



LAW AND ORDER: DENVER EDITION

DATE: 5TH DEC
2022

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DENVER MIFFLIN CONSULTANTS

An Analysis of Denver Crime Statistics

The aim of our work is to:

Provide concrete evidence that our solutions are relevant to the existing crime trends in Denver.

Understand Denver's neighbourhoods and the types of crime occurring frequently.

Support the Department of Police in Denver with their mission to reduce response time.



What this Analysis is:

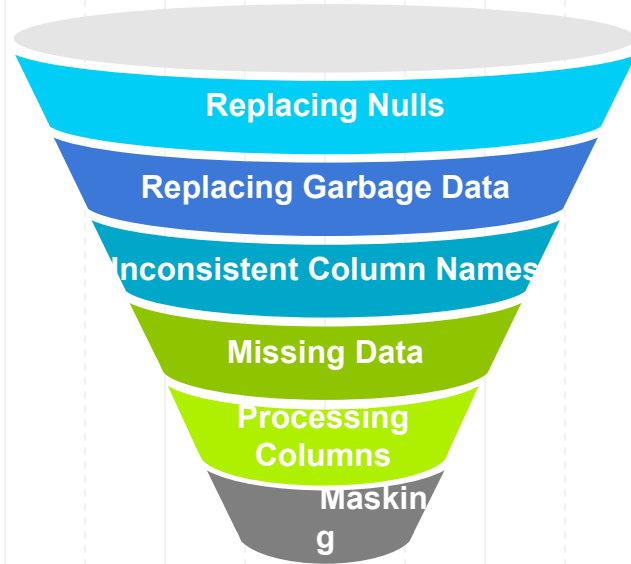
A comprehensive interpretation on the dataset provided by the Department of Police in Denver and associated viable recommendations with the computed patterns and trends observed.

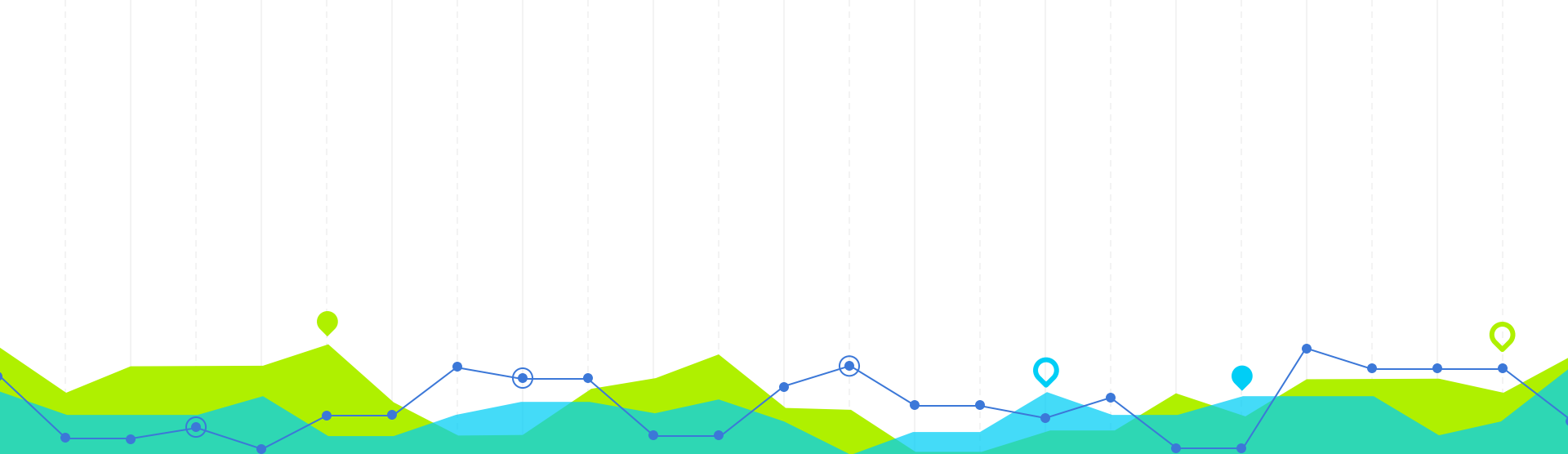
What this Analysis is not:

This analysis is not a complete dictation of the sequential steps to be taken to mitigate the observed insights. That discretion lies solely with the Government of Denver and the Police Department. Allocation of financial resources are not taken into consideration.



