



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

### Salem Terminal to ANITHA AUTO SERVICE

#### 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.

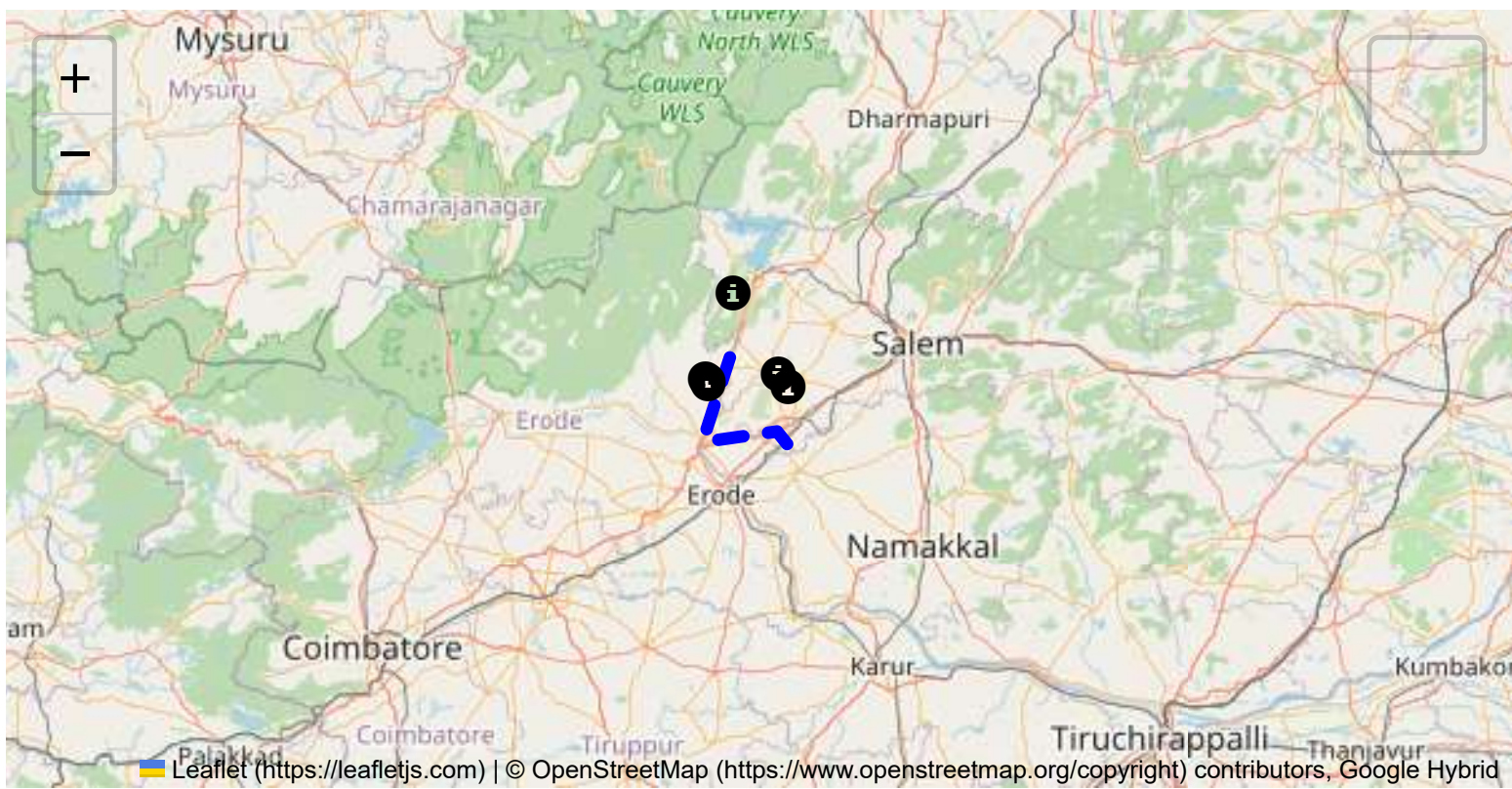
## **Journey Risk Mitigation**

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.

