



## **Introduction**

Safelite has asked Element to quantify the return on investment of implementing the Derive Systems software. The software is designed to improve the fuel efficiency of Safelite's mobile glass shops.

## **Methodology**

For the purposes of the analysis we set the baseline miles per gallon equal to the average experienced in the fourth quarter of 2015. The mpg from the 4<sup>th</sup> quarter 2015 represent the control group in our analysis. We also calculated the average miles per gallon in the third quarter of 2016. The mpg experienced in the 3<sup>rd</sup> quarter 2016 occurred after the Derive software was installed in the mobile glass shop vehicles. We define average miles per gallon as the total gallons consumed over the time period (less the first fuel purchase) divided by the total miles driven. In order to derive an accurate mpg, we excluded average miles per gallon less than zero or greater than thirty from the analysis. These averages would most likely be caused by bad odometer or fuel consumption data. Comparing the average miles per gallon from both quarters, there was a significant improvement in fuel efficiency in the 3<sup>rd</sup> quarter 2016. We can infer that the Derive software is responsible for an average mpg improvement of 8.65% for the mobile glass shop vehicles during that time period.

Given that the experienced mpg had improved by an average of 8.65% and the new average mpg was 14.3, we can conclude that the fuel consumption savings over the lifetime of a mobile glass shop vehicle (assuming replacement at 150,000 miles) would be 907 gallons. Assuming the average cost of fuel over the lifetime of the vehicle will be \$2.77 (EIA average price of \$2.12 in 2016 compounding at 10% over the next five years), the fuel savings totaled \$2,510. Additionally, we have taken into account the increased productivity of the driver as a result of the improved fuel efficiency. Since the fuel efficiency gains result in less fuel consumption, the driver will spend less time at the pump over the vehicles lifetime. We assumed an average tank capacity of 26 gallons, driver productivity cost to Safelite of \$100 per hour, and time per fill-up at the pump of 10 minutes. The resulting productivity savings to Safelite equaled \$582. Therefore, the total savings resulting from the installation of the Derive system software was \$3,092 over 150,000 miles given our assumptions.

The Derive software installation cost to Safelite is \$339 per vehicle. Given that the gain from investment in the software is \$3,092 over the vehicle's lifetime, the return on investment of the software installation is 812.2%. Additionally, the improved fuel efficiency results in a reduction in CO2 emissions equivalent to 7.8 metric tons over 150,000 miles driven.

## **Conclusion**

In conclusion, the installation of the Derive software on Safelite's mobile glass shops is an extremely viable investment from both a financial and sustainability standpoint.