



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

### IOCL Coimbatore Terminal to Sri Krishna 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**

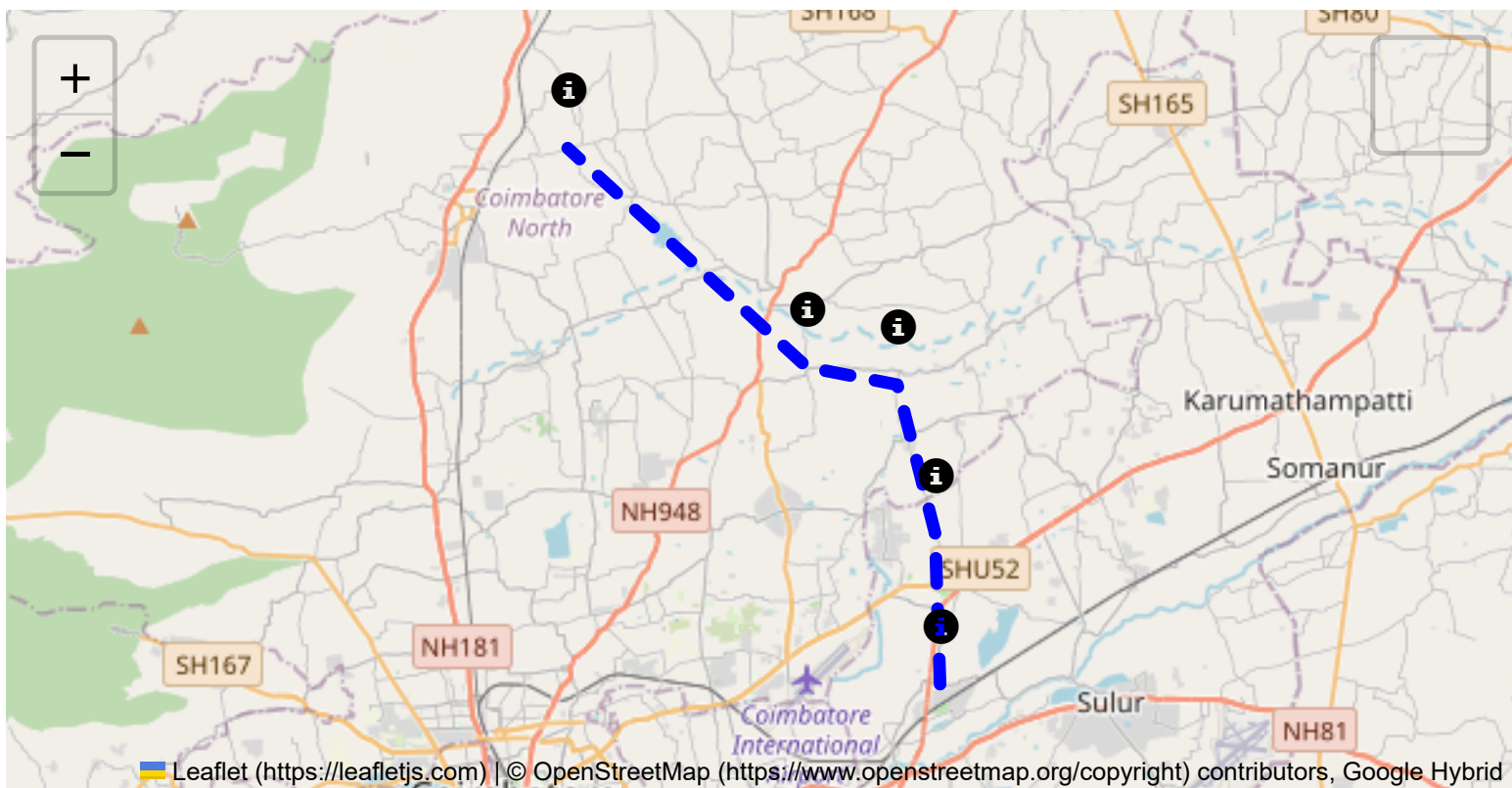
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

