

# Skupos Data Helps Convenience Stores Predict Inventory Needs Before Hurricanes

*A Look At The Data Behind Consumer Purchases In The Days Before Hurricane Florence In The Carolinas*

Skupos helps convenience stores (C-Stores) leverage their sales data to drive growth and enables stores to take advantage of tobacco incentive programs. As important events come up we conduct research from our extensive list of C-Store partners to help our retailers discover opportunities to move more product. In this article, Skupos looks at the sales data before Hurricane Florence to identify when store owners should prepare for surges in customer purchases they will experience so they can avoid stock-outs. We hope that armed with this information, C-Stores can be most effective at their locations in hurricane paths and provide communities that are evacuating with the goods they need.

## ANALYSIS BACKGROUND

We looked at 66 stores in the Carolinas starting before the announcement of Hurricane Florence and compared them to the week of the Hurricane. Hurricane week in this analysis refers to September 8th–15th which is the time when consumers were preparing the most for the coming storm. Our control data or pre-preparation data is the 20-day period before September 8th. We looked at the following:

### Overall Sales Increases

We mapped our data to announcements from local governments and hurricane intensity alerts to understand when people begin to flock to stores.

### Coastal Stores vs. Stores Farther Inland

Do stores farther inland see a similar spike in sales in the week before the hurricane?

### How Do Different Items Sell

The essential items are water, batteries, ice, fuel, and bread. We look at these specific products to identify which products C-Stores really need to stock up on.

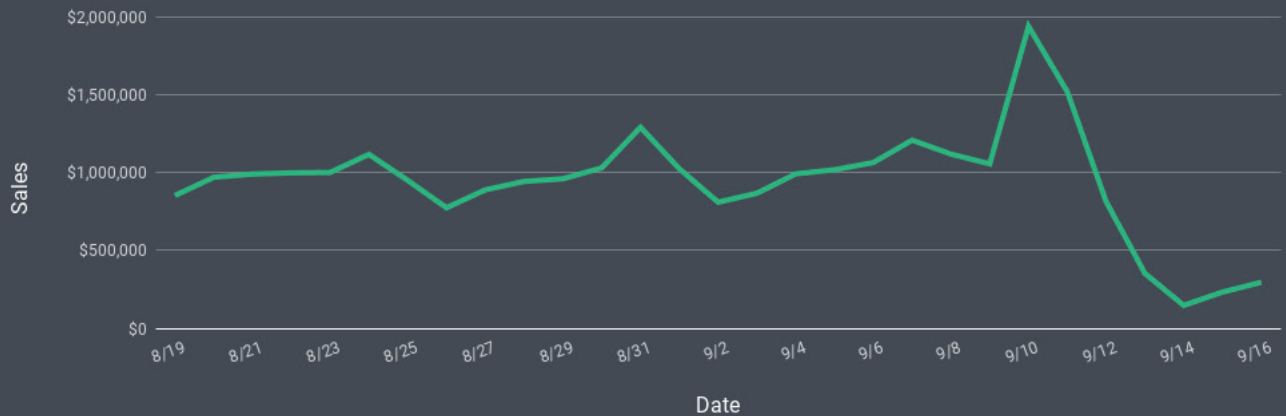
## OVERALL SALES INCREASE

As a whole, the average daily sales for all stores combined were up by over \$420,000 during the hurricane prep phase. This breaks down to an increase of over \$6,000 per day per store. The most significant peak in sales was on September 10th when sales hit \$1,938,278 soaring 96% above the average daily sales leading up to the storm.

