



DATA DRIFT

Road Accident KPI Dashboard Of Karnataka

Submitted by Team RY
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Data Preparation

•Data Cleaning:

- Handled missing values with meaningful imputations.
- Corrected spelling inconsistencies.
- Converted date fields and created derived features: *Month, Day of Week,*
- **Data Dimensions:** ~13 KPIs visualized through interactive dashboards.

KPIs for Visualization: Total Accidents by District:

Count the number of accidents by district and identify the top 5 districts.

•**Accident Severity Distribution:** Visualize the proportions of fatal, serious, and slight accidents.

•**Accident Patterns by Time and Day:** Create time-based visualizations showing accident frequency at different times of day and days of the week.

•**Road Type and Surface Type Contributions:** Assess how different road types and surface conditions affect accident frequency and severity.

Data Processing:

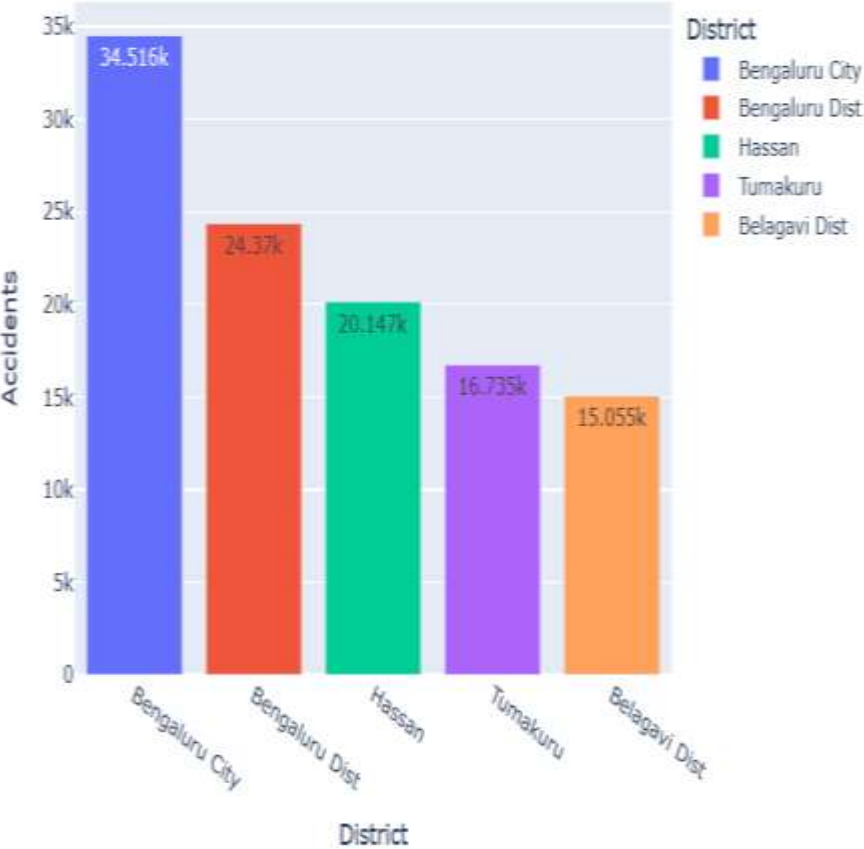
•**Group Data:** Use `groupby()` to aggregate data by categories such as district, road type, or weather condition.

•**Extract New Features:** Derive columns for "Month" and "Day of Week" from the existing date column.

•**Feature Engineering:** Create any new features that may offer further insight, such as accident frequency by day/time.

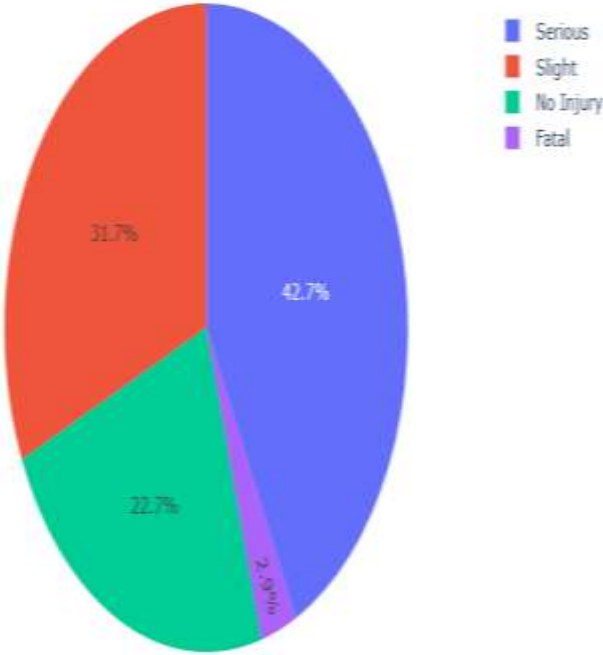
Total Number of Accidents by District (Top 5)

