

Energy and Maintenance Cost Reduction Proposal

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Executive Summary and Introduction

The State University of the Midwest (SUM) has hundreds of buildings on its campus that depend on important safety infrastructure, such as classic exit signs that run on electricity. This unsolicited proposal from LumenGuard Energy Solutions brings up a big, but frequently ignored, area of budget drain: the total cost of operating and maintaining typical exit sign lighting. Incandescent or fluorescent bulbs are used in current systems, which use a lot of energy, need expensive periodic maintenance, and can fail when there are power outages on campus.

This proposal suggests that SUM's current exit signs be replaced right away with self-illuminating, non-electrical signs (Kolin, 2022). This change is a fully reliable safety solution with no maintenance or operational costs, based on proven outcomes in major government and institutional settings. The thorough research shows that an initial investment of about \$288,000 will give a conservative return on investment (ROI) in less than 4.6 years. This will save the university more than \$63,000 a year for the next 10 to 12 years that the devices will last.

The Problem: High Cost and Low Dependability

SUM's current exit sign infrastructure faces three core challenges: financial inefficiency, operational complexity, and safety risk.

Financial and Operational Drain

Current exit sign fixtures are on 24/7 and use a lot of power. Incandescent and fluorescent signs in older buildings use more electricity than LED signs in newer buildings. Also, these vintage signs need constant attention. Facilities staff spend a lot of time monitoring, mending, and replacing faulty bulbs and tracking, storing, and disposing of replacement supplies (Kolin,

2022). This strategy wastes skilled staff who could be working on more vital facility needs, making it ineffective.

Safety Risk During Power Failures

Even with backup batteries, standard signs depend on building power, a major drawback. Batteries require maintenance, testing, and replacement, adding expenses and complexity. More importantly, severe or lengthy power outages, such as those induced by weather, can result in a complete loss of illumination, jeopardizing emergency escape for thousands of students, teachers, and visitors.

The Proposed Solution: Self-Illuminating Signage

LumenGuard Energy Solutions proposes a full-scale transition to self-illuminating exit signs, utilizing non-electrical, non-radioactive tritium technology that requires no external power source.

Product Features and Installation Simplicity

These self-illuminating signs are maintenance-free devices engineered to provide reliable illumination for their entire lifespan, typically 10 to 12 years (Kolin, 2022).

1. **Zero Operational Cost:** These signs consume no electricity and require zero maintenance, getting rid of all energy and labor costs associated with bulb and battery replacement.
2. **Dependability:** Because the illumination is self-contained, these signs are completely immune to power failures, ensuring continuous, reliable guidance during any emergency.

3. **Ease of Installation:** Simpler retrofitting of existing fixtures. Installation takes as little as "hanging a picture" because no electrical circuits are needed (Kolin, 2022). In new construction or renovations, expensive specialized electrical lines might be avoided.

The proposed units are recognized for compliance with safety standards, listed under Fire Safety Code (FSC) Group 99, and are readily available for large-scale institutional projects.

Cost Analysis and Projected Return on Investment (ROI)

This investigation estimates that the State University of the Midwest campus uses 800 incandescent or aged fluorescent exit sign fixtures. This projection shows the initial expenditure and the large, provable savings during the first year and the product's guaranteed lifespan.

First Project Investment

This campus-wide upgrade costs \$288,000, including signs and installation labor. Based on 800 fixtures, an equitable split between single-face signs (\$225.00 each) and double-face signs (\$475.00 each), and a minimal installation labor cost of \$10.00 per sign, totaling \$8,000 for labor.

Annual savings projection

The university will save two key expenses. First, eliminating sign electricity consumption will save \$36,442 yearly, based on 800 signs using 40W each, 24/7. Second, eliminating all maintenance—labor, material expenses, stocking, and disposal—will save \$27,024 (Kolin, 2022). The State University of the Midwest will save \$63,466 annually.

Financial Gains and ROI

The estimated return on investment makes SUM's facilities budget financially attractive. The Simple Payback Period is 4.54 years for \$288,000 in project costs and \$63,466 in annual savings. The institution will save \$63,466 each year for the rest of the signs 10-to-12-year lifespan after the payback period. A cautious 12-year savings, net of the initial investment, would be \$472,000.

Conclusion and Call to Action

Self-illuminating exit sign systems are long-term investments in safety and efficiency, not merely cost-saving measures. This initiative promotes SUM's budgetary sustainability and dedication to campus safety by lowering utility bills, maintenance, and guaranteeing reliability during crises.

LumenGuard Energy Solutions will conduct a free campus survey to count fixtures and provide a guaranteed price. To start enjoying these significant benefits, we recommend arranging this initial site assessment within 30 days.

References

Kolin, P. C. (2022). Self-illuminating exit signs. In *Successful writing at work* (12th ed.,

pp. 458-459). Cengage.