



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

### Salem Terminal TO SAMY FUEL STATION

#### 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.

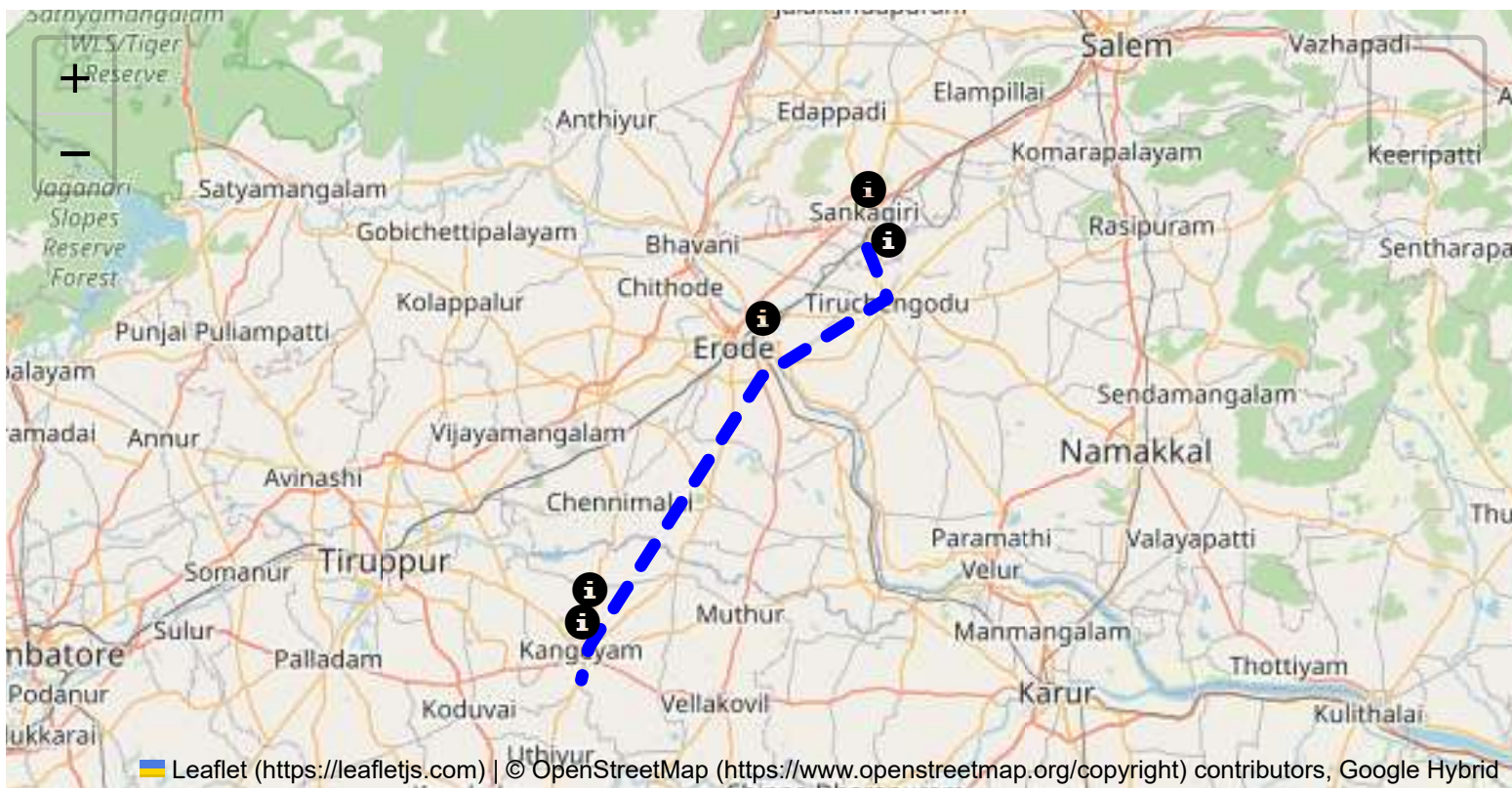
## **Journey Risk Mitigation**

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.

