

Roadmap to Safety: Analyzing Traffic Incidents for a Safer Brooklyn



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EXECUTIVE SUMMARY

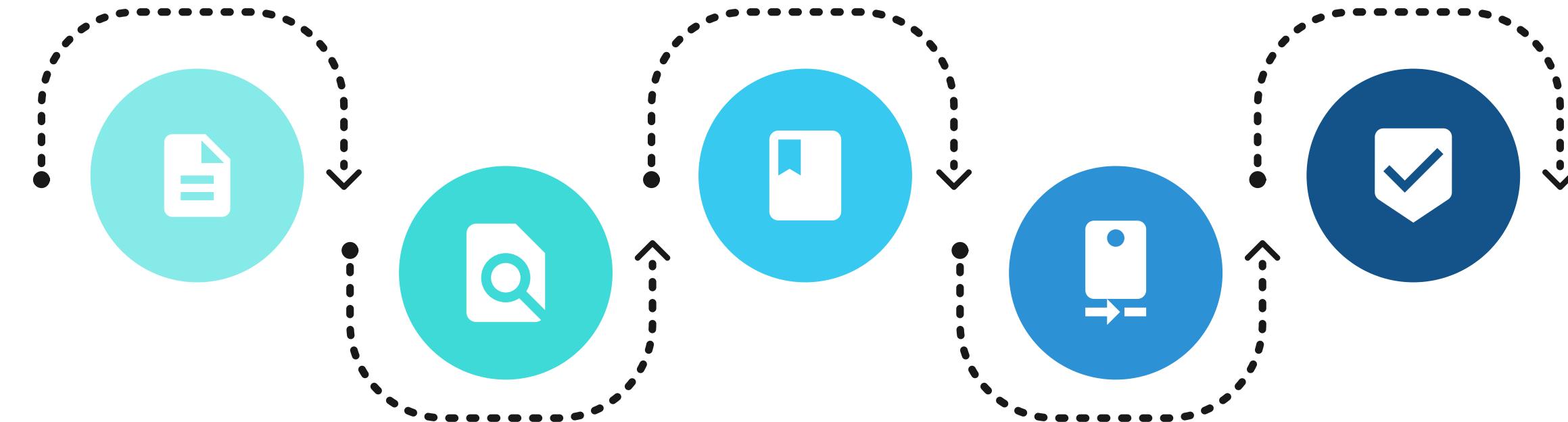
- Brooklyn, a dynamic and lively borough, faces a pressing issue with the increasing frequency and impact of traffic accidents.
- Safeguarding our streets is of utmost concern, requiring a thorough understanding of the problem to guide strategic actions and improve overall road safety.

GOALS

- Understand Traffic Accident Patterns
- Generate Insights
- Recommend Safety Measures
- Raise Awareness
- Support Decision-Making

APPROACH

Data Driven Strategy



1 - Understanding Problem

- Define and clearly articulate the problem
- Brainstorm
- Set up a clear goal
- Get Historical and Contextual background
- Stakeholder considerations

2 - Data Acquisition and Preparation

- Conducted an in-depth exploration of the dataset, examining all attributes
- Data cleaning and preprocessing
- Cross referencing with external data and public data integration

3 - Insight Derivation

- Data Acquisition using BigQuery
- Descriptive Statistics using google colab
- Grouping and aggregation correlation analysis
- Data Visualization with Tableau

4 - Recommendations Based on Trend Analysis

- Risk Mitigation Strategies for root causes
- Formulate long-term plans based on sustained trends
- Suggest resources where they are most needed

5 - Actions and Post Implementation

- Summarized Report Generation having visual representation for actionable insights
- Outcome measurement and impact assessment
- Engaging with stakeholders
- Feedback collection

DATA ANALYSIS

Weather Impact

- Highest number of collisions in rain conditions
- Highest number of deaths in 'rain' conditions: **110**
- Highest number of injuries in 'rain' conditions: **31,425**

Vehicle Analysis

- Maximum number of accidents were caused by Sedan
 - Total Persons Killed: **63**
 - Total Persons Injured: **27016**
- Maximum number of fatalities were caused by Station Wagon/Sport Utility Vehicle : **78**
- Combination of sedan & wagon sport had maximum number of accidents

Yearly Analysis

- Yearly accidents decreased from **2018 to 2022**
- Total collisions decreased by 50% after 2020.
- Year 2020 had maximum deaths
- Year 2018 had maximum injuries

Day and Time Analysis

- Number of deaths at night : **116**
- Number of injuries at night: **24287**
- Number of deaths at night : **114**
- Number of injuries at night: **32466**
- Maximum motorists were killed at night
- 17% Accidents happen on Friday

Insights 2018-2022

Overall Collision Overview

- Total Collisions: **160,512**
- Total Persons Killed: **230**
- Total Persons Injured: **56,753**

Fatalities by Category

- Pedestrians Killed: **114**
- Cyclists Killed: **29**
- Motorists Killed: **77**

Geographical Analysis

- Atlantic avenue, East street , Avenue and Ocean Parkway had maximum number of accidents
- Max Accidents Zip Code: **11207**
- Max Deaths Zip Code: **11234**
- Max Injuries Zip Code: **11207**

Contributing Factors Analysis:

- Driver Inattention/Distraction
- Failure to Yield Right-of-Way
- Following Too Closely
- Traffic Control Disregarded

RECOMMENDATIONS

Major actions to be taken for mitigating collisions					
Rain-Safe Infrastructure Projects	Integrated Traffic Management Systems	Smart Infrastructure Investments	Nighttime Traffic Law Enforcement	Road Infrastructure Adaptation accommodating huge cars such SUV	Limiting traffic, adding more stop signs and speed limits
Weather-Responsive Traffic Control	Public Transportation Promotion	Cross-Agency Collaboration	Promote Safety Features in Sedans and SUVs	Fleet Safety Programs with organizations operating vehicle	Encourage car-pooling
Public Awareness Campaigns - Rain Safety and Early Alarm System	Pedestrian and Cyclist Safety Measures	Enhanced Driver Education and Enforcement	Regular Monitoring and Feedback	Surveillance and Enforcement in High-Risk Zones	Increase the number of public transport at night

THANK YOU



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