When we overlay the announcements about the hurricane over the sales data we see that on September 10th, Hurricane Florence became a

## Day by Day Overall Sales

During Hurricane Florence

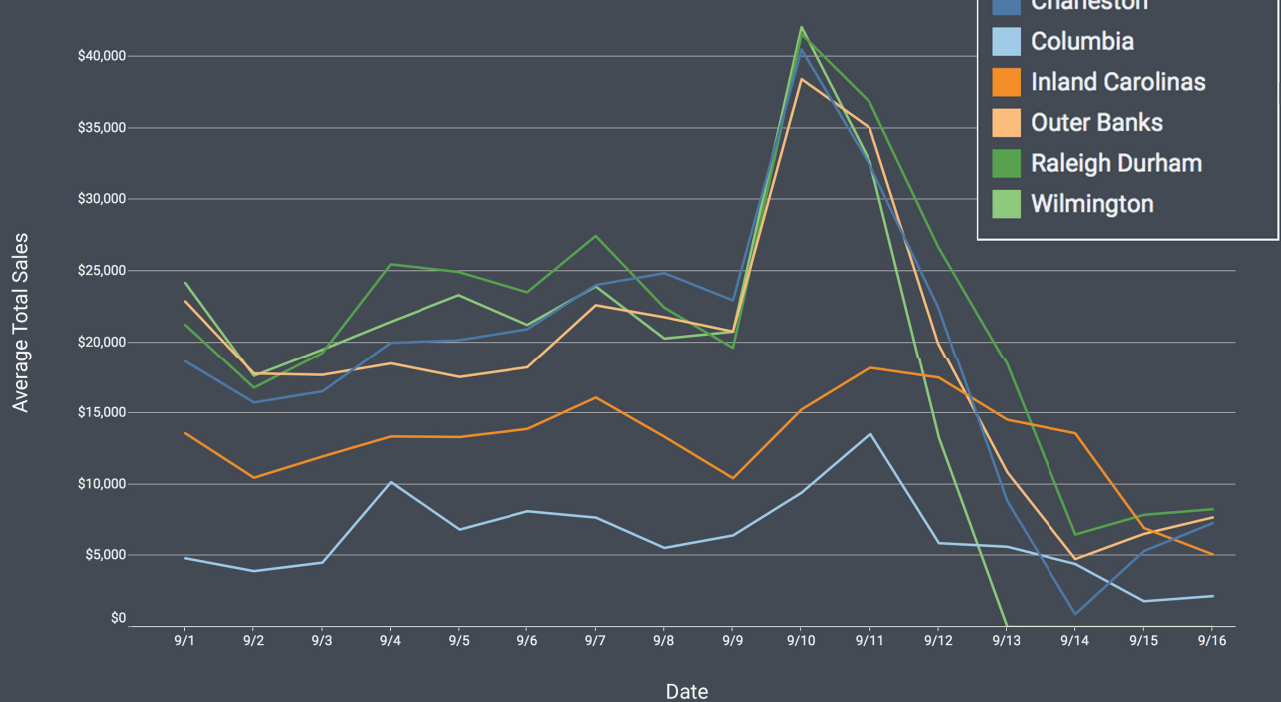


category 4 hurricane with wind speeds reaching 140 mph. The states of North Carolina, South Carolina, and Virginia all issued mandatory evacuation orders for some coastal communities (ABC News).

So, although you can't predict what day the evacuation order will come, you can prepare ahead of time stocking up in anticipation of a huge week and a potential evacuation day where you will need to have huge amounts of extra inventory to meet demand.

## Coastal vs. Inland Stores Sales

During Hurricane Florence



Comparing store sales in coastal and inland cities

## OVERALL SALES INCREASE BY CITY

When looking at increases in sales by city, as you may expect, sales surge much higher in the coastal cities.

Interestingly, as a function of time, the small spike seen by inland cities happens a day after the major spike in the coast cities suggesting that people who have made it out of the

hurricane's path may still be seeking supplies as they travel inland.

Looking at the same data in a different format we see just how big the jumps in sales were. The Outer Banks saw the largest percentage increase in sales at 86%. Their sales averaged over \$19,700 leading up to the storm increasing to almost \$37,000 during the peak prep time. Other coastal towns like Charleston, Columbia, and Wilmington



The light green bars on this chart display average store sales leading up to the storm. The dark green bars show the average store sales during the peak hurricane prep days.

