JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal TO SBT ENTERPRISES

Objective of the JRM Report

This JRM report is designed to ensure compliance with the Central Motor Vehicle Rules, 1989 (CMVR), AIS 140 standards, and the Road Transport Safety Policy (RTSP). It provides a comprehensive risk assessment for the transportation of hazardous materials along specified routes. By integrating these legal frameworks, the report offers a broad strategy for identifying and mitigating route-specific risks.

Regulatory Compliance

The report complies with the Central Motor Vehicles (Eleventh Amendment) Rules, 2022, mandating safe transportation practices for N2 and N3 category vehicles carrying hazardous materials. These rules require detailed route assessments, especially regarding road conditions, speed limits, and risk areas, to ensure safety compliance.

Risk Management Strategy

This report categorizes transportation routes into high-risk and medium-risk areas, with a focus on factors such as sharp turns, accident-prone regions, and elevation changes. The goal is to provide actionable

recommendations to minimize these risks, including speed regulations, driver warnings for hazardous zones, and the option of alternate routes.

Compliance with the Road Transport Safety Policy (RTSP)

The report integrates RTSP provisions, including mandatory driving hours, rest periods, and nighttime driving restrictions. It ensures that drivers follow official guidelines, such as taking prescribed rest breaks and avoiding dangerous road conditions like poor visibility, heavy crowds, or high-traffic areas during peak hours.

Emergency Preparedness and Response

The report highlights the significance of predetermined emergency stops for refueling, rest, and overnight stays. It includes protocols for safe responses to road hazards, alternative routes, and rerouting processes if roads are closed or severe weather arises. This aligns with the RTSP emphasis on driver safety and rapid emergency response.

Environmental Considerations

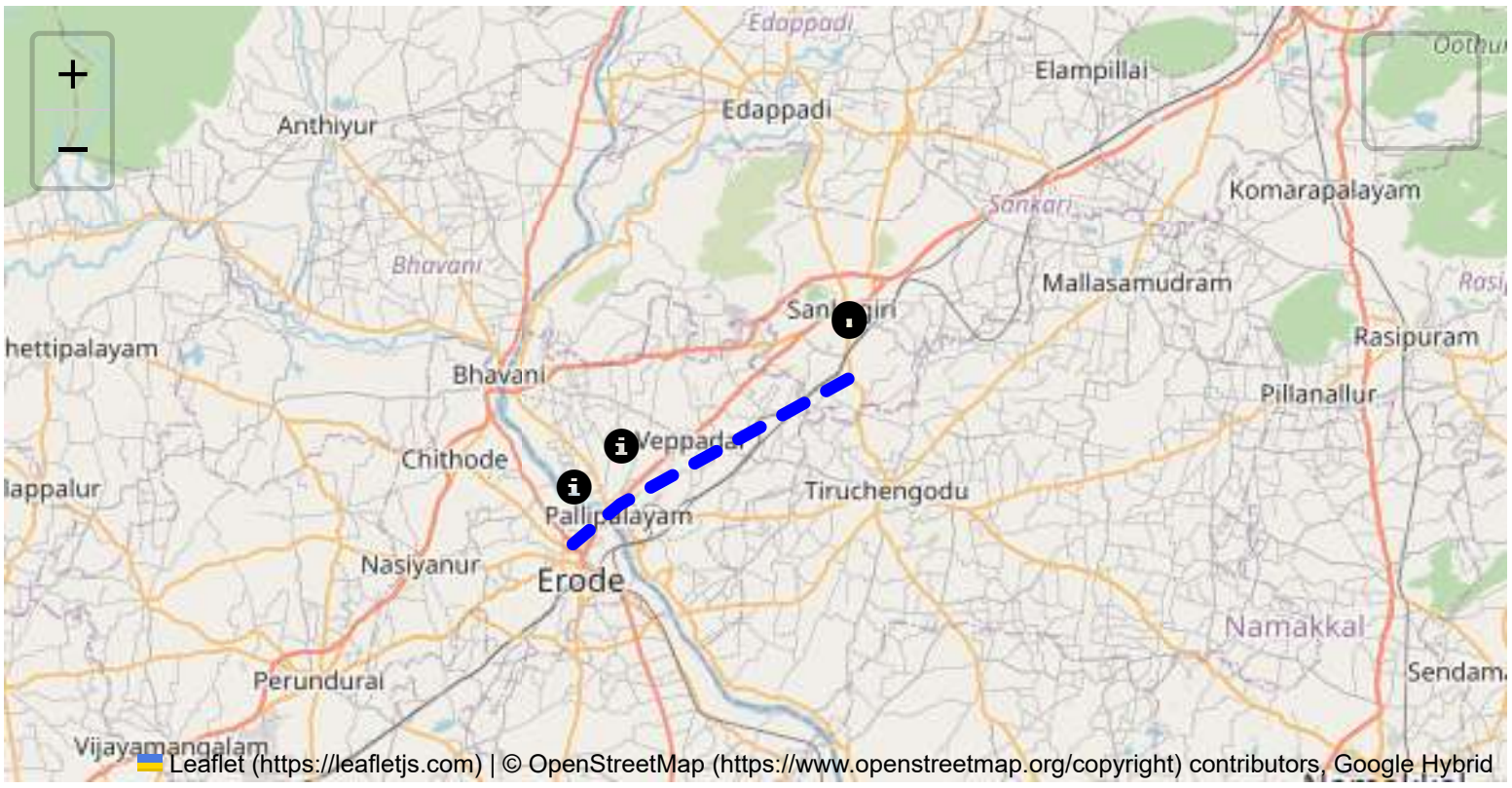
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental impacts during transport.

Journey Risk Mitigation

The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety norms.

