

Joe Kottwitz

From: Lisa Miotke [lmiotke@wppienergy.org]
Sent: Wednesday, December 10, 2014 10:13 AM
To: Joe Kottwitz
Subject: City of Menasha
Attachments: Lisa Miotke.vcf

Hi-
Sorry for the delay. I just heard back from the city & utility on the plan:

Year	Circuit	100 W	150 W	250 W	
1	13-3-3	4	182	86	
	Totals	4	182	86	272

2	13-5-3	0	95	18	
2	13-6-3	20	1	23	
2	13-8-6	0	106	53	
2	13-9-6	0	0	3	
	Totals	20	202	97	319

3	13-2-2	0	115	38	
3	13-4-2	0	21	12	
3	13-1-2	0	20	2	
3	13-2-2	0	13	0	
	Totals	0	169	52	221

Let me know if you have questions. I have meetings 12:30-3pm today.
Lisa

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ENERGY ESTIMATION
Projected Savings from an Energy Efficient Lighting Retrofit

Project: City of Menasha
Description: LED Street Lighting Energy Estimation
Date: Winter 2014

Equations: [a] Reduced kW = $[(Qty_{existing}) \times (Watts_{existing})] - [(Qty_{proposed}) \times (Watts_{proposed})] / 1000$
 [b] Annual kWh Saved = $[(Qty_{existing}) \times (Watts_{existing}) \times (hours)] - [(Qty_{proposed}) \times (Watts_{proposed}) \times (hours)] / 1000$

PROJECT	EXISTING FIXTURE					
	Room or Area	Qty.	Description	Annual Hours		Input Watts
				On-Pk	Off-Pk	
Street Lights	24	100 W HPS	372	3,734	130	
Street Lights	552	150 W HPS	372	3,734	188	
Street Lights	236	250 W HPS	372	3,734	300	

PROJECT	PROPOSED FIXTURE					
	Room or Area	Qty.	Description	Annual Hours		Input Watts
				On-Pk	Off-Pk	
Street Lights	24	101 W LED	372	3,734	101	
Street Lights	552	101 W LED	372	3,734	101	
Street Lights	236	101 W LED	372	3,734	101	

PROJECT	SAVINGS			
	Reduced kW ^[a]	Annual kWh ^[b] Saved		
		On-Pk	Off-Pk	
	0.7	300	2,600	2,900
	48.0	17,900	179,300	197,200
	47.0	17,500	175,400	192,900
	96	35,700	357,300	

Total On & Off Peak energy Savings 393,000 kWh/yr

- Notes:**
 [1] Annual Dusk to Dawn hours calculated edoc#10968
 [2] Change Mayor's assumption: use pricing for CREE XPS series 101W to replace existing HPS from WPPI Energy Joint Purchasing catalog

Replace ALL WITH 101W- NO LABOR COSTS								Energy Savings					
Labor & Materials Costs				Proposed Monthly Fixed charges-existing Lights				Annual	Rate	Saved/annual kWh			
Remove/Install	24	100W	\$0	\$0.00	24	\$7.00	\$ 168	100W	\$ 2,016	2,900 kWh	0.0657	\$ 191	
	552	150W	\$0	\$0.00	552	\$7.25	\$4,002	150W	\$ 48,024	197,200 kWh	0.0657	\$ 12,956	
	236	250W	\$0	\$0.00	236	\$7.50	\$1,770	250W	\$ 21,240	192,900 kWh	0.0657	\$ 12,674	
Total Labor				\$0						393,000 total kWh		\$ 25,820 Total/yr	
				Proposed Monthly Fixed charges- Proposed lights				Annual					
Material Cost	24	101 W	\$ 235	\$5,640.00	24	\$3.35	\$ 80	101W	\$ 965				
	552	101 W	\$ 235	\$129,720.00	552	\$3.35	\$1,849	101W	\$ 22,190				
	236	101 W	\$ 235	\$55,460.00	236	\$3.35	\$ 791	101W	\$ 9,487				
				\$ 190,820									
Total Labor & Materials	24	100s -->101W		\$5,640.00	Savings				\$ 88	101W	\$ 1,051	TOTAL Energy & Fixed Cost Savings/yr	
	552	150W -->101W		\$129,720.00					\$2,153	101W	\$ 25,834	\$ 1,241.73	
	236	250W -->101W		\$55,460.00					\$ 979	101W	\$ 11,753	\$ 38,789.64	
Total cost of Labor/Materials for all lights				\$190,820	Total annual Fixed cost savings				\$ 38,638	\$ 64,457.70 Total Energy & Fix Cost savings/yr			
Simple Payback	2.960391 yrs												
FOE incentives:	Count	Incentive	total FOE	(requires 40% savings with replacement lamp)				\$ 190,820	Total Cost				
	100 W	24	0	\$ -					\$ 33,880	less FOE Incentive			
	150 W	552	40	\$ 22,080					\$ 64,458	Less First yr savings			
	250 W	236	50	\$ 11,800					\$ 92,482	Net Cost			
	Total FOE Incentives			\$ 33,880									