



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

IOCL Coimbatore Terminal to TNSTC RMTC Palani

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

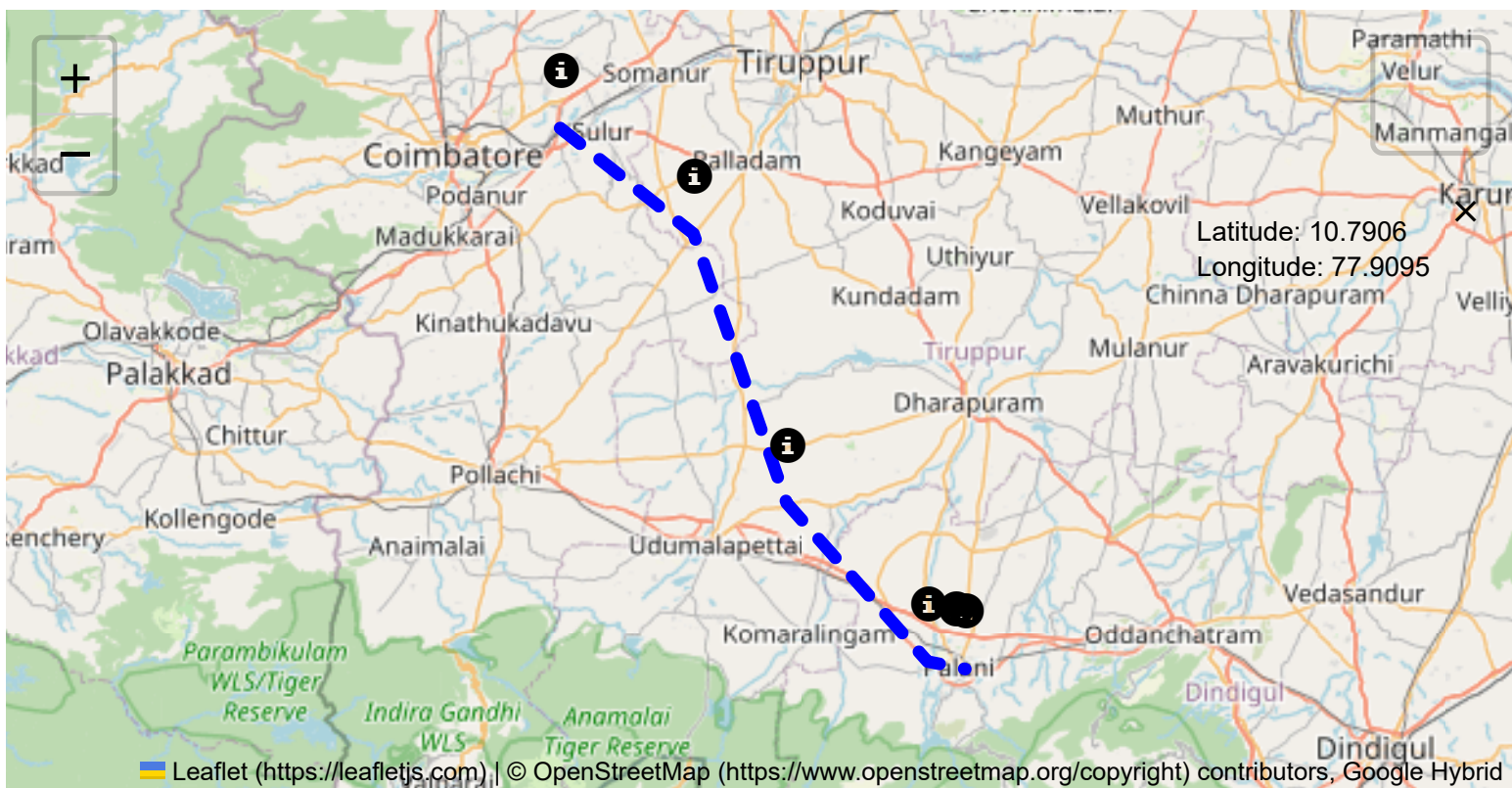
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