## **Journey Risk Mitigation**

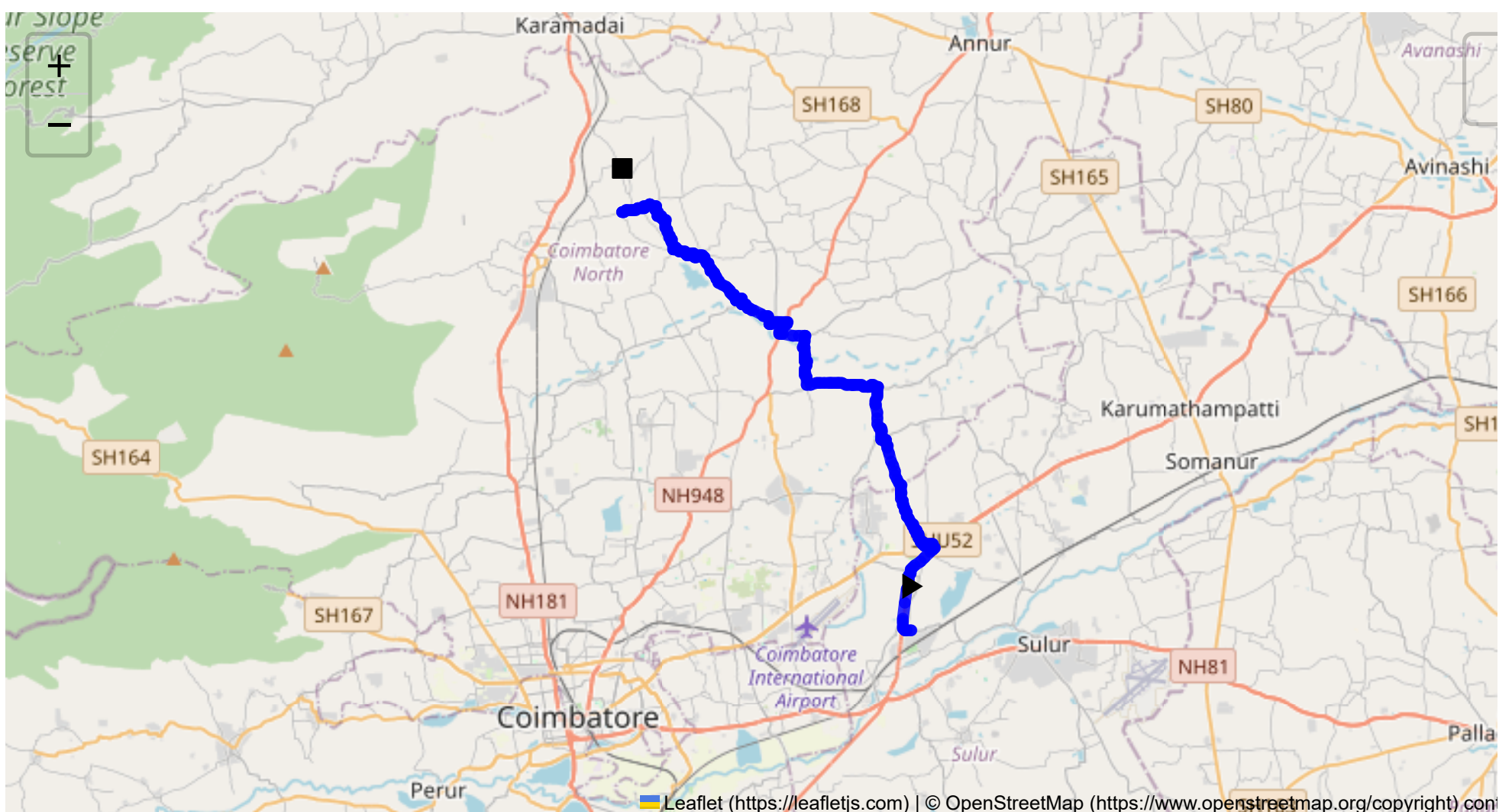
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 26.56 km**  
**Estimated Duration: 0.9 hours**  
**Adjusted Duration (Heavy Vehicle): 1.1 hours**  
**Start: (11.0315, 77.0797)**  
**End: (11.175235, 76.978058)**



## Welcome to the Journey Risk Management Study

### 1. Overview of the Route Map

The route from Athappagoundenpudur to Sama Naicken Palayam covers about 26.56 kilometers. It passes through several key points: Neelambur, Masagoundenchettipalayam, and Coimbatore. The journey typically involves navigating both urban and semi-rural road settings, progressing predominantly on state highways and local roads.