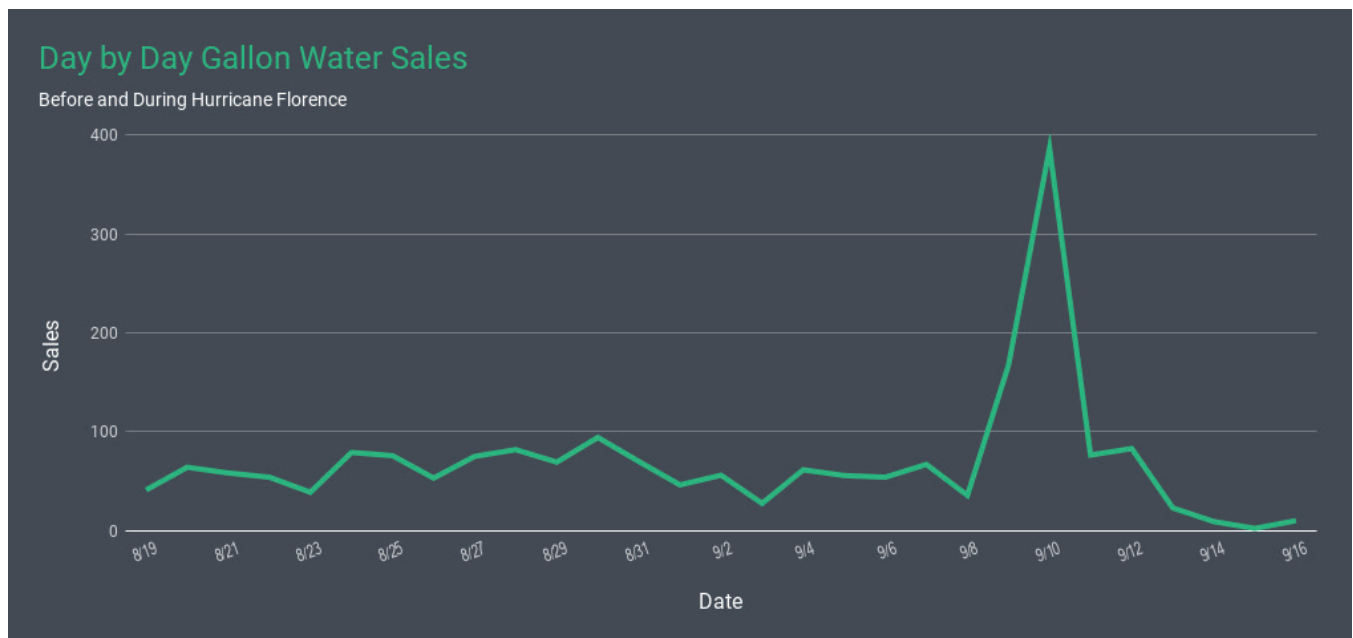
saw increased sales between 75% and 79%. Interestingly, when looking at inland cities, we still see substantial sales increases of about 29%. Raleigh was an outlier for the inland city group with a 76% increase in sales proving even cities more than 100 miles off the coast may still expect a high impact on sales during hurricane days.

## TOP NECESSITY ITEM SALES DURING A HURRICANE

This part of our analysis looks at products known for being the most popular purchases when a hurricane is approaching. These products include fuel, water by the gallon, water by the bottle, water by the case, bread, batteries, and ice.

### Product #1 – Water

When a storm is approaching, TV networks often display videos of empty water shelves at local stores, so it's no surprise that consumers flock to stores for water. Given how important water is for hurricane prep we chose to drill down and look at the different types of containers in which water is sold: Gallon Water Containers, Water Bottles, Cases of Water.