Journey Risk Mitigation

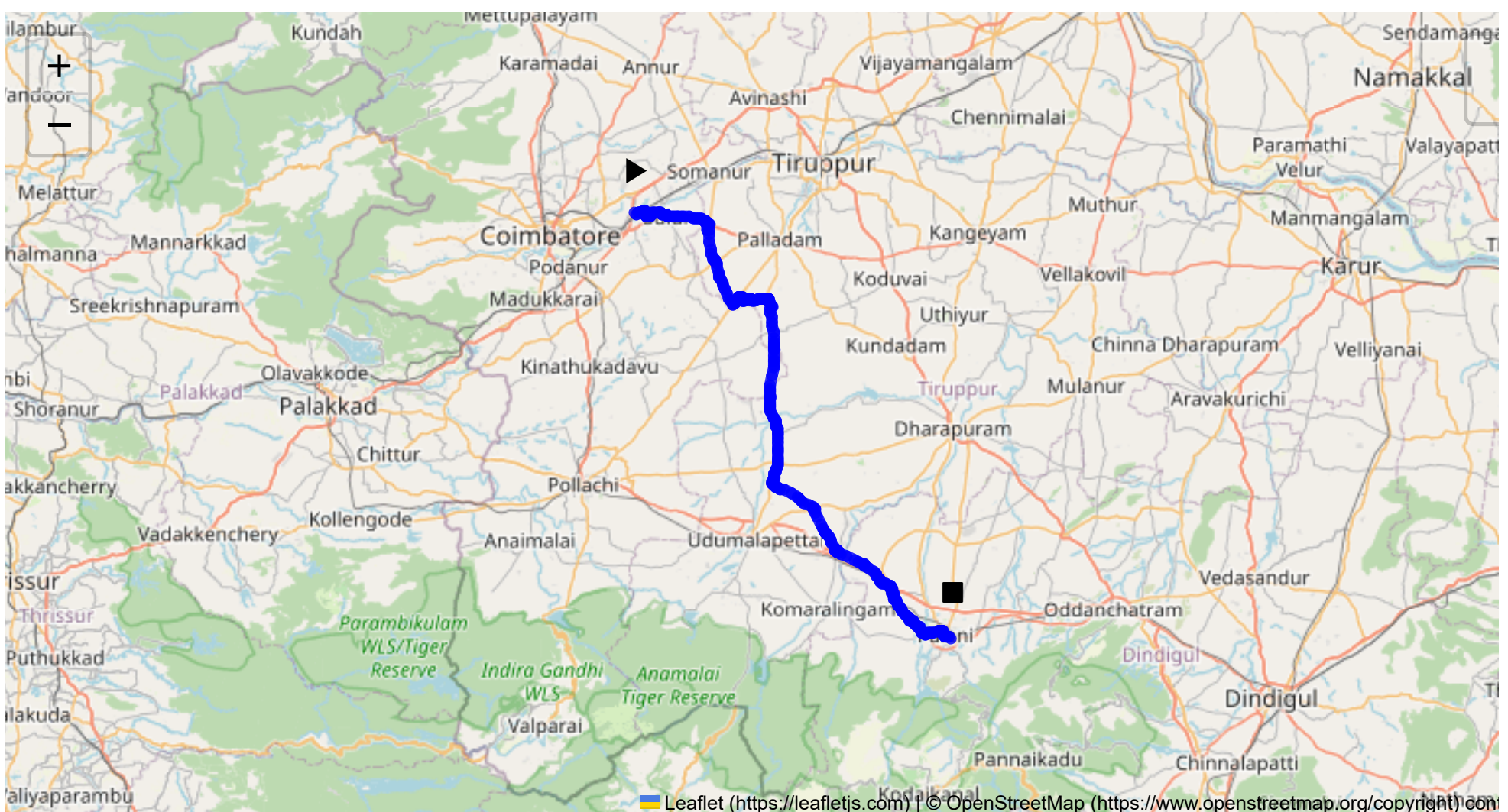
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 101.00 km
Estimated Duration: 2.2 hours
Adjusted Duration (Heavy Vehicle): 2.8 hours
Start: (11.0315, 77.0797)
End: (10.4487, 77.52129)



Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route from Athappagoundenpudur to Anna Nagar, Palani, spans approximately 101 kilometers. Key waypoints include locations in Kamanaickenpalayam, Thungavi, A.Kalayamputhur, and near Devi Electricals in Palani. The journey involves traveling through a mix of rural and semi-urban settings, with the final destination in Palani, a moderate-sized town.

2. Typical Weather Conditions and Potential Weather-Related Hazards

Tamil Nadu generally experiences tropical climate conditions. The region can face heavy monsoon rains between October and December, which may lead to waterlogging and reduced visibility. The hot months, from March to June, can create situations of heat stress, particularly on drivers. Proper ventilation and hydration are essential.

