



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

### IOCL Coimbatore Terminal to Arul Murugan Fuels

#### 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**

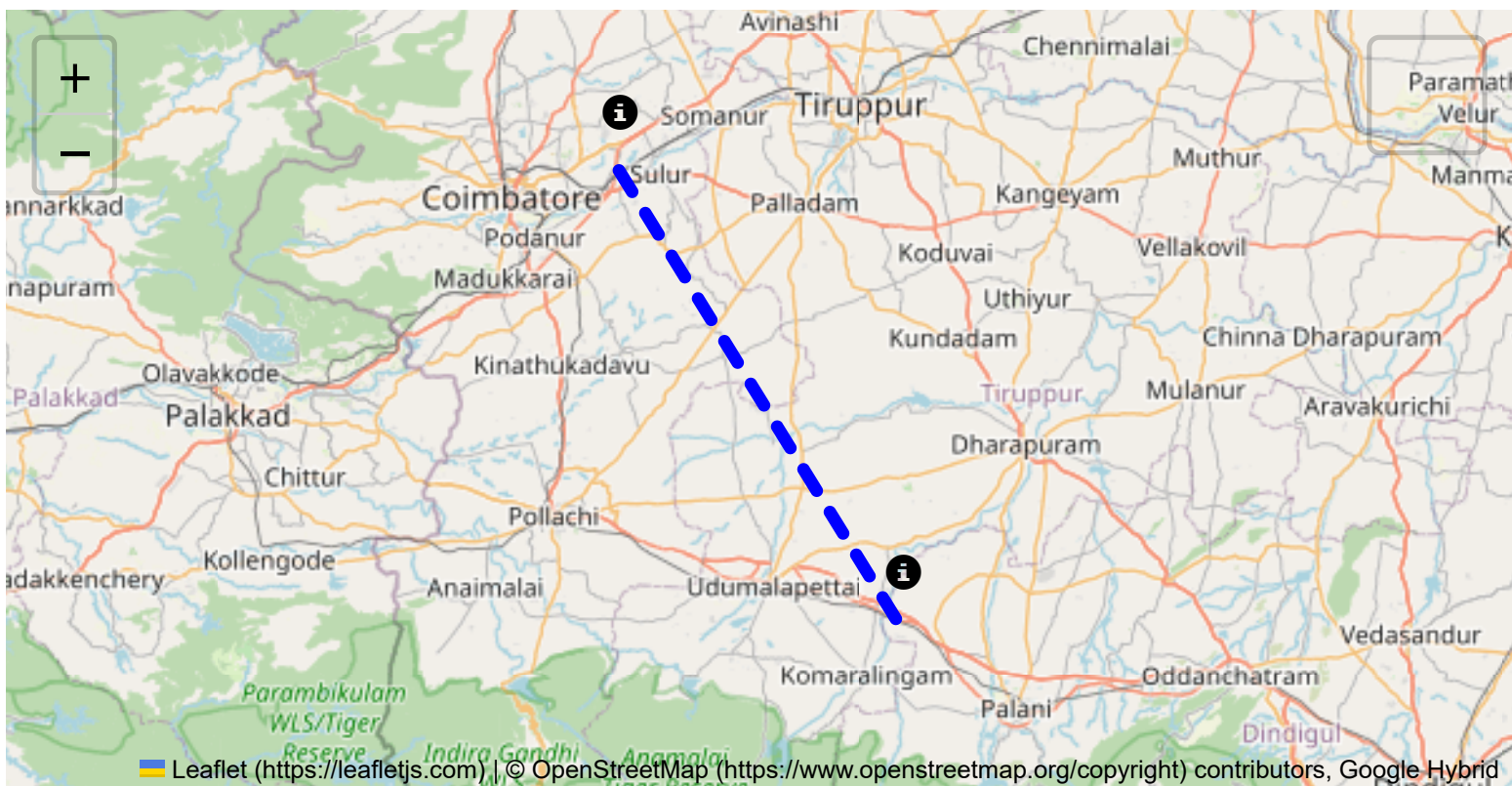
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

