A blue and black bar chart

Description automatically generated with medium confidenceIn the past twenty-five years we have had many hurricanes appear in the Gulf of Mexico and the Caribbean Sea, and it is important to identify how these storms affect the biggest cities in the gulf. There are three major factors that we are looking at in relation to each city and those are, the number of storms that hit a city, the average intensity of the storms at each city, and the average duration of the storms that hit a city.

For the number of storms, we counted the number of storms that entered a one latitude/longitude range of a city, or 54.6 miles east or west and 69 miles north or south of the twenty-five main cities in our study. A storm was able to hit multiple cities, and we recorded 881 total times a storm hit any of the cities, with an average of 35. What is interesting is that we have two outliers in our data, with George Town not getting a single storm, and Merida only having 3. This is most likely a cause of insufficient data collection, but it doesn’t ruin our data. Ignoring the outliers we can see the city with the highest count of storms is Tampa, with 58 and the rest of the cities lying between 25 and 50 storms, excluding the outliers. This makes it so in any of these cites you can expect at least 1 hurricane a year, on average.

A graph with blue lines

Description automatically generated

A blue and white bar graph

Description automatically generated With the number of storms that hit a city collected we can use this to calculate the average intensity of storms when they are over a city. With this we still have George Town and Merida as outliers, with George Town at 0kt and Merida at the highest value of 35kt. The rest of the cities don’t have a lot of variances with all the values laying between the small range of 26kt and 30kt, and an overall intensity of 28kt, we can conclude from this data that as the storms hit cities, their intensity falls drastically compared to what it is when they’re over the ocean.

The last important attribute we wanted to track is the average duration of storms that hit cities and with this attribute we only have one outlier at George Town. Besides the outlier, our data is a little more spread out but is still in a good range with a minimum of 117 hours and a maximum of 164 hours, creating a range of 47 hours. We can conclude with this that a certain number of hours is required for a storm to hit land and that seems to be at least above 100 hours.