3. Analysis of Traffic Patterns

Traffic tends to be lighter in rural stretches but can become dense as you approach towns like Palladam and Palani. Peak traffic hours are typically between 8:00 AM - 10:00 AM and 5:00 PM - 7:00 PM, especially near these towns. Congestion is common in the town centers, particularly around junctions and markets.

4. Assessment of Road Quality and Infrastructure

The quality of roads varies from well-maintained highways to narrower rural roads, which may have potholes or uneven surfaces. Larger highways approach towns, while smaller, local roads require careful navigation as they may lack signage and lighting.

5. Suggestions for Alternative Routes for Emergencies

An emergency detour can be taken through Udumalaipettai, providing an alternate path that connects back to the regional highway towards Palani. This route might be slightly longer but provides better access to larger service stations and emergency facilities.

6. Summary of Local Regulations Affecting Hazardous Material Transport

Tamil Nadu has strict guidelines on the transport of hazardous materials, requiring permits and adherence to designated routes where heavy vehicles can reduce risk to populated areas. Ensure compliance with these regulations to avoid penalties and ensure safety.

7. Overview of Historical Incidents

There have been isolated incidents involving heavy vehicles, primarily due to equipment failure or human error, typically at intersections or during overtaking maneuvers. Review of incident reports suggests emphasizing vehicle maintenance and driver training.

8. Environmental Considerations and Sensitive Areas

The route passes near agricultural land and small populated areas, requiring drivers to minimize emissions by maintaining proper vehicle performance and by planning refueling stops away from sensitive zones to avoid spills.

9. Analysis of Communication Coverage

Mobile network coverage is generally good along the major stretches but may become patchy in rural areas, especially as you transition between different providers. Utilize GPS devices that do not solely rely on cellular data for navigation.

10. Estimated Emergency Response Times

Response times can vary from 15-30 minutes in urban areas near Palani to 45-60 minutes or more in rural sections due to limited accessibility and resources. Establishing contact with local emergency services before the trip is recommended.

11. Overall Summary of Risk Assessment

This route presents moderate risk owing to some narrow or uneven roads, potential for heavy rain, and traffic congestion in towns. Preparation, such as reviewing route alerts, ensuring compliance with transport regulations, and maintaining frequent communication checks, will mitigate potential hazards. Additionally, driver rest and emergency preparedness are paramount for overall trip safety.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	10.45134, 77.51291	15 KM/Hr
1	Turn	High	11.03174, 77.08443	15 KM/Hr
2	Turn	High	11.03231, 77.08448	15 KM/Hr
3	Turn	Medium	11.03306, 77.08758	30 KM/Hr
4	Blind Spot	Blind Spot	11.03364, 77.08947	10 KM/Hr
5	Blind Spot	Blind Spot	11.03267, 77.08951	10 KM/Hr
6	Turn	High	11.03560, 77.09403	15 KM/Hr
7	Turn	Medium	11.03521, 77.09439	30 KM/Hr
8	Turn	Medium	11.03106, 77.09486	30 KM/Hr
9	Turn	Medium	11.03057, 77.09537	30 KM/Hr
10	Turn	Medium	11.02939, 77.09572	30 KM/Hr
11	Turn	Medium	11.02927, 77.09595	30 KM/Hr
12	Turn	Medium	11.02777, 77.09694	30 KM/Hr
13	Turn	Medium	11.02727, 77.09847	30 KM/Hr
14	Turn	Medium	11.03323, 77.11422	30 KM/Hr
15	Turn	High	11.03352, 77.11509	15 KM/Hr
16	Turn	Medium	11.03154, 77.11673	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
17	Turn	Medium	11.03146, 77.11854	30 KM/Hr
18	Turn	Medium	11.02970, 77.12192	30 KM/Hr
19	Turn	High	11.02928, 77.12212	15 KM/Hr
20	Turn	Medium	11.02950, 77.12393	30 KM/Hr
21	Turn	High	11.01759, 77.18426	15 KM/Hr
22	Turn	High	10.96625, 77.19239	15 KM/Hr
23	Turn	High	10.96628, 77.19310	15 KM/Hr
24	Blind Spot	Blind Spot	10.90680, 77.21854	10 KM/Hr
25	Turn	Medium	10.90926, 77.22051	30 KM/Hr
26	Turn	High	10.91679, 77.22642	15 KM/Hr
27	Turn	Medium	10.91599, 77.22755	30 KM/Hr
28	Turn	High	10.91570, 77.22991	15 KM/Hr
29	Turn	Medium	10.91277, 77.23112	30 KM/Hr
30	Turn	High	10.91255, 77.23148	15 KM/Hr
31	Turn	Medium	10.91283, 77.23208	30 KM/Hr
32	Turn	High	10.91412, 77.23606	15 KM/Hr
33	Turn	Medium	10.91382, 77.24112	30 KM/Hr
34	Turn	High	10.91530, 77.26625	15 KM/Hr
35	Turn	High	10.65984, 77.27186	15 KM/Hr
36	Turn	Medium	10.62623, 77.33109	30 KM/Hr
37	Turn	Medium	10.59258, 77.34684	30 KM/Hr
38	Blind Spot	Blind Spot	10.56755, 77.36194	10 KM/Hr
39	Blind Spot	Blind Spot	10.56785, 77.36058	10 KM/Hr
40	Turn	High	10.51927, 77.43698	15 KM/Hr
41	Turn	High	10.51890, 77.43690	15 KM/Hr
42	Turn	Medium	10.51818, 77.43818	30 KM/Hr
43	Turn	Medium	10.45743, 77.48025	30 KM/Hr
44	Turn	Medium	10.45505, 77.48386	30 KM/Hr
45	Turn	Medium	10.45468, 77.48408	30 KM/Hr
46	Turn	Medium	10.45395, 77.48616	30 KM/Hr
47	Turn	Medium	10.45586, 77.48978	30 KM/Hr
48	Turn	High	10.45747, 77.50695	15 KM/Hr
49	Turn	Medium	10.45854, 77.50871	30 KM/Hr
50	Turn	High	10.45853, 77.50953	15 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
51	Turn	High	10.45061, 77.51441	15 KM/Hr
52	Turn	Medium	10.45063, 77.51445	30 KM/Hr

