway	Troffer/T8 Fluorescent/32.0W/4 Lamp	7	106.7	747	ETECH Part No: 12W A/B TUBE Tube/T8	28	12.0	336	1,800
Hallway	Troffer/T8U Fluorescent/25.0W/2 Lamp	5	49.0	245	ETECH Part No: 15W ULAMP Tube/ULAMP	10	15.0	150	1,800
Ice rink	Highbay/T8 Fluorescent/32.0W/6 Lamp	61	172.0	10,492	James Part No: UFO 100 Highbay	61	100.0	6,100	1,800
Locker room	Strip/T8 Fluorescent/32.0W/4 Lamp	10	106.7	1,067	ETECH Part No: 12W A/B TUBE Tube/T8	40	12.0	480	1,800

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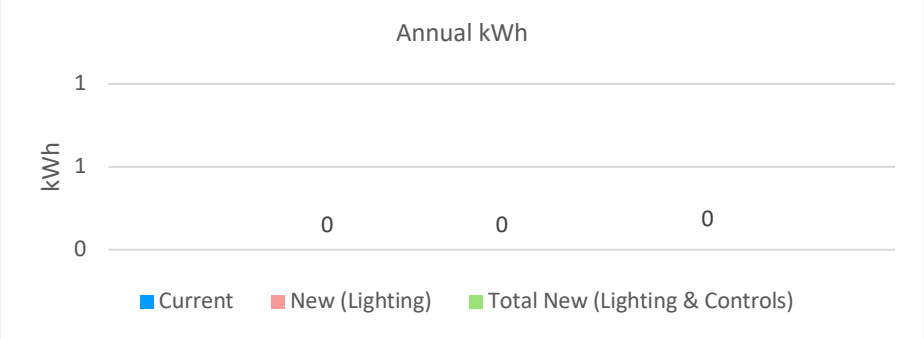
Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Office	Strip/T8 Fluorescent/32.0W/ 4 Lamp	5	106.7	534	ETECH Part No: 12W A/B TUBE Tube/T8	20	12.0	240	1,800
Restroom	Strip/T8 Fluorescent/32.0W/ 4 Lamp	4	106.7	427	ETECH Part No: 12W A/B TUBE Tube/T8	16	12.0	192	1,800
Restroom	Troffer/T8 Fluorescent/32.0W/ 3 Lamp	4	86.2	345	ETECH Part No: 12W A/B TUBE Tube/T8	12	12.0	144	1,800
Ticket window	Troffer/T8U Fluorescent/25.0W/ 2 Lamp	2	49.0	98	ETECH Part No: 15W ULAMP Tube/ULAMP	4	15.0	60	1,800
Warming room	Troffer/T8 Fluorescent/32.0W/ 4 Lamp	4	106.7	427	ETECH Part No: 12W A/B TUBE Tube/T8	16	12.0	192	1,800
Zamboni	Strip/T8 Fluorescent/32.0W/ 4 Lamp	2	106.7	213	ETECH Part No: 12W A/B TUBE Tube/T8	8	12.0	96	1,800
Total			**1,451.7**	**17,495**			**277.0**	**9,286**	

Annual Controls Energy Comparison



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Upgrade Analysis

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LIGHTING RETROFIT PROPOSAL

Prepared for

City of Waupun Safety Building

Site Information

Name	City of Waupun Safety Building
Address	16 E Main St Waupun WI 53963

Proposal Date	Proposal Expires

Dale Baeten
920-418-0153
dale@ncledlighting.com

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Executive Summary

Project Costs

Total Project Cost	$25,008
Sales Tax	$0
Value of Incentives	$4,572
Turnkey Project Cost	$20,437

Financial Metrics

Payback Period (yrs)	2.67
Avg. Annual Return	38%
10 Yr Operating Savings	$77,294
Net Present Value	$38,000

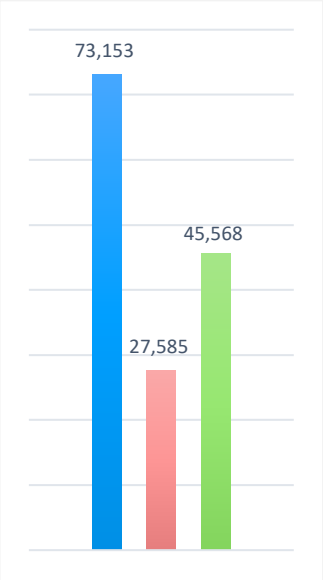
Cost of Waiting

Postpone for one month	$644
Postpone for six months	$3,864
Postpone for one year	$7,729

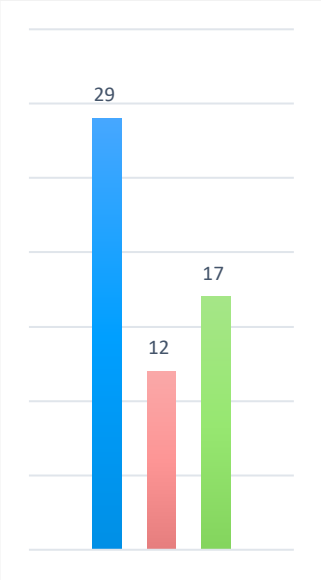
Assumptions

Energy Rate ($/kWh)	0.1080
Annual Utility Rate Increase	0.00%
Discount Rate	6.00%

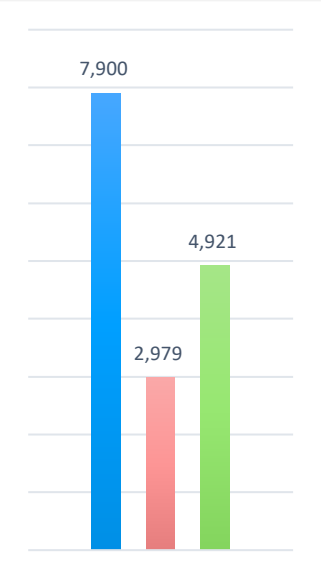
Usage (kWh)