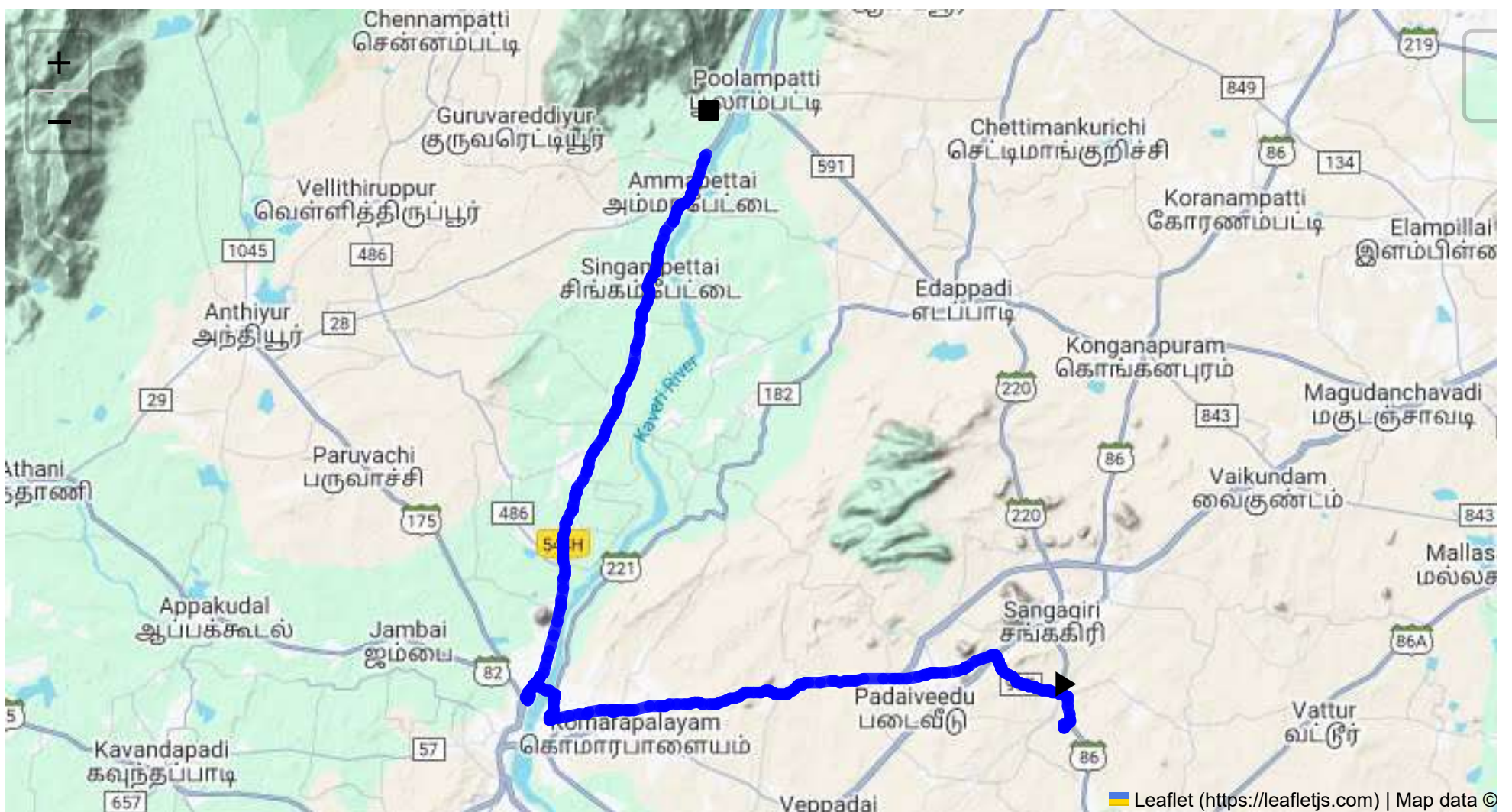
## **Compliance with Government Directives**

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: 47.46 km**  
**Estimated Duration: 1.1 hours**  
**Adjusted Duration (Heavy Vehicle): 1.4 hours**  
**Start: (11.4381, 77.8734)**  
**End: (11.63457, 77.748143)**



## Welcome to the Journey Risk Management Study

**1. Overview of the Route Map:** The route from CVQF+23W, Sangagiri to JPMW+JVC, Ammapettai spans approximately 47.46 kilometers. It passes through several key locations including Sangagiri, Sankari West, Komarapalayam, and Bhavani, primarily following Bhavani Main Road and the Salem Main Road. The route is linear, forming an eastward path toward Ammapettai through a mix of rural and semi-urban landscapes.



**2. Typical Weather Conditions and Potential Weather-Related Hazards:** Tamil Nadu generally experiences a tropical climate with hot summers and a monsoon season from October to December. The major weather-related hazards include:

- Heavy rains during the monsoon which can lead to flooding and reduced visibility.
- High temperatures particularly from March to June which can affect vehicle and road conditions.

