

Cambrian School District:

Energy and Water Optimization
Project:
Investment Grade Audit 100%

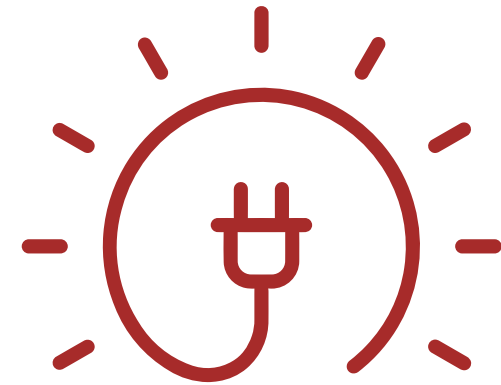


October 19, 2023



Agenda

- Executive Summary
- Project Snapshot
- Energy Conservation Measures (ECM)
- Project Financials
- Schedule / Milestones



Executive Summary

- Upgrade all lighting at the District, both interior and exterior, incorporating Title24 Energy Code compliant controls, LED technology, and new look fixtures
 - More energy efficient, less cost to operate
 - Visible upgrade will improve aesthetics to students and employees
 - Higher quality lighting system that will improve student and faculty experience in the facilities
- Install District-wide irrigation controls for better management of exterior water use
- Install touch-free plumbing fixtures to comply with current and future water conservation mandates, and reduce the spread of germs





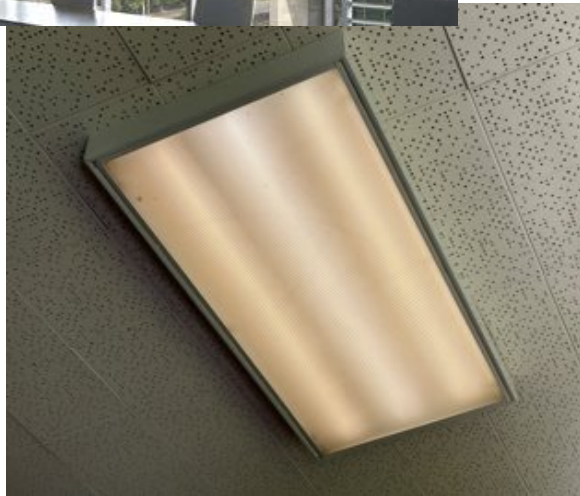
100% Snapshot

Investment Grade Analysis

Project Financials	
Proposed Project Investment	\$3,730,708
Year 1 Utility Cost Savings	\$137,613
Year 1 Maintenance Cost Savings	\$101,919
Annual Greenhouse Gas Emissions (tons)	405
Equivalent Number Passenger Vehicles per Year	82
Equivalent Reduction in Gallons of Gas Consumed per Year	18,625
Simple Payback	14.7 years



ECM (Energy Conservation Measure) #1 – Interior/Exterior LED Lighting & Controls



Lighting costs include fixture update without hazardous material displacement.

Affected Sites

- Bagby Elementary
- Ida Price School
- Fammatre School
- Farnham School
- Sartorette School
- District Office

ECM Description

Replace / retrofit incandescent, fluorescent, and HID lighting with LED. Install occupancy controls where required to meet CA Title 24 energy standards.

Special scope items include RGB (multi-color spectrum) lighting in elementary school special need classrooms and RGB theatrical lighting in the multipurpose rooms.

Location	Electricity Savings (kWh)	Electricity Cost Savings	Annual Maint Savings	Total Savings	ECM Cost	Simple Payback	Greenhouse Gases Reduced (tons/yr)
Bagby Elem School	105,175	\$25,202	\$800	\$26,002	\$511,486	19.7	82
Ida Price Middle School	124,702	\$33,653	\$1,568	\$35,221	\$446,677	12.7	97
Fammatre School	67,424	\$18,194	\$599	\$18,793	\$249,786	13.3	53
Sartorette School	64,511	\$16,847	\$414	\$17,261	\$322,488	18.7	50
Farnham School	72,206	\$18,856	\$574	\$19,430	\$226,651	11.7	56
District Office	84,396	\$24,861	\$1,296	\$26,157	\$233,619	8.9	66
Totals	518,413	\$137,613	\$5,251	\$142,864	\$1,990,707	13.9	405

Savings Over Rated Life of Lighting Equipment

Rated life: 120,000 hours

Annual hours of use (conservative estimate):
1,825 hours

Annual savings: \$142,864

Usable life of equipment: 65 years

Savings Over Rated Life:

\$9,286,160

**Savings over rated life (5% energy inflation
rate):**

\$65,259,992





ECM #1 (cont.) – Interior/Exterior LED Lighting & Controls

- Vastly improved exterior illumination
- improved safety and security
- Dark Sky compliant





ECM #3 – WeatherTrak Smart Irrigation System



Affected Sites

- Bagby Elem School
- Sartorette School
- Farnham School
- Ida Price School
- Fammatre School
- Steindorf Steam School
- District Office

ECM Description

WeatherTrak irrigation controllers reduce water waste outdoors while keeping landscapes healthy. Weather-based irrigation controllers (WBICS) are one option to achieve water-efficient irrigation scheduling.

By using local weather data and landscape conditions to tailor water schedules, weather-based irrigation controllers determine when and how much to water.

ECM Description	Annual Maint. Savings ¹	ECM Cost	Simple Payback
Weathertrak System	\$96,668	\$1,281,382	13.3

Note 1: Annual Maintenance Savings for the WeatherTrak Irrigation system based on an estimated 22 hours per week for Groundskeepers and Irrigation Specialists to maintain system and review timers/valves/etc.



ECM #4 – Hands-Free WC Operation



SLOAN.