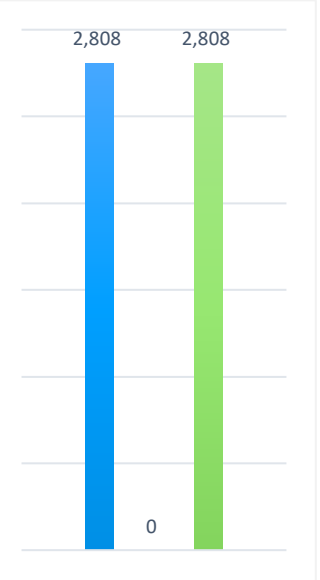
Demand (kW)

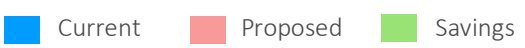


Energy Cost ($)



Maintenance Cost ($)





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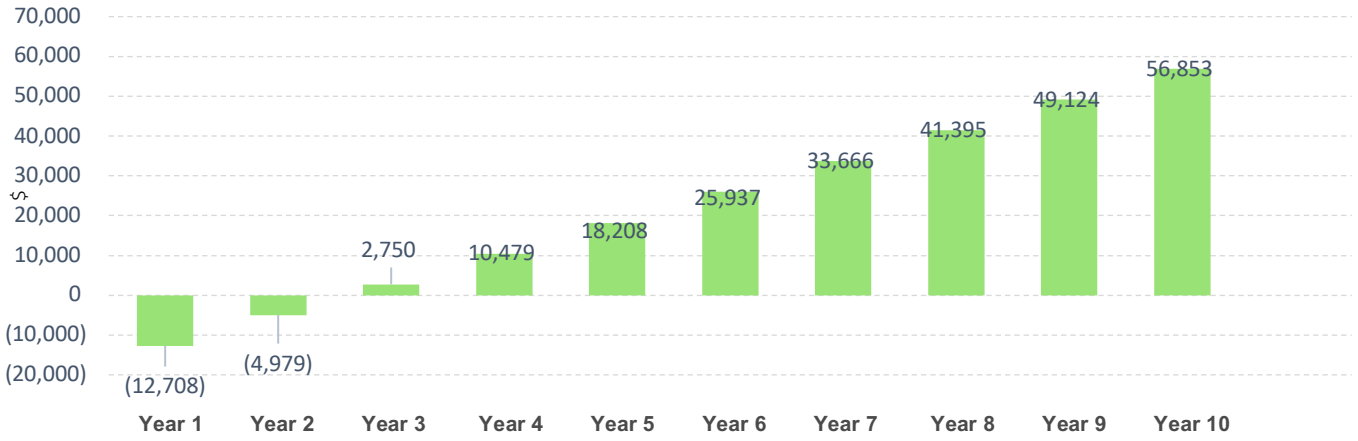
Impact of New Lighting

Energy Reduction	62%
Avg. Annual Maintenance Savings	100%
Avg. Annual Operating Savings	72%

Aggregate Operating Savings

Saving Area	Year 1	Year 5	Year 10
Energy	$4,921	$24,607	$49,214
Maintenance	$2,808	$14,040	$28,080
Total	$7,729	$38,647	$77,294

Aggregate Cash Flow Over Ten Years



Itemized Cash Flow

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Project Cost	$(25,008)	-	-	-	-	-	-	-	-	-
Incentives	$4,571	$0	$0	$0	$0	$0	$0	$0	$0	$0
Energy Savings	$4,921	$4,921	$4,921	$4,921	$4,921	$4,921	$4,921	$4,921	$4,921	$4,921
Maintenance Savings	$2,808	$2,808	$2,808	$2,808	$2,808	$2,808	$2,808	$2,808	$2,808	$2,808
Net Cash Flow	$(12,708)	$7,729	$7,729	$7,729	$7,729	$7,729	$7,729	$7,729	$7,729	$7,729

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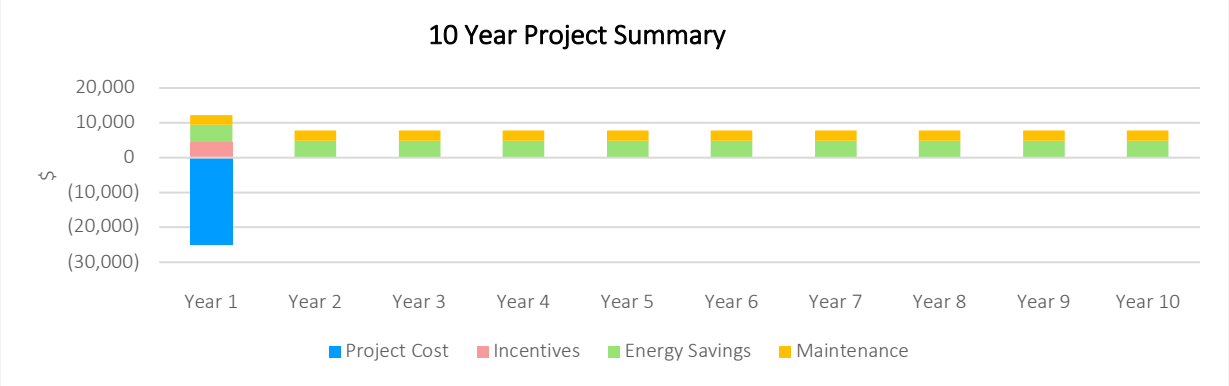
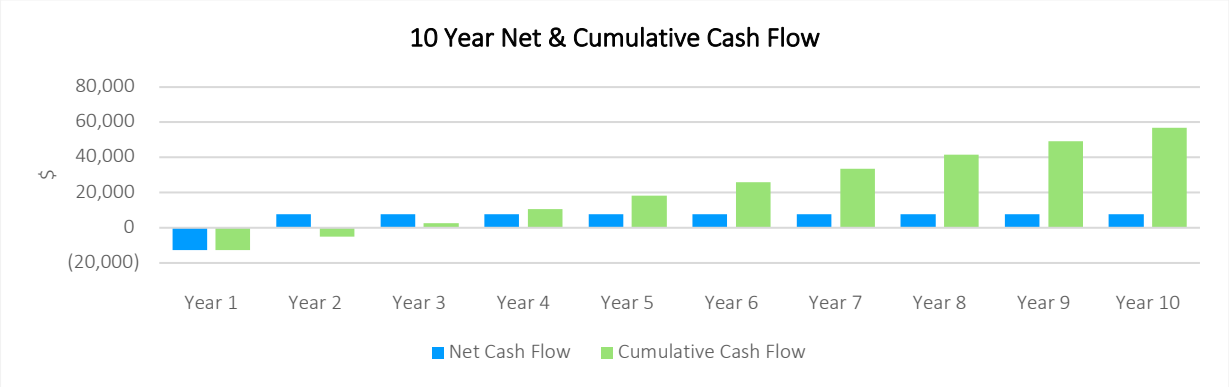
Cash Flow

