RETROFIT
LIGHTING & DESIGN

ISD#256 Red Wing Schools

District-Wide LED Lighting Replacement

The average age of public schools in the United States is 44 years, and the average functional age of these buildings is approx. 20 years

How old are our facilities? Are we properly supporting our students and staff?

Project Goals

Top 10

#1 - Maintenance

Reduce ongoing maintenance costs related to our lighting systems, across the district

Project Goals

Top 10

#2 - Consistency

Install consistent lighting solutions across the district to reduce costs and more effectively maintain each facility

Project Goals

Top 10

#3 - Productivity

Increase efficiency and productivity of our facilities and maintenance staff, allowing them to focus on non-lighting related maintenance

Project Goals

Top 10

#4 - Energy-Efficiency

Utilize this project opportunity to make the district even more energy-efficient, reducing overhead operational costs

Project Goals

Top 10

#5 - Rebates

Take advantage of current utility rebate programs and incentives to replace inefficient fluorescent and metal-halide lighting technology with LED technology

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.

Interior applications

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

Lighting controls

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

Parking garage installations

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	$56.25/fixture	$75/fixture	$37.50/fixture	$50/fixture

Exterior installations

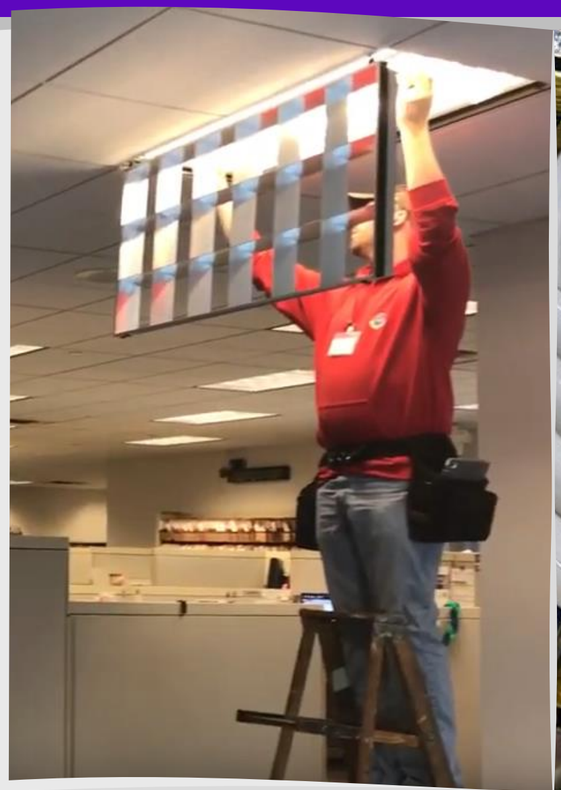
LED canopy fixtures
Creating a clean, safe and inviting appearance, these fixtures are ideal for gas station and convenient store overhangs.

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 [illegible]



