



JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal To SHREE CHANDIKA AGENCIES

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

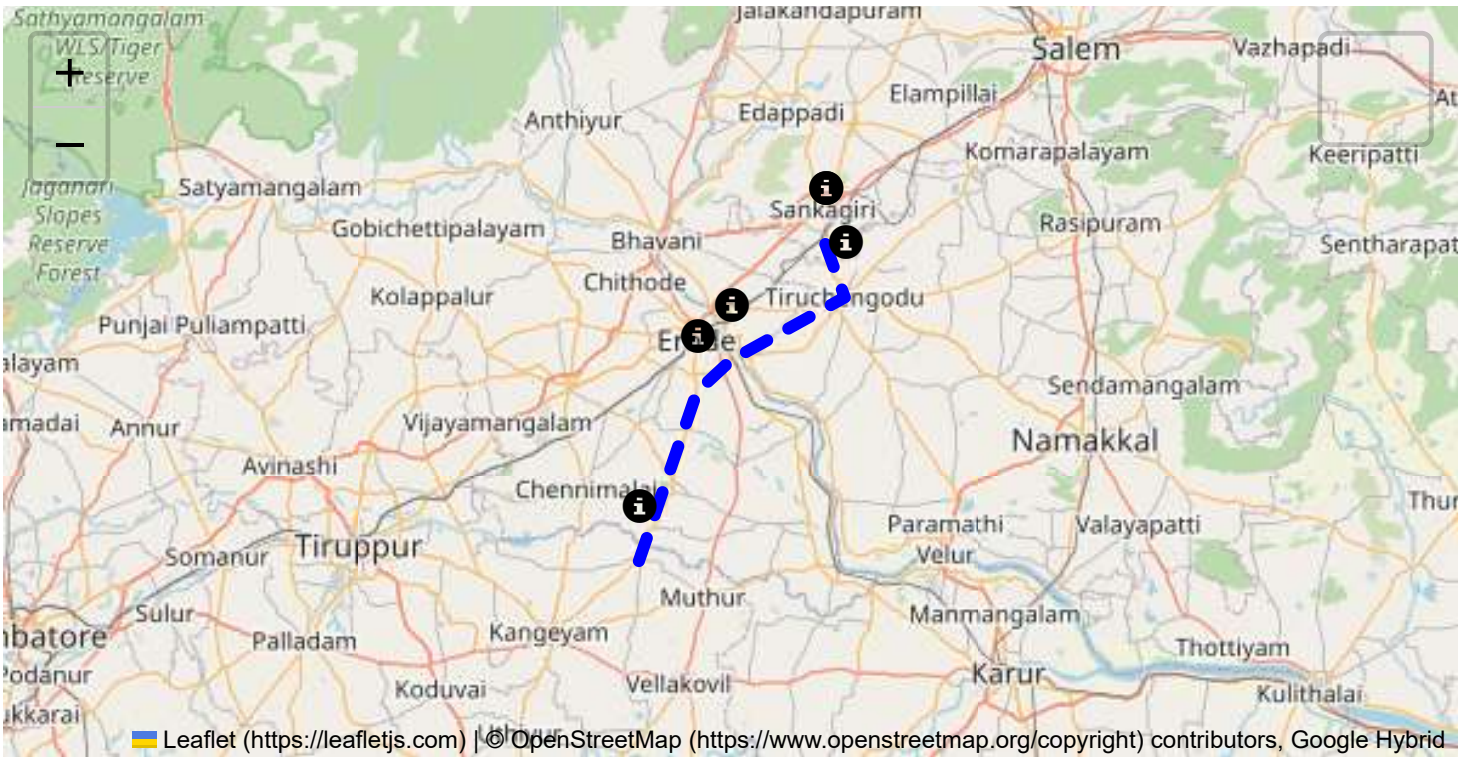
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