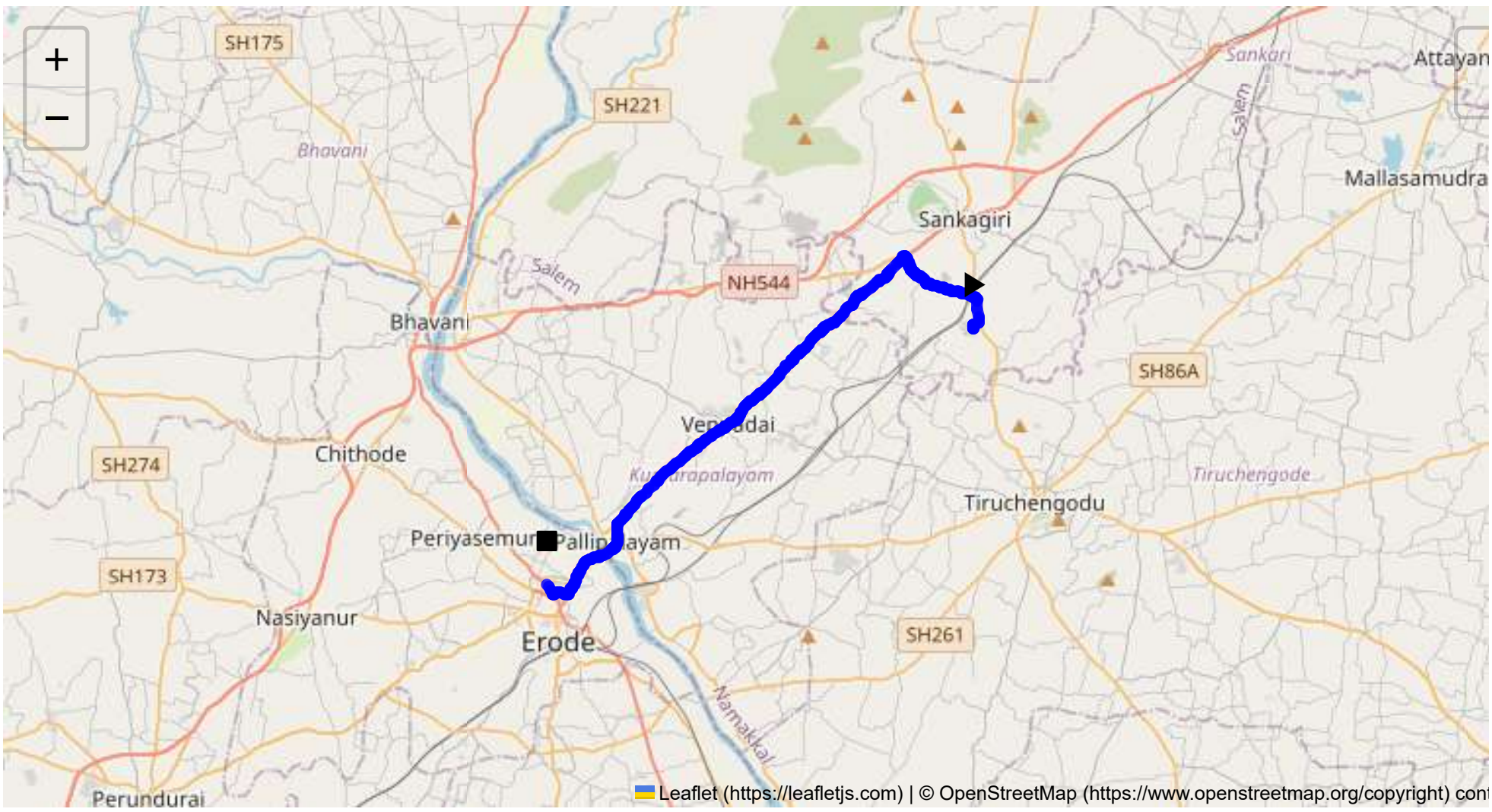
Compliance with Government Directives

This report fully adheres to governmental directives regarding hazardous material transportation, implementing mandatory speed limits, nighttime driving restrictions, and comprehensive driver briefings and real-time alerts about route-related risks.



Route Summary:

Total Distance: 24.63 km
Estimated Duration: 0.6 hours
Adjusted Duration (Heavy Vehicle): 0.8 hours
Start: (11.4381, 77.8734)
End: (11.349933, 77.723103)



Welcome to the Journey Risk Management Study

Certainly! Below is an analysis of the route from CVQF+23W, Sangagiri, Tamil Nadu, to 120, Thirunagar Colony Rd, Erode, Tamil Nadu, with consideration of various parameters necessary for ensuring the safety of a truck driver transporting hazardous materials.

1. Overview of the Route Map

The route spans approximately 24.63 kilometers and typically takes about 38 minutes for heavy vehicles. The journey begins in Sangagiri, passes through Puthur, crosses Erode Pallipalayam, and concludes in Thirunagar Colony, Erode. This route involves driving through both rural and semi-urban zones with varying traffic density.

2. Typical Weather Conditions and Weather-Related Hazards

Tamil Nadu experiences a tropical climate. Key weather considerations include:

- **Summer (March-June)**: High temperatures could affect vehicle performance, especially braking systems.
- **Monsoon (July-September)**: Heavy rains can lead to slippery roads and local flooding, particularly in low-lying areas.
- **Winter (November-February)**: Mild temperatures may reduce weather-related risks, but fog can occasionally occur in early mornings.

3. Traffic Patterns

- **Peak Hours**: Typically, morning (8-10 AM) and evening (5-7 PM) see higher traffic volumes, particularly in and around Erode.
- **Congestion-Prone Areas**: The segments through Erode, especially near Pallipalayam, tend to experience traffic congestion due to local businesses and residential areas.

4. Assessment of Road Quality and Infrastructure

- **Road Conditions**: The highways are generally stable, but rural roads may have potholes and uneven surfaces. Regular maintenance may not be consistent.
- **Infrastructure**: Bridges and small intersections in rural areas can be narrow, requiring cautious navigation.

5. Suggestions for Alternative Routes

If the primary route is blocked or otherwise unsuitable, consider:

- **Alternate Route**: Utilize National Highway NH544, which offers wider lanes and better infrastructure for large vehicles, though it may extend travel time.