## **Journey Risk Mitigation**

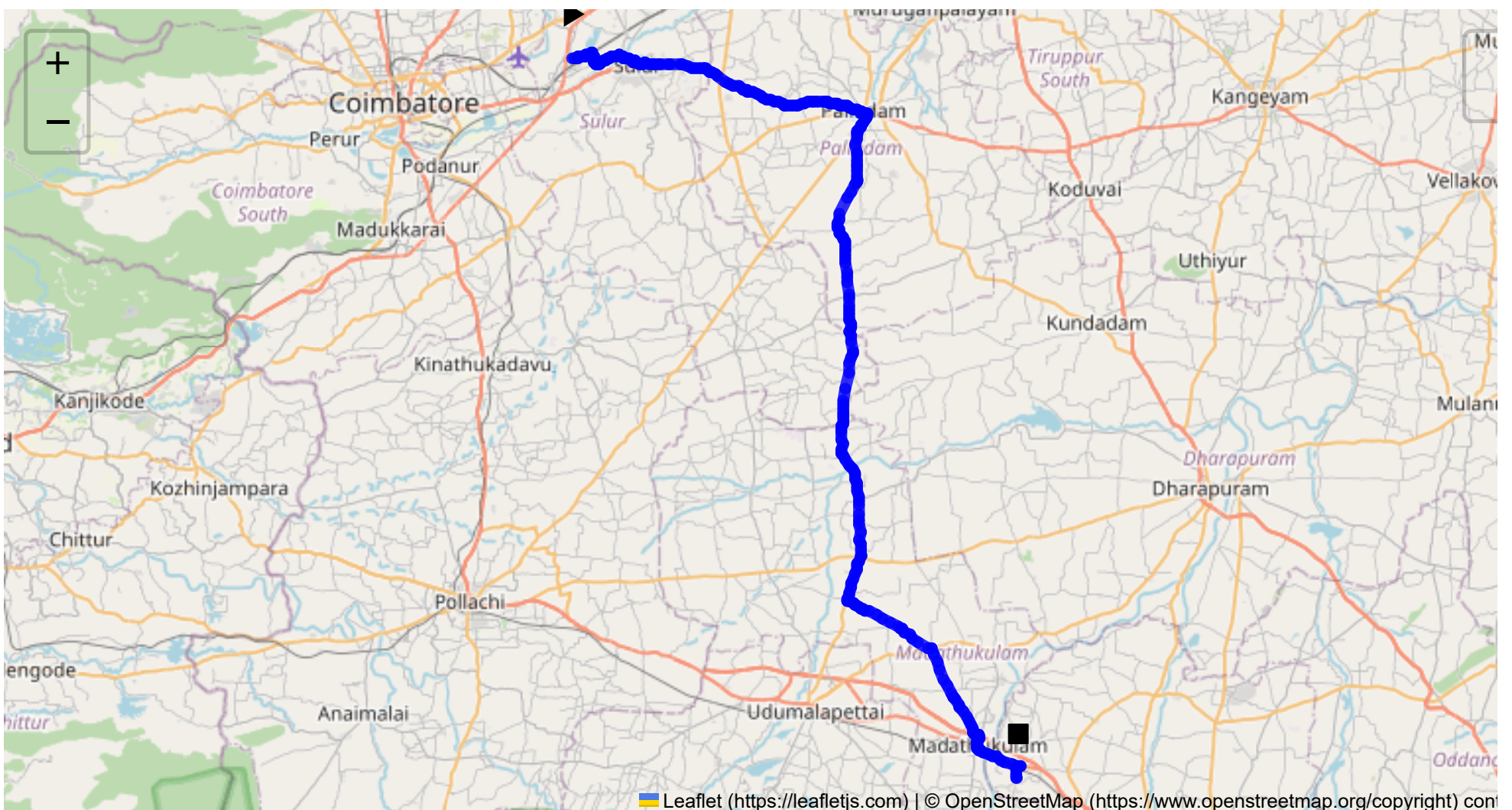
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 84.69 km**  
**Estimated Duration: 1.9 hours**  
**Adjusted Duration (Heavy Vehicle): 2.3 hours**  
**Start: (11.0315, 77.0797)**  
**End: (10.5373304, 77.3897633)**



## Welcome to the Journey Risk Management Study

### Route Safety Analysis Report

#### 1. Overview of the Route Map

The route from Athappagoundenpudur in Coimbatore to Kandiya Goundan Puthur spans approximately 84.69 kilometers, traversing a mix of rural and semi-urban areas in Tamil Nadu. This journey typically



takes around 1.86 hours for heavy vehicles, depending on traffic and road conditions.

## 2. Typical Weather Conditions and Potential Hazards

The region experiences a tropical climate, with temperatures ranging from 25°C to 35°C. The monsoon season from June to September can bring heavy rain, leading to slippery roads and potential flooding in low-lying areas. During these months, there is an increased risk of landslides in hilly areas, particularly if traveling through the Western Ghats.

## 3. Traffic Patterns and Congestion-Prone Areas

Traffic tends to be heavier during morning (7 AM - 9 AM) and evening (5 PM - 7 PM) hours. Key congestion-prone areas include urban segments near major townships, market areas, and intersections with national or state highways. Rural roads may have less traffic but can occasionally be blocked by slow-moving farm vehicles.

## 4. Road Quality and Infrastructure

The route comprises a mix of state highways and rural roads. State highways are generally well-maintained, but rural roads can be narrower and may have potholes. Signage might be limited in rural areas, so drivers need to be cautious and pay attention to navigational aids.