Data Cleansing and Processing





ANALYSIS

Crime Of The Day

1

Identifying Patterns In Crimes

Process

Analysis

Observations



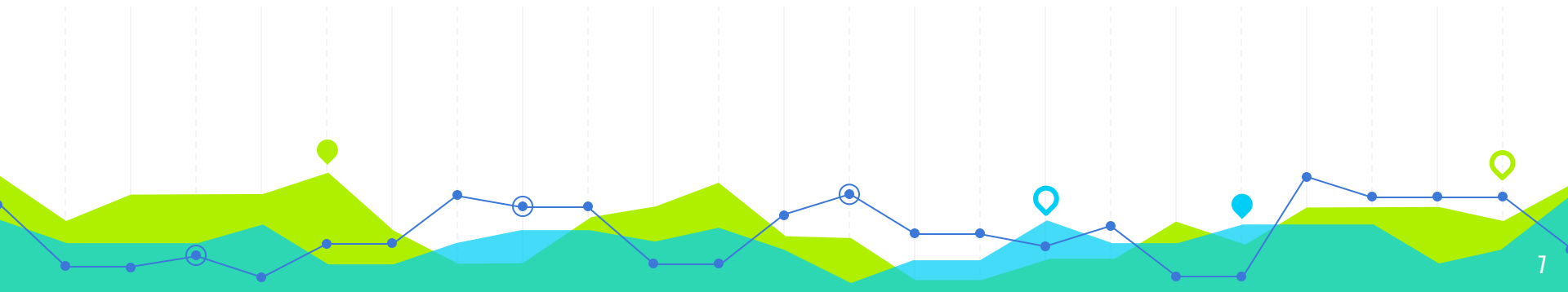
Identifying Patterns In Crimes

Weekend Crimes

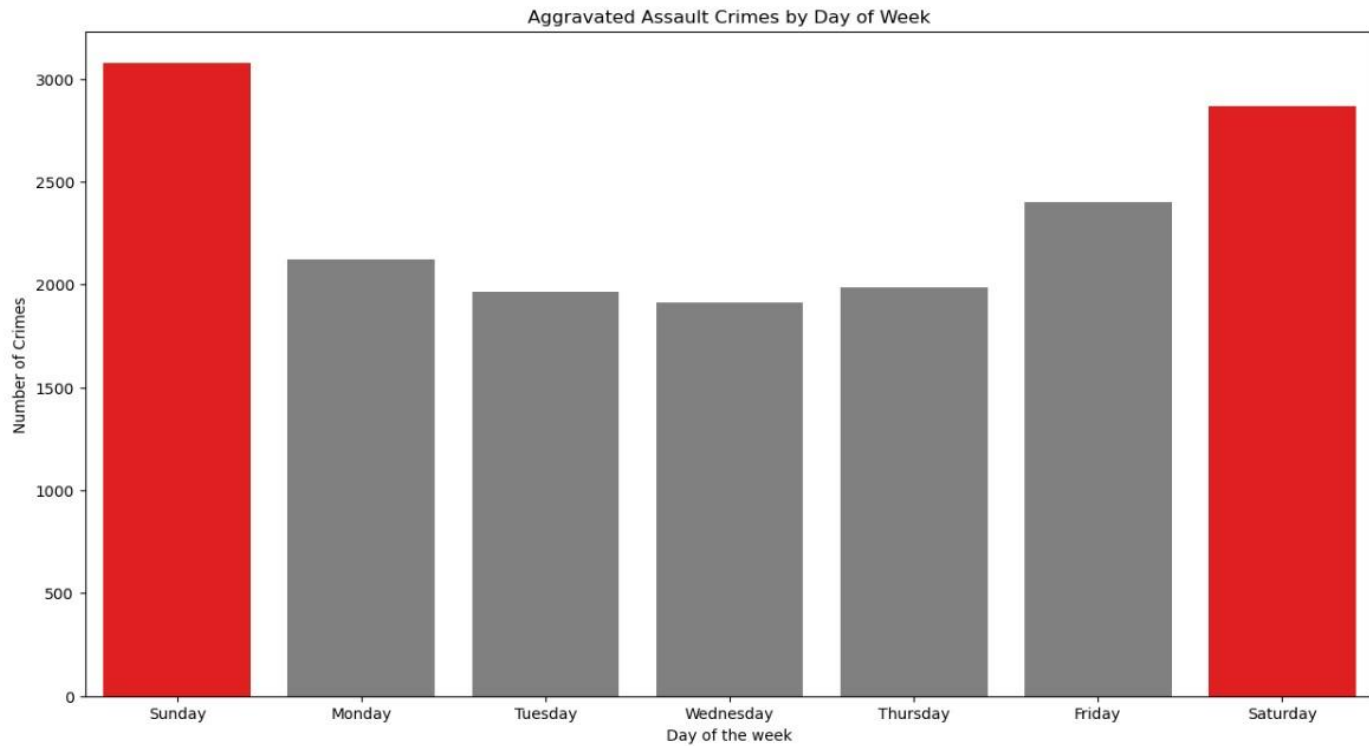
OFFENSE_CATEGORY_ID	Aggravated Assault	Murder	Public Disorder	Robbery	Sexual Assault
FIRST_OCCURRENCE_DAY_NAME					
Friday	2401	66	8465	1108	725
Monday	2121	52	7758	1034	603
Saturday	2866	81	8322	1056	785
Sunday	3076	62	8154	1076	751
Thursday	1985	58	7791	985	594
Tuesday	1964	35	7771	952	522
Wednesday	1913	53	8009	971	579