**3. Analysis of Traffic Patterns:**

- **Peak Hours:** Morning (7:30-9:30 AM) and evening (5:00-7:00 PM).
- **Congestion-Prone Areas:**
  - Intersection at Sankari West due to bus stops and local traffic.
  - Nadaraja Nagar near Indian Bank, which is a busy commercial area.
  - Komarapalayam Bridge Road, particularly during market days, which can increase congestion.

**4. Assessment of Road Quality and Infrastructure:**

- **General Condition:** Varies from good in urban areas to moderate in rural stretches.
- **Infrastructure:** Adequate signage and lighting, but potholes and narrow bridges in some areas, particularly in rural stretches, can pose challenges, especially during rains.

**5. Suggestions for Alternative Routes for Emergencies:**

- Exiting the main route via SH 86 toward Erode provides an alternative path, but might add time to the journey.
- Utilizing NH 544 offers a broader road and better connectivity, though it is farther from the main destination.

**6. Summary of Local Regulations Affecting Hazardous Material Transport:**

- Transport of hazardous materials requires adherence to Tamil Nadu's regulations regarding vehicle markings, emergency preparedness, and permissible transit times (often restricted during peak hours for safety).

**7. Overview of Historical Incidents:**

- Limited records of major incidents, but minor accidents occur due to congestion and road quality issues. Local reports suggest occasional incidents involving overloaded trucks in Komarapalayam.

**8. Environmental Considerations and Sensitive Areas:**

- The route crosses the Cauvery River near Bhavani, a sensitive area where environmental protection measures are critical.
- Villages along the route may have limited tolerance for hazardous materials due to potential impacts on agriculture.

**9. Analysis of Communication Coverage:**

- Coverage is robust in urban sections but can be patchy in rural areas, especially between Sankari West and Komarapalayam.

- Known dead zones mainly occur in valleys or near large agricultural fields.

**10. Estimated Emergency Response Times:**

- Urban Areas: 15-20 minutes due to proximity to larger towns and cities.
- Rural Areas: 30-45 minutes, depending on accessibility and road conditions.

**11. Overall Summary of Risk Assessment:** The route presents a moderate to high risk due to traffic congestion, road quality variations, and weather-related challenges. Proper planning, awareness of local regulations, and preparing for adverse weather conditions are critical. Consideration of alternative routes, especially during emergencies or peak traffic hours, is advised for timely and safe travel. Monitoring weather forecasts and maintaining consistent communication can mitigate risks associated with transportation of hazardous materials.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Turn	High	11.43811, 77.87348	15 KM/Hr
1	Turn	High	11.43968, 77.87345	15 KM/Hr
2	Turn	High	11.44029, 77.87544	15 KM/Hr
3	Turn	Medium	11.44898, 77.87410	30 KM/Hr
4	Turn	Medium	11.45357, 77.85789	30 KM/Hr
5	Turn	Medium	11.45352, 77.85698	30 KM/Hr
6	Turn	Medium	11.46048, 77.85036	30 KM/Hr
7	Turn	Medium	11.46303, 77.84945	30 KM/Hr
8	Turn	Medium	11.46318, 77.84913	30 KM/Hr
9	Turn	Medium	11.44467, 77.72092	30 KM/Hr
10	Turn	High	11.44377, 77.71562	15 KM/Hr
11	Turn	Medium	11.44438, 77.71501	30 KM/Hr
12	Blind Spot	Blind Spot	11.44105, 77.69331	10 KM/Hr
13	Turn	High	11.44985, 77.69520	15 KM/Hr
14	Turn	High	11.45331, 77.68803	15 KM/Hr
15	Blind Spot	Blind Spot	11.44979, 77.68549	10 KM/Hr
16	Turn	High	11.44948, 77.68645	15 KM/Hr
17	Turn	High	11.44801, 77.68596	15 KM/Hr
18	Blind Spot	Blind Spot	11.44842, 77.68473	10 KM/Hr

