



## Project Summary

Texas Tonka Liquor has been selling beer, wine, and spirits in Minneapolis, Minnesota for 14 years. Until 2012, the lighting in the store consisted of yellow fluorescent T12 tube lights and 75 Watt incandescent bulbs. These products bestowed a dingy, dated appearance and consumed a substantial amount of energy. In March 2012, Texas Tonka embarked on a lighting retrofit and swapped its traditional lighting products for bright, clean, efficient LEDs.

**End User:** Liquor Store, Minneapolis, MN

**Application:** Retail and Employee Work Areas, Storage Cooler

**Products:**

- 18W SMD Dimmable LED Utility Lamps
- 4-ft. 15W Double End Power LED Tube Lights
- 3-ft. 12W Double End Power LED Tube Lights

**Benefits:**

- \$11,190 annual savings
- 10-15 year lifespan of new LED light engines vs. 2-year lifespan of traditional fixtures
- Half the energy use of prior traditional lighting
- Estimated 11.6 months payback
- Enhanced store security
- Delamping

## Project Overview



In the retail area and storage cooler, 8' T12 fluorescent tube lights were replaced with 4' T8 tube lights. In the employee back room area, incandescent bulbs were replaced with LED household bulbs. In the back storage area, the smaller 4' LED tube lights proved so much brighter in combination than the previous 8' fluorescents that 10 fixtures could be delamped. Here, in the place of two 8' fluorescent T12s, just two 4' LED T8s were installed.

Tons of <b>Coal</b> Saved @ 0.08 lbs. per kWh	2,341 lbs.
Gallons of <b>Oil</b> Saved @ 0.07 gallons per kWh	2,049gals
Pounds of <b>Carbon Dioxides</b> Saved @ 1.95 lbs. per kWh	57,071 lbs.
Pounds of <b>Sulfur Dioxides</b> Saved @ 0.008477 lbs. per kWh	248 lbs.
Pounds of <b>Nitrogen Oxides</b> Saved @ 0.004092 lbs. per kWh	120 lbs.



## Project Overview (con't)

Upon installation of the new LED products, the manager of Texas Tonka immediately noticed a dramatic change in the lighting quality throughout the store. He is thrilled with the noticeably brighter, cleaner appearance of his store and the consistent color of the lights. The lighting now enhances the product packaging and signage instead of dulling and aging it. It also gives the store a tidy, contemporary feeling.



## Cost Analysis



Perhaps one of the greatest benefits of Texas Tonka's switch to LED is the new lighting's effect on the CCTV system. Security footage is now much more distinct. This helps the manager better monitor traffic through the store and improves security.

### Annual LED Life-Cycle Cost Analysis

Existing Fixture	Number	Energy Use (kWh)	Cost/Unit	Total Cost
8' T12 110W Fluorescent	68	32,762	\$ 0.13	\$ 4,259
4' T12 40W Fluorescent	24	4,205	\$ 0.13	\$ 547
75W Incandescent Bulbs	6	1,971	\$ 0.13	\$ 256
Maintenance (est.)	-	-	-	6,915
<b>Total Costs for Period</b>				<b>\$ 11,977</b>

RVLT Fixture	Number	Energy Use (kWh)	Cost/Unit	Total Cost
4' T8 15 W LED	116	7,621	\$ 0.13	\$ 991
4' T8 15 W LED	24	1,577	\$ 0.13	\$ 205
18W LED Household Bulbs	6	473	\$ 0.13	\$ 61
Maintenance (est.)	-	-	-	833
<b>Total Costs for Period</b>				<b>\$ 2,090</b>

Savings	Savings
Energy Savings	\$ 3,805
Maintenance Savings (est.)	6,082
<b>Total Savings LED Fixtures</b>	<b>\$ 9,887</b>

Texas Tonka's lighting retrofit is expected to result in an overall savings of 20% annually, estimated at more than \$11,000. With additional rebates, the project will have an estimated simple payback of 11.6 months

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