Journey Risk Mitigation

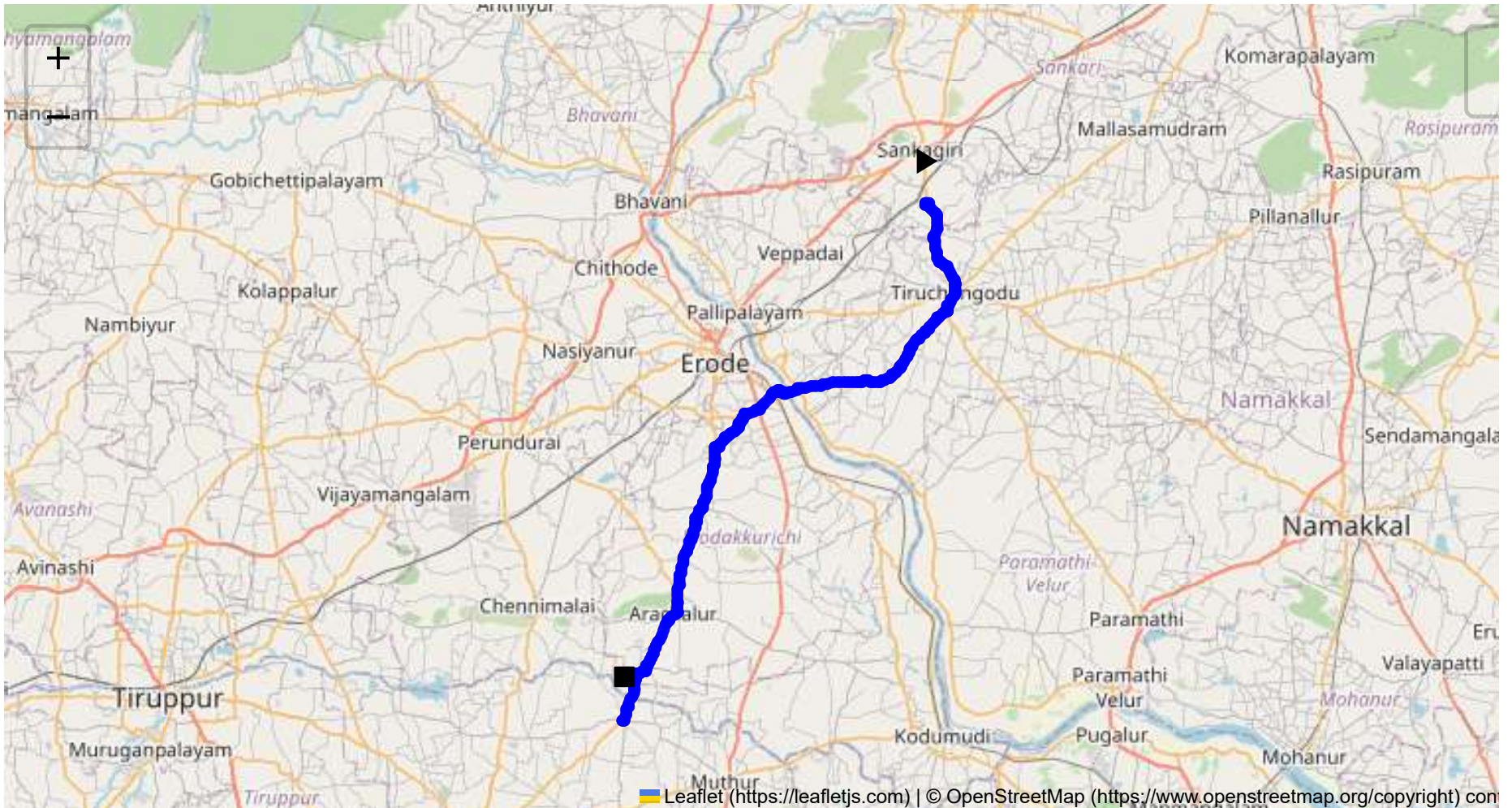
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 55.15 km
Estimated Duration: 1.4 hours
Adjusted Duration (Heavy Vehicle): 1.7 hours
Start: (11.4381, 77.8734)
End: (11.085247, 77.662736)



Welcome to the Journey Risk Management Study

Route Safety Analysis

1. Overview of the Route Map: The route from Sangagiri to Nathakadaiyur, spanning approximately 55.15 kilometers, passes through Tiruchengode and Kasipalayam E, traversing a mix of urban and rural areas. It mainly follows state highways and potentially smaller roads as it moves through towns and agricultural regions.

2. Typical Weather Conditions and Potential Weather-Related Hazards: Tamil Nadu's climate is generally tropical, with hot and dry weather for most of the year. The monsoon season, typically from October to December, can bring heavy rains. Potential hazards during these periods include flooding and reduced visibility, particularly in rural areas. Drivers need to be mindful of waterlogged roads and potential landslides.

3. Analysis of Traffic Patterns:

- **Peak Hours:** Traffic congestion is common during morning (8 AM - 10 AM) and evening (5 PM - 8 PM) peak hours, especially near urban centers like Tiruchengode and Erode.
- **Congestion-Prone Areas:** Expect congestion near major intersections and market areas within towns. Traffic tends to be heavier on highways connecting larger urban areas.

4. Assessment of Road Quality and Infrastructure: The road infrastructure varies from well-maintained highways with clear signage to narrower roads with potential potholes and uneven surfaces in rural

segments. Recent efforts in infrastructure improvement have enhanced certain parts, but ongoing construction or maintenance work might be encountered.

5. Suggestions for Alternative Routes for Emergencies: In case of route blockages, drivers could consider taking alternative rural roads that run parallel to the primary route, though these might have lower quality in terms of road conditions and lesser services. GPRS and updated local maps are recommended for navigating these alternatives.

