



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

### IOCL Coimbatore Terminal to TNSTC JTC 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.

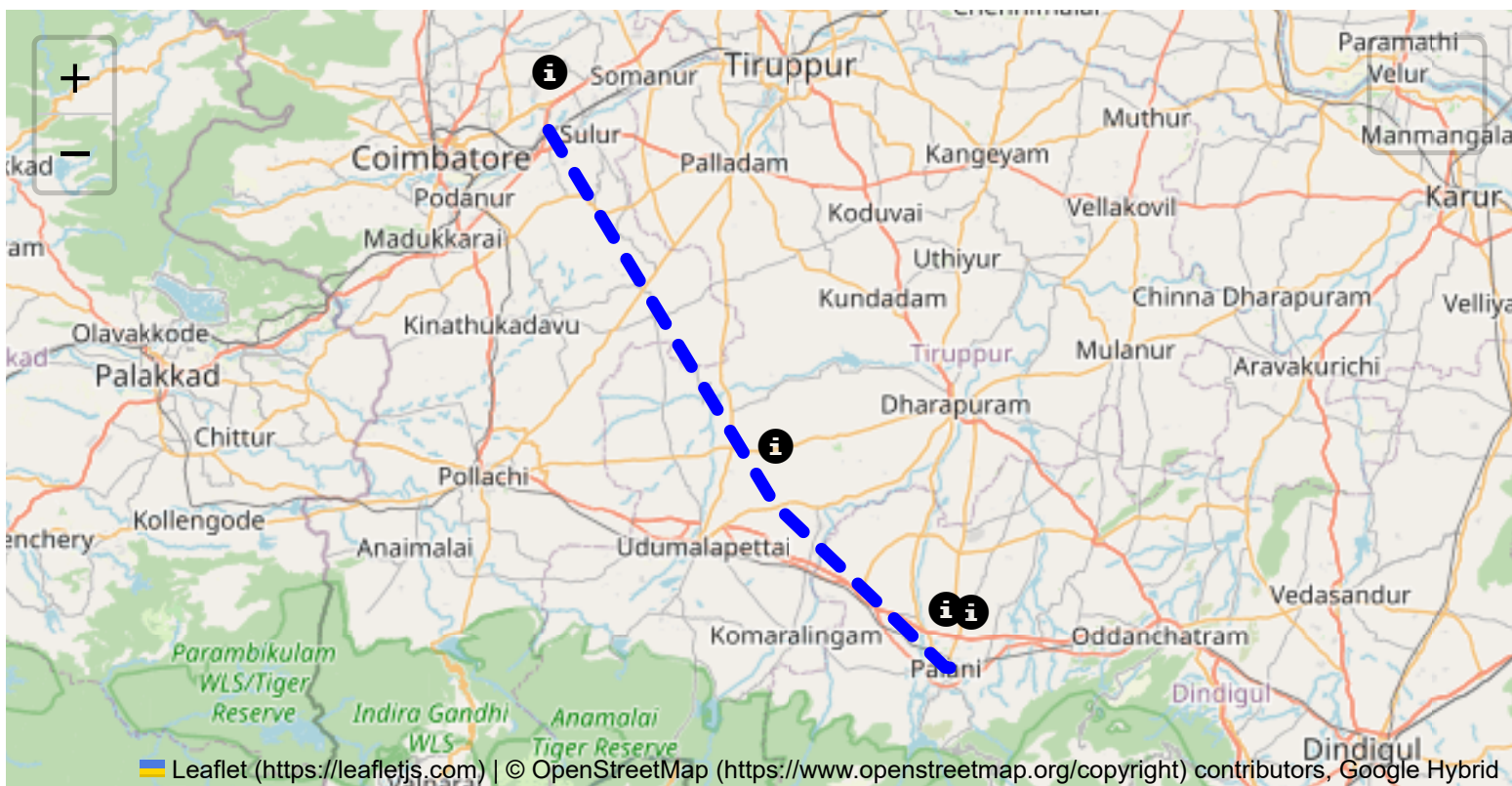
## **Journey Risk Mitigation**

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.