Top 5 Districts by Number of Accidents



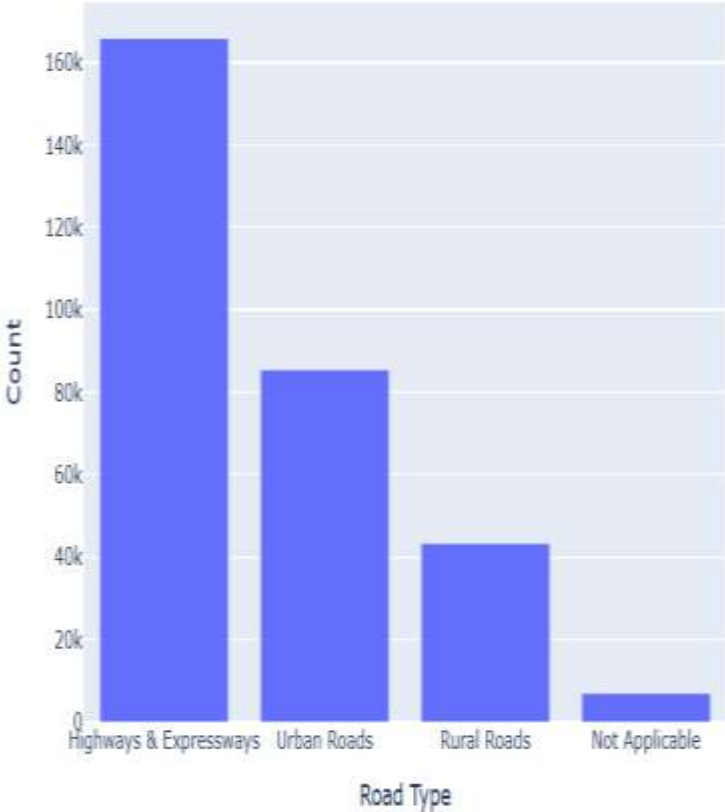
Accident Severity Distribution

Accident Severity Distribution



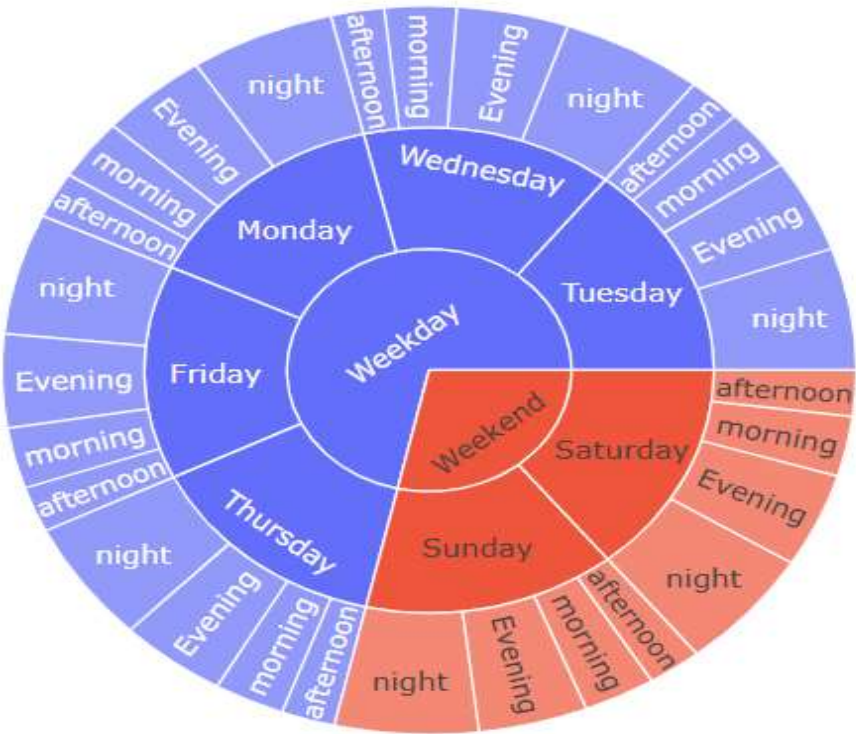
Road Type Contribution to Accidents

Accidents by Road Type



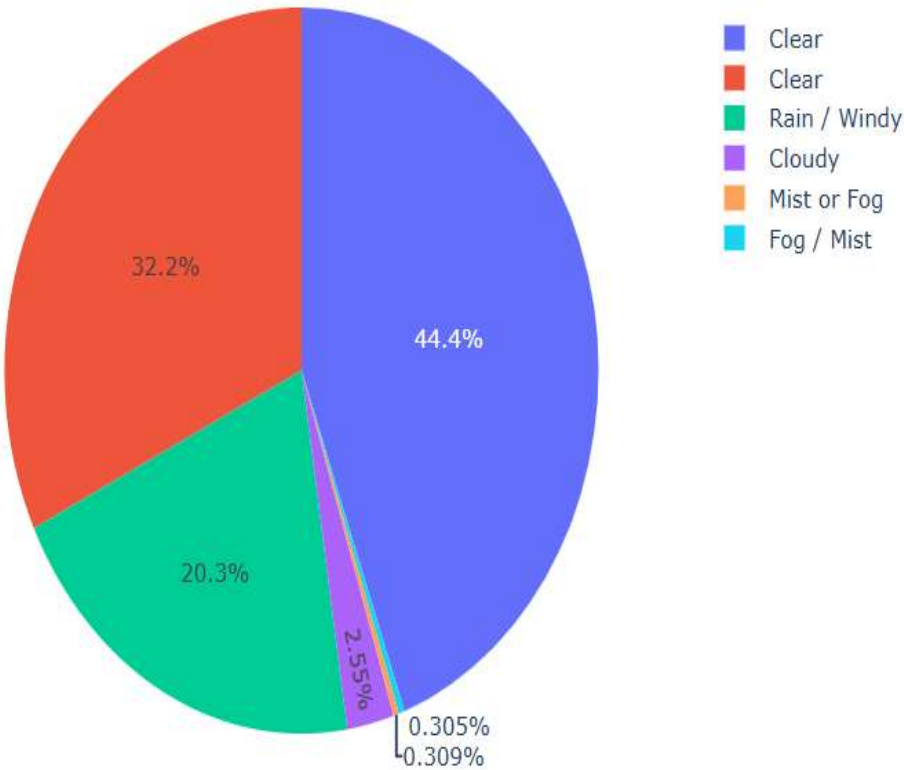
Accident Patterns by Time of Day and Day of Week