Emergency Locations

	type	name	coordinates	speed_limit	risk_level
1	hospital	Balaji Hospital, Sulur	11.0277947, 77.1298133	30 km/h	Medium
3	hospital	Government Hospital Karadivavi	10.961828, 77.1943977	30 km/h	Medium
4	hospital	Vel Multispeciality Hospital	10.4598547, 77.5127337	30 km/h	Medium
6	hospital	Sanjay Surgical Hospital	10.4542017, 77.5138074	30 km/h	Medium
7	clinic	Sankararaman Nursing home	10.4545446, 77.5132093	30 km/h	Medium
9	police	Palani Town Police Station	10.4528743, 77.5155698	30 km/h	Medium
10	hospital	Ramya Eye Hospital	10.4513085, 77.5145136	30 km/h	Medium
11	hospital	Nitharsana Ortho Clinic	10.4516432, 77.514925	30 km/h	Medium
12	hospital	Government Hospital Palani	10.44856, 77.516727	30 km/h	Medium
13	hospital	PPN hospital cardiac care	10.4518523, 77.5167875	30 km/h	Medium
14	hospital	MPS Hospital	10.4517732, 77.516412	30 km/h	Medium
15	hospital	KG Hospital, Palani	10.4493418, 77.5181043	30 km/h	Medium
17	hospital	Ds Hospital Palani	10.4511464, 77.5191526	30 km/h	Medium
18	hospital	Sai Krishna Women's Hospital	10.4497, 77.521652	30 km/h	Medium

Crowded Spots

	type	name	coordinates	speed_limit	risk_level
0	marketplace	Sulur Market	11.029887, 77.1232729	30 km/h	Medium
2	school	Kendriya Vidhyalaya School	11.0254394, 77.1609298	30 km/h	Medium
5	school	CSI wakeman school	10.4550372, 77.5136922	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
8	marketplace	Daily Market	10.4514131, 77.5134508	30 km/h	Medium
16	school	Municipal Higher Secondary School	10.449848, 77.5194144	30 km/h	Medium
19	school	Akshaya Public School	10.446954, 77.5216673	30 km/h	Medium

Route Photos of Risky Spots



Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.45134, 77.51291



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.03174, 77.08443



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.03231, 77.08448



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.03306, 77.08758



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Coordinates: 11.03364, 77.08947



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Coordinates: 11.03267, 77.08951



