



ISD#256 Red Wing Schools

District-Wide LED Lighting Replacement



Project Goals

Maintenance

- Our newest building is 27 years old.
- Our existing lighting system is beginning to fail at a higher rate.
- Reducing staff maintenance tasks related to our lighting system will allow for other tasks to be completed, while reducing operation costs.





Project Goals

Consistency

- Consistent lighting solutions district-wide will allow us to more effectively maintain our facilities, long-term.
- A one-by-one replacement approach is not cost-effective.



Project Goals

Energy-Efficiency

- This upgrade will make our district more energy-efficient.
- Reduce electric demand and overhead operational costs.

Project Goals

Rebates

- Xcel Energy currently offers utility rebate programs and incentives to replace inefficient technology with LED.
- **Estimated Utility Rebate on this project:**

\$211,887.44

Xcel Energy MINNESOTA August, 1 2021

TAKE ADVANTAGE OF LED REBATES AND START SAVING

LED rebates available – If the fixture is within + or – 10% of the lowest and highest wattages for the rebated product, the fixture can qualify for a prescriptive rebate. If not, then it could be eligible for a custom rebate.

LED stairwell fixtures
Replace traditional fluorescent lighting systems with LED troffers in offices and other commercial spaces (1x4, 2x2, or 2x4).

FIXTURE TYPE	RETROFIT REBATE		NEW CONSTRUCTION REBATE	
	NON-DLC	DLC-QUALIFIED*	NON-DLC	DLC-QUALIFIED*
20W-60W	\$30/fixture	\$40/fixture	\$22.50/fixture	\$30/fixture

LED troffer fixtures
Replace traditional fluorescent lighting systems with LED troffers in offices and other commercial spaces (1x4, 2x2, or 2x4).

FIXTURE TYPE	RETROFIT REBATE		NEW CONSTRUCTION REBATE	
	NON-DLC	DLC-QUALIFIED*	NON-DLC	DLC-QUALIFIED*
LED troffer fixtures	\$22.50/fixture	\$30/fixture	\$22.50/fixture	\$30/fixture
LED troffer retrofit kit	\$22.50/fixture	\$30/fixture	N/A	N/A

Standalone and networked lighting controls
Add lighting controls to any LED interior retrofit and parking garage retrofit projects to increase your energy savings. Excludes facilities/spaces where occupancy sensors are required by the MN building or ASHRAE 90.1-2019 9.4.1.1(h) codes.

CONTROL TYPE	RETROFIT REBATE	NEW CONSTRUCTION REBATE
Occupancy sensor	\$0.05/watt	\$0.05/watt
Daylighting (photocell) sensor	\$0.10/watt	N/A
Occupancy and daylighting (photocell) sensor	\$0.15/watt	N/A
Networked Lighting Control (NLC)	\$0.40/watt	N/A

LED parking garage fixtures
Many parking garages are lit 24 hours a day, 365 days a year. Replacing fluorescent or HID fixtures with LEDs can help deliver significant energy savings.

FIXTURE TYPE	RETROFIT REBATE		NEW CONSTRUCTION REBATE	
	NON-DLC	DLC-QUALIFIED*	NON-DLC	DLC-QUALIFIED*
25W-60W	\$86.25/fixture	\$115/fixture	\$18.75/fixture	\$25/fixture
61W-83W	\$93.75/fixture	\$125/fixture	\$26.25/fixture	\$35/fixture

LED parking garage wall pack fixtures
Increase security and appearance of your building's exterior area or parking garage with high-quality, directional LED output.

FIXTURE TYPE	RETROFIT REBATE		NEW CONSTRUCTION REBATE	
	NON-DLC	DLC-QUALIFIED*	NON-DLC	DLC-QUALIFIED*
10W-25W	\$22.50/fixture	\$30/fixture	\$11.25/fixture	\$15/fixture
26W-60W	\$45/fixture	\$60/fixture	\$22.50/fixture	\$30/fixture
61W-150W	\$66.25/fixture	\$75/fixture	\$37.50/fixture	\$50/fixture

LED canopy fixtures
Creating a clean, safe and inviting appearance, these fixtures are ideal for gas station and convenient store overhangs.

