



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

IOCL Coimbatore Terminal to Royal Agency

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

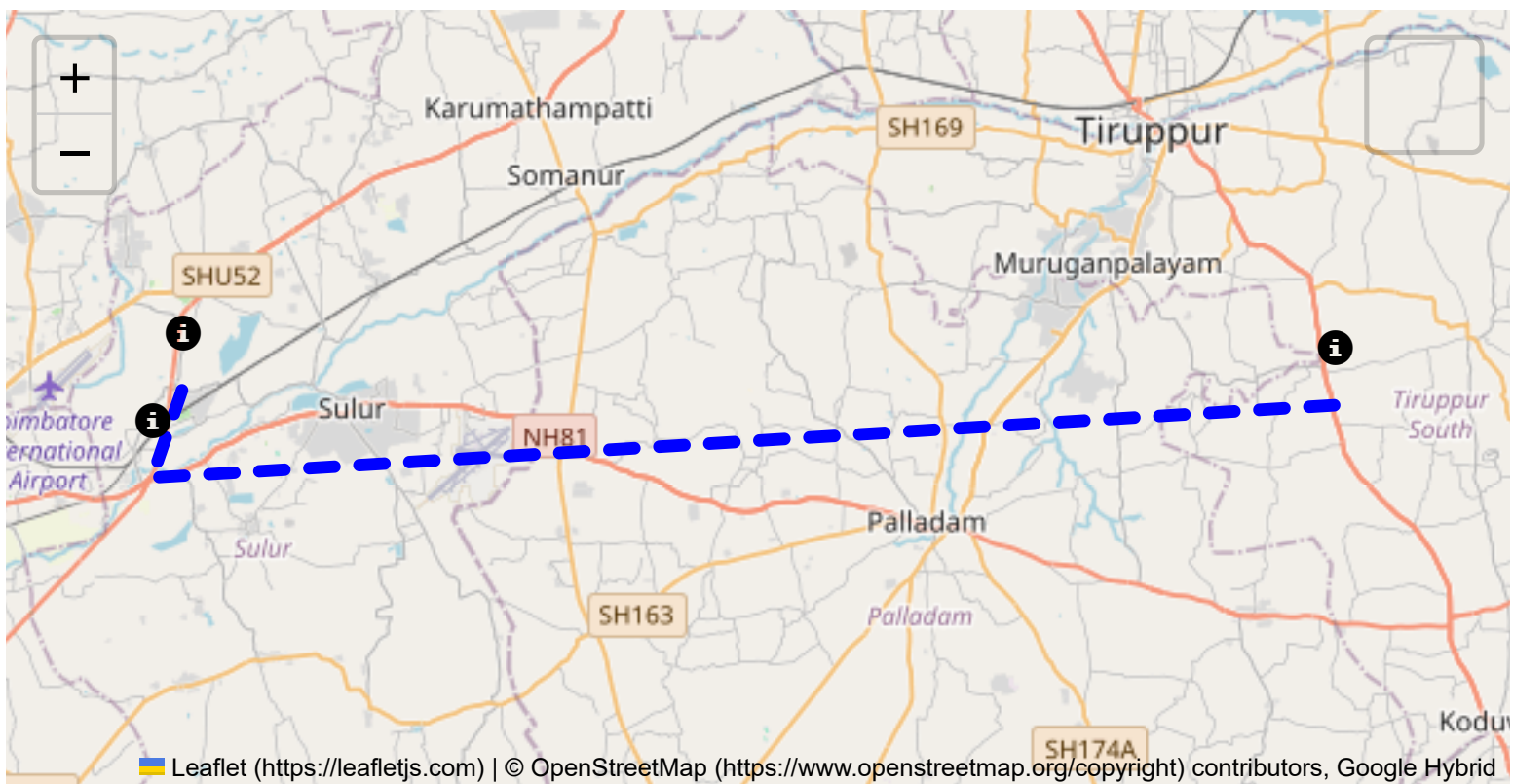
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