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

Coimbatore's climate is generally tropical with distinct wet and dry seasons. During the monsoon period (June to September), expect heavy rains, which could lead to waterlogging and slippery roads, increasing the risk of accidents, especially for heavy vehicles. In contrast, the rest of the year remains relatively dry but can still bring unexpected showers.

## 3. Analysis of Traffic Patterns

Traffic congestion is common around Coimbatore and during peak hours (8-10 AM and 5-8 PM), particularly near Neelambur and major intersections within Coimbatore city. The main congestion-prone areas include industrial spots and markets along this route, which can delay travel times significantly.

## 4. Assessment of Road Quality and Infrastructure

The roads on this route vary in quality. Major highways are generally well-maintained but inner and local roads may have potholes and uneven surfaces, posing hazards for heavy vehicles. Infrastructure such as bridges and flyovers, particularly in Coimbatore, are well-constructed but require attention during peak times due to higher vehicle volume.

## 5. Suggestions for Alternative Routes for Emergencies

In case of emergencies or severe congestion, alternative routes via smaller rural roads may be used, although these might add extra time and require traveling through less maintained areas. It's advisable to plan these ahead and ensure GPS systems are updated for real-time navigation.

## 6. Summary of Local Regulations Affecting Hazardous Material Transport

Transporting hazardous materials requires compliance with the guidelines set by Indian transportation authorities, including having the appropriate permits and ensuring safe vehicle specifications. There are restrictions on heavy vehicle access during peak hours in urban areas to ease congestion and ensure public safety.

## 7. Overview of Historical Incidents

Though there are fewer reported incidents involving heavy vehicles on this specific route, accidents in Coimbatore district often involve overturns and spills due to abrupt vehicular movements and road surface issues. Proper load management and cautious driving are essential.

## 8. Environmental Considerations and Sensitive Areas

This route passes through a mix of industrial and residential areas. There are environmentally sensitive zones near agricultural fields where potential spillage of hazardous materials may cause significant harm to local ecosystems. Compliance with environmental regulations is critical.



## 9. Analysis of Communication Coverage

Mobile network coverage is generally good along this route, especially near urban centers. However, there may be occasional dead zones in semi-rural stretches, which could impact communication. It is advisable to have alternative communication methods, like satellite phones or CB radios, during transit.

## 10. Estimated Emergency Response Times

Emergency response times can vary; within city boundaries such as Coimbatore, response is quicker (around 10-15 minutes). However, in more rural sections, it may take longer (around 30-45 minutes) for emergency services to reach the scene, depending on traffic and weather conditions.

## 11. Overall Summary of Risk Assessment

This route presents several challenges to the transport of hazardous materials. While major roads are generally in good condition, the high volume of traffic in urban areas like Coimbatore and potential adverse weather conditions pose significant risks. Proper vehicle maintenance, adherence to route timings, knowledge of alternate routes, and communication readiness are essential to minimize risks. Regular updates on traffic and weather forecasts will greatly aid in safer navigation. Planning with all regulatory compliances in place further ensures safety and efficiency during transport.

### Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Turn	High	11.03211, 77.07640	15 KM/Hr
1	Turn	High	11.05950, 77.08744	15 KM/Hr
2	Blind Spot	Blind Spot	11.06138, 77.08700	10 KM/Hr
3	Blind Spot	Blind Spot	11.06017, 77.08395	10 KM/Hr
4	Turn	High	11.09697, 77.07044	15 KM/Hr
5	Turn	High	11.09692, 77.06915	15 KM/Hr
6	Blind Spot	Blind Spot	11.11531, 77.06799	10 KM/Hr
7	Turn	Medium	11.11581, 77.05929	30 KM/Hr
8	Turn	Medium	11.11555, 77.05876	30 KM/Hr
9	Turn	High	11.11590, 77.04318	15 KM/Hr
10	Turn	Medium	11.12357, 77.04303	30 KM/Hr
11	Turn	Medium	11.12366, 77.04297	30 KM/Hr
12	Turn	Medium	11.12407, 77.04226	30 KM/Hr
13	Turn	High	11.13291, 77.04230	15 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
14	Turn	High	11.13350, 77.03352	15 KM/Hr
15	Blind Spot	Blind Spot	11.13744, 77.03599	10 KM/Hr
16	Turn	Medium	11.13663, 77.03025	30 KM/Hr
17	Turn	High	11.13663, 77.03012	15 KM/Hr
18	Turn	High	11.13963, 77.02926	15 KM/Hr
19	Turn	High	11.14337, 77.02076	15 KM/Hr
20	Turn	Medium	11.14511, 77.02005	30 KM/Hr
21	Turn	Medium	11.14519, 77.01994	30 KM/Hr
22	Turn	Medium	11.14496, 77.01819	30 KM/Hr
23	Turn	Medium	11.14506, 77.01808	30 KM/Hr
24	Turn	Medium	11.15582, 77.00906	30 KM/Hr
25	Turn	Medium	11.15986, 77.00680	30 KM/Hr
26	Turn	High	11.15965, 77.00356	15 KM/Hr
27	Turn	High	11.16067, 77.00341	15 KM/Hr
28	Turn	Medium	11.16073, 77.00332	30 KM/Hr
29	Turn	Medium	11.16037, 77.00099	30 KM/Hr
30	Turn	Medium	11.16040, 77.00094	30 KM/Hr
31	Turn	Medium	11.16121, 77.00043	30 KM/Hr
32	Turn	Medium	11.16145, 76.99894	30 KM/Hr
33	Turn	High	11.16220, 76.99654	15 KM/Hr
34	Blind Spot	Blind Spot	11.16262, 76.99646	10 KM/Hr
35	Turn	Medium	11.16271, 76.99667	30 KM/Hr
36	Turn	Medium	11.16279, 76.99670	30 KM/Hr
37	Turn	Medium	11.17237, 76.99330	30 KM/Hr
38	Turn	Medium	11.17290, 76.99216	30 KM/Hr
39	Turn	Medium	11.17379, 76.99181	30 KM/Hr
40	Turn	Medium	11.17392, 76.99166	30 KM/Hr
41	Turn	High	11.17390, 76.99070	15 KM/Hr
42	Turn	Medium	11.17397, 76.99064	30 KM/Hr
43	Turn	Medium	11.17698, 76.99007	30 KM/Hr
44	Turn	High	11.17708, 76.98998	15 KM/Hr
45	Turn	Medium	11.17754, 76.98799	30 KM/Hr
46	Turn	Medium	11.17695, 76.98636	30 KM/Hr
47	Turn	Medium	11.17663, 76.98623	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
48	Turn	Medium	11.17640, 76.98486	30 KM/Hr
49	Turn	High	11.17505, 76.97821	15 KM/Hr

### Emergency Locations

	type	name	coordinates	speed_limit	risk_level
0	hospital	Royal Care Hospital, Coimbatore	11.059106, 77.0893479	30 km/h	Medium
4	hospital	Aravindan Hospital	11.1334592, 77.0340488	30 km/h	Medium
5	hospital	Sampath Hospital ,S.S.Kulam	11.1339, 77.034088	30 km/h	Medium
6	hospital	Gokulam ortho hospital	11.1340331, 77.0350369	30 km/h	Medium

### Crowded Spots

	type	name	coordinates	speed_limit	risk_level
1	college	Info Institute of Engineering	11.1272103, 77.0392923	30 km/h	Medium
2	college	Vivekananda Institute Of Management Studies	11.1343205, 77.044678	30 km/h	Medium
3	school	Star kids pre school	11.1346624, 77.0390481	30 km/h	Medium