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	$(25,008)	-	-	-	-	-	-	-	-	-	$(25,009)
Incentives	$4,571	$0	$0	$0	$0	$0	$0	$0	$0	$0	$4,571
Energy Savings	$4,921	$4,921	$4,921	$4,921	$4,921	$4,921	$4,921	$4,921	$4,921	$4,921	$49,214
Maintenance Savings	$2,808	$2,808	$2,808	$2,808	$2,808	$2,808	$2,808	$2,808	$2,808	$2,808	$28,080
Net Cash Flow	$(12,708)	$7,729	$7,729	$7,729	$7,729	$7,729	$7,729	$7,729	$7,729	$7,729	$56,853
Cum Cash Flow	$(12,708)	$(4,979)	$2,750	$10,479	$18,208	$25,937	$33,666	$41,395	$49,124	$56,853	$56,853





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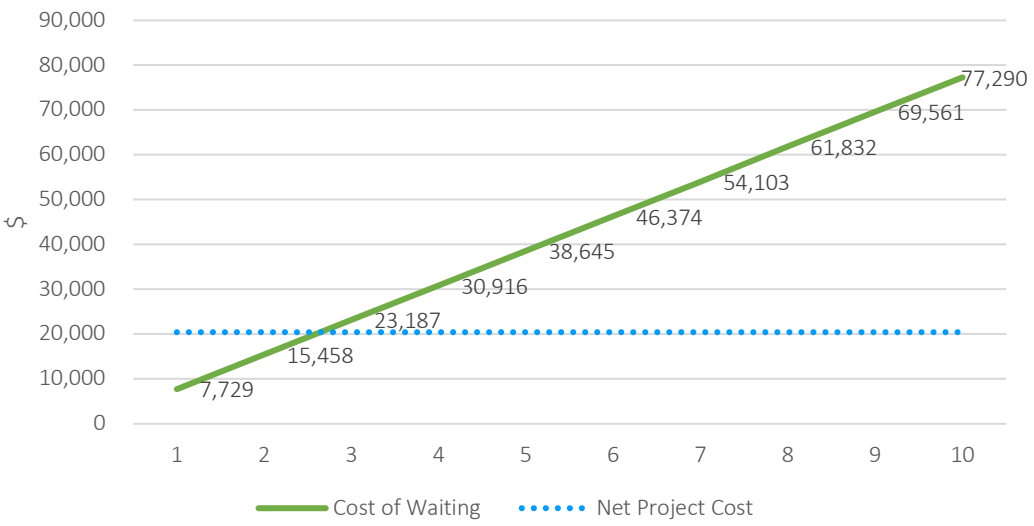
Cost Of Waiting

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
$644	$7,729	$77,290



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

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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

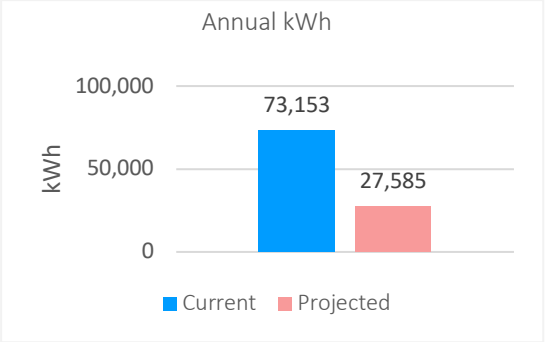
Current Usage (kWh)	Projected Usage (kWh)	Reduction	Current Cost	Projected Cost	Financial Savings	Percent Saved
73,153	27,585	62%	$7,900	$2,979	$4,921	62%

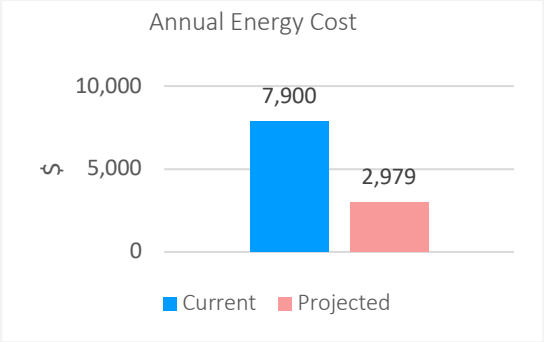
1. *Energy cost = $0.1080/kWh; Annual energy cost escalation = 0.00%*
2. *Energy costs are averaged over 10 year analysis period*
3. *Projected Usage (kWh) includes savings from controls if applicable*

Annual Energy Usage Reduction

Current Usage (kWh)	Projected Usage (kWh)	Reduction (kWh)	Reduction
73,153	27,585	45,568	62%

Energy Comparison





1. *Energy Cost = $0.1080/kWh; Annual energy cost escalation = 0.00%*
2. *Energy costs are averaged over 10 year analysis period*