Accident Patterns by Time of Day and Day of Week

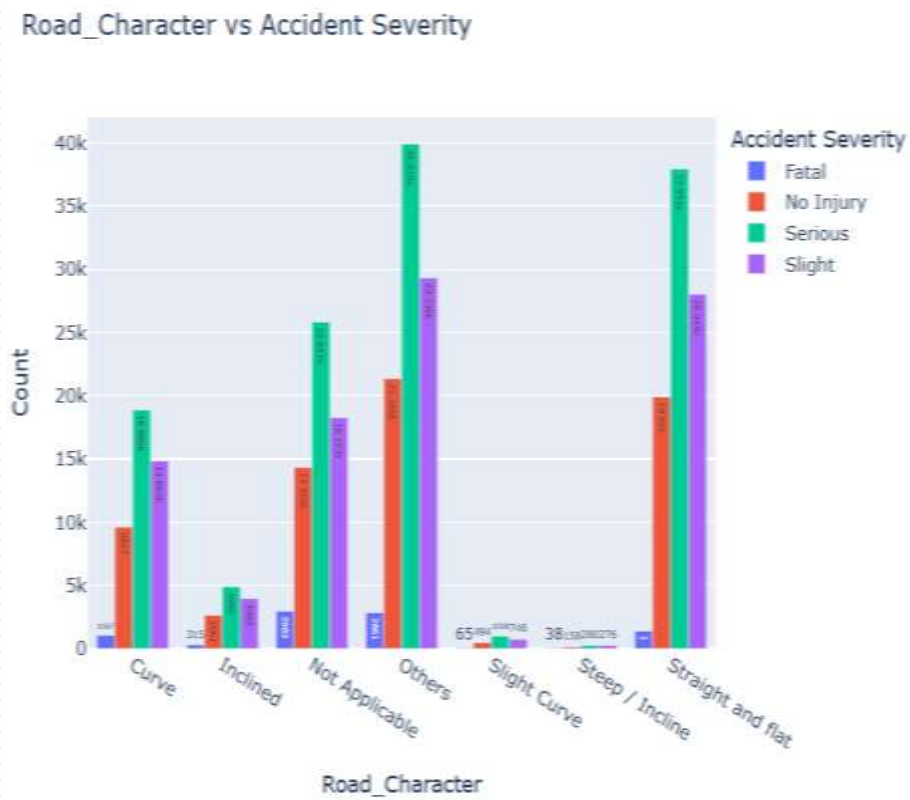


Casualty Distribution by Weather Conditions