6. Summary of Local Regulations Affecting Hazardous Material Transport: Transport of hazardous materials in Tamil Nadu requires compliance with the Motor Vehicles Act, which mandates specific permits. Trucks should display appropriate placards indicating hazardous cargo and follow regulations regarding speed limits and timing restrictions within urban areas.

7. Overview of Historical Incidents: The region has seen incidents involving heavy vehicles, often due to speeding or overloading. Awareness of low-clearance bridges or weight-restricted roads is crucial to preventing accidents. Data on hazardous material incidents is limited but reinforces the need for careful adherence to safety standards.

8. Environmental Considerations and Sensitive Areas: The route runs near agricultural lands, with some protected environmental areas. Drivers should minimize noise and emissions, ensuring no leakage or spillage of hazardous materials to protect local ecosystems.

9. Communication Coverage: Most of the route has good mobile network coverage, but rural areas may experience brief dead zones. Satellite phones or pre-downloaded maps can be useful backups.

10. Estimated Emergency Response Times: Response times can range from 20 to 40 minutes in urban areas due to better connectivity and infrastructure. Rural areas may experience delays, with response times possibly extending up to an hour depending on the specific location.

11. Overall Summary of Risk Assessment: The route presents moderate risks primarily due to weather conditions, road infrastructure variability, and traffic congestion in urban segments. Adherence to regulatory standards, staying informed about weather forecasts, and choosing non-peak travel times can mitigate these risks. Emergency plans and alternative routes should be thoroughly assessed in advance. Proper communication tools and contingency plans are vital to ensure safe and efficient transport of hazardous materials.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.38395, 77.89480	15 KM/Hr
1	Turn	Medium	11.43822, 77.87348	30 KM/Hr
2	Turn	High	11.43961, 77.87341	15 KM/Hr
3	Turn	High	11.44029, 77.87544	15 KM/Hr
4	Turn	Medium	11.39671, 77.88878	30 KM/Hr
5	Turn	High	11.37862, 77.89488	15 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
6	Turn	High	11.37850, 77.89453	15 KM/Hr
7	Turn	High	11.36604, 77.88887	15 KM/Hr
8	Turn	Medium	11.34632, 77.86836	30 KM/Hr
9	Turn	Medium	11.33882, 77.86218	30 KM/Hr
10	Turn	Medium	11.30970, 77.76705	30 KM/Hr
11	Turn	High	11.29490, 77.74685	15 KM/Hr
12	Turn	High	11.29133, 77.74660	15 KM/Hr
13	Turn	Medium	11.28844, 77.74319	30 KM/Hr
14	Turn	Medium	11.28558, 77.74271	30 KM/Hr
15	Turn	Medium	11.27326, 77.72991	30 KM/Hr
16	Turn	High	11.27330, 77.72711	15 KM/Hr
17	Turn	Medium	11.27322, 77.72706	30 KM/Hr
18	Turn	Medium	11.23054, 77.71796	30 KM/Hr
19	Turn	Medium	11.22387, 77.71385	30 KM/Hr
20	Turn	Medium	11.16078, 77.70122	30 KM/Hr
21	Turn	Medium	11.15953, 77.70067	30 KM/Hr
22	Turn	High	11.15944, 77.70068	15 KM/Hr
23	Turn	Medium	11.11918, 77.67766	30 KM/Hr
24	Turn	Medium	11.11740, 77.67198	30 KM/Hr
25	Turn	Medium	11.10481, 77.67060	30 KM/Hr
26	Turn	Medium	11.08730, 77.66436	30 KM/Hr
27	Blind Spot	Blind Spot	11.08565, 77.66268	10 KM/Hr
28	Blind Spot	Blind Spot	11.08550, 77.66308	10 KM/Hr

Emergency Locations

	type	name	coordinates	speed_limit	risk_level
0	hospital	Tiruchengode, Goverment Hospital	11.3903328, 77.8920627	30 km/h	Medium
1	hospital	SPM Medical Centre,Tiruchengode	11.3881331, 77.8931963	30 km/h	Medium
5	clinic	Kongu Nursing Home	11.3783065, 77.8961134	30 km/h	Medium
6	hospital	T.C.A Hospital Tiruchengode	11.3791885, 77.8965774	30 km/h	Medium
7	hospital	Soorya Multispecialty Hospital	11.3786429, 77.8931912	30 km/h	Medium
8	hospital	Tiruchengode Government Hospital	11.37645, 77.89426	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
9	hospital	Krishna Hospital, Namakkal	11.3754811, 77.8931817	30 km/h	Medium
10	hospital	Tirukumaran Hospitals	11.3782118, 77.8914933	30 km/h	Medium
13	hospital	Government Hospital	11.2343326, 77.719226	30 km/h	Medium