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Watts Summary

Existing Watts	Proposed Watts	Reduced Watts	Reduction
28,528	11,933	16,595	62%

1. *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

Interior

Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
1 st floor hallway	Downlight/CFL Screw In/26.0W/1 Lamp	1	26.0	26	VIKING Part No: CAN TRIM 8 WIRED Downlight/Retrofit Kit	1	24.0	24	2,294
1 st floor hallway	Troffer/T8 Fluorescent/32.0W/ 2 Lamp	8	62.0	496	ETECH Part No: 12W A/B TUBE Tube/T8	16	12.0	192	2,294
1 st floor hallway	Troffer/T8U Fluorescent/24.0W/ 2 Lamp	6	45.7	274	ETECH Part No: 15W ULAMP Tube/ULAMP	12	15.0	180	2,294
Administrative hallway	Troffer/T8 Fluorescent/32.0W/ 3 Lamp	29	86.2	2,500	ETECH Part No: 12W A/B TUBE Tube/T8	87	12.0	1,044	4,380
Basement	Decorative Indoor/Incandescent/100.0W/1 Lamp	2	100.0	200	SYLVANIA Part No: 16W A21 A-Type/A21	2	16.0	32	1,564
Basement	Troffer/T8 Fluorescent/32.0W/ 2 Lamp	24	62.0	1,488	ETECH Part No: 12W A/B TUBE Tube/T8	48	12.0	576	1,564
Bathrooms first floor	Strip/T8 Fluorescent/17.0W/ 1 Lamp	1	18.3	18	Part No: 2 ft tube Tube/T8 Linear	1	15.0	15	1,043
Bathrooms first floor	Strip/T8 Fluorescent/32.0W/ 1 Lamp	1	33.2	33	ETECH Part No: 12W A/B TUBE Tube/T8	1	12.0	12	1,043
Bathrooms first floor	Troffer/T8 Fluorescent/32.0W/ 2 Lamp	2	62.0	124	ETECH Part No: 12W A/B TUBE Tube/T8	4	12.0	48	1,043
Elevator	Strip/T8 Fluorescent/32.0W/ 3 Lamp	1	86.2	86	ETECH Part No: 12W A/B TUBE Tube/T8	3	12.0	36	2,294
Entry	Troffer/T8 Fluorescent/32.0W/ 4 Lamp	1	106.7	107	ETECH Part No: 12W A/B TUBE Tube/T8	4	12.0	48	2,294
Entry	Troffer/T8U Fluorescent/24.0W/ 2 Lamp	1	45.7	46	ETECH Part No: 15W ULAMP Tube/ULAMP	2	15.0	30	2,294
Fire station	Strip/T8 Fluorescent/32.0W/ 2 Lamp	7	62.0	434	ETECH Part No: 12W A/B TUBE Tube/T8	14	12.0	168	8,760
Fire station count 2	Strip/T8 Fluorescent/32.0W/ 2 Lamp	25	62.0	1,550	ETECH Part No: 12W A/B TUBE Tube/T8	50	12.0	600	1,564
Lockers	Troffer/T8 Fluorescent/32.0W/ 3 Lamp	9	86.2	776	ETECH Part No: 12W A/B TUBE Tube/T8	27	12.0	324	2,294

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Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Lockers	Vapor Tight/T8 Fluorescent/32.0W/ 2 Lamp	2	62.0	124	ETECH Part No: 12W A/B TUBE Tube/T8	4	12.0	48	2,294
Restroom	Troffer/T8 Fluorescent/32.0W/ 2 Lamp	1	62.0	62	ETECH Part No: 12W A/B TUBE Tube/T8	2	12.0	24	1,043
Room # 107	Troffer/T8 Fluorescent/32.0W/ 3 Lamp	2	86.2	172	ETECH Part No: 12W A/B TUBE Tube/T8	6	12.0	72	261
Room 107	Troffer/T8 Fluorescent/32.0W/ 2 Lamp	1	62.0	62	ETECH Part No: 12W A/B TUBE Tube/T8	2	12.0	24	2,294
Room 108	Troffer/T8 Fluorescent/32.0W/ 3 Lamp	3	86.2	259	ETECH Part No: 12W A/B TUBE Tube/T8	9	12.0	108	521
Room 111	Troffer/T8 Fluorescent/32.0W/ 2 Lamp	2	62.0	124	ETECH Part No: 12W A/B TUBE Tube/T8	4	12.0	48	2,294
Room 115	Troffer/T8 Fluorescent/32.0W/ 2 Lamp	2	62.0	124	ETECH Part No: 12W A/B TUBE Tube/T8	4	12.0	48	2,294
Room 120	Troffer/T8 Fluorescent/32.0W/ 3 Lamp	11	86.2	948	ETECH Part No: 12W A/B TUBE Tube/T8	33	12.0	396	2,294
Room 128	Wrap/T8 Fluorescent/32.0W/ 2 Lamp	2	62.0	124	ETECH Part No: 12W A/B TUBE Tube/T8	4	12.0	48	2,294
Room 135	Troffer/T8 Fluorescent/32.0W/ 3 Lamp	4	86.2	345	ETECH Part No: 12W A/B TUBE Tube/T8	12	12.0	144	2,294
Room 136	Troffer/T8 Fluorescent/32.0W/ 3 Lamp	136	86.2	11,723	ETECH Part No: 12W A/B TUBE Tube/T8	408	12.0	4,896	1,564
Room 137	Troffer/T8 Fluorescent/32.0W/ 3 Lamp	4	86.2	345	ETECH Part No: 12W A/B TUBE Tube/T8	12	12.0	144	261
Room 139	Troffer/T8 Fluorescent/32.0W/ 3 Lamp	4	86.2	345	ETECH Part No: 12W A/B TUBE Tube/T8	12	12.0	144	2,294
Room 140	Troffer/T8 Fluorescent/32.0W/ 3 Lamp	2	86.2	172	ETECH Part No: 12W A/B TUBE Tube/T8	6	12.0	72	2,294
Room 141	Troffer/T8 Fluorescent/32.0W/ 3 Lamp	4	86.2	345	ETECH Part No: 12W A/B TUBE Tube/T8	12	12.0	144	2,294
Room 141	Troffer/T8U Fluorescent/24.0W/ 2 Lamp	1	45.7	46	ETECH Part No: 15W ULAMP Tube/ULAMP	2	15.0	30	2,294
Room 147	Troffer/T8 Fluorescent/32.0W/ 3 Lamp	2	86.2	172	ETECH Part No: 12W A/B TUBE Tube/T8	6	12.0	72	2,294
Room 148	Troffer/T8 Fluorescent/32.0W/ 3 Lamp	4	86.2	345	ETECH Part No: 12W A/B TUBE Tube/T8	12	12.0	144	2,294
Room 149	Troffer/T8 Fluorescent/32.0W/ 3 Lamp	2	86.2	172	ETECH Part No: 12W A/B TUBE Tube/T8	6	12.0	72	2,294
Room 150	Troffer/T8 Fluorescent/32.0W/ 3 Lamp	4	86.2	345	ETECH Part No: 12W A/B TUBE Tube/T8	12	12.0	144	2,294