Project Goals

Top 10

#6 - Hazardous Waste

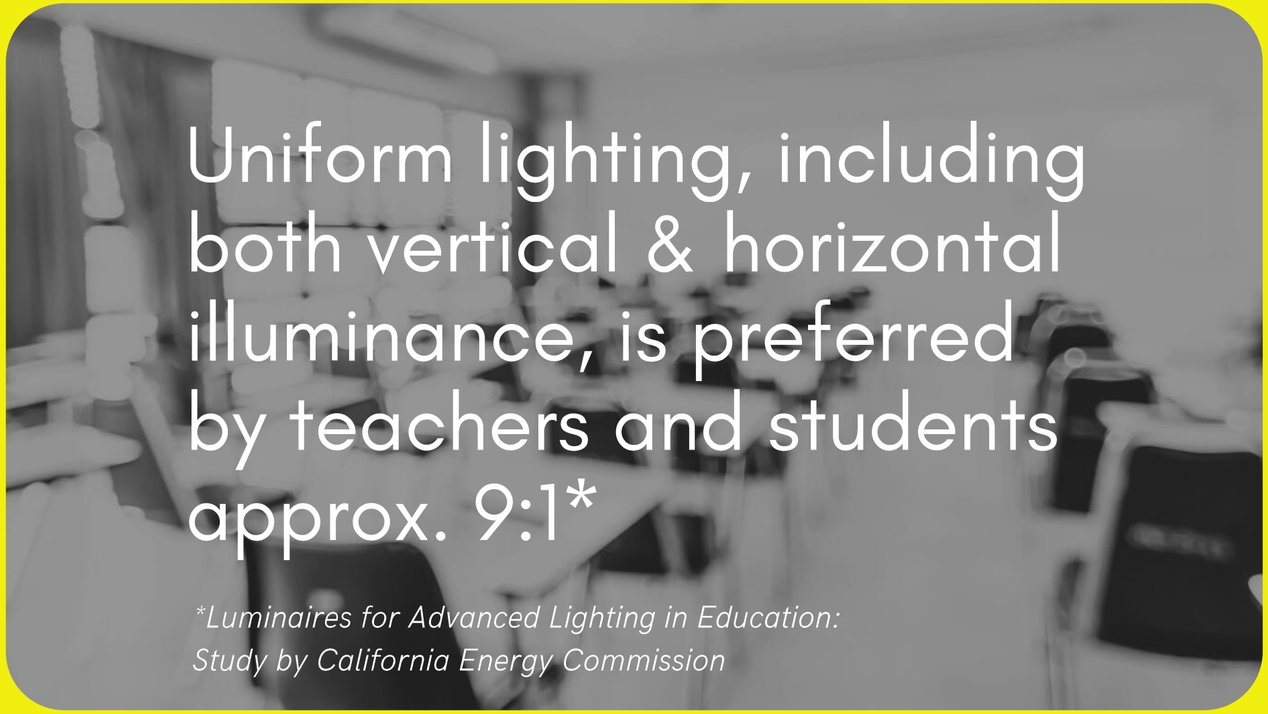
Remove regulated waste from our facilities by removing all mercury lamps & any remaining PCB ballasts. This reduces the risk for regulatory & safety incidents & reduces our ongoing recycling costs.

Project Goals

Top 10

#7 - Educational Setting

Implement lighting technology that will enhance the learning environment for students, teachers and staff



Project Goals

Top 10

#8 - Community

Promote positive community support for our district and the positive changes we are implementing to foster the best environment for students, staff and teachers

Project Goals

Top 10

#9 - Going Green

Positively engage the community with our district-wide "green" initiatives to promote more environmentally friendly facilities

Project Goals

Top 10

#10 - Lifespan

Install long-life LED technology that will allow our planning and budget committees to address the most relavent and pressing issues

What We Can do

How do we achieve these goals?

Installing quality, long-life LED solutions throughout the entire district

These lighting solutions offer sufficient light levels & limited maintenance for 30 years

Caledonia Public Schools

Options

How do we decide?