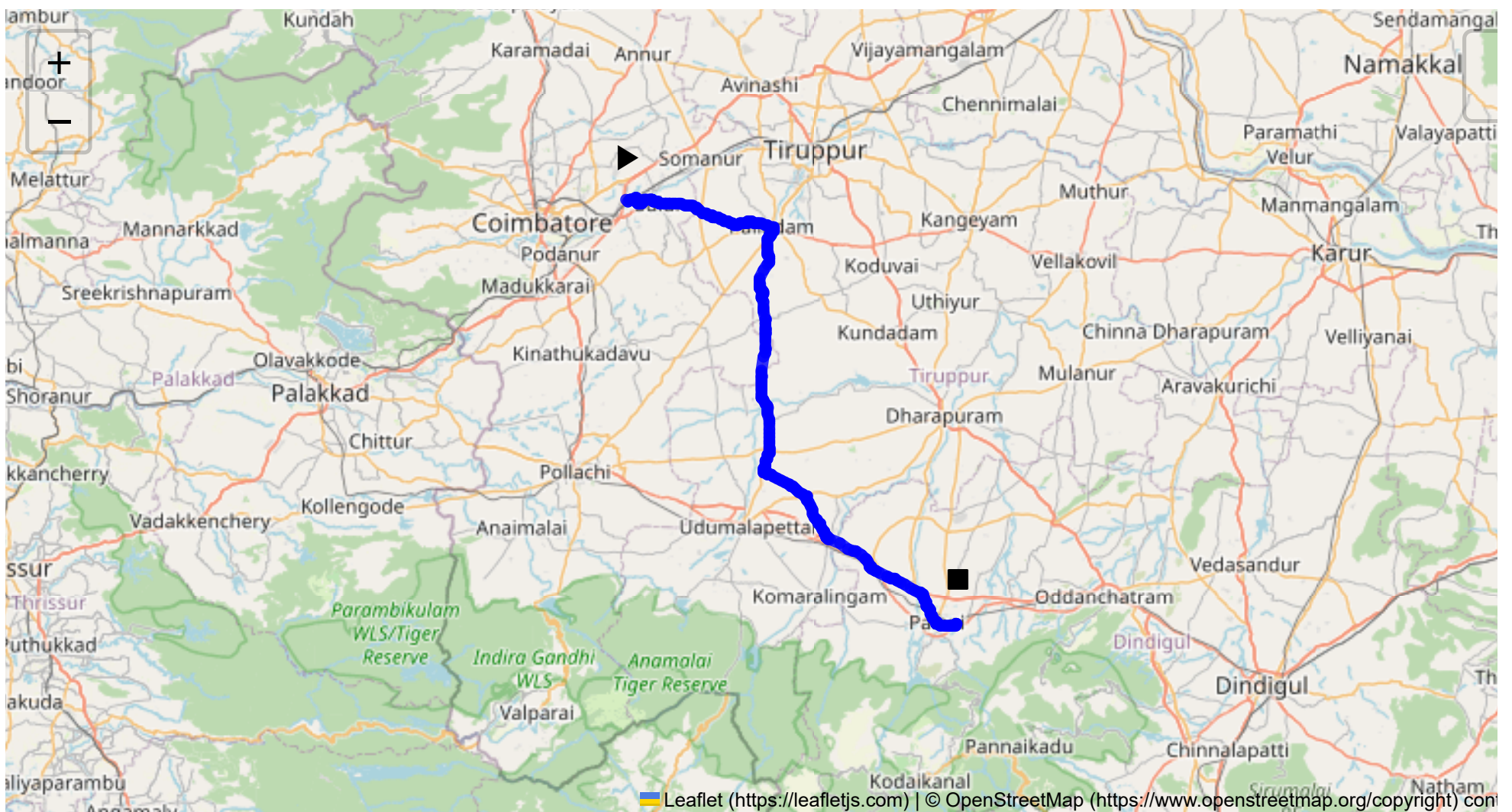
## **Compliance with Government Directives**

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: 104.34 km**  
**Estimated Duration: 2.2 hours**  
**Adjusted Duration (Heavy Vehicle): 2.7 hours**  
**Start: (11.0315, 77.0797)**  
**End: (10.449671, 77.54147)**



## Welcome to the Journey Risk Management Study

Here's an analysis of the route from Athappagoundenpudur, Coimbatore, Tamil Nadu to Sivagiripatti, Tamil Nadu, taking into account various safety and operational factors:

1. **Overview of the Route Map:** The route covers approximately 104.34 kilometers and traverses through a mix of rural areas, small towns, and hilly regions. Starting in Coimbatore, it moves through Kottamangalam, Thungavi, Madathukulam, and Palani, before reaching the destination in



Sivagiripatti. This route includes a blend of state highways, local roads, and stretches that may pass through dense rural zones.