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Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Room 151	Troffer/T8 Fluorescent/32.0W/ 4 Lamp	2	106.7	213	ETECH Part No: 12W A/B TUBE Tube/T8	8	12.0	96	2,294
Room 152	Troffer/T8 Fluorescent/32.0W/ 4 Lamp	4	106.7	427	ETECH Part No: 12W A/B TUBE Tube/T8	16	12.0	192	2,294
Room 157	Troffer/T8 Fluorescent/32.0W/ 3 Lamp	12	86.2	1,034	ETECH Part No: 12W A/B TUBE Tube/T8	36	12.0	432	2,294
Room 158	Highbay/T8 Fluorescent/32.0W/ 4 Lamp	18	106.7	1,921	ETECH Part No: 12W A/B TUBE Tube/T8	72	12.0	864	8,760
Stairway	Strip/T8 Fluorescent/25.0W/ 2 Lamp	1	48.1	48	Part No: 3 ft tube Tube/T8 Linear	2	15.0	30	2,294
Stairway	Strip/T8 Fluorescent/32.0W/ 1 Lamp	1	33.2	33	ETECH Part No: 12W A/B TUBE Tube/T8	1	12.0	12	2,294
Stairway	Strip/T8 Fluorescent/32.0W/ 2 Lamp	1	62.0	62	ETECH Part No: 12W A/B TUBE Tube/T8	2	12.0	24	2,294
Stairway	Troffer/T8U Fluorescent/24.0W/ 2 Lamp	2	45.7	91	ETECH Part No: 15W ULAMP Tube/ULAMP	4	15.0	60	2,294
Stairway	Wrap/T8 Fluorescent/32.0W/ 2 Lamp	3	62.0	186	ETECH Part No: 12W A/B TUBE Tube/T8	6	12.0	72	2,294
Total			**3,139.8**	**28,528**			**562.0**	**11,933**	

Controls Energy Comparison

Interior

Space	Existing Fixture	Existing kWh	Proposed Solution	New kWh (Lighting)	Proposed Control	Reduction		Total New kWh
						Sched	Watt	
Administrative hallway	Troffer/T8 Fluorescent/32.0 W/3 Lamp	10,949	ETECH Part No: 12W A/B TUBE Tube/T8	4,573	Part No: 65% Occupancy Sensor	75	0	1,143
Total		**10,949**		**4,573**				**1,143**

1. *Proposed kWh (Lighting) is lighting usage and does not include controls savings*
2. *Total Proposed kWh is lighting usage that includes savings from controls*

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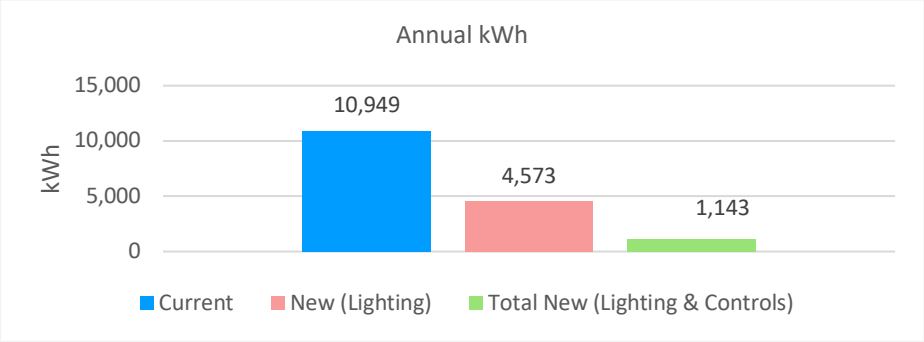
Annual Controls Energy Comparison



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Upgrade Analysis

Controls Upgrade Summary

Proposed Control	Qty
Part No: 65% Occupancy Sensor	2

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LIGHTING RETROFIT PROPOSAL

Prepared for

City of Waupun Safety Building

Site Information

Name City of Waupun Safety Building

Address 16 E Main St Waupun WI 53963

Proposal Date	Proposal Expires

Dale Baeten
920-418-0153
dale@ncledlighting.com

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Executive Summary

Project Costs

Total Project Cost	$7,692
Sales Tax	$0
Value of Incentives	$1,010
Turnkey Project Cost	$6,682

Financial Metrics

Payback Period (yrs)	4.5
Avg. Annual Return	22%
10 Yr Operating Savings	$14,957
Net Present Value	$4,626

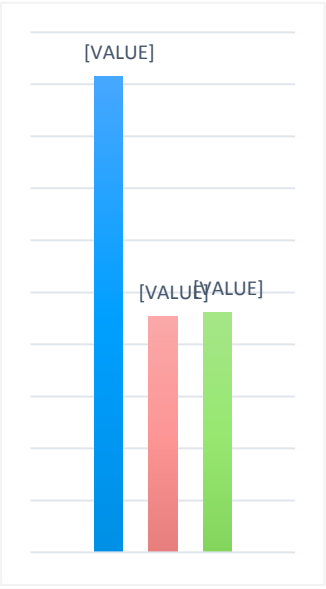
Cost of Waiting

Postpone for one month	$124
Postpone for six months	$747
Postpone for one year	$1,495