Weekday Crimes

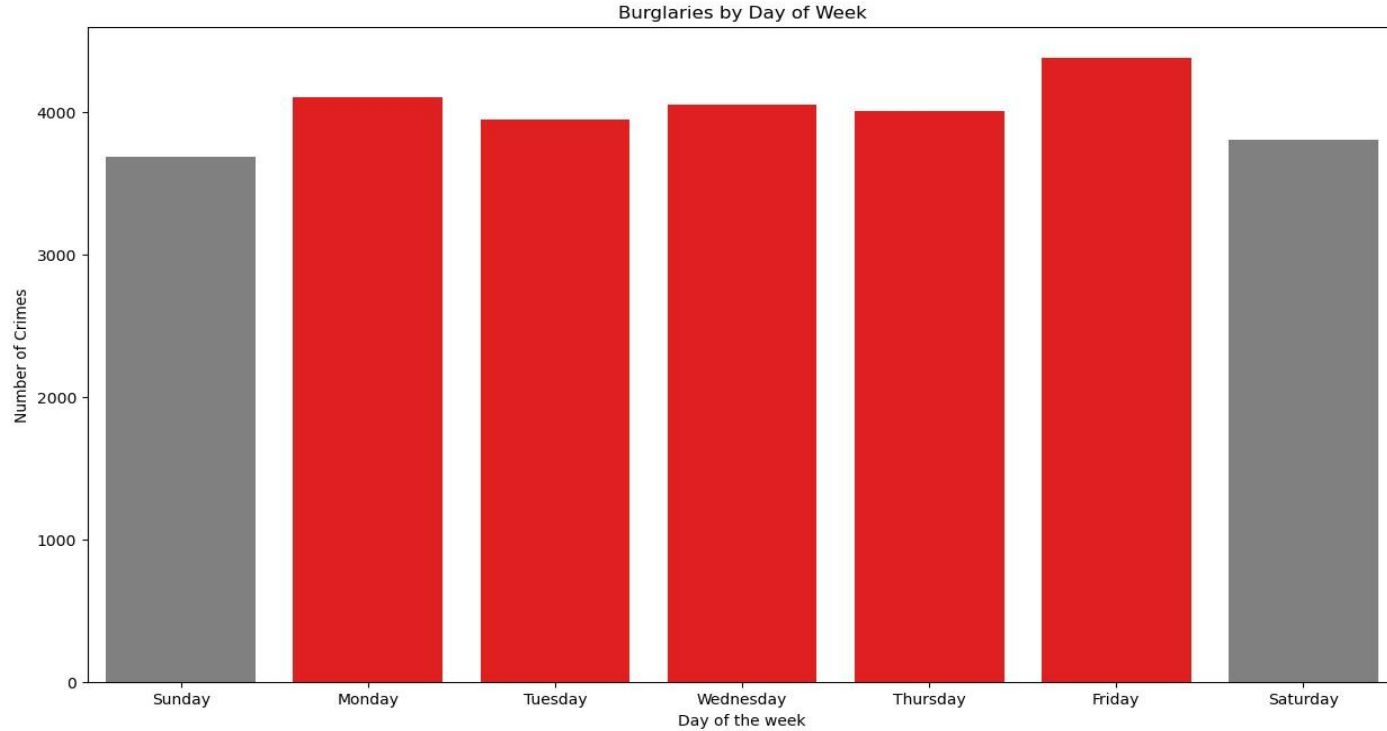
OFFENSE_CATEGORY_ID	Burglary	White Collar Crime	Larceny	Theft From Motor Vehicle
FIRST_OCCURRENCE_DAY_NAME				
Friday	4378	1162	8749	9071
Monday	4102	1156	8018	9066
Saturday	3805	735	8090	8069
Sunday	3686	529	7070	8028
Thursday	4002	1159	8225	8540
Tuesday	3942	1140	8040	8755
Wednesday	4051	1131	8245	8867