FIXTURE TYPE	RETROFIT REBATE		NEW CONSTRUCTION REBATE	
	NON-DLC	DLC-QUALIFIED*	NON-DLC	DLC-QUALIFIED*
25W-60W	\$15/fixture	\$20/fixture	\$15/fixture	\$20/fixture
61W-150W	\$18.75/fixture	\$25/fixture	\$18.75/fixture	\$25/fixture

LED exterior wall pack fixtures
Increase security and appearance of your building's exterior area. Parking garage wall packs are above with high-quality, directional LED output.

FIXTURE TYPE	RETROFIT REBATE		NEW CONSTRUCTION REBATE	
	NON-DLC	DLC-QUALIFIED*	NON-DLC	DLC-QUALIFIED*
10W-25W	\$11.25/fixture	\$15/fixture	\$11.25/fixture	\$15/fixture
26W-60W	\$22.50/fixture	\$30/fixture	\$22.50/fixture	\$30/fixture
61W-150W	\$37.50/fixture	\$50/fixture	\$45/fixture	\$50/fixture

*To qualify for a rebate, these LED products must be either found on or comparable to the DesignLights Consortium's (DLC) Qualified Product and/or ENERGY STAR lists. The DLC QPL is available at designlights.org/QPL. The DLC establishes specifications for high-efficiency, high-quality commercial lighting solutions and maintains listings of qualified products. Note: Rebates are subject to full program eligibility, participation requirements and restrictions.



Project Goals

Eliminate Hazardous Waste

- This project will remove regulated waste from our facilities.
- All Mercury lamps and remaining PCB ballasts will be recycled.
- This reduces the risk for regulatory & safety incidents & significantly reduces our ongoing recycling costs.

Project Goals

Going Green

- Positively engage the community with our district-wide "green" initiatives.
- Promote more environmentally-friendly facilities.
- We want to promote positive community support for our district and the changes we are implementing to provide the best environment for all students, staff, and residents utilizing our facilities.





Project Goals

Long-term impact

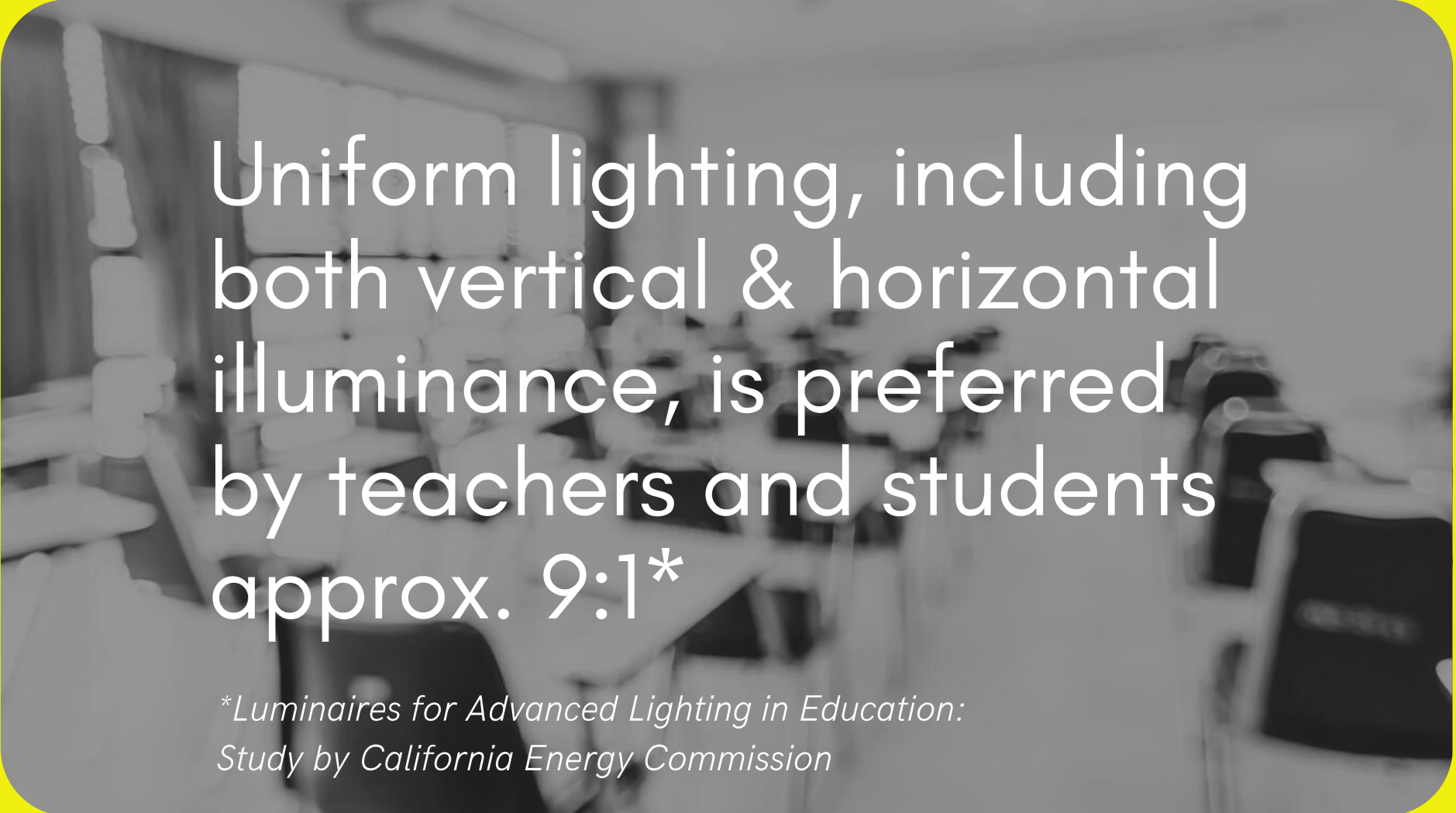
- Install long-lasting LED technology.
- Provide sufficient light levels for over 30 years
- Almost no maintenance time spent on our lighting systems. Freeing up maintenance to work on other needed projects\repairs.