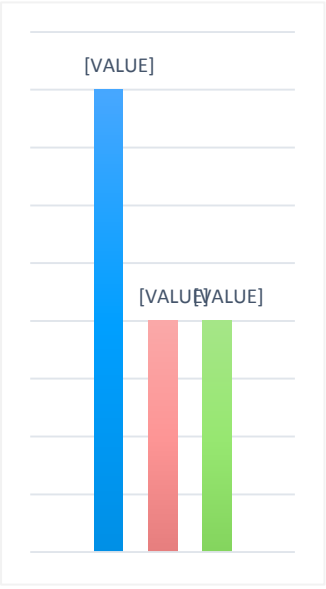
Assumptions

Energy Rate ($/kWh)	0.1080
Annual Utility Rate Increase	0.00%
Discount Rate	6.00%

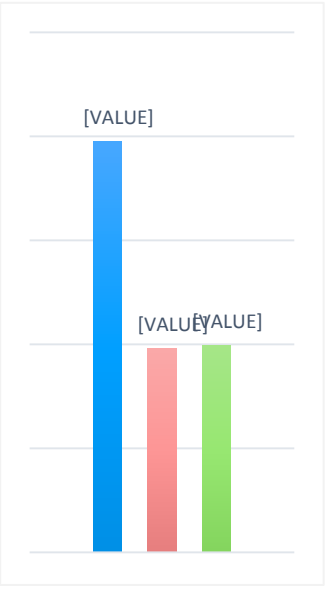
Usage (kWh)



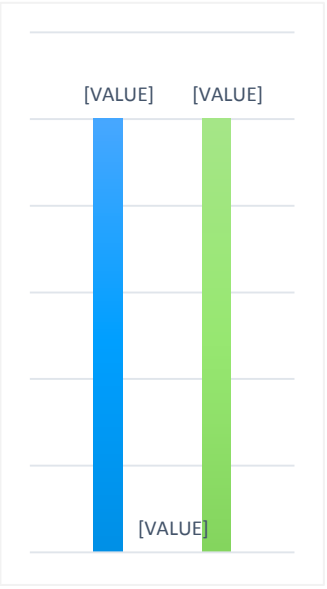
Demand (kW)



Energy Cost ($)



Maintenance Cost ($)



Current Proposed Savings

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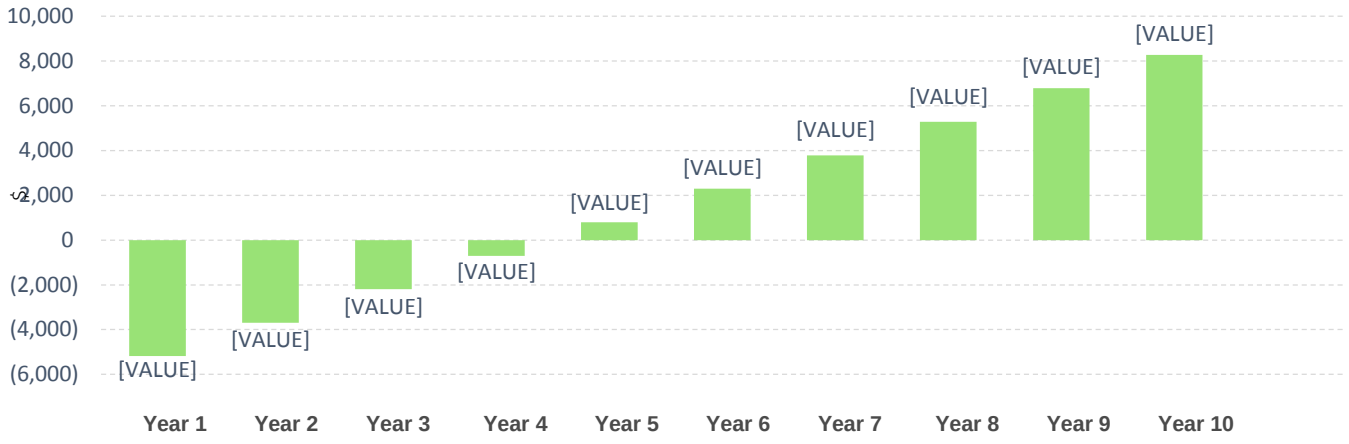
Impact of New Lighting

Energy Reduction	50%
Avg. Annual Maintenance Savings	100%
Avg. Annual Operating Savings	60%

Aggregate Operating Savings

Saving Area	Year 1	Year 5	Year 10
Energy	$996	$4,978	$9,957
Maintenance	$500	$2,500	$5,000
Total	$1,496	$7,478	$14,957

Aggregate Cash Flow Over Ten Years



Itemized Cash Flow

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Project Cost	$(7,692)	-	-	-	-	-	-	-	-	-
Incentives	$1,010	$0	$0	$0	$0	$0	$0	$0	$0	$0
Energy Savings	$996	$996	$996	$996	$996	$996	$996	$996	$996	$996
Maintenance Savings	$500	$500	$500	$500	$500	$500	$500	$500	$500	$500
Net Cash Flow	$(5,186)	$1,496	$1,496	$1,496	$1,496	$1,496	$1,496	$1,496	$1,496	$1,496