OPTION A

Keep Going

Maintain current fluorescent and metal - halide lighting system

OPTION B

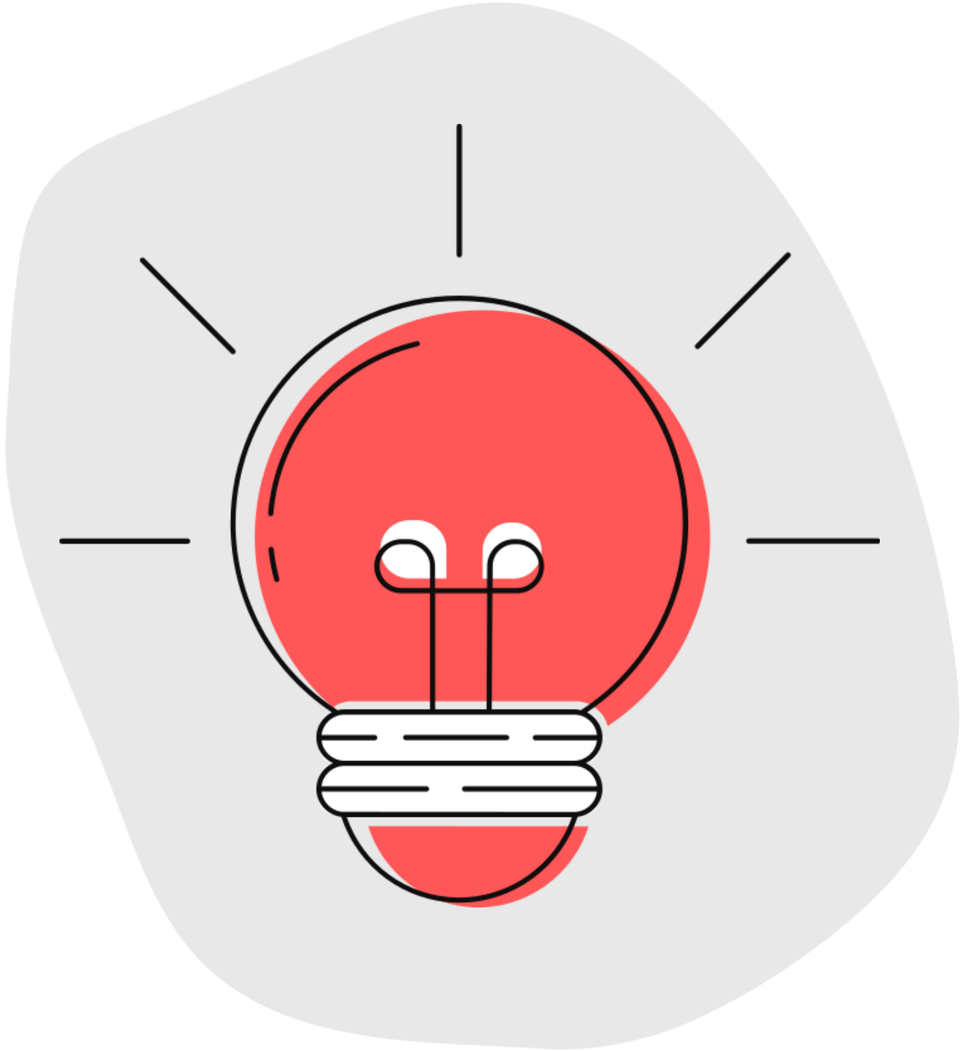
LED Bulbs

Upgrade to LED bulbs (not fixtures), more economical, less energy-savings, 10 year solution

OPTION C

LED Fixtures

Upgrade to LED fixtures, more than 57% lower cost of ownership over next 30 years than Option B

