

## **Self-Illuminating Signs Proposal**

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CIS 311: Technical Writing in CIS

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11/30/2025

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### Purpose Statement

The purpose of this proposal is to recommend the replacement of the office's outdated exit signs with updated self-illuminating exit signs. Several signs appear to have functional deformities. This creates a potential physical safety risk during office emergencies.

### Problem Statement

Based on observation of the current exit signs, we have noted cracks, flickering, and burnt-out light bulbs in the signs. Due to the fact that the signs are not visible, it could cause trouble for office staff in the event of an emergency, or in determining where to exit the building.

Additionally, the current outdated exit signs can no longer meet safety standards and regulations due to the visible deformities. They require frequent maintenance and operation expenses, which is not beneficial for the company.

### Solution

The recommended solution is to replace the current outdated exit signs with self-illuminating exit signs. These new exit signs are photoluminescent, meaning that they radiate the absorbed light from the environment. They do not require an additional power source. They have glow-in-the-dark capabilities. In the case of a power failure, the paint in the lights will glow and illuminate the sign (Bold Commerce, 2019).

### Advantages

There are several advantages to self-illuminating exit signs. They save money on electricity expenses and require no maintenance. Self-illuminating exit signs can save upwards of \$37,171 within 2.6 years (Kolin, 2022). Additionally, more expenses can be saved by calculating the current electricity expenditure. The current exit signs are incandescent, which typically consume

50 to 100 watts. The office contains 200 exit sign fixtures. Using the formula provided by Philip C. Kolin, the electrical expenses for the current exit signs can be calculated. The number of fixtures, wattage/fixture, hours operated/day, and days/year are multiplied to calculate the kWh/year (Kolin, 2022). To calculate the office's savings: 200 fixtures \* 0.075 kW/fixture \* 24 hours/day \* 365 days/year = 131,400 kWh/year. Then, that total is multiplied by the price of kWh: 131,400 \* \$0.13 = \$17,082. As a result, the office would save \$17,082 a year on electricity expenses by eliminating the current exit signs. Additionally, expenses will be saved on maintenance. Self-illuminating exit signs require no maintenance. The company does not need to pay for bulbs, materials, and outside maintenance services. These signs have a 10-to-12-year life, and the only maintenance is to replace them when necessary.

### **Cost**

The cost varies on the style of the self-illuminating sign of desire. The labor for each sign costs \$10. Therefore, the total cost of labor is \$2,000. The single-face sign costs \$200 to \$250. Using the median cost of this sign and the addition of labor, the total cost for single-face signs is \$47,000. On the other hand, double-face signs cost \$450 - \$500. Using the median cost of this sign and the addition of labor, the total cost for double-face signs are \$97,000. Even though the cost is higher than typical exit signs, the long-term savings in electricity and maintenance are worth it.

### **Conclusion**

In summary, the current exit signs are outdated and exhibit several defects, including cracks, flickering, and burnt bulbs, which do not meet safety standards and regulations. To provide a solution, it is recommended to replace the current exit signs with self-illuminating exit signs. By implementing these signs, it will save on electricity expenses, require no maintenance, illuminate

during power failures, and deliver long-term cost benefits.

## References

Bold Commerce. (2019, July 2). *Why Use Self Powered Exit Signs?* Exit Sign Warehouse .

<https://www.exitsignwarehouse.com/blogs/news/why-use-self-powered-exit-signs>

Kolin, P. C. (2022). Self-illuminating exit signs, pp. 458-459. In *Successful writing at work* (12th ed.). Cengage.