## 5. Alternative Routes for Emergencies

In the event of an emergency, alternative routes can include utilizing nearby state highways or regional roads that bypass smaller towns. It is advisable to use GPS navigation systems that provide real-time updates on road conditions and closures.

## 6. Local Regulations Affecting Hazardous Material Transport

Tamil Nadu has strict regulations for the transportation of hazardous materials. Drivers must ensure the vehicle is properly labeled and that all necessary permits are in place. Compliance with safety standards is imperative, including adherence to speed limits and transport documentation.

## 7. Historical Incidents

While specific historical incident data may not be widely available, the region has witnessed occasional road accidents involving heavy vehicles due to weather conditions and poor road infrastructure. Drivers should exercise caution, particularly during adverse weather conditions.

## 8. Environmental Considerations and Sensitive Areas

The route may pass through agricultural areas and near wildlife corridors. It is important to minimize noise and pollution during transit. Any spillage of hazardous materials could have significant environmental impacts, hence strict adherence to safety protocols is advised.

## 9. Communication Coverage and Potential Dead Zones

Mobile network coverage is generally reliable along state highways but can be patchy in rural areas or through dense foliage regions. Planning for communication dead zones by informing the base or using satellite communication if necessary is advised.

## 10. Estimated Emergency Response Times

Emergency response times can vary from 30 minutes to over an hour, depending on proximity to urban centers or remote areas. It is recommended that truck drivers familiarize themselves with the locations of nearby hospitals, fire stations, and police stations along the route.

## 11. (Corrected from 12.) Overall Summary of Risk Assessment

The route presents moderate risks associated with weather conditions, road quality, and traffic congestion. Adherence to safety protocols for hazardous materials is crucial. Drivers should prepare for potential delays and ensure they have contingencies for poor weather or road conditions. Regular communication with base operations is recommended to maintain safety and adherence to regulations.

This comprehensive report aims to enhance the safety and efficiency of transporting hazardous materials along the designated route.

### Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	U-Turn	High	10.5457591, 77.3928281	10 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	Turn	Medium	11.03279, 77.08941	30 KM/Hr
6	Turn	High	11.03267, 77.08951	15 KM/Hr
7	Turn	High	11.03560, 77.09403	15 KM/Hr
8	Turn	Medium	11.03521, 77.09439	30 KM/Hr
9	Turn	High	11.03106, 77.09486	15 KM/Hr
10	Turn	Medium	11.03057, 77.09537	30 KM/Hr
11	Turn	Medium	11.02939, 77.09572	30 KM/Hr
12	Turn	Medium	11.02927, 77.09595	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
13	Turn	Medium	11.02761, 77.09723	30 KM/Hr
14	Turn	High	11.02727, 77.09847	15 KM/Hr
15	Turn	Medium	11.03323, 77.11422	30 KM/Hr
16	Turn	High	11.03352, 77.11509	15 KM/Hr
17	Turn	Medium	11.03154, 77.11673	30 KM/Hr
18	Turn	Medium	11.03146, 77.11854	30 KM/Hr
19	Turn	Medium	11.02970, 77.12192	30 KM/Hr
20	Turn	High	11.02928, 77.12212	15 KM/Hr
21	Turn	Medium	11.02950, 77.12393	30 KM/Hr
22	Turn	Medium	10.99572, 77.28148	30 KM/Hr
23	Turn	High	10.99541, 77.28179	15 KM/Hr
24	Turn	High	10.99424, 77.28192	15 KM/Hr
25	Turn	High	10.99391, 77.28559	15 KM/Hr
26	Turn	Medium	10.98906, 77.28494	30 KM/Hr
27	Turn	Medium	10.91573, 77.26608	30 KM/Hr
28	Turn	High	10.65978, 77.27183	15 KM/Hr
29	Turn	Medium	10.62623, 77.33109	30 KM/Hr
30	Turn	Medium	10.59335, 77.34672	30 KM/Hr
31	Blind Spot	Blind Spot	10.56658, 77.36496	10 KM/Hr
32	Turn	High	10.55909, 77.36238	15 KM/Hr
33	Turn	Medium	10.54580, 77.39011	30 KM/Hr
34	Turn	Medium	10.54577, 77.39265	30 KM/Hr
35	Blind Spot	Blind Spot	10.54564, 77.39281	10 KM/Hr
36	Blind Spot	Blind Spot	10.54569, 77.39004	10 KM/Hr

### Emergency Locations

	type	name	coordinates	speed_limit	risk_level
1	hospital	Balaji Hospital, Sulur	11.0277947, 77.1298133	30 km/h	Medium
4	hospital	Ponni Hospital - Palladam	10.9965327, 77.2758865	30 km/h	Medium
5	police	Palladam Police Station	10.9966966, 77.279193	30 km/h	Medium
6	hospital	Palladam Government Hospital	10.9962561, 77.2803585	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
7	hospital	Sanjeevi Hospital, Palladam	10.9963103, 77.2800924	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