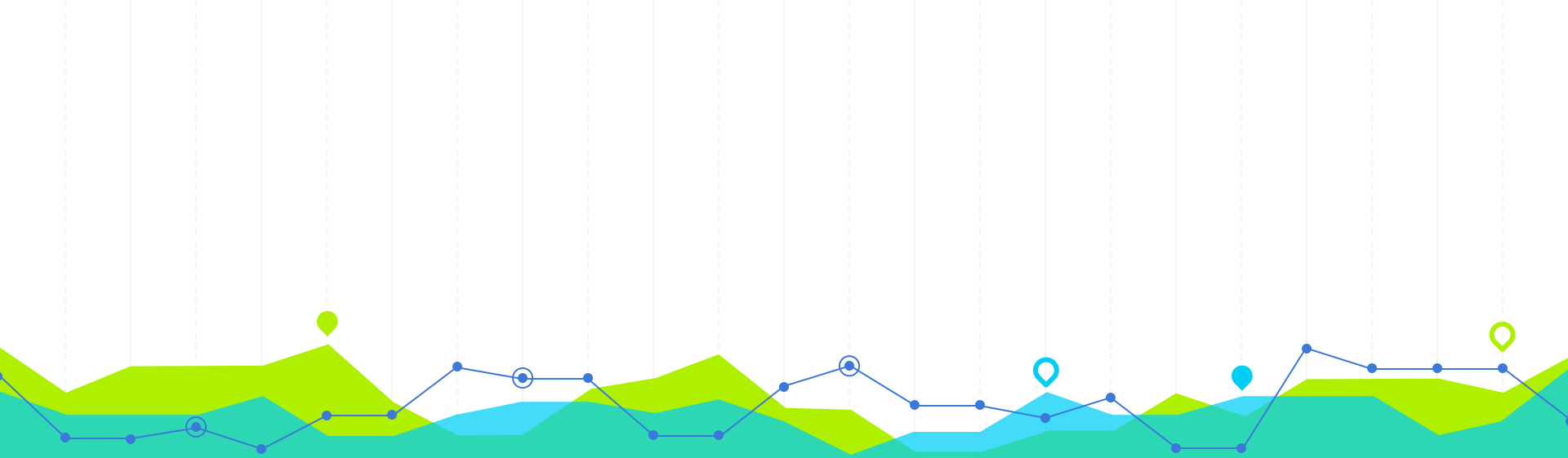


Understanding Weekend Crimes With Aggravated Assault



Understanding Weekday Crimes With Burglary





ANALYSIS 2

Calling 911

Occurrences vs Reporting

Process

Analysis

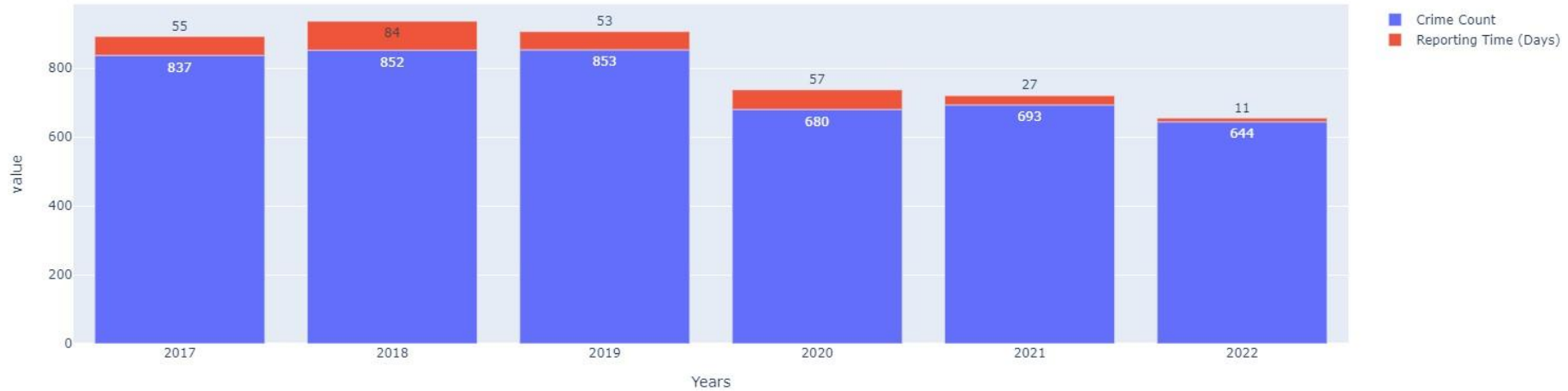
Observations

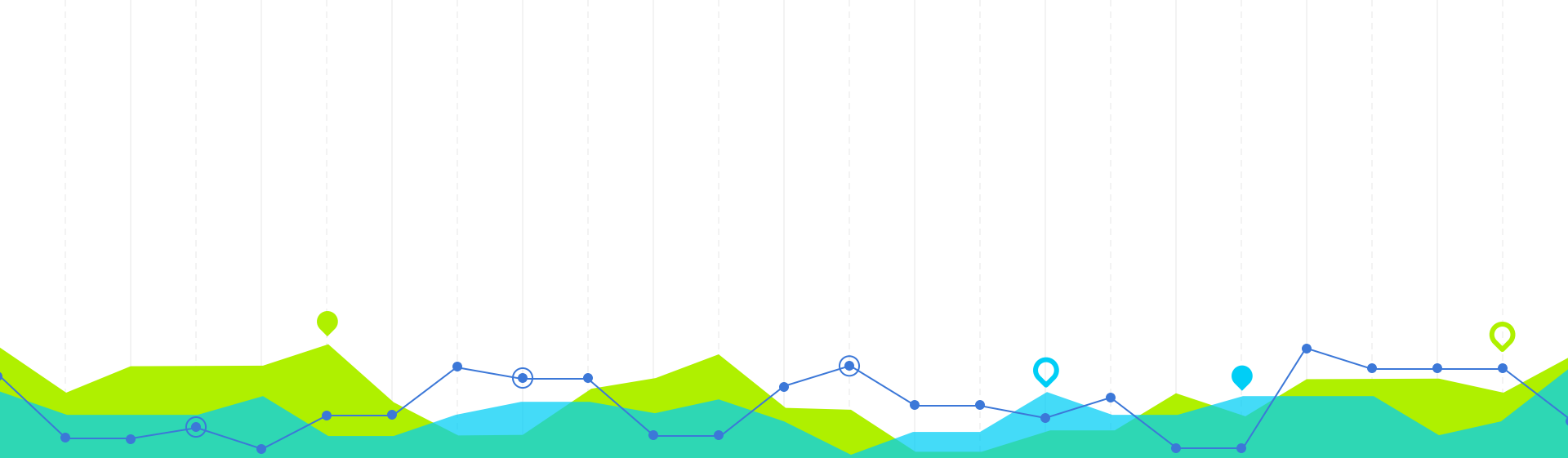


Sexual Assault

Trend in Denver's Reporting Time Over Last 6 Years

Number of Sexual Assault Cases vs Average Reporting Time





ANALYSIS

Where am I?

3

Classifying Neighborhoods By Crime Levels