Journey Risk Mitigation

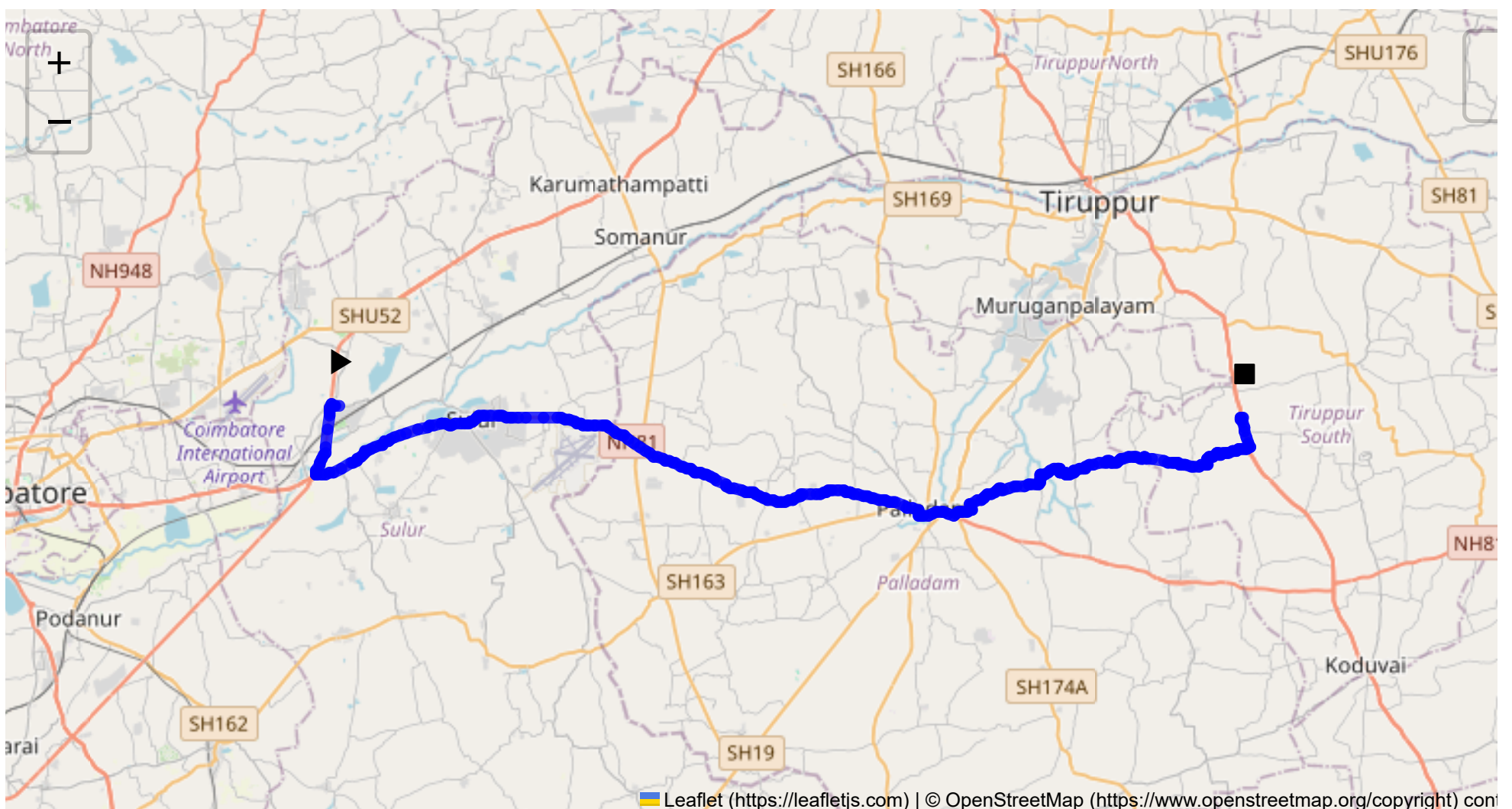
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 43.42 km
Estimated Duration: 1.0 hours
Adjusted Duration (Heavy Vehicle): 1.3 hours
Start: (11.0315, 77.0797)
End: (11.027247, 77.395126)



Welcome to the Journey Risk Management Study

1. Overview of the Route Map:

The route begins in Athappagoundenpudur, moving towards Chinthamanipudur on Trichy Road, and finally to Pollikalipalayam. This route spans approximately 43.42 kilometers, primarily traversing state highways, interspersed with rural and urban areas.