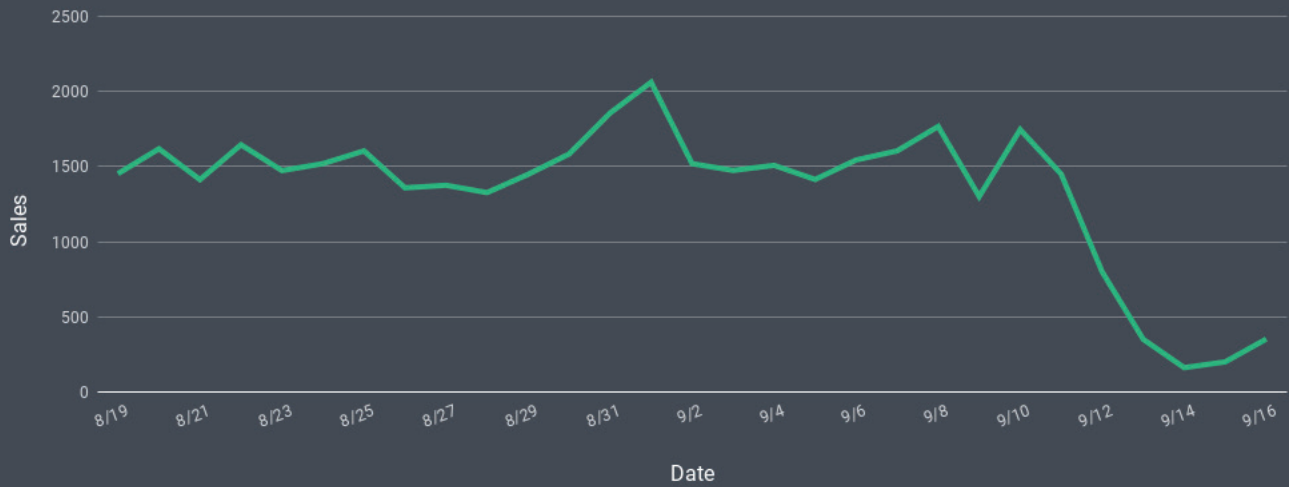
*The daily sales of gallon water containers on September 9th were 534% higher than the daily average.*

In the time leading up to hurricane week daily gallon water sales never exceeded \$100 but on September 9th sales hit almost \$400. As a point of reference, average daily sales prior to the storm were only \$61 compared to September 8th–13th where sales rose to \$129.

As you might expect, sales of gallon water containers saw the highest percentage increase over average daily sales of all the products in our study.

## Day by Day Water Bottle Sales

Before and During Hurricane Florence

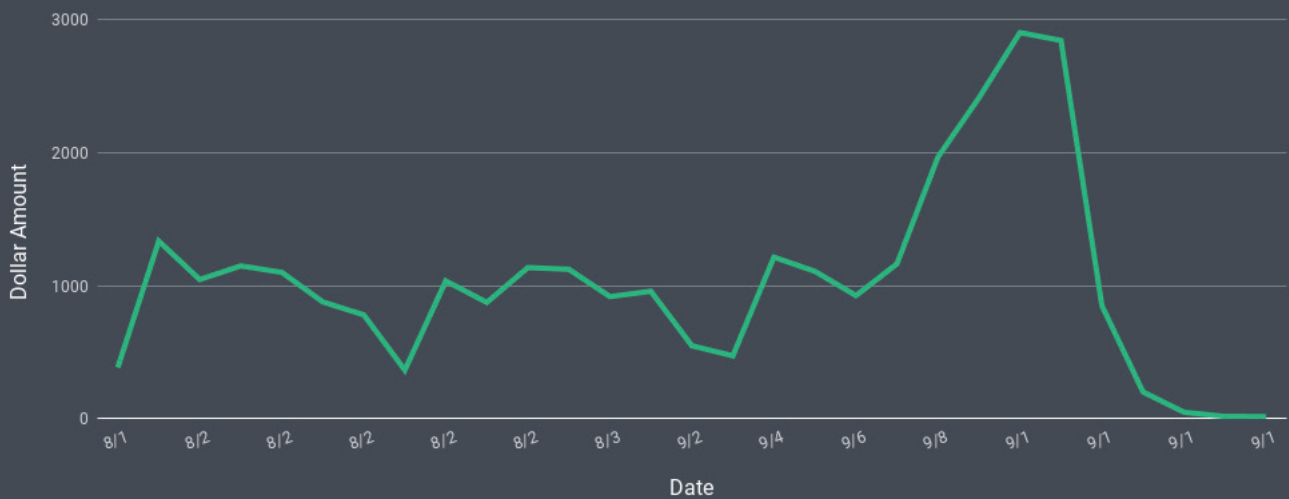


*The daily sales of water by the bottle were higher over Labor Day weekend than during the hurricane period.*

The average daily sales leading up to hurricane week of single bottles of water were \$1540 compared to average daily sales between September 8th-13th where sales were lower by over \$300. During the whole 29-day period including hurricane and non-hurricane days, Labor Day had the highest water by the bottle sales with sales exceeding \$2,060.

