

City of Minnetonka

Lighting Conservation Measures



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LIGHTING UPGRADES

- **Fleet Storage** 48,490 Sq. Ft.
- **Fleet Maintenance** 8,040 Sq. Ft.
- **Ice Arena** 39,450 Sq. Ft.

Metal Halides (MH)



High Bay Fluorescent



ADVANTAGES

- Instant start
- Better light output
- Energy efficient 2X
- Easier maintenance



FLEET STORAGE

48,490 Sq. Ft.

BEFORE

- 54 high bay MH (460 Watt)
- Light Level: 10 foot-candles
- Dark spots over plows
- Continuous burn
- 24,840 Watts

AFTER

- 38 Super T8 fluorescents (225 Watt)
- Light Level: 15-20 foot-candles
- Better light distribution
- Motion sensors
- 8,550 Watts

FLEET MAINTENANCE

8,040 Sq. Ft.

BEFORE

- 16 high bay MH (460 Watt) & 33 2-lamp fluorescents
- Light Level: 40 foot-candles
- Dark spots over work areas
- Continuous burn
- 9,307 Watts

AFTER

- 11 Super T8 (225 Watt) & 32 1-lamp fluorescents
- Light Level: 55 foot-candles
- Better light distribution
- Continuous burn & motion sensors
- 3,435 Watts





ICE ARENA A

39,450 Sq. Ft.

BEFORE

- 36 high bay MH (1100 Watt)
& 63 2-lamp
fluorescents
- Light Level: 45 foot-candles
- Dark spots over ice
- 43,317 Watts

AFTER

- 32 6-lamp T5 (467 Watt)
& 35 1-lamp
fluorescents
- Light Level: 55 foot-candles
- Better light distribution
- Low heat generation
- 16,814 Watts

SUMMARY OF COSTS

	Material Cost	Labor Cost	Rebate \$	Net Cost \$
Fleet Storage	\$6,373.60	\$9,560.40	\$6,516.00	\$9,418.00
Fleet Maintenance	\$3,245.13	\$4,867.69	\$2,349.00	\$5,763.82
Ice Arena	\$9,543.60	\$14,315.40	\$10,879.00	\$12,980.00

*Figures are based upon 40% Material and 60% Labor Cost

SUMMARY OF SAVINGS

	Watts Saved (W)	Energy Saved (kWh)	Annual Savings (\$)	Pay Back (Years)
Fleet Storage	16,290	71,155	\$3,092	3.0
Fleet Maintenance	5,872	25,649	\$1,115	4.9
Ice Arena	26,503	118,795	\$5,163	2.5

FUTURE PROJECTS

- Indoor Lighting
- Energy Star Equipment
- Parking Lot Lights (Induction)
- Efficient Motors (HVAC)
- On-Demand Hot Water Heaters
- Variable Frequency Drive Controls

QUESTIONS