6. Summary of Local Regulations

- **Regulations for Hazardous Material Transport**: Local authorities enforce strict guidelines including designated permissible hours for transport and routes to minimize exposure to densely populated areas.

7. Overview of Historical Incidents

- While specific data may be limited, the region typically reports incidents due to poor visibility or road surface issues. No major hazardous material incidents are well-documented in public domain

resources.

8. Environmental Considerations and Sensitive Areas

- **Sensitive Areas**: Avoid spilling or accidents near water bodies or agricultural lands, which characterize large parts of this route, particularly near Erode.

9. Analysis of Communication Coverage

- **Coverage**: Urban areas like Erode have good mobile network coverage. However, rural stretches might experience occasional dead zones. Keep emergency communication devices ready.

10. Estimated Emergency Response Times

- **Response Time**: Urban areas like Erode and Pallipalayam have quicker response times (15-20 minutes), whereas rural areas can expect delays of up to 30-45 minutes due to accessibility challenges.

11. Overall Summary of Risk Assessment

The route is moderately safe for the transport of hazardous materials, assuming compliance with regional laws and awareness of local traffic patterns. Key concerns include road quality variations and weather impacts during monsoon season. Overall, consistent monitoring, adherence to safety protocols, and readiness for emergency response enhance the journey's safety profile.

By actively utilizing this risk assessment, drivers can better prepare and manage potential hazards, ensuring a safer transport operation along this route.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.37086, 77.74828	15 KM/Hr
1	Turn	High	11.43811, 77.87348	15 KM/Hr
2	Turn	Medium	11.43961, 77.87341	30 KM/Hr
3	Turn	Medium	11.43968, 77.87345	30 KM/Hr
4	Turn	High	11.44029, 77.87544	15 KM/Hr
5	Turn	Medium	11.45350, 77.85700	30 KM/Hr
6	Turn	Medium	11.45833, 77.85146	30 KM/Hr
7	Turn	Medium	11.46318, 77.84913	30 KM/Hr
8	Turn	Medium	11.46312, 77.84886	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
9	Turn	High	11.34678, 77.73104	15 KM/Hr
10	Turn	High	11.34678, 77.72581	15 KM/Hr

Emergency Locations

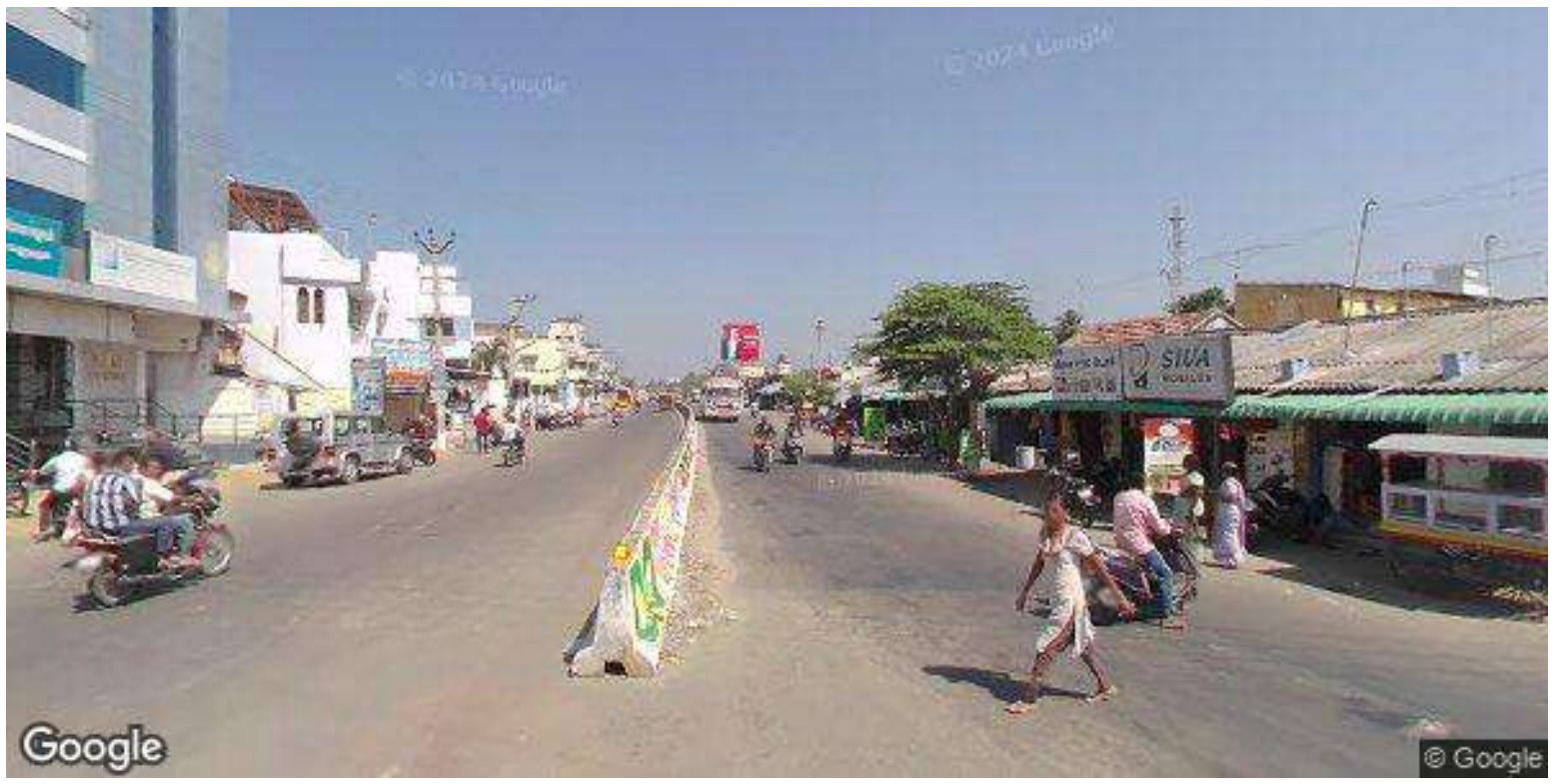
	type	name	coordinates	speed_limit	risk_level
1	hospital	Cheran Hospital	11.3680302, 77.7481976	30 km/h	Medium
2	pharmacy	Pharmacy	11.3652161, 77.7486375	30 km/h	Medium
3	hospital	Sri Kumaran E N T Hospital	11.3657814, 77.7477763	30 km/h	Medium
4	hospital	Sri Krishna Hospital	11.3656648, 77.7477783	30 km/h	Medium
5	hospital	Visaalam Hospitals	11.3651528, 77.747808	30 km/h	Medium
6	police	Police Station	11.3630177, 77.7476505	30 km/h	Medium
7	hospital	Government Hospital	11.3608508, 77.747453	30 km/h	Medium
9	hospital	Sri Hari Sakthivel Hospital	11.3526901, 77.7323055	30 km/h	Medium
10	hospital	Senthil Prakash Hospital	11.352639, 77.732267	30 km/h	Medium
11	hospital	V K Hospital	11.3513792, 77.7313976	30 km/h	Medium
12	hospital	Dhanvantri Critical Care Center	11.3504266, 77.7311274	30 km/h	Medium
13	hospital	Indrajith Yoga Nature Cure Hospital	11.3499973, 77.732974	30 km/h	Medium
15	hospital	Dhanvantri Critical Care Centre	11.35099, 77.730508	30 km/h	Medium
16	hospital	Kumudha Hospital	11.3467172, 77.7306797	30 km/h	Medium
17	hospital	City Hospital	11.3451151, 77.7300887	30 km/h	Medium
18	clinic	K.B.N. Nursing Home	11.344835, 77.7310771	30 km/h	Medium