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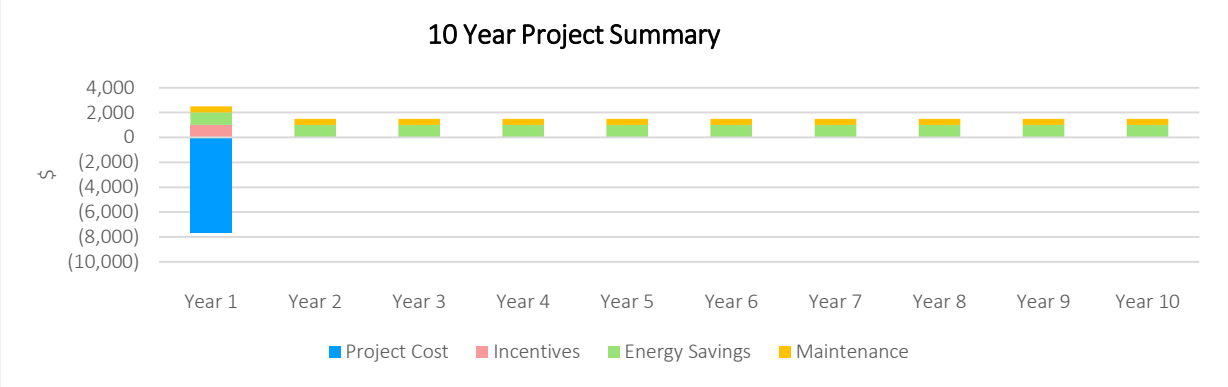
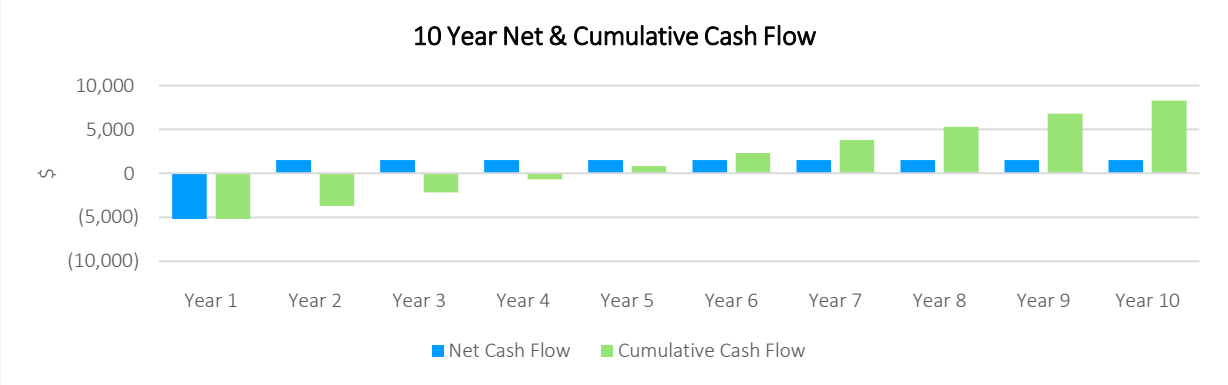
Cash Flow

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	$(7,692)	-	-	-	-	-	-	-	-	-	$(7,692)
Incentives	$1,010	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,010
Energy Savings	$996	$996	$996	$996	$996	$996	$996	$996	$996	$996	$9,957
Maintenance Savings	$500	$500	$500	$500	$500	$500	$500	$500	$500	$500	$5,000
Net Cash Flow	$(5,186)	$1,496	$1,496	$1,496	$1,496	$1,496	$1,496	$1,496	$1,496	$1,496	$8,278
Cum Cash Flow	$(5,186)	$(3,690)	$(2,194)	$(698)	$798	$2,294	$3,790	$5,286	$6,782	$8,278	$8,278





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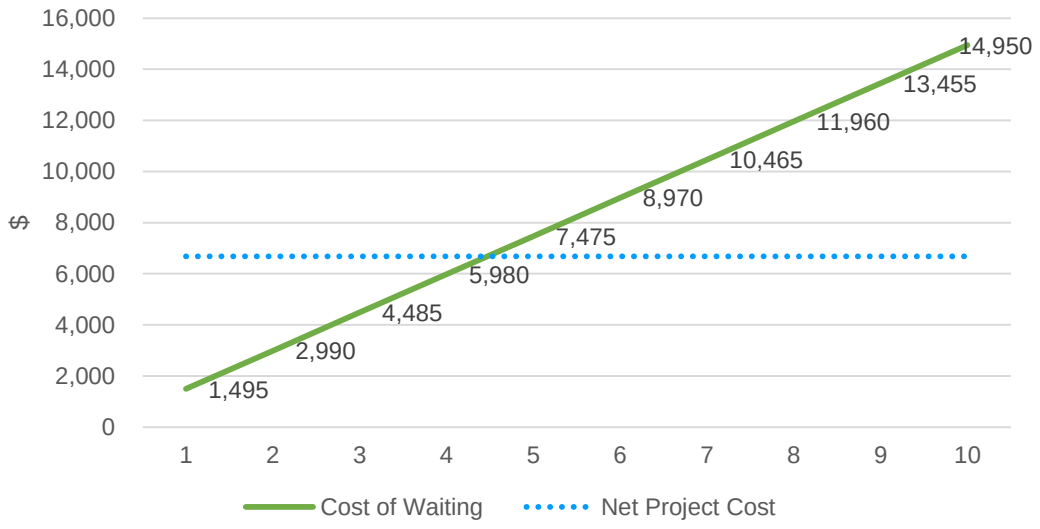
Cost Of Waiting

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
$124	$1,495	$14,950



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

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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

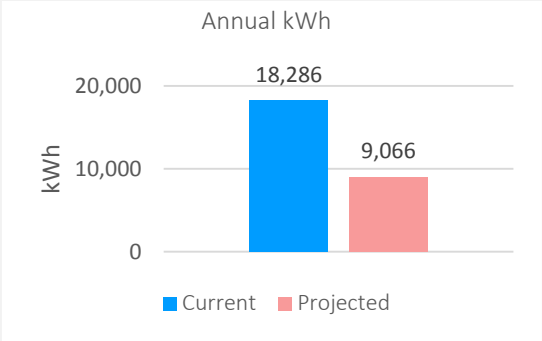
Current Usage (kWh)	Projected Usage (kWh)	Reduction	Current Cost	Projected Cost	Financial Savings	Percent Saved
18,286	9,066	50%	$1,974	$979	$995	50%