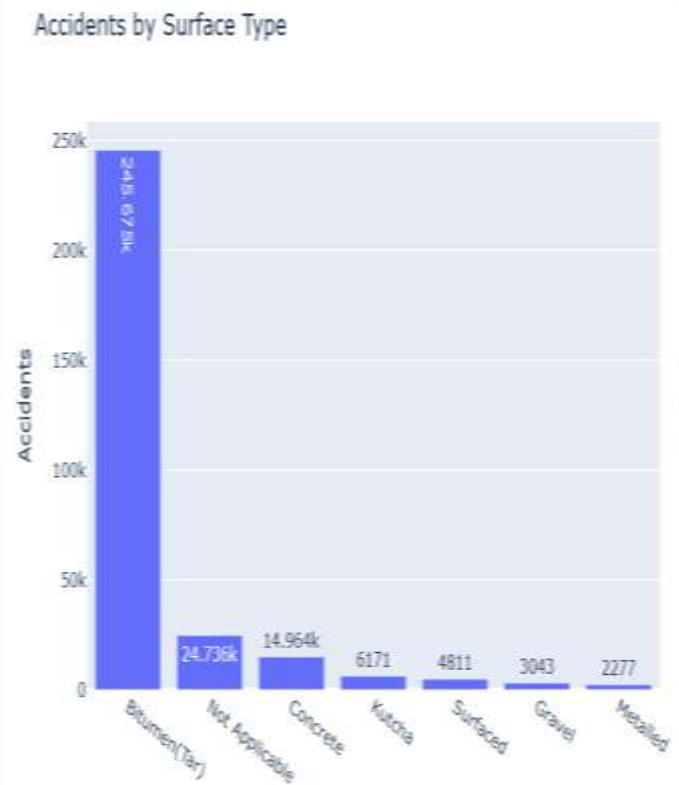
Casualties by Weather Conditions



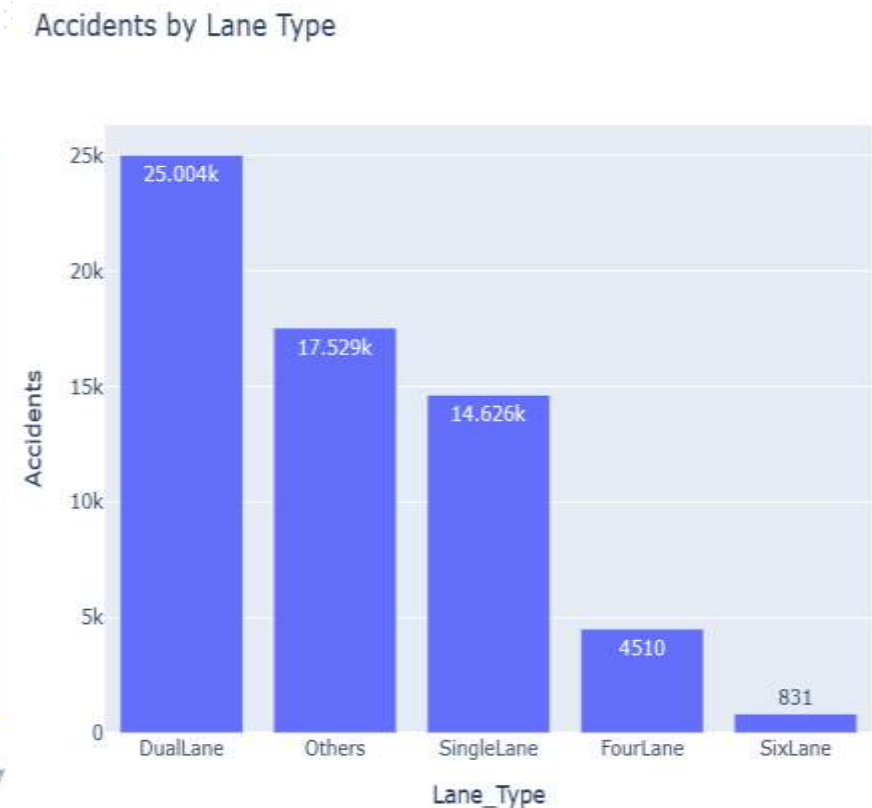
Accidents by Road Character and Severity



