

Transportation Safety

Category

Accident Analysis

Traffic Safety Planning

Emergency Response

Pedestrian and Bicycle Safety

Infrastructure Monitoring

Public Transportation Safety

GIS Applications

- Identifying accident hotspots
- Mapping accident frequency
- Analyzing accident causes
- Optimizing traffic signal timings
- Designing safer road layouts
- Assessing speed limits
- Route planning for emergency vehicles
- Locating nearest emergency services
- Evacuation planning
- Identifying high-risk pedestrian areas
- Planning safe bicycle routes
- Monitoring crosswalk usage
- Analyzing road surface conditions
- Monitoring bridge and tunnel safety
- Predicting infrastructure failures
- Mapping safe routes for buses and trains
- Monitoring real-time vehicle locations
- Analyzing boarding and alighting safety

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GIS Applications

Environmental Safety

- Mapping areas prone to landslides, floods, etc.
- Assessing environmental risks near transportation corridors

Safety Compliance and Enforcement

- Tracking violations (e.g., speed, red-light running)
- Mapping enforcement zones
- Analyzing compliance trends

Risk Assessment

- Assessing the risk of accidents based on historical data
- Modeling future risk scenarios

Driver Behavior Analysis

- Monitoring driver speed and braking patterns
- Mapping areas with high aggressive driving incidents

Key Benefits of GIS in Transportation Safety

- Visualization: Clear mapping of safety issues.
- Analysis: Enhanced data analysis for better decision-making.
- Prediction: Ability to model and predict future risks.
- Real-Time Data: Use of real-time data for quick responses.