## Day by Day Water Case Sales

Before and During Hurricane Florence



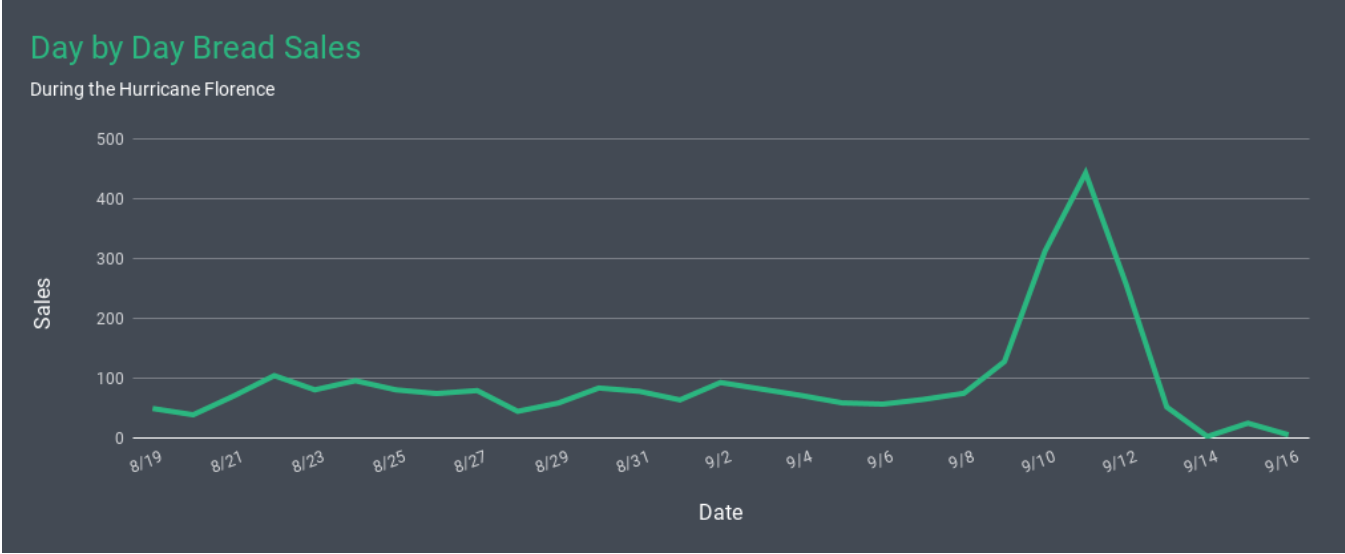
*The daily sales of water by the case on September 10th were 214% higher than the daily average.*

In the time leading up to the hurricane, daily sales of water by the case never exceeded \$1350 compared to September 10th where sales hit \$2900. The biggest take away when looking at average daily sales prior to the storm at \$926 and September 8th -13th numbers where sales were doubled at \$1864 stores is that there is a huge revenue opportunity if you stock up on cases of water.

So to all our current and future C-Stores that are in hurricane paths, starting about a week before landfall, stock up on water by the gallon and water by the case. For cases, we would recommend ordering at least 75% over your typical daily sales before the storm and for gallons, we recommend ordering at least 125% over your typical order volume when preparing for a hurricane week. Given that water won't spoil, it might be worth ordering even more just in case.

**Product #2 – Bread**

In the time leading up to the hurricane daily bread sales never exceeded \$105 compared to September 11th during where sales hit \$443. We also found that the average daily sales prior to the storm were \$71 compared to September 8th -13th where sales were at \$443.