Crowded Spots

	type	name	coordinates	speed_limit	risk_level
0	school	Ssri Valliappa Vidhayalayam mat hr school	11.4004878, 77.7794381	30 km/h	Medium
8	marketplace	Weekly Market	11.3605669, 77.7488199	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
14	school	Municipality Girls Higher secondary school	11.3495618, 77.7325011	30 km/h	Medium
19	school	Siddhartha Matriculation school	11.3519996, 77.7247861	30 km/h	Medium

Route Photos of Risky Spots

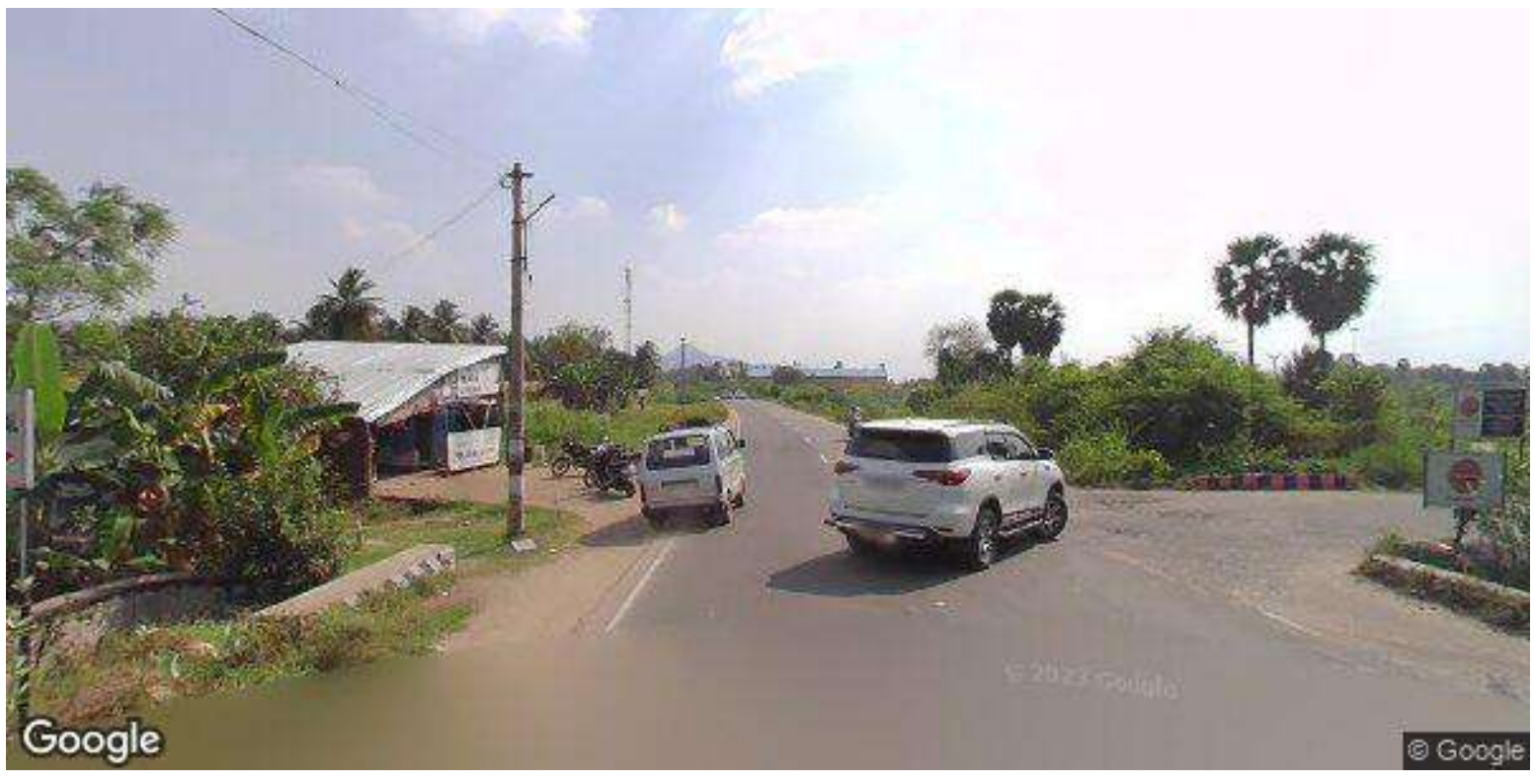


Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.37086, 77.74828

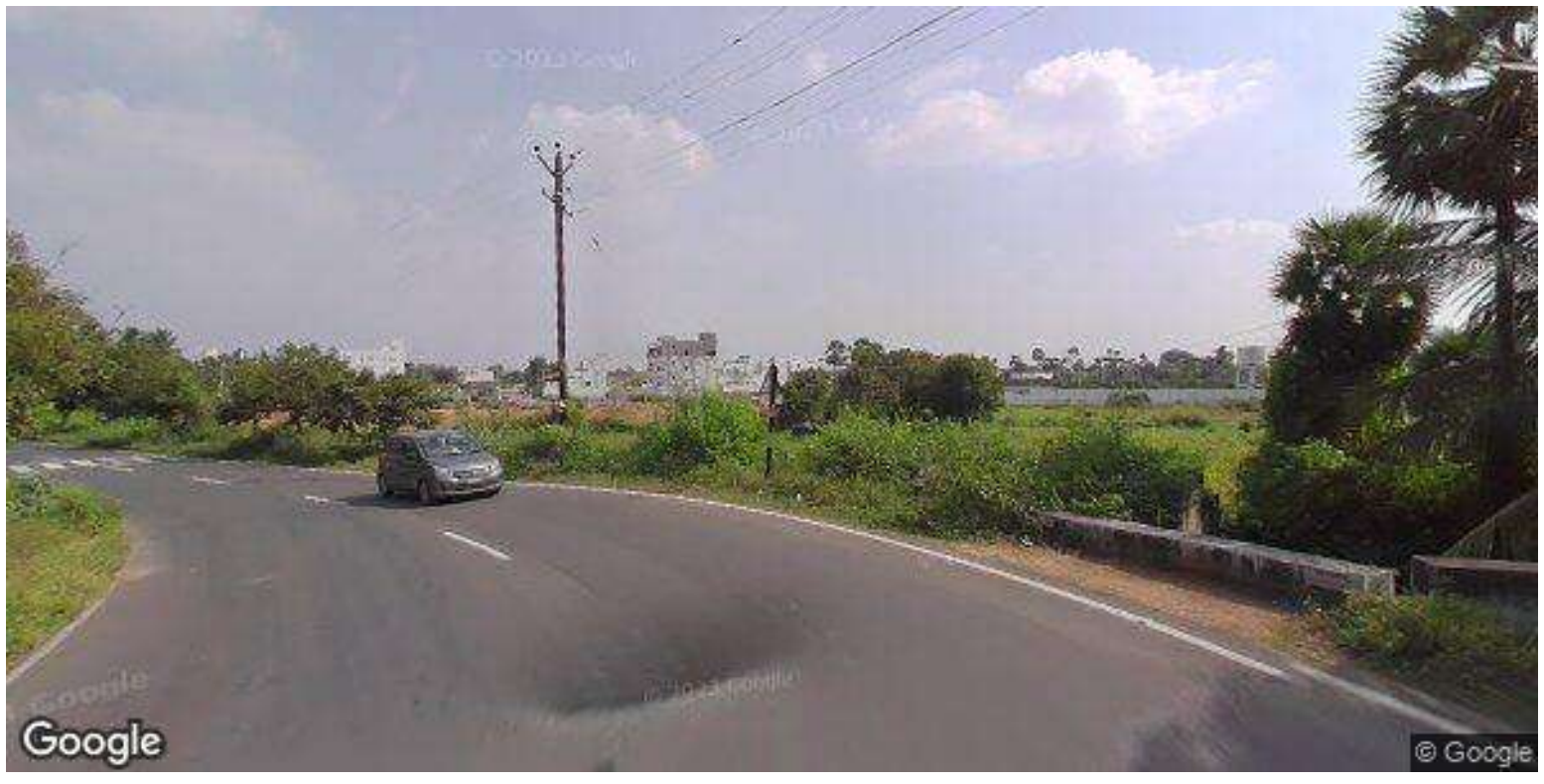


Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.44029, 77.87544

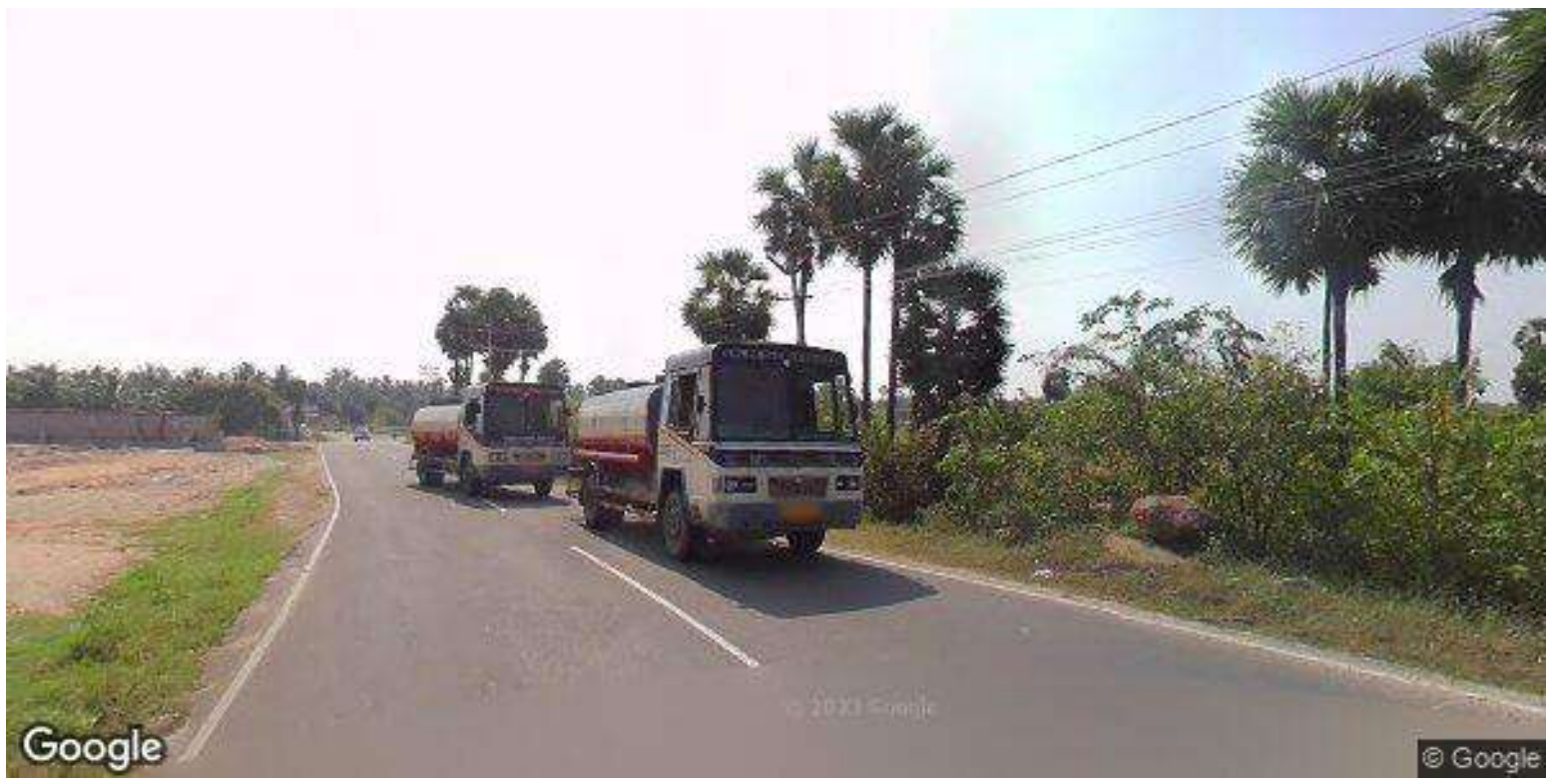


Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.45350, 77.85700