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.03560, 77.09403



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.03521, 77.09439



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.03106, 77.09486

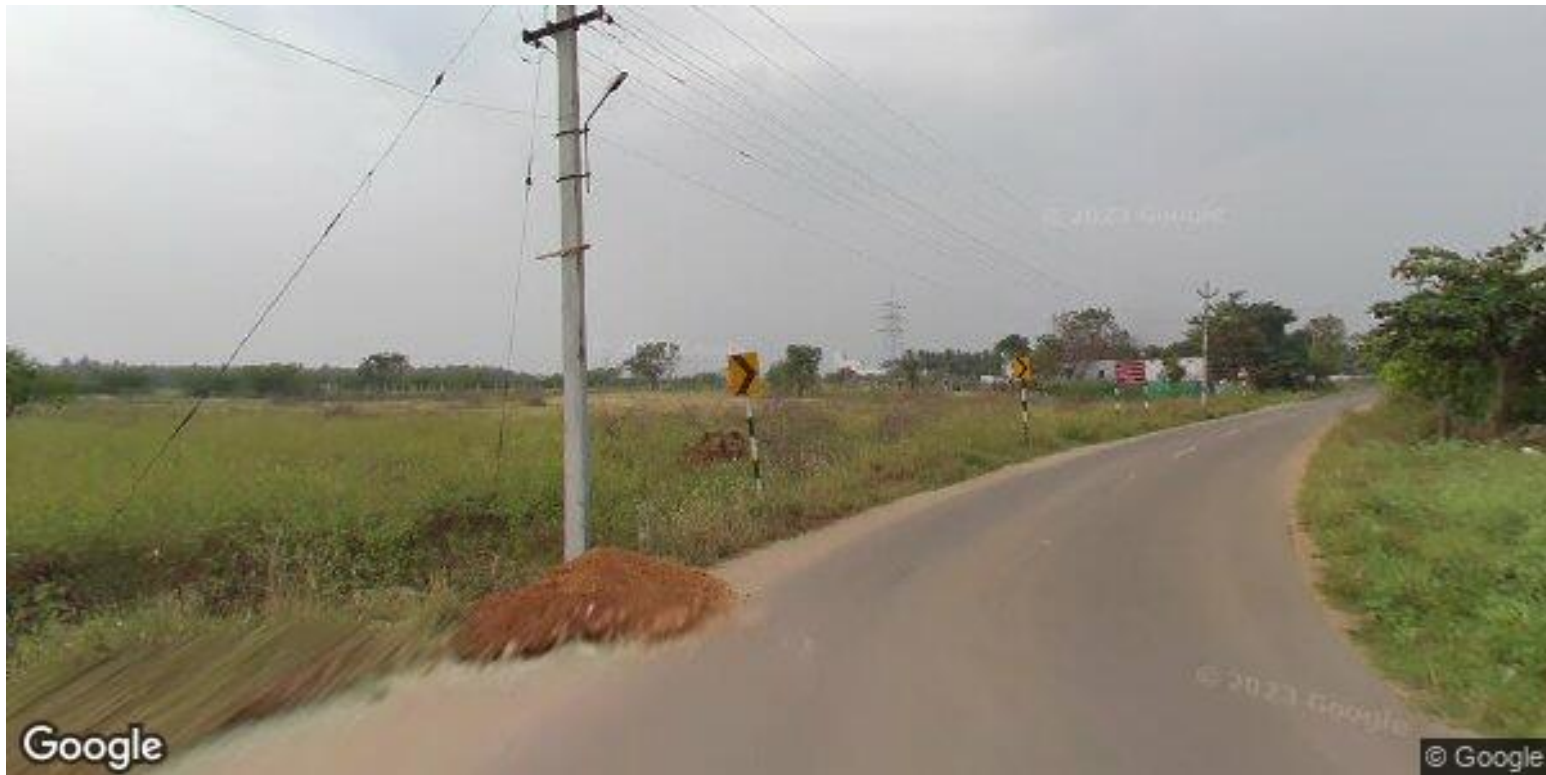


Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.03057, 77.09537



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.02939, 77.09572



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.02927, 77.09595



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.02777, 77.09694



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.02727, 77.09847



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.03323, 77.11422



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.03352, 77.11509



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.03154, 77.11673



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.03146, 77.11854



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.02970, 77.12192



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.02928, 77.12212



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.02950, 77.12393



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.01759, 77.18426



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.96625, 77.19239



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.96628, 77.19310



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Coordinates: 10.90680, 77.21854