*The daily sales of water by the case on September 10th were 214% higher than the daily average.*

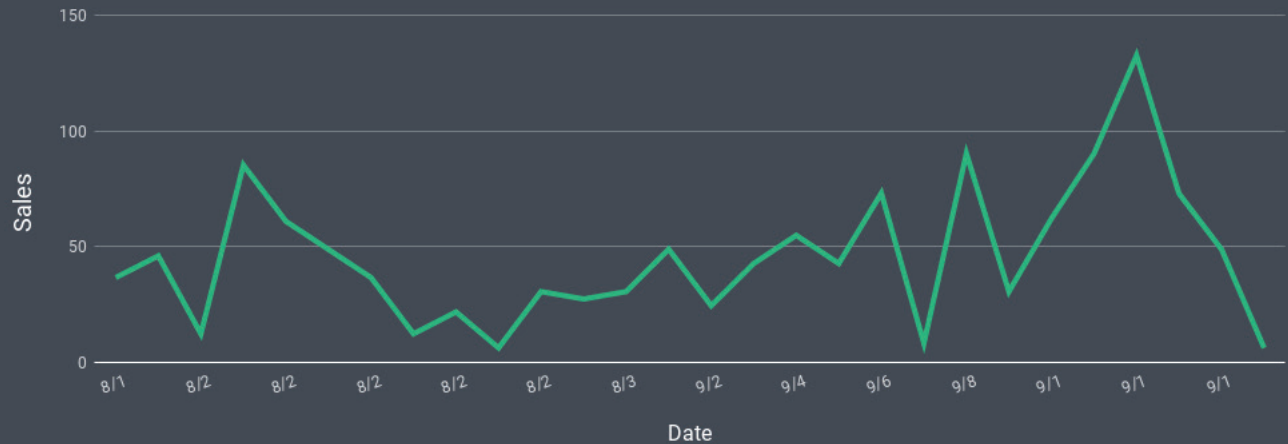
**Product #3 – Batteries**

When the power goes out it is important to have a set of emergency flashlights, which brings us to our next product, batteries. Battery sales did not follow the same pattern as the other products but still had a noticeable increase in sales during hurricane week.

In the time leading up to the hurricane, daily battery sales never exceeded \$85 compared to September 12th during where sales hit \$132. Average daily sales prior to the storm were \$37 compared to September 8th -13th where sales doubled at \$80.

## Day by Day Battery Sales

Before and During Hurricane Florence



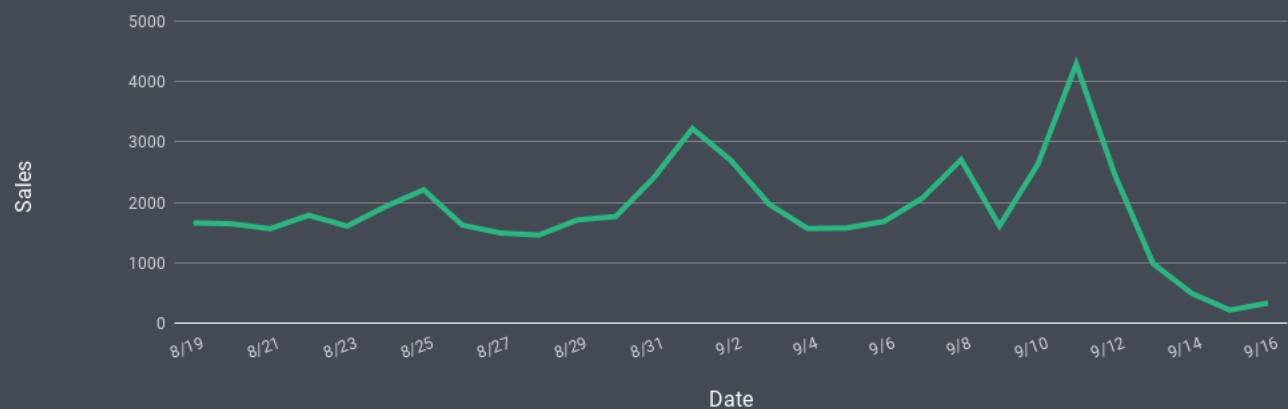
*The daily sales of batteries on September 12th were 257% higher than the daily average.*

## Product #4 – Ice

Ice is another big opportunity from a revenue perspective. In the time leading up to the hurricane daily ice sales never exceeded \$3,225 compared to September 11th when sales hit \$4,284. Average daily sales prior to the storm were \$1,885 compared to September 8th -13th when sales were \$2,450.