Project Goals

Educational Setting

- Implement lighting technology that will enhance the learning environment.
- LED fixtures offer a flicker-free environment for students, teachers, and staff, reducing headaches and missed time away from the classroom.



Uniform lighting, including both vertical & horizontal illuminance, is preferred by teachers and students approx. 9:1*

**Luminaires for Advanced Lighting in Education:
Study by California Energy Commission*



Benefits Beyond Savings

LED Lighting in Schools



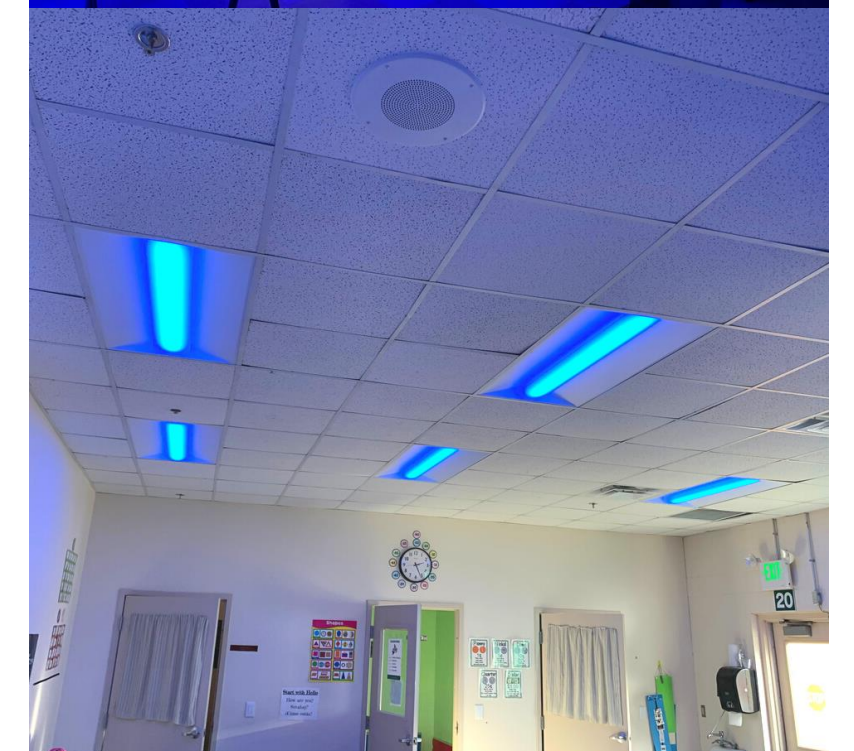
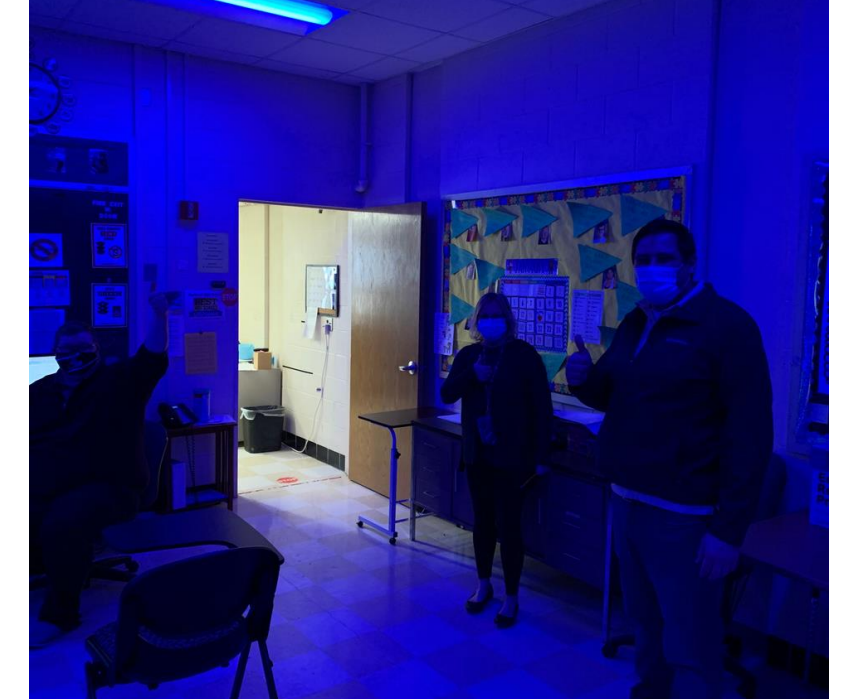
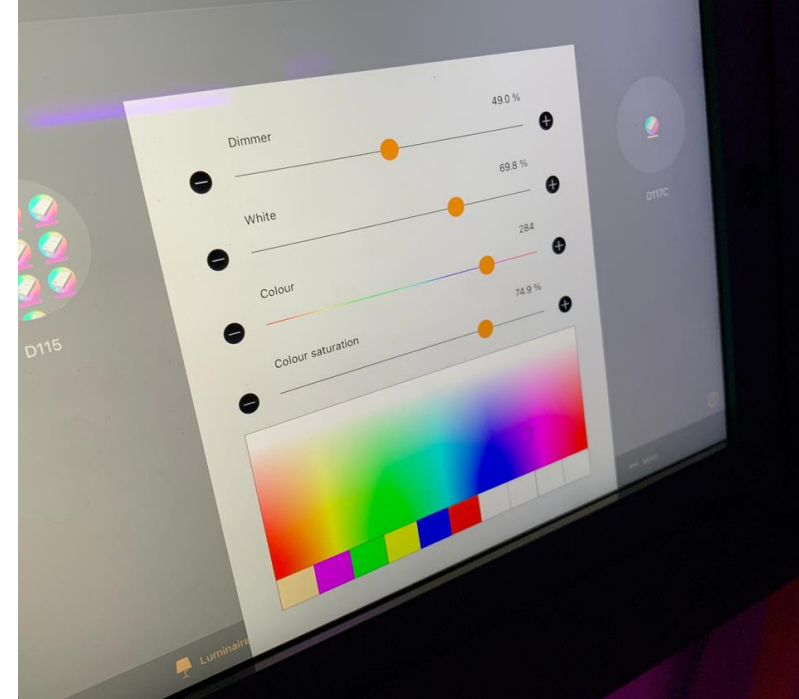
Studies show more than 90% of people with autism spectrum disorder are particularly sensitive to external sensory stimulation, with bright lights being an issue of great concern