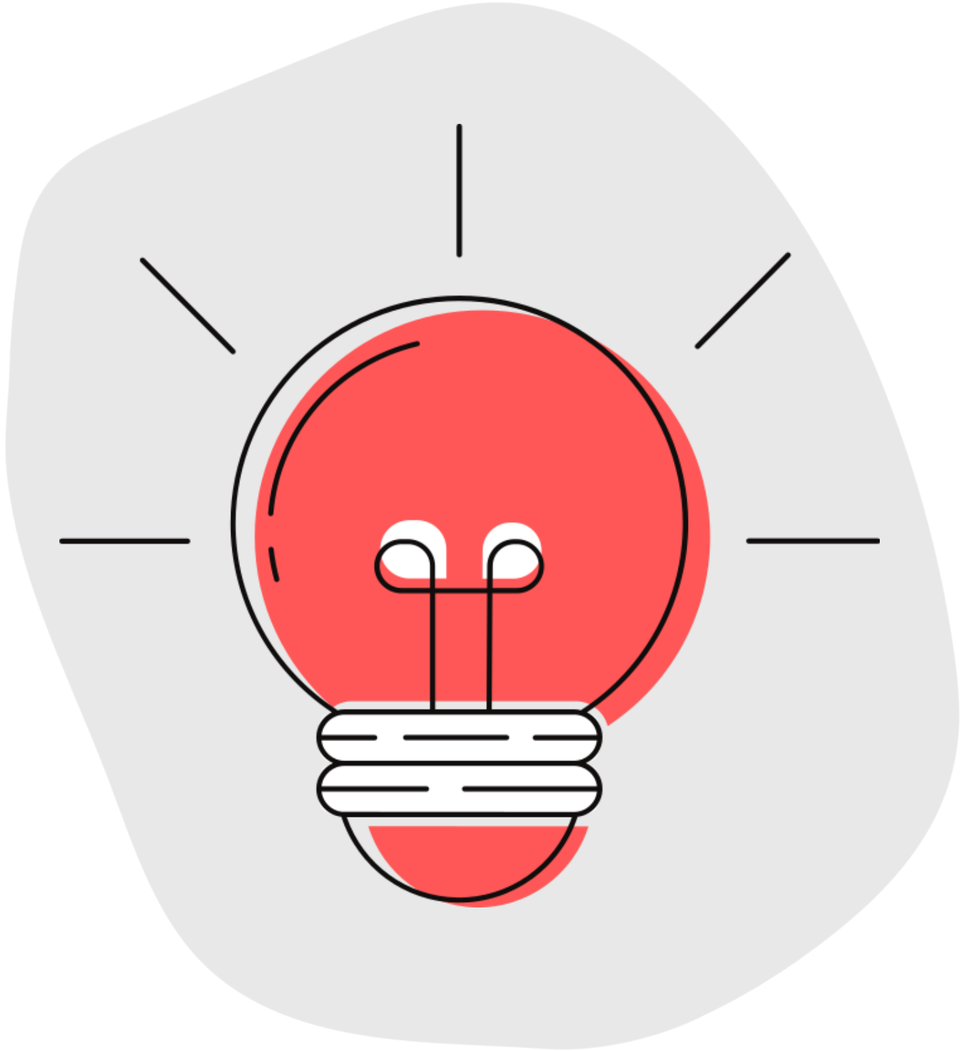


Option A

Maintain Current Lighting System

We keep going, as we are, maintaining our current fluorescent and metal halide lighting system

- **$1,194,526.25** - Total cost to maintain current system, with inflation, over next 30 years
- **$211,887.44** - By not changing to LED we miss out on this amount in utility rebates
- **$2,552,719.80** - By not changing to LED we miss out on this amount in energy savings over next 30 years



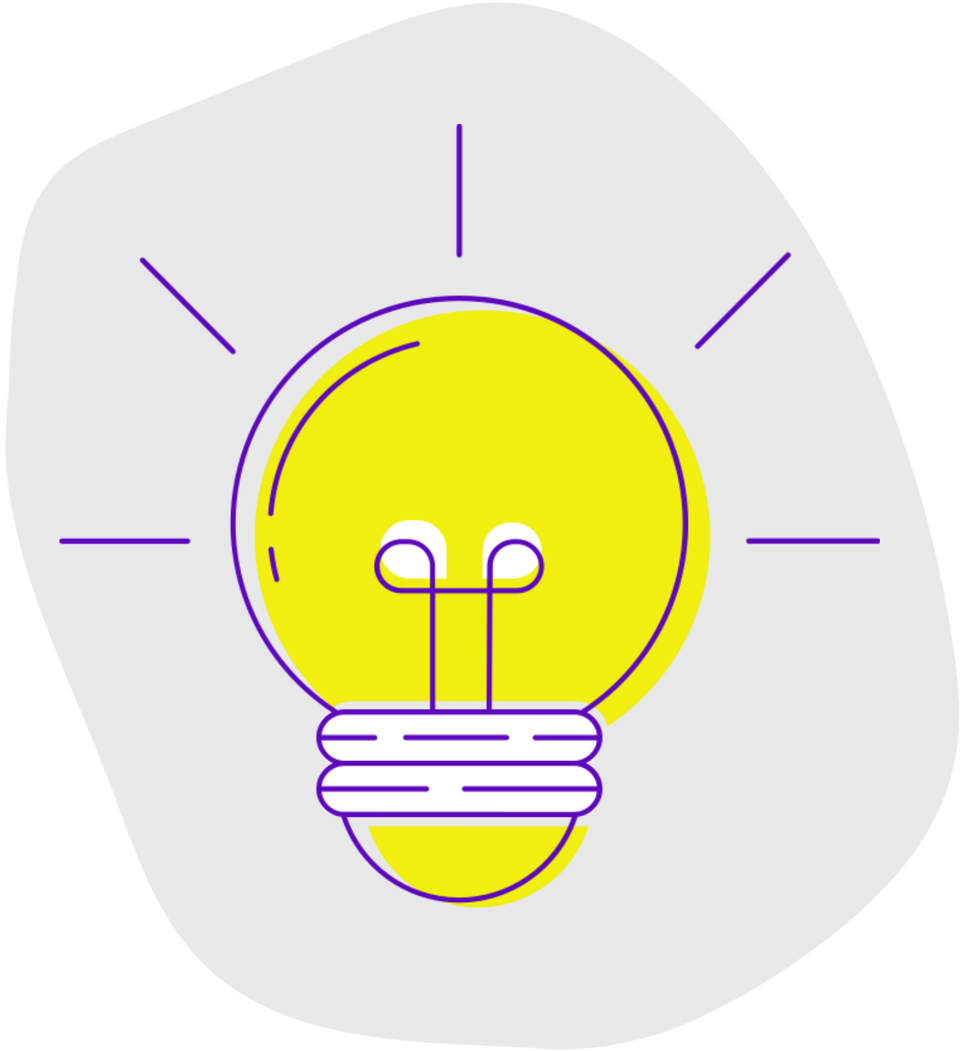
Option B

*LED Bulb Replacement

Upgrade to LED bulbs with a more economical approach to upfront investment

- **$1,271,640.00** - District-wide project investment
- **$71,954.67** - Annual energy-savings
- **$116,544.08** - Rebates & incentives
- **$3,187,079.67** - Cost of ownership of this lighting system over next 30 years

**LED bulbs offer a shorter life than LED fixtures - will require replacement an estimated 3X plus ongoing maintenance between projects*



Option C

LED Fixture Upgrade

We recommend properly upgrading our facilities with LED fixtures. Invest now to reduce operating and maintenance costs long term.

