***Storm and Climate Data Record (SCDR)***

Implementation Plan

Date of record:

Jan 1, 2017 to Dec 1, 2019

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## I. Introduction

### 1.1 Overview and purpose

This report was written to help the Miami Police Department investigate the relationship between storm events and crimes. This report was written to analyze the rising cost of crimes when storms occur. This analysis will be used to help the Miami Police Department draw insights and guide them on future resource allocation and loss preventions.

### 1.2 Define why you need data analysis

Data analysis is a tool that allows trends and patterns to be uncovered. This data analysis is needed because it helps identify whether storms increase criminal activity and results in financial lost. This analysis is need because it will inform the Miami Police Department about possible future risks and financial cost during storm seasons.

## II. Data Preparations

### 2.1 Name data sources

The data sources that are used in this report were given by the Miami Police Department and includes crime data from January 1st of 2017 to December 1st of 2019. It includes the crimestormQ.csv which includes records of crimes during storm months, the crimenostormQ.csv which includes records of crimes outside storm months, and the TimesYearlyNewR.txt which includes the supporting timeline.

### 2.2 Filter through unnecessary data

Data fields that are unrelated to financial loss or storm conditions were excluded. Types of crimes was excluded because it is not necessary to know that type of crime committed.

### 2.3 Define your parameters

The parameters defined are crimes with storms, crimes without storms, and the monetary loss.

### 2.4 Identify measurement priorities

The priorities for this report are storms with crimes, storms without crimes, and the monetary loss. The locations of crimes with storms and crimes without storms are also needed.

### 2.5 Ensure collected data fits the need

This data fits the needs of the Miami Police Department because it address how crime-related monetary losses differ between crimes committed during storms and crimes committed not during storms.

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## III. Data Analysis

### 3.1 Identify scripts used

The following scripts were used to analyze the data and create a line graph of the monetary loss during a storm and not a storm.

install.packages("tframe");

# Download the desired version from the CRAN archive (replace with the correct URL)

download.file("https://cran.r-project.org/src/contrib/Archive/tfplot/tfplot\_2021.6-1.tar.gz", destfile = "tfplot\_2021.6-1.tar.gz")

library('tframe');

library("tfplot");

crimestormdataQ<-read.csv("crimestormQ.csv")

print(crimestormdataQ)

crimenostormdataQ<-read.csv("crimenostormQ.csv")

print(crimenostormdataQ)

tfplot(z, x,

      ylab = "Victim Loss in K$",

      xlab = "By Month by Year",

      title = "Victim Loss From Crimes for Jan 2017 - Dec 2019",

      subtitle = "Cumulative Loss in Thousands of Dollars",

      legend = c("Crimes During Storms", "Crimes When No Storms"),

      source = "Source: DAT Data")

### 3.2 Run the scripts to analyze the data and validate the output

The output from the scripts is validated by the line graph showing that the monetary loss is greater when crimes are committed during a storm than when it is not. The scripts validate that the monetary loss is also rising each year and is rising drastically during a storm. The monetary loss also rises each year during when there is no storm but does not rise as drastically as when there is a storm.

## IV. Drawing Conclusions

### 4.1 Present the results of the analysis to stakeholders

A graph with numbers and lines

AI-generated content may be incorrect.

This graph shows the monetary losses of victims that occurred during the time frame of January 2017 to December 2019. The black line shows the monetary losses of victims when crimes are committed during storms, while the red line shows the monetary losses of victims when crimes are committed not during storms. This graph shows that crimes during storms have a steeper rise in monetary loss compared to crimes committed not during storms. This graph suggests that storm conditions affect the frequency of crime and the severity of monetary loss.

### 4.2 Determine whether the problem was addressed, including any challenges and limitations

This analysis did address the problem present by the Miami Police Department. It confirms their concern that storms are associated with higher crime-related losses. There are some challenges and limitations that need to be addressed. One is that loss values may have underreported real costs. Another limitation is that this data only covers the time period of January 2017 to December 2019 which can limit long-term predictions. Another limitation is that the storm severity levels were not differentiated, which excludes valuable insists into severity of storms affecting monetary losses.

### 4.3 Report potential new findings

This analysis found a trend that monetary losses peak in the months that fall within hurricane season. These spikes in monetary losses during the hurricane season suggest that there needs to be higher preparedness. Future hurricane seasons may bring increase crime costs. The Miami Police Department can uses this analysis to predict potential financial impacts and allocate resources like increases patrol presence during the hurricane season and during storms.