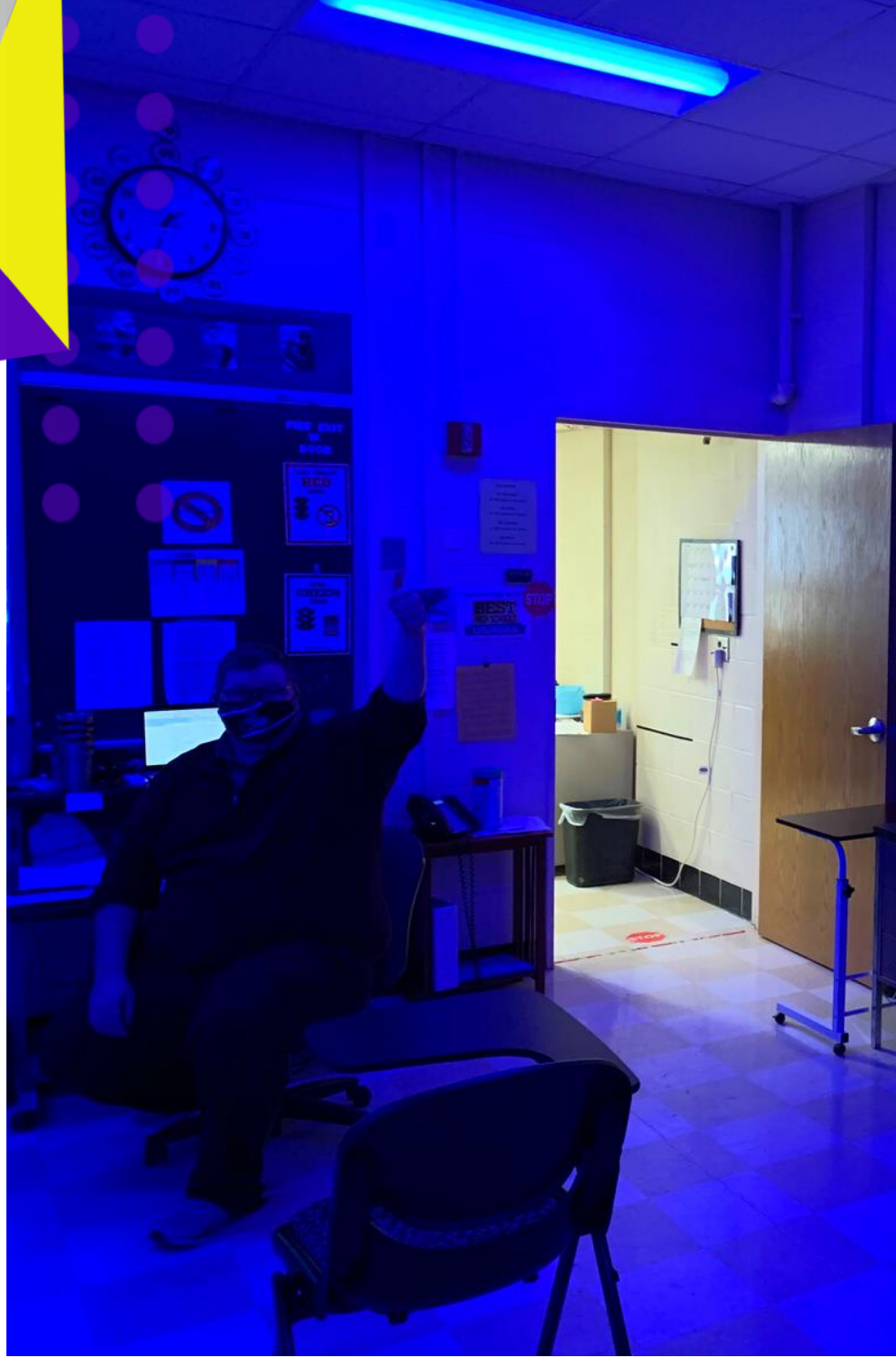
LED Lighting Fixtures: Better Learning Environment for Students with Autism [Study]

Mental Health & Productivity

Autism Spectrum Disorder

- Half of autistic individuals experience what is classified as a severe sensitivity to fluorescent lighting.
- Increased anxiety and other types of sensory disruptions can lead to social problems and worsening educational outcomes for school-aged autistics.
- Full-Color Tunable lighting in the Special Ed rooms provide sensory-sensitive and autism spectrum students a learning environment that suits them.





Tunable lighting controls give teachers customized learning environment for every activity



Tunable LED lighting helps teachers better manage the classroom



Better student engagement & behavior helps districts retain teachers



If we do nothing

Our estimated cost to replace bulbs and maintain our current fluorescent lighting system over the next 30 years is:

\$1,718,197.49

If we upgrade to new LED fixtures

We will significantly reduce operating and maintenance costs for our entire district, long term, with a net investment of:

\$1,847,747.58

This project will save the district over \$85,000.00 per year in energy savings alone!