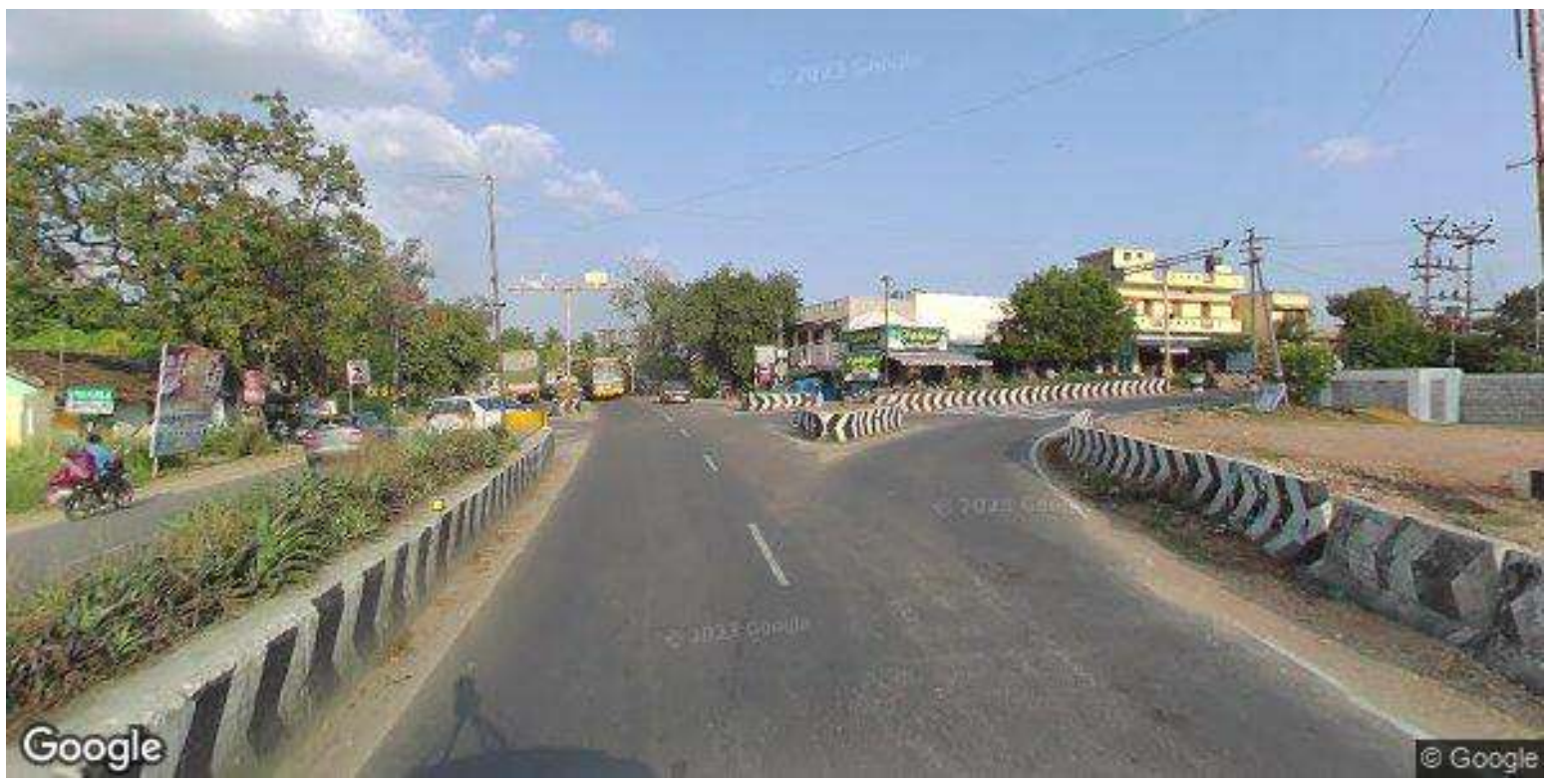


Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.45833, 77.85146

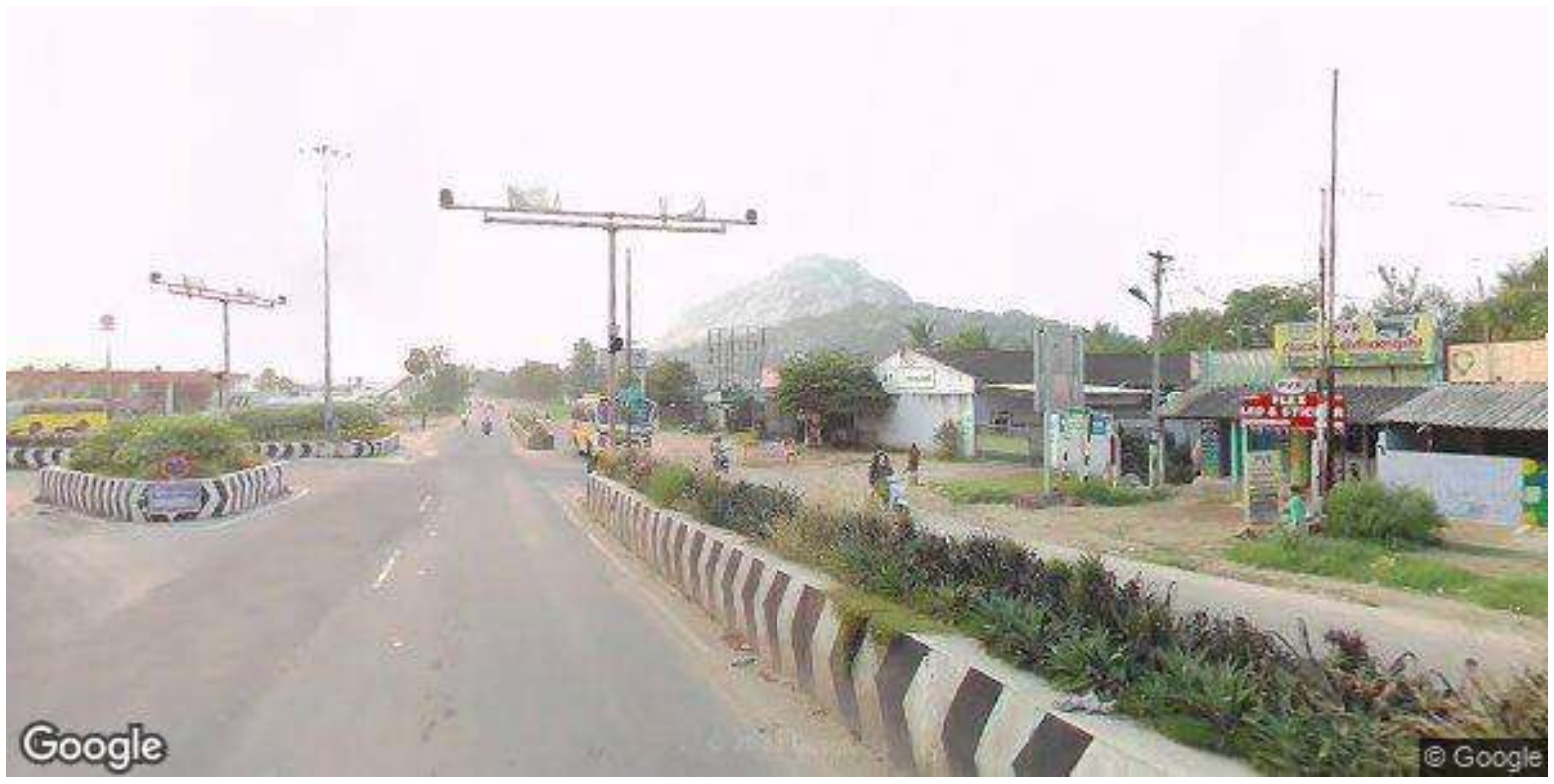


Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.46318, 77.84913

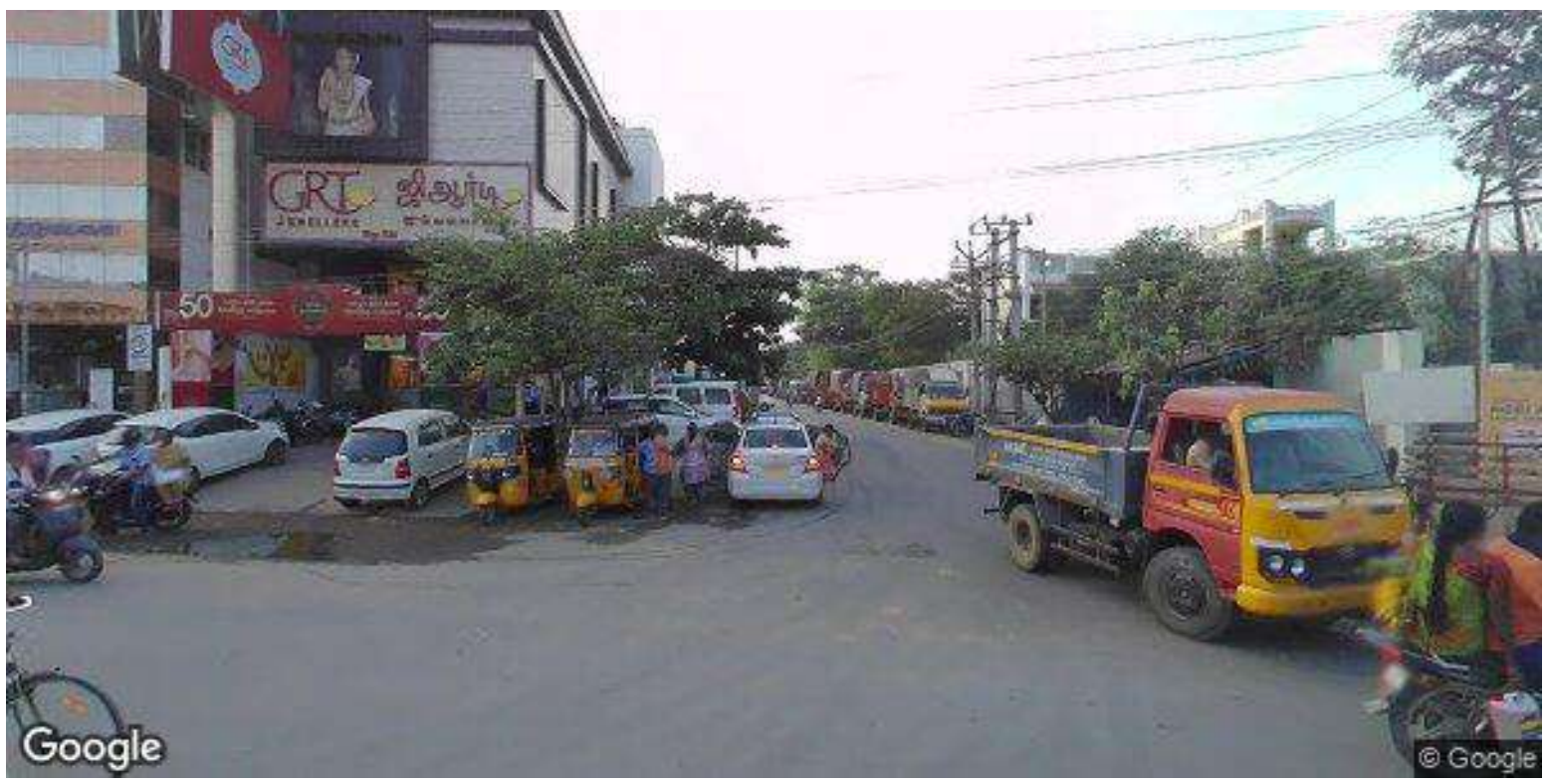


Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.46312, 77.84886

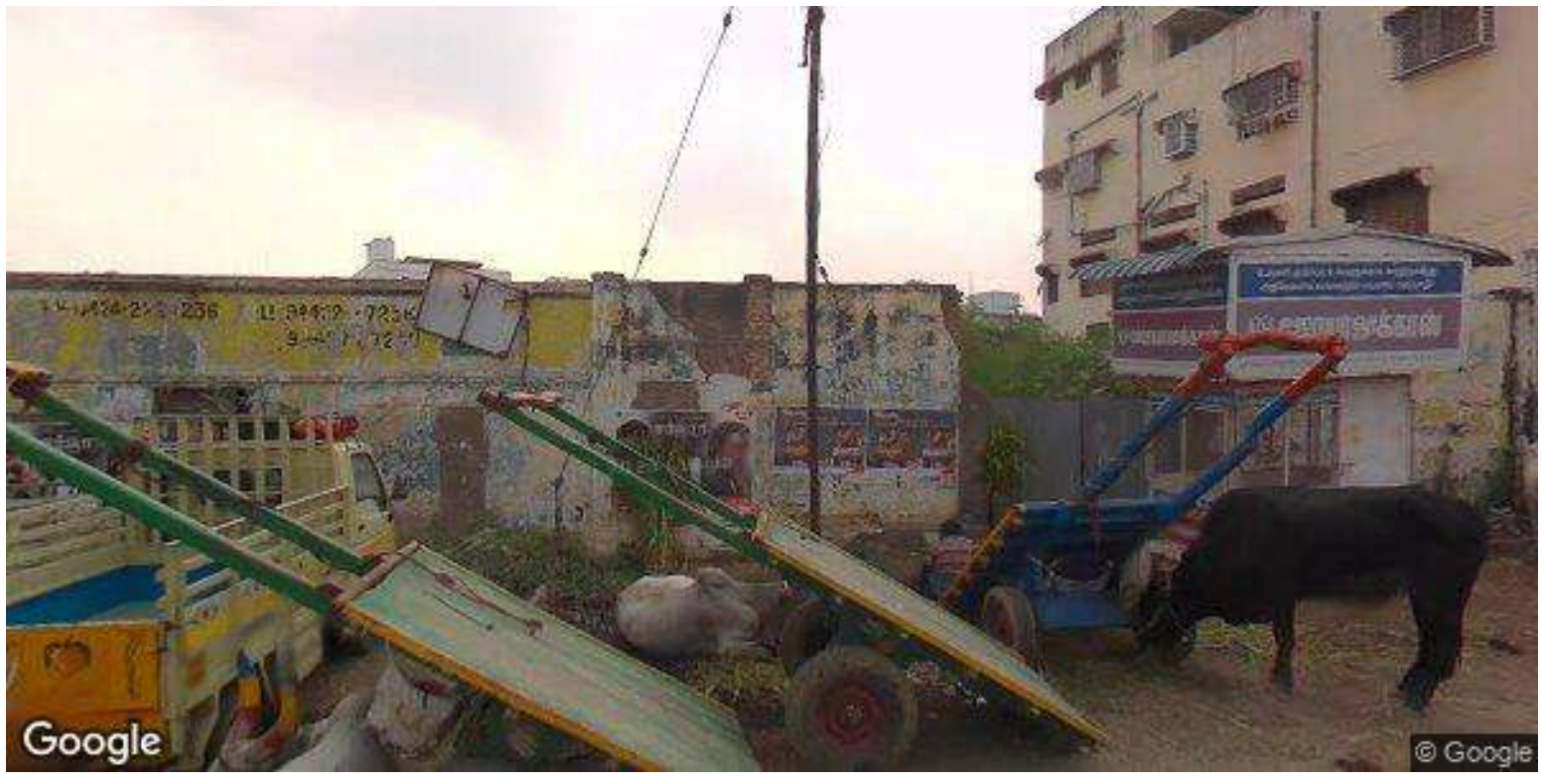


Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.34678, 77.73104



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.34678, 77.72581