Crowded Spots

	type	name	coordinates	speed_limit	risk_level
2	school	அரசு ஆண்கள் மேல்நிலைப் பள்ளி	11.3850439, 77.8948279	30 km/h	Medium
3	school	அரசு பெண்கள் மேல்நிலைப் பள்ளி	11.3844247, 77.8949053	30 km/h	Medium
4	marketplace	திருச்செங்கோடு தினசரி காய்கறி சந்தை	11.3833608, 77.8970145	30 km/h	Medium
11	school	KSR Educational institution	11.3772013, 77.8908807	30 km/h	Medium
12	school	MDV School	11.3719843, 77.8915244	30 km/h	Medium

Route Photos of Risky Spots



Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.38395, 77.89480



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: 11.39671, 77.88878



Risk Type: Turn
Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.37862, 77.89488



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.37850, 77.89453



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.36604, 77.88887



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.34632, 77.86836



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.33882, 77.86218



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.30970, 77.76705



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.29490, 77.74685



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.29133, 77.74660



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.28844, 77.74319



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.28558, 77.74271



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.27326, 77.72991



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.27330, 77.72711



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.27322, 77.72706



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.23054, 77.71796



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.22387, 77.71385



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.16078, 77.70122



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.15953, 77.70067

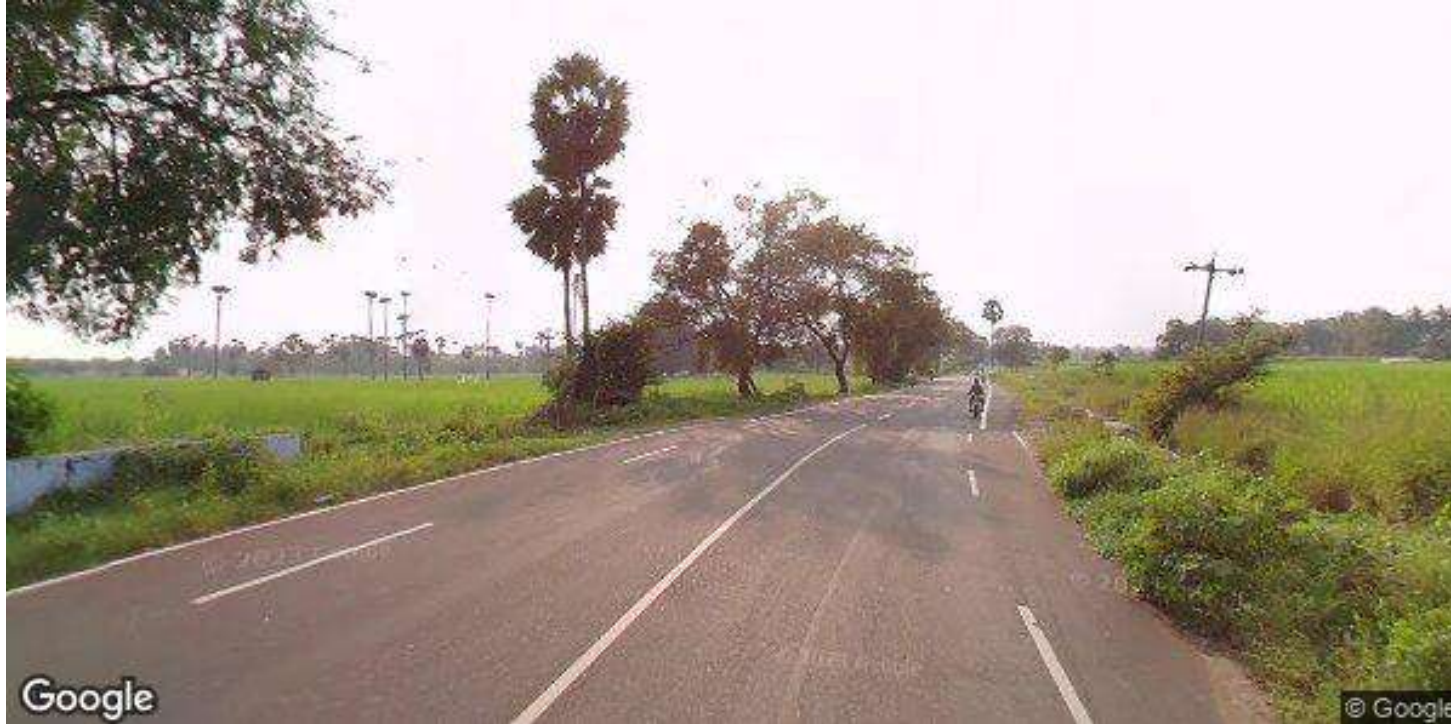


Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.15944, 77.70068



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.11918, 77.67766



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.11740, 77.67198



Risk Type: Turn
Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.10481, 77.67060



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.08730, 77.66436



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.08565, 77.66268