1. Using bins 'HIGH', 'LOW' & 'MEDIUM' based on occurring crime percentage of in each neighborhood, we are attempting to classify via AdaBoost Classifier the latitude and longitudes to predict the crime levels.

2. Our Model Accuracy on test data is at 74.24%

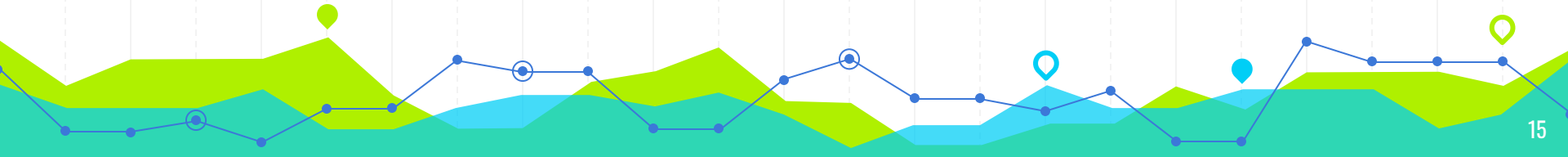
	Expected	Predicted
104831	Medium Crime	Low Crime
15540	Low Crime	Low Crime
3751	Medium Crime	Low Crime
59651	Low Crime	Low Crime
30246	Low Crime	Low Crime
8632	Low Crime	Low Crime
61008	Medium Crime	High Crime
9418	Medium Crime	Medium Crime
24702	Medium Crime	Medium Crime
55514	Low Crime	Low Crime