Affected Sites

- Bagby Elementary
- Ida Price School
- Fammatre School
- Steindorf Steam School
- Sartorette School
- Farnham School
- District Office

ECM Description

Replace faucets and flushometers for all restrooms in each facility with high efficiency touchless systems to minimize transmission of germs. Each restroom will contain one non-sensored standard operated faucet to ensure successful operation under any conditions.

ECM Description	Annual Water Savings (Gals)	Annual Savings	ECM Cost	Simple Payback
Touchless Fixtures	742,448	\$14,387	\$458,619	31.9

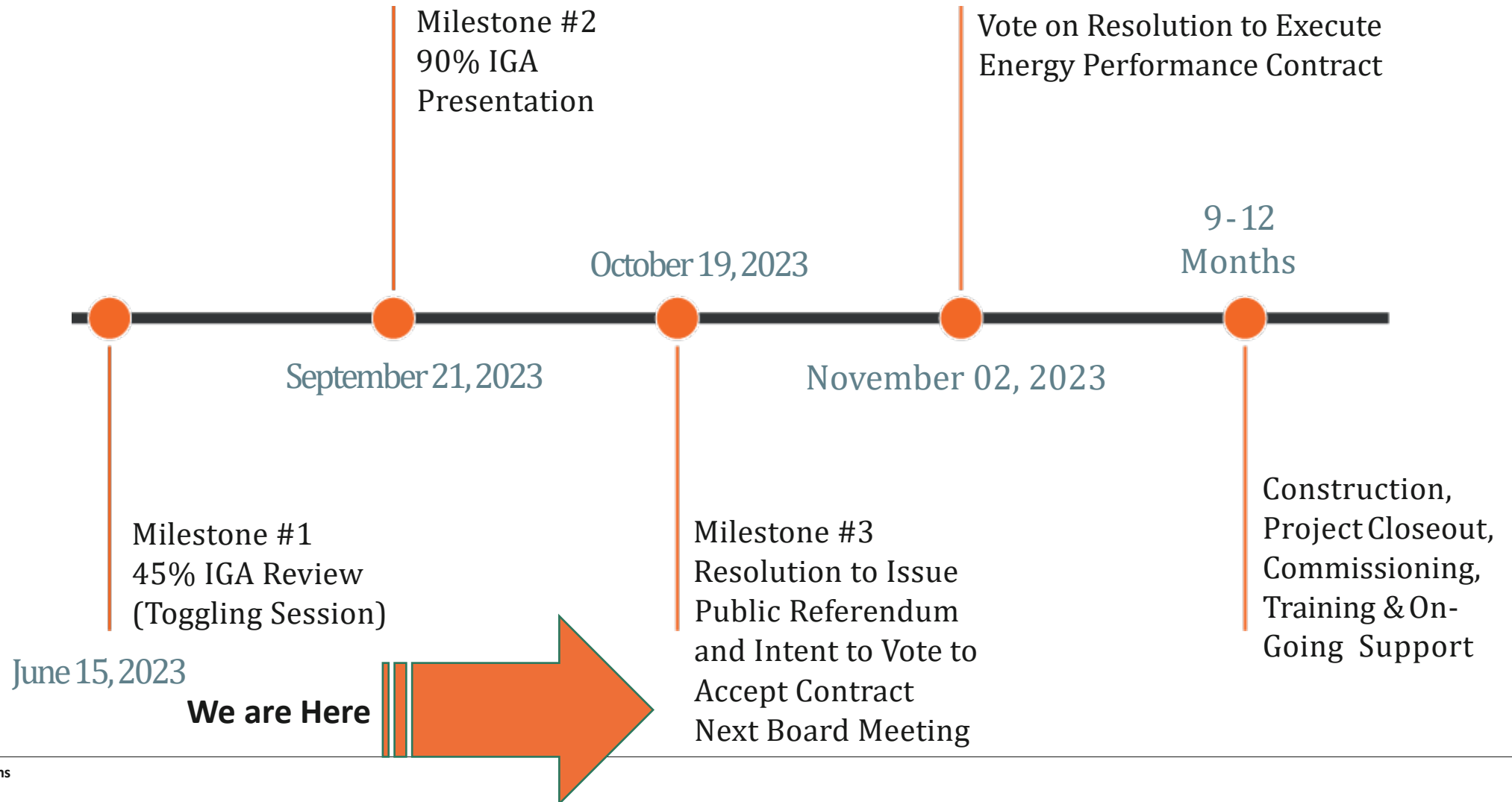
Project Financials

ECM #	ECM Description	Electricity Savings (kWh)	Electricity Cost Savings	Annual Maint Savings	Total Savings	ECM Cost	Simple Payback	Greenhouse Gases Reduced (tons/yr)
1	Int/Ext Lighting Retrofit & Control	434,017	\$112,752	\$3,955	\$116,707	\$1,757,088	15.1	339
1A	Int/Ext Lighting Retrofit & Control (DO)	84,396	\$24,861	\$1,296	\$26,157	\$233,619	8.9	66
3	WeatherSmart Irrigation System ¹	-	-	\$82,858	\$82,858	\$1,126,938	13.6	-
3A	WeatherSmart Irrigation System (DO)	-	-	\$13,810	\$13,810	\$154,444	11.2	-
4	Hand's Free WC Operation	-	-	-	\$13,558	\$403,343	29.7	-
4A	Hand's Free WC Operation (DO)	-	-	-	\$829	\$55,276	66.7	-
	Totals	518,413	\$137,613	\$101,919	\$253,919	\$3,730,708	14.7	405

Notes:

- 1) Annual Maintenance Savings for the WeatherSmart system based on estimated 22 hours total time spent per week for groundskeepers and Irrigation Specialists to maintain system and review timers/valves/etc.

Next Steps





Thank you

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