2. **Typical Weather Conditions and Potential Weather-related Hazards:** The region experiences a tropical climate. The monsoon season (June to September) could present challenges like heavy rainfall, flooding, and landslides, particularly around hilly areas near Palani. During summer months, high temperatures may affect road conditions, while mist can be expected in higher altitudes during the winter.
3. **Analysis of Traffic Patterns:** Traffic tends to be heavier around towns like Palani, especially during festivals and weekends due to pilgrim activities. Peak hours generally align with local business hours (8-10 AM and 5-7 PM). There may be congestion near market areas and schools during these times.
4. **Assessment of Road Quality and Infrastructure:** The road quality varies, with state highways being relatively well-maintained. However, some sections, particularly the local roads, may have potholes and less defined lanes. Watch for less visible or non-existent road markings and inadequate street lighting at night.
5. **Suggestions for Alternative Routes for Emergencies:** An alternative route could involve using NH83, offering a more straightforward path, though it may increase travel time. Keep in mind the road conditions and availability of services along alternative paths before diverting.
6. **Summary of Local Regulations Affecting Hazardous Material Transport:** Transporting hazardous materials in Tamil Nadu requires adherence to strict state regulations that dictate permissible times (often restricted during peak hours and at night for safety), permitting processes, and necessary signage on vehicles.
7. **Overview of Historical Incidents Involving Heavy Vehicles or Hazardous Materials:** Historical incidents have been sporadic, with occasional road spills or vehicle overturns. Common causes include driver fatigue and challenging road conditions, particularly during poor weather.
8. **Environmental Considerations and Sensitive Areas:** The route crosses areas close to ecologically sensitive zones, particularly near Palani Hills, requiring adherence to environmental guidelines to prevent spills or soil contamination.
9. **Analysis of Communication Coverage:** While most areas should have mobile coverage, potential dead zones may exist in more rural or forested segments near Palani. It's crucial for drivers to report their position regularly and have contingency plans for long communication blackouts.
10. **Estimated Emergency Response Times:** Emergency response is generally efficient near larger towns with developed infrastructure, such as Palani. However, response times could be longer in rural stretches, potentially taking up to an hour or more depending on exact location and access challenges.
11. **Overall Summary of Risk Assessment:** The primary risks on this route include weather-related hazards, poor road conditions in sections, heavy congestion in urban centers, and environmental sensitivities near Palani hills. Precautions such as adhering to predicted weather patterns, planning for detours, and complying with local regulations for hazardous materials transport will be essential. Excellent pre-trip inspections, diligent weather monitoring, and emergency preparedness will help mitigate these risks effectively.

## Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Turn	High	11.03174, 77.08443	15 KM/Hr
1	Turn	High	11.03231, 77.08448	15 KM/Hr
2	Turn	Medium	11.03306, 77.08758	30 KM/Hr
3	Blind Spot	Blind Spot	11.03364, 77.08947	10 KM/Hr
4	Blind Spot	Blind Spot	11.03267, 77.08951	10 KM/Hr
5	Turn	High	11.03560, 77.09403	15 KM/Hr
6	Turn	Medium	11.03521, 77.09439	30 KM/Hr
7	Turn	Medium	11.03106, 77.09486	30 KM/Hr
8	Turn	Medium	11.03057, 77.09537	30 KM/Hr
9	Turn	Medium	11.02939, 77.09572	30 KM/Hr
10	Turn	Medium	11.02927, 77.09595	30 KM/Hr
11	Turn	Medium	11.02777, 77.09694	30 KM/Hr
12	Turn	Medium	11.02727, 77.09847	30 KM/Hr
13	Turn	Medium	11.03323, 77.11422	30 KM/Hr
14	Turn	High	11.03352, 77.11509	15 KM/Hr
15	Turn	Medium	11.03154, 77.11673	30 KM/Hr
16	Turn	Medium	11.03146, 77.11854	30 KM/Hr
17	Turn	Medium	11.02970, 77.12192	30 KM/Hr
18	Turn	High	11.02928, 77.12212	15 KM/Hr
19	Turn	Medium	11.02950, 77.12393	30 KM/Hr
20	Turn	Medium	10.99572, 77.28148	30 KM/Hr
21	Turn	Medium	10.99541, 77.28179	30 KM/Hr
22	Turn	High	10.99424, 77.28192	15 KM/Hr
23	Turn	Medium	10.99396, 77.28249	30 KM/Hr
24	Turn	High	10.99391, 77.28559	15 KM/Hr
25	Turn	Medium	10.98129, 77.27944	30 KM/Hr
26	Turn	Medium	10.91573, 77.26608	30 KM/Hr
27	Turn	High	10.65968, 77.27199	15 KM/Hr
28	Turn	Medium	10.62623, 77.33109	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
29	Blind Spot	Blind Spot	10.56755, 77.36194	10 KM/Hr
30	Blind Spot	Blind Spot	10.56785, 77.36059	10 KM/Hr
31	Turn	High	10.49126, 77.49541	15 KM/Hr
32	Turn	Medium	10.47543, 77.49985	30 KM/Hr
33	Turn	Medium	10.45151, 77.51287	30 KM/Hr
34	Turn	High	10.45061, 77.51441	15 KM/Hr
35	Turn	Medium	10.45063, 77.51446	30 KM/Hr
36	Turn	High	10.44792, 77.54035	15 KM/Hr
37	Turn	High	10.44980, 77.54030	15 KM/Hr
38	Turn	Medium	10.44996, 77.54094	30 KM/Hr

