# Internal Proposal: Upgrade to Self-Illuminating Exit Signs for Enhanced Safety and Cost Reduction

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## 1. Introduction

The current system of conventional incandescent exit signs used throughout the Post University campus presents an unnecessary and persistent financial and logistical burden related to maintenance and electricity consumption. These incandescent fixtures consume high levels of electricity (50 to 100 watts) and require periodic bulb replacement, resulting in avoidable expenses that impact our operational budget (Kolin, 2022). Furthermore, relying on an electrical circuit means power failures or other disturbances could compromise the functionality of our emergency egress lighting, an essential component of the facility's safety infrastructure.  
  
This proposal recommends the complete replacement of all existing conventional exit signs with self-illuminating exit sign systems. This strategic upgrade offers a maintenance-free, zero-power-cost solution that will deliver significant, measurable financial savings and enhance the reliability of our emergency safety systems over the next decade. The Marine Corps Development and Education Center (MCDEC), Quantico, Virginia, implemented a similar project for a cost of $97,238 and anticipated a payback time of 2.6 years, making this an excellent way to save money.

## 2. Proposed Solution: Self-Illuminating Exit Sign System

The solution involves a phased installation of self-illuminating exit signs. These signs eliminate the need for electrical circuits because they use photoluminescent or tritium light sources, removing two major cost factors: maintenance and electricity. The primary benefit is that virtually all operation and maintenance expense is eliminated for the normal life of the device, which is typically 10 to 12 years.

* Key Benefits of the System
* Zero Operational Cost: These devices eliminate the cost associated with electricity and the labor and material costs for changing bulbs, stocking, storage, and transportation.
* Enhanced Safety and Reliability: Power failures or other disturbances will not cause the signs to go out, ensuring a highly dependable emergency egress system.
* Reduced Labor and Simplicity: Installation labor and expense for the self-illuminating signs is minimal, described as being about that of hanging a picture.
* Circuit Release: In retrofits, a dedicated circuit can be released for other beneficial use, and in new construction, expensive electrical circuits can be totally eliminated.

## 3. Financial Analysis and Cost/Benefit

This financial analysis is based on a conservative estimate for a facility with 400 incandescent fixtures, a conservative energy rate of $0.13/kWh, and continuous (24 hours/day, 365 days/year) operation.

1. 3.1. Projected Annual Savings

|  |  |  |
| --- | --- | --- |
| Item | Source | Annual Savings Estimate |
| Electricity Savings | Calculated | $18,221 |
| Maintenance Savings | MCDEC Estimate | $13,512 |
| TOTAL PROJECTED ANNUAL SAVINGS |  | $31,733 |

1. 3.2. Projected Project Costs

|  |  |  |
| --- | --- | --- |
| Item | Calculation/Source | Estimated Cost |
| Material Cost (400 Signs) | 400 signs × $250/sign | $100,000 |
| Installation Labor | 400 signs × $10/sign | $4,000 |

1. 3.3. Payback Period and ROI

The project’s projected payback period is calculated as follows (Facility Maintenance Department, 2024):  
  
Payback Period = Total Project Cost ÷ Annual Savings = $104,000 ÷ $31,733 ≈ 3.28 years.  
A payback period of approximately 3.3 years is financially realistic and highly favorable. Over the 10-year lifespan of the signs, the net operational savings after recouping the initial investment will exceed $220,000.

## 4. Recommendation and Next Steps

The implementation of self-illuminating exit signs provides high dependability, no maintenance, and zero operations cost. This initiative represents an excellent way to save money while upgrading a core facility safety system.  
  
We recommend the immediate approval of a budget of $104,000 to proceed with the phased procurement and installation of the self-illuminating exit sign system. Signs such as “Isolite” are available through GSA contract, listed as FSC Group 99, Part IV, Section A, Class 9905 signs.  
  
We are prepared to discuss the next steps, including securing firm pricing and planning the installation timeline. Contact Gerald Harnett, Safety Light Corp., for more information.

# References

Facility Maintenance Department. (2024). Annual report on energy and maintenance

expenditures. Post University/Internal Report.  
Kolin, P. C. (2022). Self-illuminating exit signs, pp. 458-459. In \*Successful writing at work\*

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