## Emergency Locations

	type	name	coordinates	speed_limit	risk_level
3	hospital	Government Hospital	11.4525596, 77.7749426	30 km/h	Medium
4	hospital	Dhanvantri Multi Speciality Hospital	11.451362, 77.766602	30 km/h	Medium
5	hospital	Dhanvanthri Hospital	11.4496712, 77.7593772	30 km/h	Medium
6	hospital	J.K.K. Trust Hospital	11.4445841, 77.7307962	30 km/h	Medium
10	hospital	Senthil Nursing Home	11.4395054, 77.6957293	30 km/h	Medium
11	hospital	Govt hospital	11.4432595, 77.6941951	30 km/h	Medium
12	hospital	Government Hospital, Komarapalayam	11.4435826, 77.6946365	30 km/h	Medium
13	police	Komarapalayam Police station	11.4413141, 77.6931115	30 km/h	Medium
14	pharmacy	Devi pharmacy	11.4410349, 77.6928556	30 km/h	Medium
16	hospital	Sri Balaji Womens Centre	11.4531821, 77.6875979	30 km/h	Medium
17	hospital	Lrk Hospital	11.4544553, 77.6889783	30 km/h	Medium
18	hospital	Vignesh Hospital	11.4513898, 77.6879679	30 km/h	Medium
19	hospital	Mahaswaran Hospital	11.4519883, 77.6882952	30 km/h	Medium
20	hospital	Karunya Hospital	11.451637, 77.687949	30 km/h	Medium
21	hospital	Balakrishna Hospital	11.4514522, 77.688074	30 km/h	Medium
22	hospital	PGR Hospital	11.4512002, 77.687185	30 km/h	Medium
23	hospital	Kharthik Hospital	11.4516542, 77.6871221	30 km/h	Medium
24	hospital	Ramya Hospital	11.4512773, 77.6870043	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
25	hospital	Gopikrishnan Eye Hospital	11.451813, 77.687171	30 km/h	Medium
26	clinic	KS Homeo Clinic	11.451398, 77.687344	30 km/h	Medium
27	hospital	Jaswanth Arun Hospital	11.451794, 77.687216	30 km/h	Medium
28	clinic	Soorya Hospital Maternity and Child Care	11.4517604, 77.6871956	30 km/h	Medium
29	clinic	JK Skin Clinic	11.4508168, 77.6865545	30 km/h	Medium
30	clinic	V.S Eye and Dental Care	11.4512557, 77.686801	30 km/h	Medium
31	clinic	Suriyaraja Siddha Health Care	11.45133, 77.686898	30 km/h	Medium
32	hospital	Saraswathi Siddha Hospital	11.451769, 77.6865838	30 km/h	Medium
33	hospital	Dr Loganathan Orthopaedic Hospital	11.4554834, 77.6903362	30 km/h	Medium
34	hospital	Anbe Sivam Hospital	11.4508139, 77.6854947	30 km/h	Medium
35	hospital	Adithya Hospital	11.4515977, 77.6864105	30 km/h	Medium
36	hospital	Ashok Krishna Hospital	11.4483344, 77.6856579	30 km/h	Medium
37	hospital	Shri Mani Hospital	11.44771, 77.6838471	30 km/h	Medium
38	clinic	Sri Hari Clinic	11.4483503, 77.6850963	30 km/h	Medium
39	hospital	Immiaditya Hospital	11.4501276, 77.6836088	30 km/h	Medium
40	hospital	Sri Saravana Hospital	11.4506202, 77.6829676	30 km/h	Medium
41	hospital	Senthil Hospital	11.4475854, 77.6844482	30 km/h	Medium
42	hospital	Government Hospital	11.45112, 77.682149	30 km/h	Medium
43	hospital	Vijay Hospital	11.45091, 77.682019	30 km/h	Medium
44	hospital	S.N.A. Siddha Hospital	11.44704, 77.682877	30 km/h	Medium
45	hospital	Suham Hospital and Diabetic Centre	11.4572053, 77.6912235	30 km/h	Medium

## Crowded Spots

	type	name	coordinates	speed_limit	risk_level
0	school	KRP Matric. Hr. Sec School	11.4546193, 77.8142445	30 km/h	Medium
1	college	Vivekanandha Engineering College	11.4589312, 77.7899284	30 km/h	Medium
2	marketplace	Monday market	11.452863, 77.775989	30 km/h	Medium
7	school	JKK Matriculation and Higher Secondary school	11.4446843, 77.7066207	30 km/h	Medium
8	school	JKK Girls Higher Secondary school	11.4437747, 77.7066298	30 km/h	Medium
9	school	Government Girls Hr Sec School	11.4456929, 77.7007497	30 km/h	Medium
15	school	Municipality Middle School	11.4386238, 77.6957329	30 km/h	Medium

## Route Photos of Risky Spots



**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:** 11.44898, 77.87410



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.45357, 77.85789





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.45352, 77.85698



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.46048, 77.85036



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.46303, 77.84945





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.46318, 77.84913



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.44467, 77.72092





**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.44377, 77.71562



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.44438, 77.71501



**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 11.44105, 77.69331





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.44985, 77.69520



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.45331, 77.68803





**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 11.44979, 77.68549



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.44948, 77.68645



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.44801, 77.68596





**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Coordinates:** 11.44842, 77.68473

---