## Emergency Locations

	type	name	coordinates	speed_limit	risk_level
1	hospital	Balaji Hospital, Sular	11.0277947, 77.1298133	30 km/h	Medium
4	hospital	Ponni Hospital - Palladam	10.9965327, 77.2758865	30 km/h	Medium
5	hospital	Palladam Government Hospital	10.9962561, 77.2803585	30 km/h	Medium
6	hospital	Sanjeevi Hospital, Palladam	10.9963103, 77.2800924	30 km/h	Medium
7	police	Palladam Police Station	10.9966966, 77.279193	30 km/h	Medium
8	clinic	Rajeshwari Nursing Home	10.9953069, 77.2841138	30 km/h	Medium
9	hospital	Balaji Hospital	10.9936939, 77.2849449	30 km/h	Medium
11	hospital	Sanjay Surgical Hospital	10.4542017, 77.5138074	30 km/h	Medium
12	clinic	Sankararaman Nursing home	10.4545446, 77.5132093	30 km/h	Medium
14	police	Palani Town Police Station	10.4528743, 77.5155698	30 km/h	Medium
15	hospital	Ramya Eye Hospital	10.4513085, 77.5145136	30 km/h	Medium
16	hospital	Nitharsana Ortho Clinic	10.4516432, 77.514925	30 km/h	Medium
17	hospital	Government Hospital Palani	10.44856, 77.516727	30 km/h	Medium
18	hospital	PPN hospital cardiac care	10.4518523, 77.5167875	30 km/h	Medium
19	hospital	MPS Hospital	10.4517732, 77.516412	30 km/h	Medium
20	hospital	KG Hospital, Palani	10.4493418, 77.5181043	30 km/h	Medium
22	hospital	Ds Hospital Palani	10.4511464, 77.5191526	30 km/h	Medium
23	hospital	Sai Krishna Women's Hospital	10.4497, 77.521652	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
25	hospital	K V Hospital (Iswarya Fertility Center)	10.4488063, 77.52472	30 km/h	Medium
26	hospital	satish babu hospital	10.4475295, 77.524816	30 km/h	Medium
27	hospital	ENT clinic	10.4480545, 77.5242001	30 km/h	Medium
30	hospital	ortho hospital	10.4481759, 77.5285028	30 km/h	Medium
31	hospital	Priya Hospital, Dindigul	10.4485636, 77.5314268	30 km/h	Medium
32	clinic	Raaj Poly Clinic Palani	10.44798, 77.531321	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
3	school	Infant Jesus Matriculation Higher Secondary School	10.9986758, 77.2493732	30 km/h	Medium
10	school	CSI wakeman school	10.4550372, 77.5136922	30 km/h	Medium
13	marketplace	Daily Market	10.4514131, 77.5134508	30 km/h	Medium
21	school	Municipal Higher Secondary School	10.449848, 77.5194144	30 km/h	Medium
24	school	Akshaya Public School	10.446954, 77.5216673	30 km/h	Medium
28	college	Arulmigu Palaniandavar Polytechnic College	10.4461092, 77.5266362	30 km/h	Medium
29	college	Arulmigu Palaniyandavar Arts & Science College	10.4461317, 77.5287922	30 km/h	Medium