2. Typical Weather Conditions and Potential Weather-Related Hazards:

Coimbatore typically experiences a tropical wet and dry climate. The monsoon season (June to October) can lead to heavy rainfall, causing waterlogging and reduced visibility. During the summer months (March to May), high temperatures can potentially cause overheating issues in vehicles.

3. Traffic Patterns and Congestion-Prone Areas:

Traffic is generally moderate, with peak congestion occurring during morning (8-10 AM) and evening (5-7 PM) rush hours, especially near urban areas such as Chinthamanipudur. The segment along Trichy Road is particularly prone to slow-moving traffic due to both local commuters and heavy vehicles.

4. Assessment of Road Quality and Infrastructure:

The road quality is decent but mixed, with some segments undergoing frequent maintenance. The infrastructure supports heavy vehicles, although occasional potholes and narrow bridges might present challenges. Be cautious near smaller towns where roads might narrow.

5. Suggestions for Alternative Routes for Emergencies:

In case of roadblocks or emergencies, bypassing the main Trichy Road via smaller bypass roads like Kalapatti-Kalveerampalayam-P.N. Palayam Road might be beneficial. However, these alternatives should be used cautiously, considering their lower capacity for heavy vehicles.

6. Summary of Local Regulations Affecting Hazardous Material Transport:

Transport of hazardous materials requires special permits, compliance with weight limits, and adherence to safety protocols. Restricted times may be enforced in certain zones, primarily in urban sectors.

7. Overview of Historical Incidents:

There have been sporadic reports of accidents involving heavy vehicles, often attributed to poor visibility and sudden lane shifts. However, incidents specifically involving hazardous materials are rare but typically involve improperly secured cargo.

8. Environmental Considerations and Sensitive Areas:

Some stretches traverse ecologically sensitive zones, requiring adherence to noise and pollution regulations. Measures should be taken to prevent spills or emissions as these areas may contain water bodies and wildlife.

9. Communication Coverage and Potential Dead Zones:

Communication networks are generally reliable along this route. However, there might be occasional signal drops in rural stretches, specifically between cities. Investing in high-gain antennas or using

multiple network providers could mitigate potential communication issues.

10. Estimated Emergency Response Times:

Emergency response is relatively swift in urban areas (about 15-20 minutes), but response may be delayed up to 40 minutes in rural or remote areas. It's advisable to carry emergency kits and establish a direct line of communication with emergency services when transporting hazardous materials.