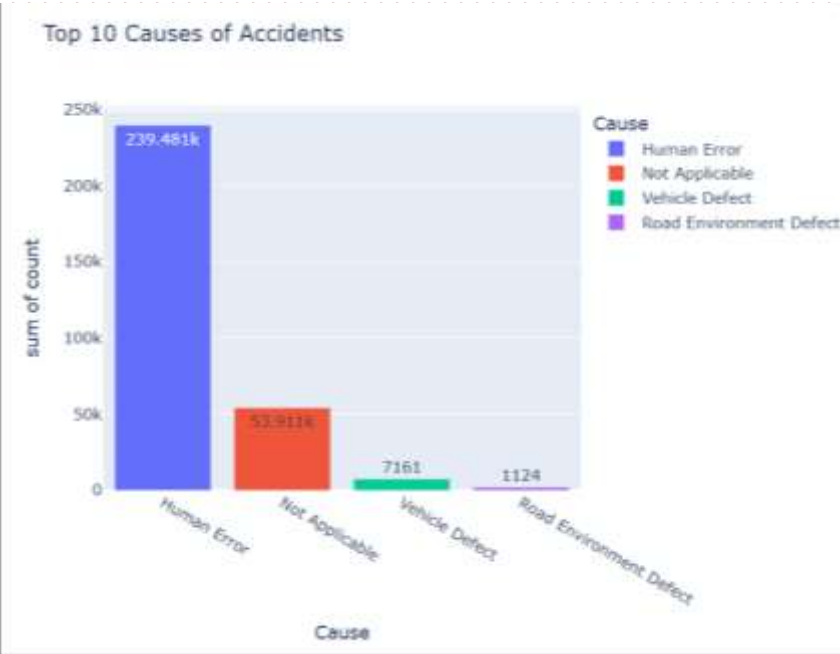
Accidents by Surface Type



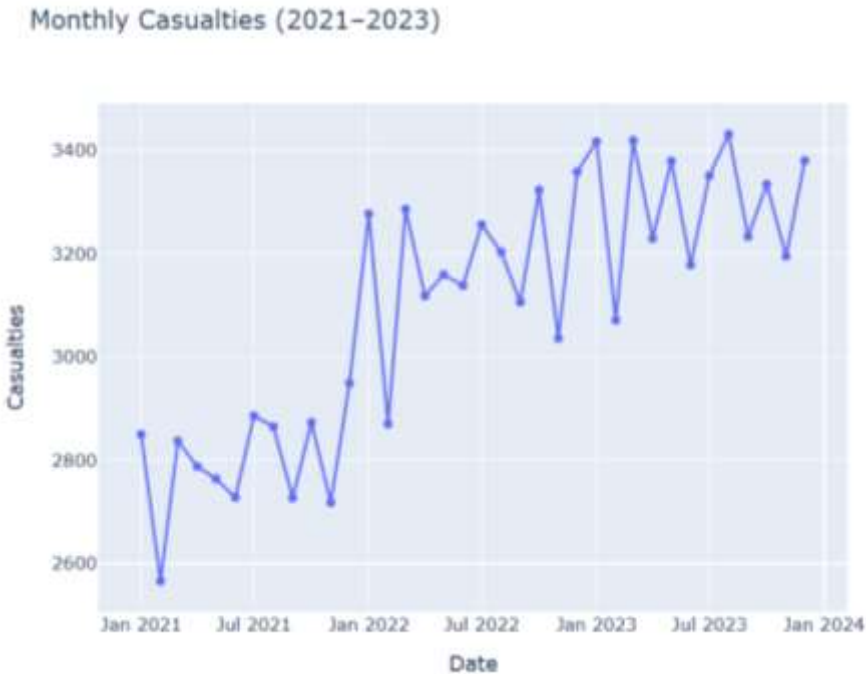
Accidents by Lane Type



Top Causes of Accidents



Monthly Casualty Trend Analysis (2021–2023)