### Route Photos of Risky Spots





**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

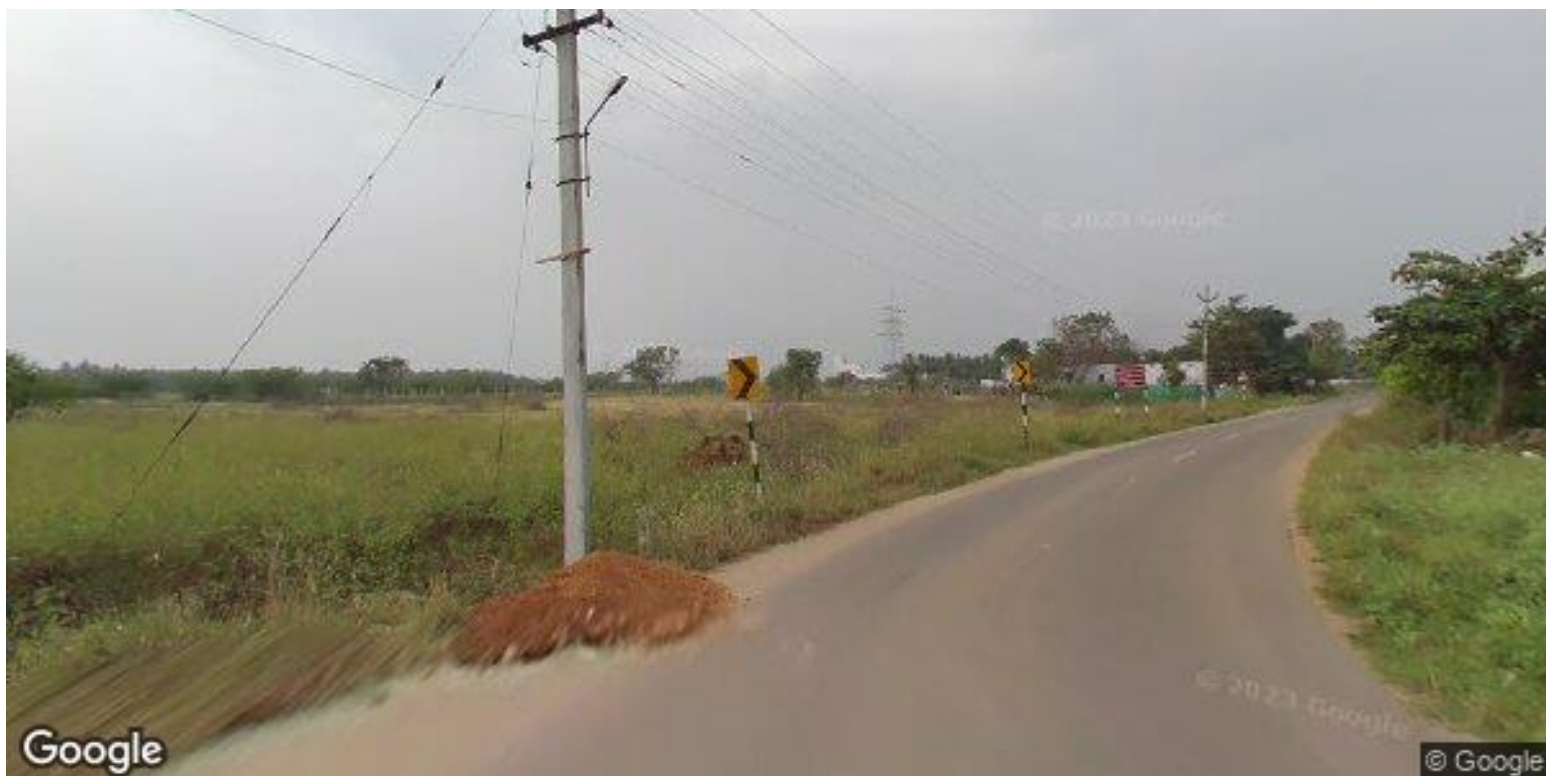




**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.03106, 77.09486



**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:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 10.99572, 77.28148



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 10.99541, 77.28179





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 10.99424, 77.28192



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 10.99396, 77.28249



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 10.99391, 77.28559





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 10.98129, 77.27944



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 10.91573, 77.26608





**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 10.65968, 77.27199



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



**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:** 10.49126, 77.49541



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 10.47543, 77.49985





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 10.45151, 77.51287



**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, 77.51446





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 10.44792, 77.54035



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 10.44980, 77.54030





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 10.44996, 77.54094

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