11. Overall Summary of Risk Assessment:

The route is moderately risky, predominantly due to weather variability and occasional traffic congestion. Hazards can be mitigated with diligent adherence to safety regulations, continuous monitoring of weather and traffic updates, and maintaining clear communication lines. Proper vehicle maintenance, especially brakes and cooling systems, ensures safety. Keeping emergency contacts and alternate route plans ready is also crucial when transporting hazardous materials.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	U-Turn	High	11.0273137, 77.3948585	10 KM/Hr
1	Blind Spot	Blind Spot	11.03211, 77.07640	10 KM/Hr
2	Turn	High	11.00778, 77.07085	15 KM/Hr
3	Turn	Medium	10.99557, 77.28171	30 KM/Hr
4	Turn	Medium	10.99436, 77.28183	30 KM/Hr
5	Turn	High	10.99378, 77.29404	15 KM/Hr
6	Turn	High	10.99561, 77.30039	15 KM/Hr
7	Turn	High	10.99794, 77.30012	15 KM/Hr
8	Turn	Medium	11.00299, 77.31025	30 KM/Hr
9	Turn	Medium	11.00268, 77.31086	30 KM/Hr
10	Turn	Medium	11.00466, 77.32367	30 KM/Hr
11	Turn	Medium	11.00485, 77.32402	30 KM/Hr
12	Turn	Medium	11.00746, 77.32453	30 KM/Hr
13	Turn	Medium	11.00796, 77.32471	30 KM/Hr
14	Turn	High	11.01019, 77.33100	15 KM/Hr
15	Turn	High	11.00870, 77.33148	15 KM/Hr
16	Turn	Medium	11.00865, 77.33158	30 KM/Hr
17	Turn	Medium	11.00865, 77.33304	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
18	Turn	Medium	11.00856, 77.33320	30 KM/Hr
19	Turn	High	11.00812, 77.33338	15 KM/Hr
20	Turn	High	11.00849, 77.33640	15 KM/Hr
21	Turn	Medium	11.00910, 77.33641	30 KM/Hr
22	Turn	Medium	11.00928, 77.33651	30 KM/Hr
23	Turn	Medium	11.01023, 77.34006	30 KM/Hr
24	Turn	Medium	11.01250, 77.34852	30 KM/Hr
25	Turn	Medium	11.01424, 77.35740	30 KM/Hr
26	Turn	Medium	11.01156, 77.38296	30 KM/Hr
27	Turn	Medium	11.01182, 77.38311	30 KM/Hr
28	Turn	Medium	11.01356, 77.38323	30 KM/Hr
29	Turn	Medium	11.01519, 77.38618	30 KM/Hr
30	Turn	Medium	11.01501, 77.38870	30 KM/Hr
31	Turn	Medium	11.01549, 77.38942	30 KM/Hr
32	Turn	High	11.01719, 77.39768	15 KM/Hr
33	Blind Spot	Blind Spot	11.02731, 77.39486	10 KM/Hr
34	Blind Spot	Blind Spot	11.02732, 77.39494	10 KM/Hr

Emergency Locations

	type	name	coordinates	speed_limit	risk_level
0	hospital	Saraswathi Hospital	11.0069868, 77.071368	30 km/h	Medium
1	clinic	Dr. V. Ramakrishnan Clinic	11.0086635, 77.081108	30 km/h	Medium
2	police	Sulur Police Station	11.0248612, 77.1204842	30 km/h	Medium
3	hospital	Government Hospital, Sulur	11.0247544, 77.1228621	30 km/h	Medium
4	hospital	Balaji Hospital, Sulur	11.0277947, 77.1298133	30 km/h	Medium
7	hospital	Ponni Hospital - Palladam	10.9965327, 77.2758865	30 km/h	Medium
8	police	Palladam Police Station	10.9966966, 77.279193	30 km/h	Medium
9	hospital	Palladam Government Hospital	10.9962561, 77.2803585	30 km/h	Medium
10	hospital	Sanjeevi Hospital, Palladam	10.9963103, 77.2800924	30 km/h	Medium
11	clinic	Rajeshwari Nursing Home	10.9953069, 77.2841138	30 km/h	Medium
12	hospital	Balaji Hospital	10.9936939, 77.2849449	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
13	hospital	Ponni Hospital, Coimbatore	10.9955604, 77.2887151	30 km/h	Medium

Crowded Spots

	type	name	coordinates	speed_limit	risk_level
5	school	Kendriya Vidhyalaya School	11.0254394, 77.1609298	30 km/h	Medium
6	school	Infant Jesus Matriculation Higher Secondary School	10.9986758, 77.2493732	30 km/h	Medium

Route Photos of Risky Spots



Risk Type: U-Turn
Risk Level: High
Speed Limit: 10 KM/Hr
Coordinates: 11.0273137, 77.3948585



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Coordinates: 11.03211, 77.07640