## Day by Day Ice Sales

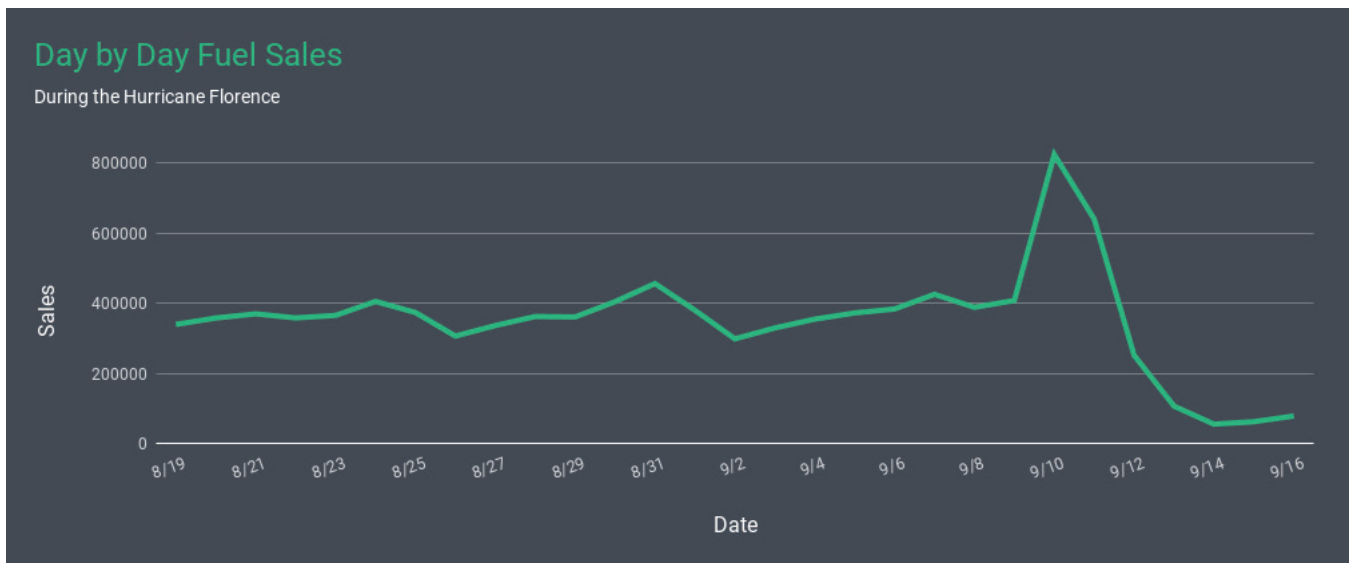
Before and During Hurricane Florence



*The daily sales of Ice on September 11th were 127% higher than the daily average.*

## Product #5 – Fuel

Watching coverage of the hurricane you most likely heard that fuel quantities were running low as people flocked to the pump. Although fuel saw an increase in sales during the hurricane prep days, it



*The daily sales of fuel on September 10th were 102% higher than the daily average.*

was not as pronounced as some of the other goods we looked at. If store owners can encourage customers to fill up early they may have a chance to make money before the storm and they should still see huge spikes on the day of as well.

In the time leading up to hurricane week daily fuel sales did not exceed \$247,000 but on September 10th sales exceeded \$418,000. Average daily sales prior to the storm were \$206,550 compared to September 8th – 13th where average daily sales rose to about \$39,000 more.

## CONCLUSION

At Skupos we believe data can help your business thrive and we hope to help our C-Store partners drive more revenue each year. Armed with the information above we want to help our stores better prepare for the remainder of the 2018 hurricane season and for the upcoming 2019 hurricane season. Whether a store or chain is in a coastal city or a refuge city owners should stock additional inventory on the products consumers are rushing to buy as hurricanes approach so customers don't come into a store with empty shelves.

### About SKUPOS

SKUPOS is helping bring data analytics solutions to all players of the convenience store industry. We record billions of transactions every year for forward-thinking stores, brands, and distribution partners around the country. We have developed data analytic tools for thousands of customers in thirty eight states across the country and continue to ensure insights are seamless from end-to-end in the convenience store industry.

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