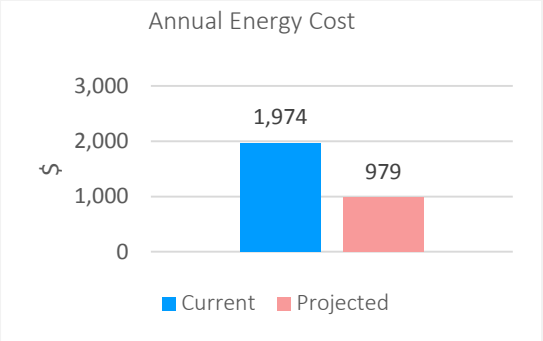
1. *Energy cost = $0.1080/kWh; Annual energy cost escalation = 0.00%*
2. *Energy costs are averaged over 10 year analysis period*
3. *Projected Usage (kWh) includes savings from controls if applicable*

Annual Energy Usage Reduction

Current Usage (kWh)	Projected Usage (kWh)	Reduction (kWh)	Reduction
18,286	9,066	9,220	50%

Energy Comparison





1. *Energy Cost = $0.1080/kWh; Annual energy cost escalation = 0.00%*
2. *Energy costs are averaged over 10 year analysis period*

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Watts Summary

Existing Watts	Proposed Watts	Reduced Watts	Reduction
4,175	2,070	2,105	50%

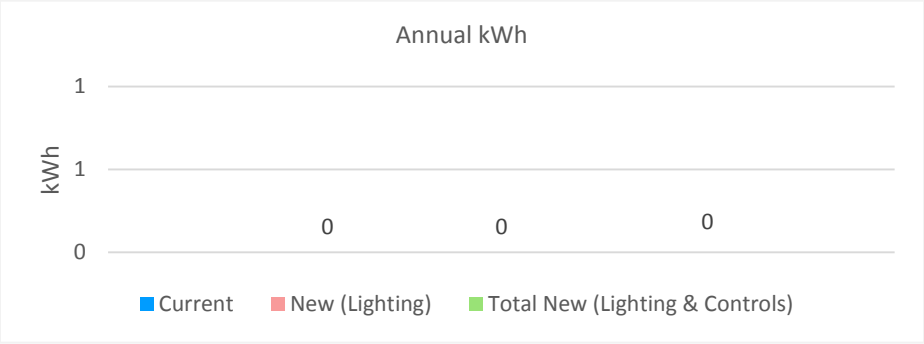
1. *The calculations in this table take into account the existing fixtures that are being replaced, upgraded, and/or have new lighting controls being proposed for them*

Lighting Wattage Comparison

Exterior

Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Canopy	Canopy/Metal Halide/70.0W/1 Lamp	8	95.0	760	Wisdom Part No: FOOTBALL FULL-CUTOFF WP 45 Wallpack	8	45.0	360	4,380
Canopy	Canopy/Metal Halide/70.0W/1 Lamp	3	95.0	285	Wisdom Part No: FOOTBALL FULL-CUTOFF WP 45 Wallpack	3	45.0	135	4,380
Parking lot	Parking And Garage/Metal Halide/250.0W/1 Lamp	6	295.0	1,770	Wisdom Part No: SB 150 Area Light	6	150.0	900	4,380
Parking lot	Parking And Garage/Metal Halide/250.0W/1 Lamp	3	295.0	885	Wisdom Part No: SB 150 Area Light	3	150.0	450	4,380
Wall pack	Wallpack/Metal Halide/70.0W/1 Lamp	5	95.0	475	Wisdom Part No: FOOTBALL FULL-CUTOFF WP 45 Wallpack	5	45.0	225	4,380
Total			**875.0**	**4,175**			**435.0**	**2,070**	

Annual Controls Energy Comparison



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Upgrade Analysis

3D

ORDINANCE NUMBER 18-_____

AN ORDINANCE TO AMEND CHAPTER SEVEN OF THE MUNICIPAL CODE OF THE CITY OF WAUPUN ENTITLED "STREETS AND SIDEWALKS."

THE COMMON COUNCIL OF THE CITY OF WAUPUN, DO ORDAIN:

SECTION 1: Section 7.15 of the Waupun Municipal Code entitled "STREETS, ALLEYS AND SIDEWALKS; PRORATION OF CONSTRUCITON COST." is created to read as follows:

For the purpose of encouraging the paving of streets, alleys and sidewalks in the City and having the cost of these improvements equitably apportioned between the city and the abutting property owners, the cost shall be prorated as follows:

(a) Sidewalk Ramps. The cost of the sidewalk portion of handicap ramp paving and all sidewalk radius paving within intersections shall be borne by the City.

(b) Sidewalk. Both long and short sides of abutting property: city, 50%; and property owner, 50%.

(c) Curb & Gutter. If there is currently no curb and gutter installed, the property owner will be assessed 100% of the cost of curb & gutter on both the long and short sides of the abutting property. Where curb and gutter is already installed and only being replaced, the City will pay for 100% of the curb and gutter replacement.

SECTION 2: This Ordinance shall be in full force and effect upon its passage and publication as provided by law.

Enacted this _____ day of _____, 2018

_____
Julie Nickel,
Mayor

ATTEST:

_____
Angela Hull
City Clerk

ORDINANCE NUMBER 18-_____

AN ORDINANCE TO AMEND CHAPTER SEVEN OF THE MUNICIPAL CODE OF THE CITY OF WAUPUN ENTITLED "STREETS AND SIDEWALKS."

THE COMMON COUNCIL OF THE CITY OF WAUPUN, DO ORDAIN:

SECTION 1: Section 7.07 (3)(c) of the Waupun Municipal Code entitled "RESTRICTIONS" is repealed and recreated to read as follows:

(c) The cost of snow and/or ice removal shall be charged to the property owner at the rate charged by the City's contractor, together with an administrative fee of $100.00 per occasion. These costs are not to be considered a penalty, but are to reimburse the City for its cost in administration and overhead.

SECTION 2: This Ordinance shall be in full force and effect upon its passage and publication as provided by law.

Enacted this _____ day of _____, 2018

_____
Julie Nickel,
Mayor

ATTEST:

_____
Angela Hull
City Clerk