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.90926, 77.22051



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.91679, 77.22642



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.91599, 77.22755



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.91570, 77.22991



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.91277, 77.23112



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.91255, 77.23148



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.91283, 77.23208



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.91412, 77.23606



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.91382, 77.24112



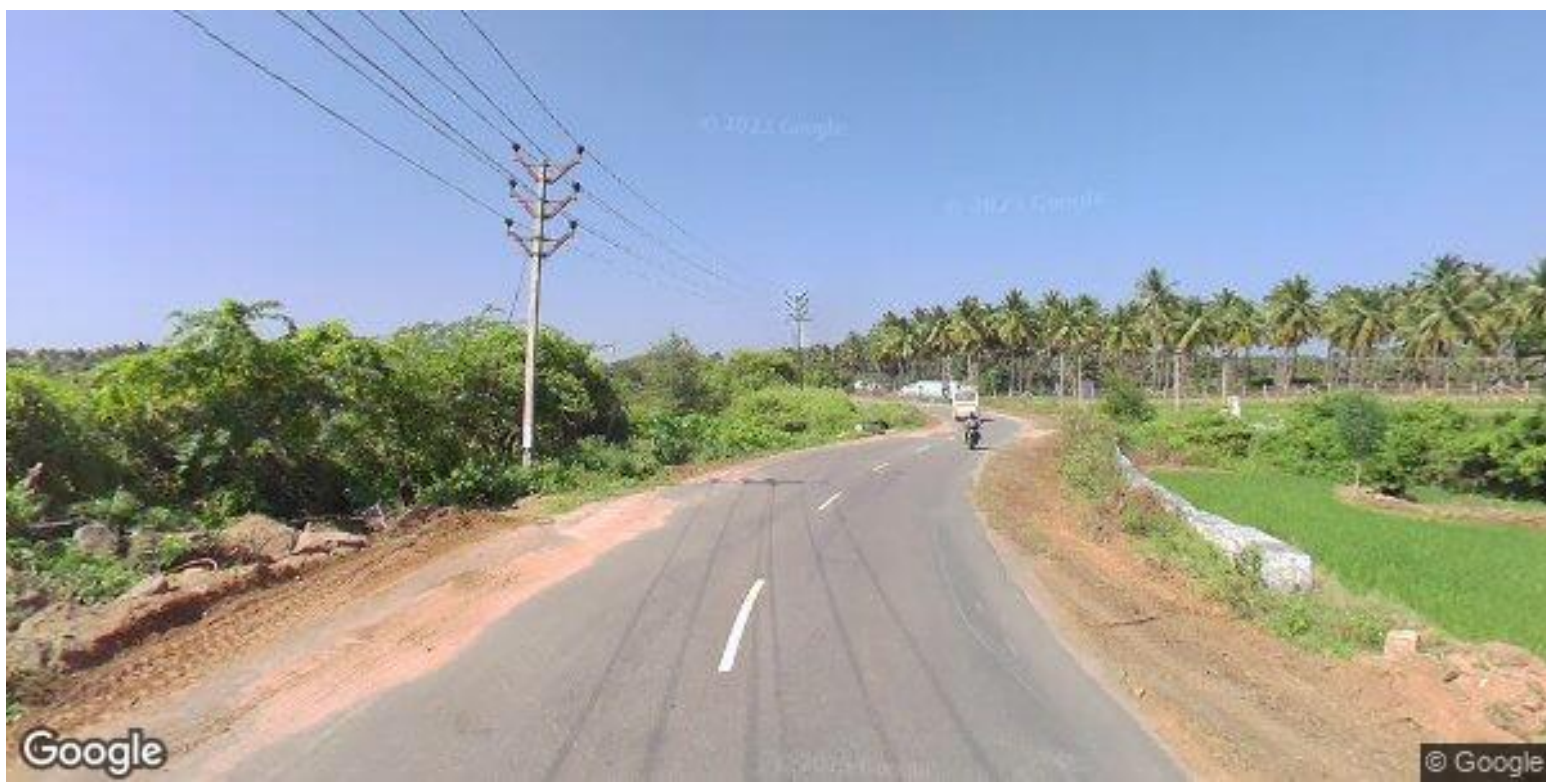
Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.91530, 77.26625



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.65984, 77.27186



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.62623, 77.33109



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.59258, 77.34684



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 10.56755, 77.36194



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.51927, 77.43698



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.51890, 77.43690



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.51818, 77.43818



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.45743, 77.48025



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.45505, 77.48386



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.45468, 77.48408



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.45395, 77.48616



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.45586, 77.48978



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.45747, 77.50695



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.45854, 77.50871



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.45853, 77.50953



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.45061, 77.51441



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.45063, 77.51445