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.00778, 77.07085



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.99557, 77.28171



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.99436, 77.28183



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.99378, 77.29404



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.99561, 77.30039



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.99794, 77.30012



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.00299, 77.31025



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.00268, 77.31086



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.00466, 77.32367



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.00485, 77.32402



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.00746, 77.32453



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.00796, 77.32471



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.01019, 77.33100



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.00870, 77.33148



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.00865, 77.33158



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.00865, 77.33304



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.00856, 77.33320



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.00812, 77.33338



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.00849, 77.33640



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.00910, 77.33641



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.00928, 77.33651



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.01023, 77.34006



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.01250, 77.34852



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.01424, 77.35740



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.01156, 77.38296



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.01182, 77.38311



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.01356, 77.38323



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.01519, 77.38618



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.01501, 77.38870



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.01549, 77.38942

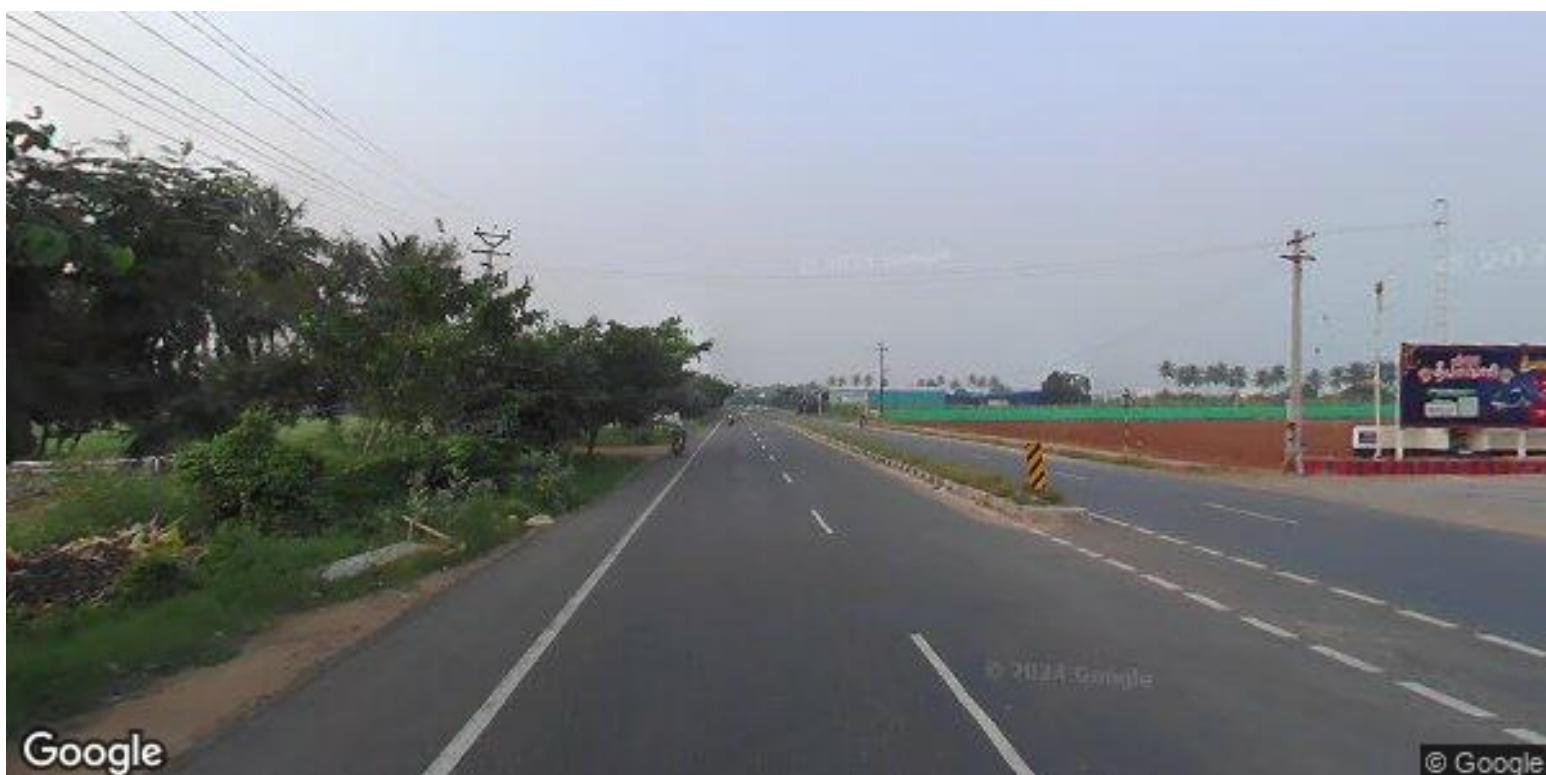


Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.01719, 77.39768



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Coordinates: 11.02731, 77.39486



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Coordinates: 11.02732, 77.39494
