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Mr. Brian Olson
City of Ramsey
7550 Sunwood Dr NW
Ramsey MN 5303-6140

March 3, 2011

Dear Brian,

I have reviewed the two lighting proposals that you have received for the Public Works Buildings lighting retrofits. The following are observations regarding these proposals:

Current light levels with existing lighting systems

	Measured	Recommended (IES)
Main Public Works Garage	10-20fc	Parking/Driving 10-50fc, Repair, 100fc
Vehicle Storage Building	8-10fc	Storage 5fc, Traffic Lane 10fc
Sign Utility Building	20-27fc	Parking - Entrance 10-50fc

Fixture Light Output

Existing - 400 Watt Metal Halide	17,250 Lumens (de-rated 50% light loss)
AID Electric - 6-Lamp T8	17,700 Lumens (2950 x 6)
Ready Watt Electric 6-LED-Tube	6,000 Lumens (1000 x 6)

Notes:

- The T8 fixtures will reduce the wattage by 232 watts per fixture from the 400W MH fixtures
- The rebate amounts on the AID proposal are accurate. *except motion sensors \$40 on quote → \$5 each 3/8/11*
- The rebate for an LED retrofit would be a custom rebate based on 35¢ per watt up to a maximum 50% wattage reduction. (13,434 x .35 = \$4,701.90)
- The Titan LED Website shows a recommended replacement for 400W MH as 105w to 180W LED. The Proposal from Ready Watt is for a 90W replacement (6 x 15w) See attached spec sheet
- The areas are not currently over lit so a reduction in light levels would be below recommended IES guidelines.

Sincerely,

Leo Offerman
Utility Services Representative

TITAN LED

"Changing the world one socket at a time"

Standard Lighting		LED Replacement	
CATEGORY	WATTAGE		WATTAGE
Incandescent	100w	INCANDESCENTS	10-15w LED
Incandescent	90w		9-12w LED
Incandescent	80w		8-12w LED
Incandescent	75w		7-10w LED
Incandescent	65w		6-9w LED
Incandescent	55w		5-9w LED
Incandescent	40w		3-7w LED
Incandescent	30w		3-6w LED
Incandescent	20w		2-4w LED
Halogen	50w		Halogens
Halogen	25w	3w LED	
Fluorescent 2'	16w	Fluorescent Tubes	8w LED
Fluorescent 3'	20w		12w LED
Fluorescent 4'	32w		15w LED
Fluorescent 4'	40w		15w LED
Fluorescent 8'	60w		34w LED
High Bays	250w	Metal Halide High Bays	60-105w LED
High Bays	400w		105-180w LED
High Bays	1000w		300w LED
Outdoor Luminaire	250w HPS	Outdoor Luminaires	105w LED
Outdoor Luminaire	400w HPS		180w LED
Outdoor Luminaire	250w MH		60-105w LED
Outdoor Luminaire	400w MH		105-180w LED
Street Light	100-150w		Street Lights
Street Light	150-250w	145w LED	
Street Light	250-400w	220w LED	
Street Light	400-1000w	300w LED	