- **$1,847,747.56** - District-wide project investment
- **$85,090.66** - Annual energy-savings
- **$211,887.44** - Rebates & incentives
- **$1,847.747.56** - *Cost of ownership of this lighting system over next 30 years

**Over 57% more cost-effective over 30 years than bulb project*

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

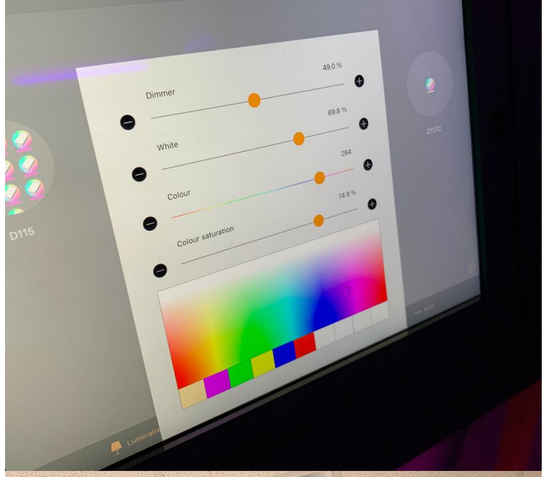
LED Lighting Fixtures: Better Learning Environment for Students with Autism [Study]

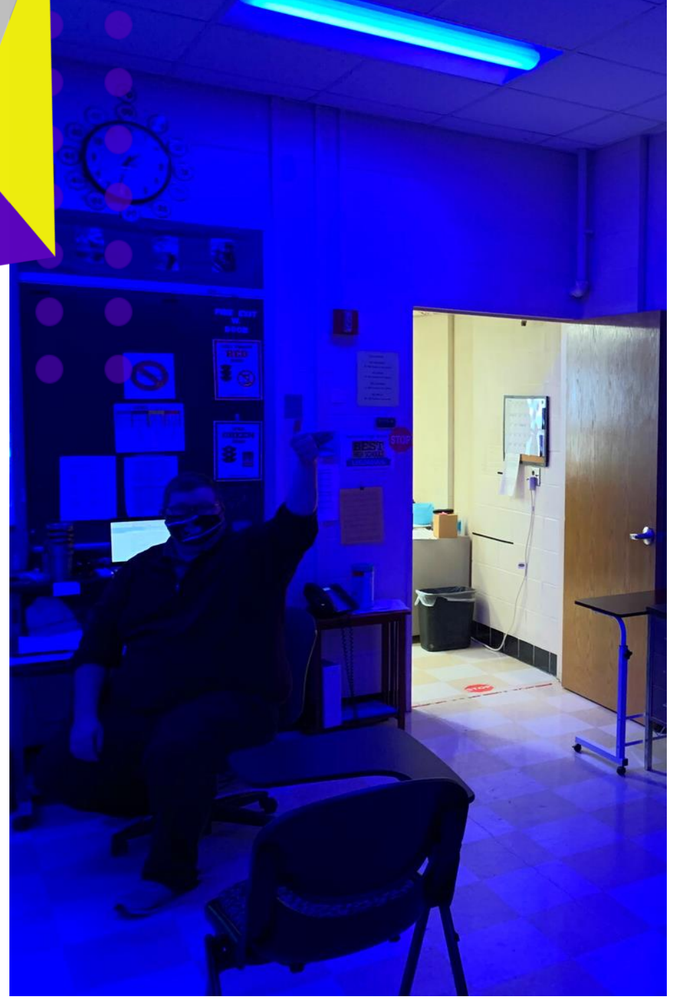
Mental Health & Productivity

Autism Spectrum Disorder

LED fixtures offer a flicker-free environment for students, teachers, and staff

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

Don't Just Take Our Word

Hear from local teachers

This video shares the experience of multiple local teachers from Faribault, MN and the benefits they are seeing in switching their classrooms to full color tunable lighting