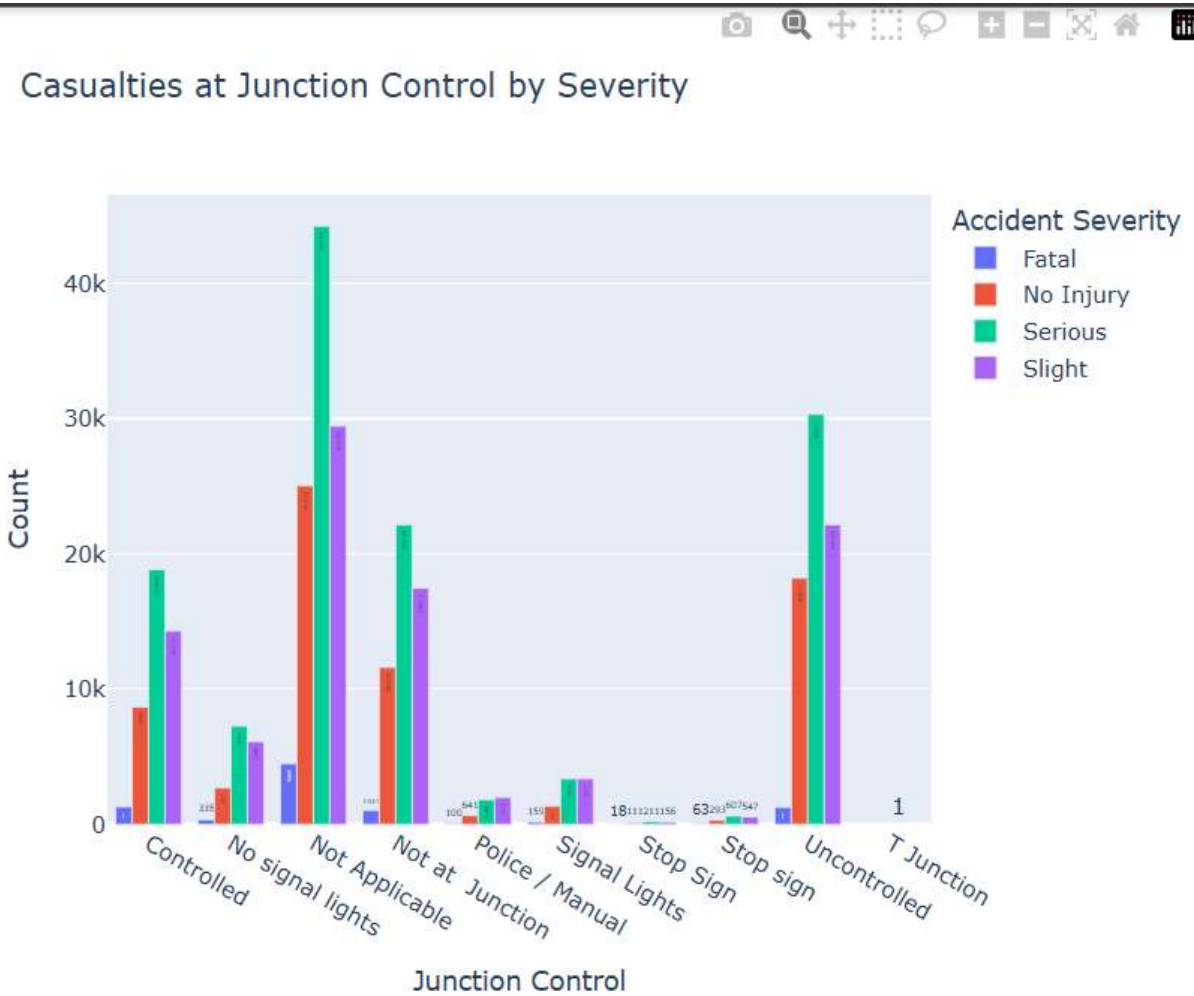


Casualty Analysis across Surface Condition by Surface Type and Weather Condition

Casualties by Surface Condition, Type and Weather

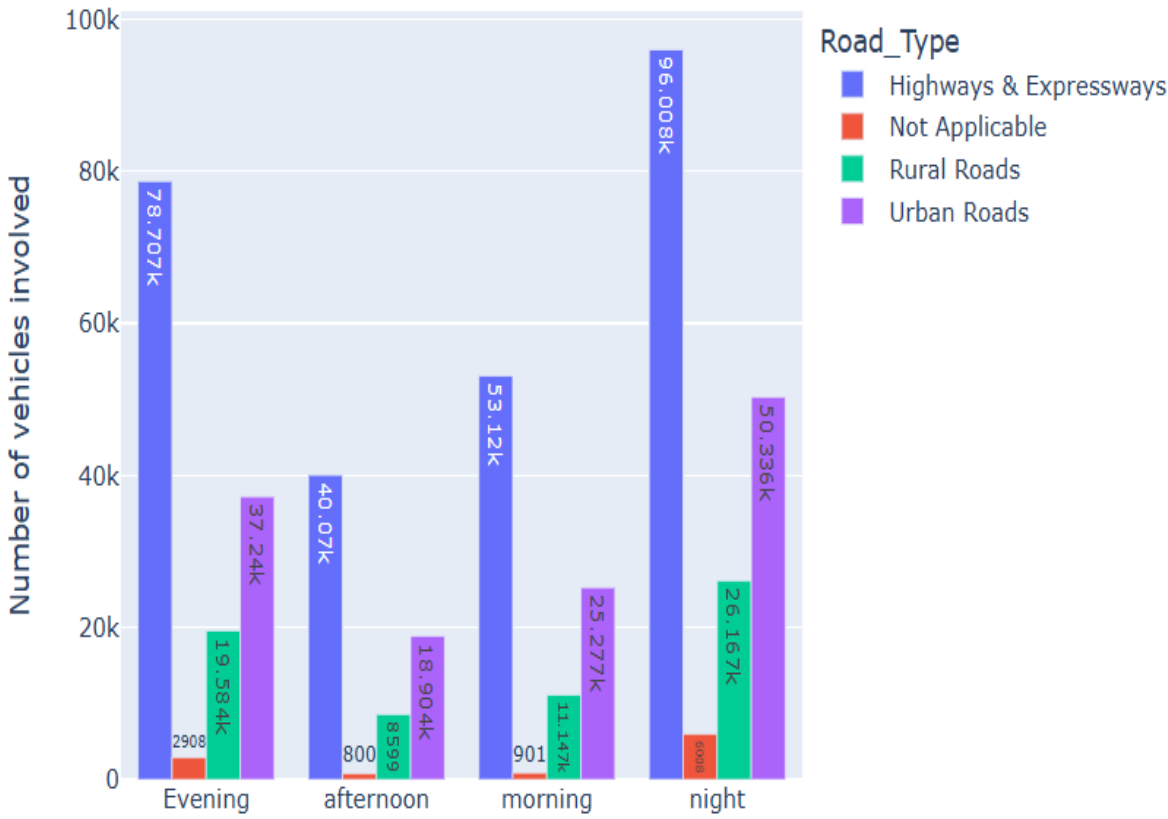


Casualty Analysis at Junction Controls by Accident severity



Vehicle Involvement by Time of Day and Road Type

Vehicle Involvement by Time of Day and Road Type



Policy Recommendations Summary

<u>Category</u>	<u>Recommendation</u>
Districts	Prioritize infrastructure and enforcement in top 5 districts
Time	Strict checks during evening/weekend
Weather	Public campaigns irrespective of weather
Road Types	Redesign or enhance signage/lighting
Causes	Focused driver behavior reform
Junctions	Improve signage & signal systems