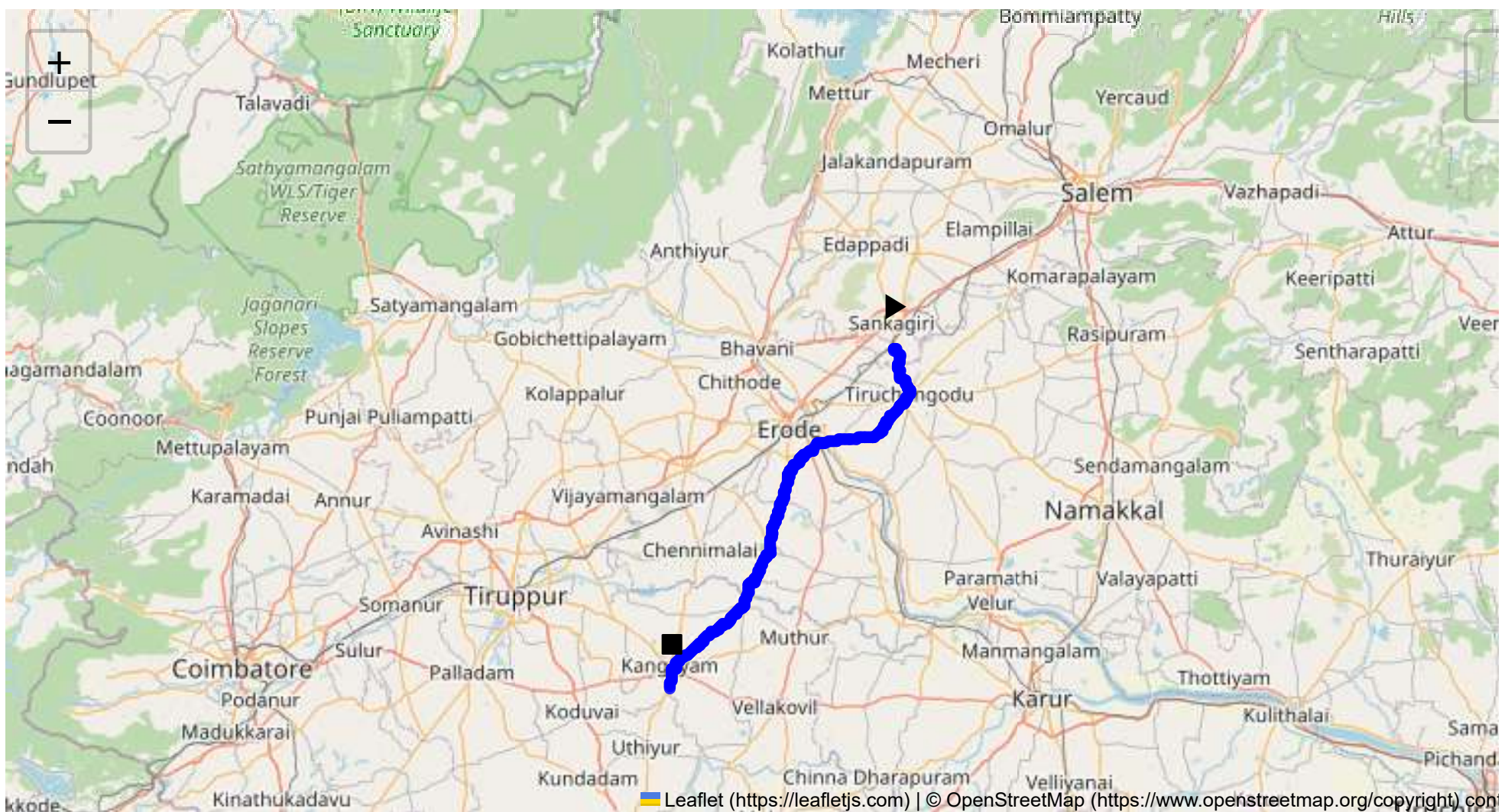
## **Compliance with Government Directives**

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: 73.41 km**  
**Estimated Duration: 1.8 hours**  
**Adjusted Duration (Heavy Vehicle): 2.2 hours**  
**Start: (11.4381, 77.8734)**  
**End: (10.97463394, 77.56045848)**



## Welcome to the Journey Risk Management Study

### Overview of the Route Map

The route from Sangagiri to Tiruppur is approximately 73.41 kilometers and passes through several key points, including Puthur, Tiruchengode, Erode, and Kangeyam. The journey covers a variety of rural and semi-urban landscapes in Tamil Nadu and involves traveling on state highways and local roads.



