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Title:

Proposal for Traffic Light Installation Impact Assessment on Accident Prevention

Introduction:

Traffic accidents at intersections pose a significant risk to public safety. This proposal aims to conduct a comprehensive impact assessment on the installation of traffic lights at various intersections to prevent accidents. The study will focus on gathering data to analyze the effectiveness of traffic lights in reducing accident rates and improving overall traffic safety.

Objectives:

- Evaluate the impact of traffic light installation on accident rates at selected intersections.
- Identify patterns and correlations between traffic light signal timings and accident occurrences.
- Analyze the influence of factors such as weather conditions, time of day, and road conditions on intersection safety.
- Assess changes in traffic flow and vehicle speeds pre- and post-installation of traffic lights.
- Investigate the role of driver behavior in relation to traffic light effectiveness.
- Examine the interplay between surrounding infrastructure (e.g., crosswalks, signage) and accident prevention.

Methodology:

Location Data:
- Record geographic coordinates of selected intersections.
- Major Column: Intersection ID, Latitude, Longitude.

Accident Data:
- Document the number and types of accidents before and after traffic light installation.
- Major Column: Date, Accident Type, Severity.

Traffic Flow:
- Collect data on traffic volume, vehicle types, and pedestrian traffic.
- Major Column: Traffic Volume, Vehicle Types.

Weather Conditions:
- Note weather conditions during accidents.
- Major Column: Weather (Clear, Rainy, Snowy).

Time of Day:
- Record the time of day when accidents occurred.
- Major Column: Time, Period (Morning, Afternoon, Evening).

Road Conditions:
- Document road surface conditions.
- Major Column: Road Condition (Dry, Wet, Icy).

Vehicle Speed:
- Collect information on average vehicle speeds.
- Major Column: Average Speed.

Driver Behavior:
- Include data on driver adherence to traffic rules.
- Major Column: Driver Compliance.

Surrounding Infrastructure:
- Consider the impact of surrounding infrastructure.
- Major Column: Infrastructure Features.

Expected Outcomes:

This study aims to provide valuable insights into the effectiveness of traffic light installations in preventing accidents. The results will inform future traffic management strategies and contribute to enhancing public safety at intersections.

REFERENCES : GOOGLE ,Google Dataset Search , Kaggle Datasets and construct by myself.