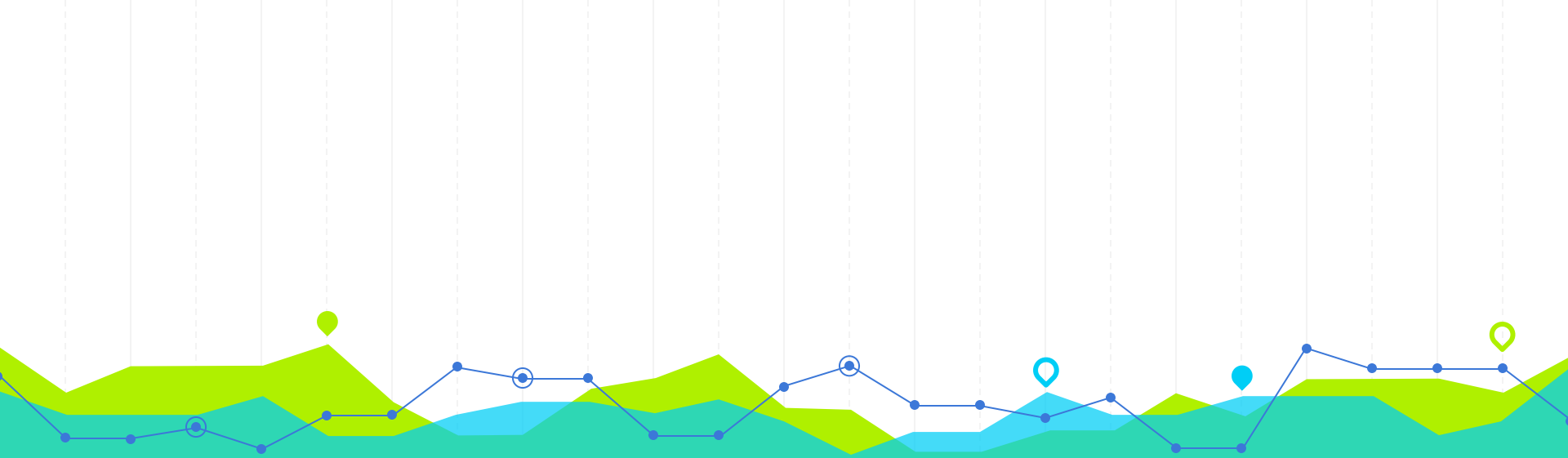
Analysis and Approach

Process

Classification

Prediction





Conclusions

The Conclusion Of Our Story

Looking for patterns:

Most crimes can be categorized;

Weekend(Violent)

Weekday(Non-Violent)

Recommendation:

Prioritize police resources(officers, camera, patrols etc.) to reflect these observations.

How long?

Sexual assault is by far the crime that takes the longest to report.

Sexual assault reports also dropped significantly during the pandemic.

Recommendations:

The City of Denver can use an community outreach program to encourage timely reporting.

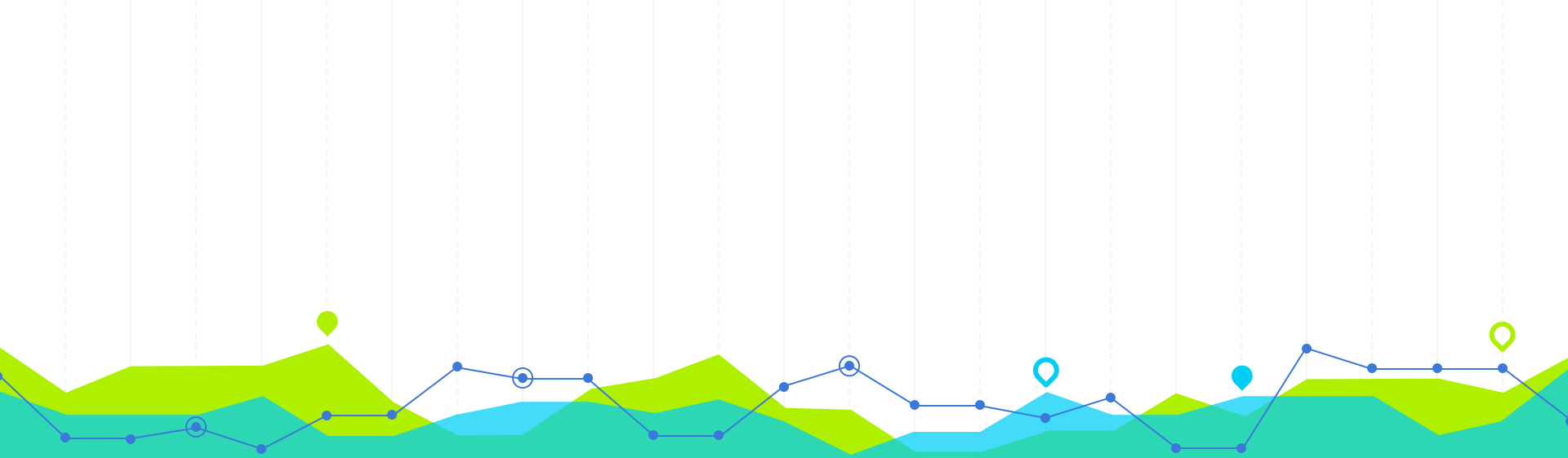
Categorizing neighborhoods

We employed machine learning to find expected levels of crime for each coordinate of Denver. Giving each an expected level of Low, Medium, or High crime

Recommendations:

We can use this information to help protect the public and police. An application could be created to allow citizens to check the area they are in currently and make informed decisions.





Resources/References

Sources

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<https://www.9news.com/article/news/crime/reasons-behind-colorado-car-thefts/73-603b4e70-6329-4600-8238-769c0e73d5c8>

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**WE WILL TAKE QUESTIONS NOW.
THANK YOU.**