### Route Photos of Risky Spots





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.03211, 77.07640



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.05950, 77.08744

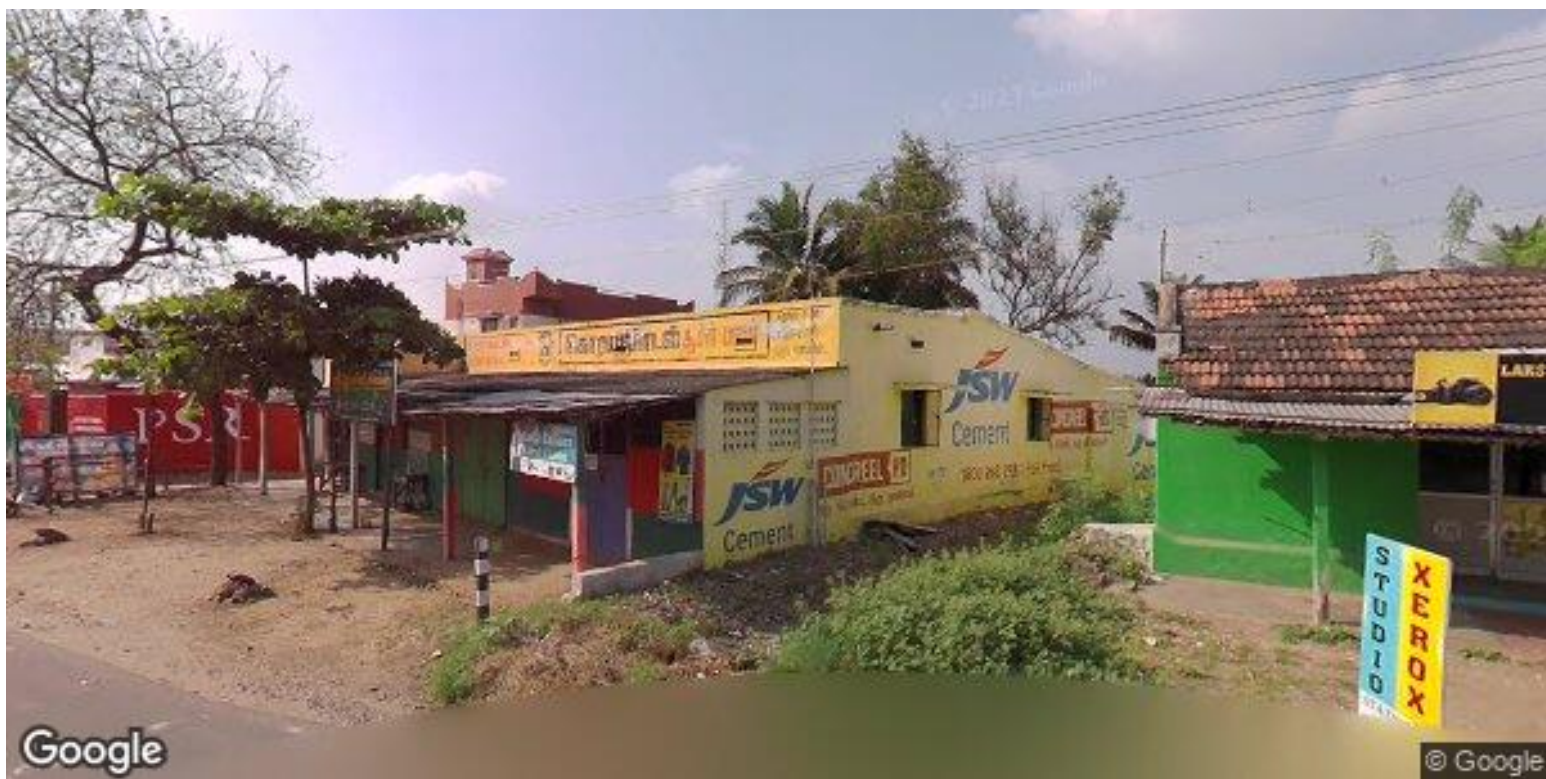




**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 11.06138, 77.08700



**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 11.06017, 77.08395



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.09697, 77.07044





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.09692, 77.06915

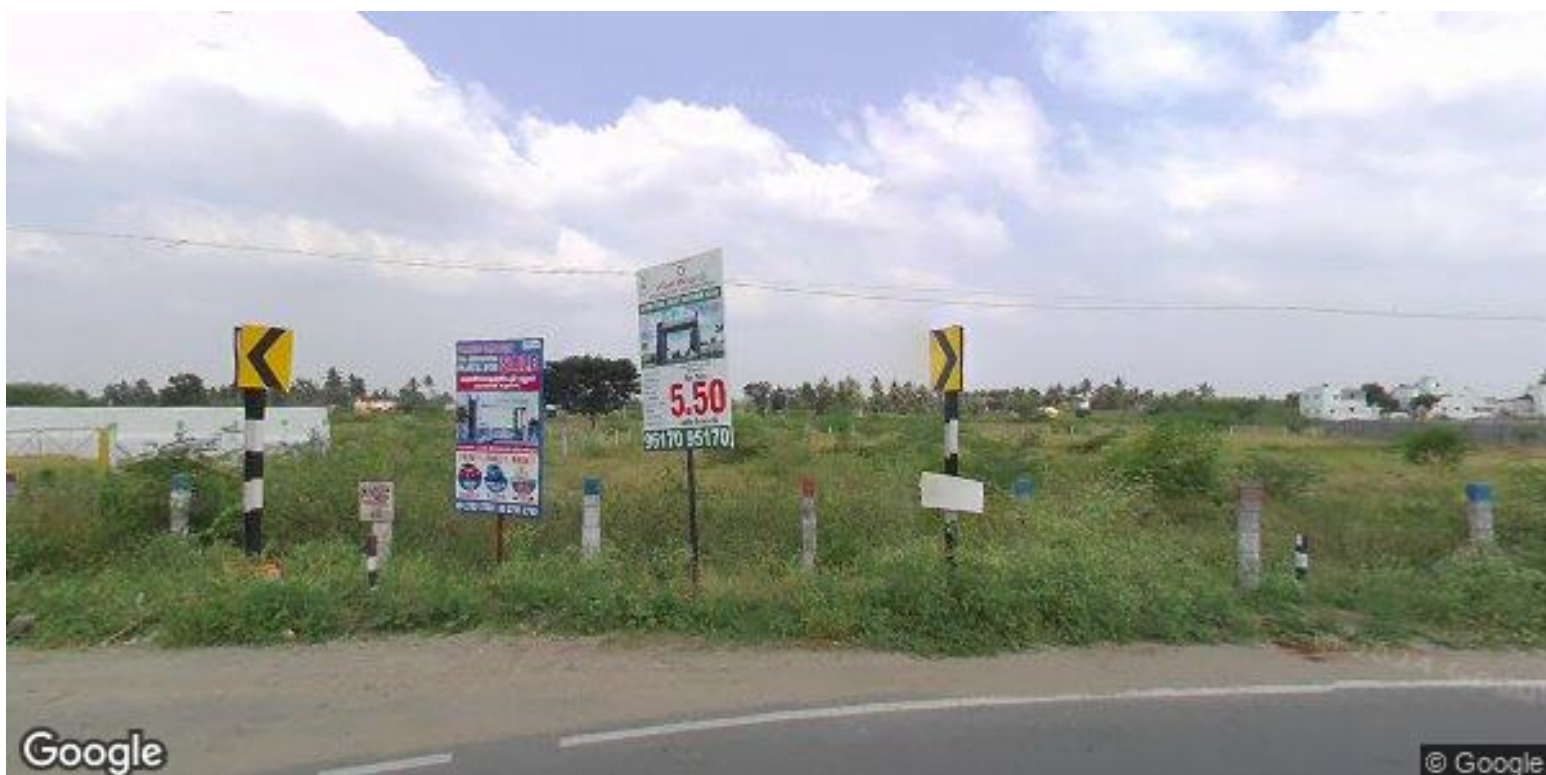


**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Coordinates:** 11.11531, 77.06799





**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.11581, 77.05929**



**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.11555, 77.05876**



**Risk Type: Turn**

**Risk Level: High**

**Speed Limit: 15 KM/Hr**

**Coordinates: 11.11590, 77.04318**





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.12357, 77.04303



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.12366, 77.04297





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.12407, 77.04226



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.13291, 77.04230



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.13350, 77.03352





**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Coordinates:** 11.13744, 77.03599



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.13663, 77.03025





**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.13663, 77.03012



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.13963, 77.02926



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.14337, 77.02076





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.14511, 77.02005



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.14519, 77.01994





**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.14496, 77.01819**



**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.14506, 77.01808**



**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.15582, 77.00906**





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.15986, 77.00680



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.15965, 77.00356





**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.16067, 77.00341



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.16073, 77.00332



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.16037, 77.00099





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.16040, 77.00094



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.16121, 77.00043





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.16145, 76.99894



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.16220, 76.99654



**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 11.16262, 76.99646





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.16271, 76.99667



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.16279, 76.99670





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.17237, 76.99330



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.17290, 76.99216



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.17379, 76.99181





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.17392, 76.99166



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.17390, 76.99070





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.17397, 76.99064



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.17698, 76.99007



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.17708, 76.98998





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.17754, 76.98799



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.17695, 76.98636





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.17663, 76.98623



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.17640, 76.98486



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.17505, 76.97821

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