## 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

## Route Photos of Risky Spots



**Risk Type:** U-Turn

**Risk Level:** High

**Speed Limit:** 10 KM/Hr

**Coordinates:** 10.5457591, 77.3928281





**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:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.03279, 77.08941





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 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

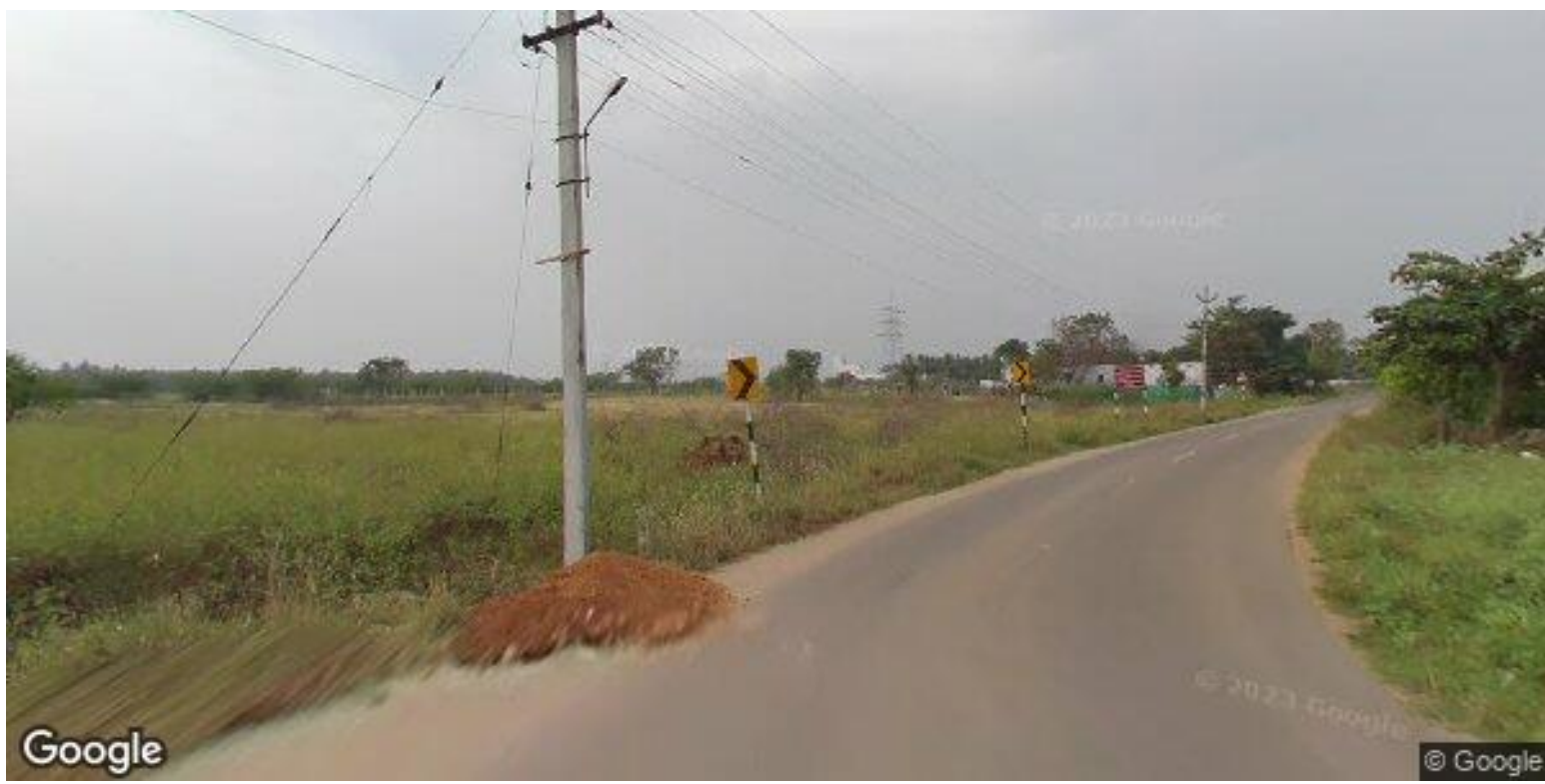


**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.03106, 77.09486



**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:** 11.02761, 77.09723



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 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:** High  
**Speed Limit:** 15 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:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 10.99391, 77.28559





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 10.98906, 77.28494



**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:** 10.65978, 77.27183



**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:** 10.59335, 77.34672





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 10.55909, 77.36238



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 10.54580, 77.39011





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 10.54577, 77.39265



**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 10.54564, 77.39281



**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 10.54569, 77.39004

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