# Typical Weather Conditions and Potential Weather-Related Hazards

- **Climate:** The area experiences a tropical climate with four seasons: dry, rainy, post-monsoon, and winter.
- **Weather Hazards:**
  - **Monsoon Rains:** Heavy rains during the monsoon season (June to September) can lead to slippery roads and poor visibility.
  - **Fog and Mist:** Occasional fog which could be dense during early mornings, especially in the winter months, may reduce visibility.
  - **Heat:** High temperatures, especially during the summer (March to June), can cause tire blowouts.

## Analysis of Traffic Patterns

- **Peak Hours:** Traffic congestion is typically higher in the mornings (7:30 AM - 9:30 AM) and evenings (5:30 PM - 7:30 PM), especially near urban centers like Erode and Tiruchengode.
- **Congestion Areas:** Busy intersections within Tiruchengode and Erode, and near manufacturing zones in Tiruppur can experience bottleneck situations.

## Assessment of Road Quality and Infrastructure

- **Infrastructure:** Roads are generally well-maintained with clear signage. Certain rural sections may be narrow with limited shoulder space.
- **Road Quality:** There might be potholes and uneven surfaces especially after the monsoon, requiring careful navigation.

## Suggestions for Alternative Routes for Emergencies

- **Alternate Route:** In case of obstructions, consider using the NH44 highway which runs parallel to some segments of this journey, providing a potential bypass with better infrastructure.

## Summary of Local Regulations Affecting Hazardous Material Transport

- Restricted hours for heavy vehicle movement may apply within city limits during peak hours.
- Ensure compliance with regulations on transporting hazardous materials, including proper signage and necessary permits.

## Overview of Historical Incidents Involving Heavy Vehicles or Hazardous Materials

- Past incidents have included vehicle rollovers during monsoon and brake failures due to overheating in summer.
- Recorded issues often involved narrower roads in rural areas.

# Environmental Considerations and Sensitive Areas

- **Reservoirs and Water Bodies:** Nearby water bodies, especially around Erode, necessitate specific precautions to prevent any spillage.
- **Agricultural Fields:** Farmers rely on the proximity to fields for irrigation, so chemical spill protection measures are crucial.

# Analysis of Communication Coverage

- **Coverage:** Mobile network coverage is generally strong in urbanized areas but can be weaker in sections between Puthur and Thondikaradu with potential dead spots.

# Estimated Emergency Response Times

- **Urban Areas:** Quick response time (15-30 minutes)
- **Rural Areas:** Extended response time (30-45 minutes) due to travel distance from emergency services.

# Overall Summary of Risk Assessment

- **Overall Risk:** Medium
- **Key Risks:** Weather conditions, road quality, congestion, regulatory adherence
- **Mitigation Strategies:** Monitor weather forecasts, schedule trips to avoid peak traffic, perform vehicle checks to ensure safety compliance, use alternate routes in emergencies, and establish clear communication protocols to maintain contact with dispatch.

This comprehensive risk assessment should aid in adequately preparing a truck driver for the route, ensuring safety and compliance with regulations.

## Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.38395, 77.89480	15 KM/Hr
1	Roundabout	High	11.00172, 77.56268	15 KM/Hr
2	Turn	High	11.43961, 77.87341	15 KM/Hr
3	Turn	High	11.44029, 77.87544	15 KM/Hr
4	Turn	Medium	11.39671, 77.88878	30 KM/Hr
5	Turn	High	11.37868, 77.89498	15 KM/Hr
6	Turn	High	11.37842, 77.89452	15 KM/Hr
7	Turn	Medium	11.36616, 77.88885	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
8	Turn	Medium	11.36602, 77.88875	30 KM/Hr
9	Turn	Medium	11.33882, 77.86218	30 KM/Hr
10	Turn	Medium	11.31747, 77.84240	30 KM/Hr
11	Turn	Medium	11.30951, 77.77608	30 KM/Hr
12	Turn	Medium	11.31118, 77.77139	30 KM/Hr
13	Turn	High	11.29473, 77.74685	15 KM/Hr
14	Turn	High	11.29133, 77.74660	15 KM/Hr
15	Turn	Medium	11.28844, 77.74319	30 KM/Hr
16	Turn	Medium	11.28558, 77.74271	30 KM/Hr
17	Turn	Medium	11.27326, 77.72991	30 KM/Hr
18	Blind Spot	Blind Spot	11.27330, 77.72711	10 KM/Hr
19	Turn	Medium	11.23047, 77.71792	30 KM/Hr
20	Turn	Medium	11.22378, 77.71384	30 KM/Hr
21	Turn	Medium	11.15952, 77.70067	30 KM/Hr
22	Turn	High	11.15943, 77.70068	15 KM/Hr
23	Turn	Medium	11.11733, 77.67191	30 KM/Hr
24	Turn	Medium	11.10471, 77.67058	30 KM/Hr
25	Turn	Medium	11.09508, 77.66612	30 KM/Hr
26	Turn	Medium	11.08722, 77.66431	30 KM/Hr
27	Turn	Medium	11.08274, 77.65832	30 KM/Hr
28	Turn	High	11.06187, 77.63939	15 KM/Hr
29	Turn	Medium	11.00826, 77.56962	30 KM/Hr
30	Blind Spot	Blind Spot	11.00058, 77.56882	10 KM/Hr

### Emergency Locations

	type	name	coordinates	speed_limit	risk_level
0	hospital	Tiruchengode, Goverment Hospital	11.3903328, 77.8920627	30 km/h	Medium
1	hospital	SPM Medical Centre,Tiruchengode	11.3881331, 77.8931963	30 km/h	Medium
5	clinic	Kongu Nursing Home	11.3783065, 77.8961134	30 km/h	Medium
6	hospital	T.C.A Hospital Tiruchengode	11.3791885, 77.8965774	30 km/h	Medium
7	hospital	Soorya Multispecialty Hospital	11.3786429, 77.8931912	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
8	hospital	Tiruchengode Government Hospital	11.37645, 77.89426	30 km/h	Medium
9	hospital	Krishna Hospital, Namakkal	11.3754811, 77.8931817	30 km/h	Medium
10	hospital	Tirukumaran Hospitals	11.3782118, 77.8914933	30 km/h	Medium
13	hospital	Government Hospital	11.2343326, 77.719226	30 km/h	Medium
16	police	Kangeyam Police Station	11.0011411, 77.562688	30 km/h	Medium
17	hospital	J K Hospital	11.0042298, 77.5603345	30 km/h	Medium

## Crowded Spots

	type	name	coordinates	speed_limit	risk_level
2	school	அரசு ஆண்கள் மேல்நிலைப் பள்ளி	11.3850439, 77.8948279	30 km/h	Medium
3	school	அரசு பெண்கள் மேல்நிலைப் பள்ளி	11.3844247, 77.8949053	30 km/h	Medium
4	marketplace	திருச்செங்கோடு தினசரி காய்கறி சந்தை	11.3833608, 77.8970145	30 km/h	Medium
11	school	KSR Educational institution	11.3772013, 77.8908807	30 km/h	Medium
12	school	MDV School	11.3719843, 77.8915244	30 km/h	Medium
14	college	Government Arts and Science College, Kangeyam	11.0626738, 77.636227	30 km/h	Medium
15	school	Carmel Girls Higher Secondary School	11.0009019, 77.5710182	30 km/h	Medium

## Route Photos of Risky Spots





**Risk Type:** Roundabout

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.38395, 77.89480



**Risk Type:** Roundabout

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.00172, 77.56268





**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:** 11.39671, 77.88878



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.37868, 77.89498





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.37842, 77.89452



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.36616, 77.88885





**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.36602, 77.88875**



**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.33882, 77.86218**



**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.31747, 77.84240**





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.30951, 77.77608



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.31118, 77.77139





**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.29473, 77.74685



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.29133, 77.74660



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.28844, 77.74319





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.28558, 77.74271



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.27326, 77.72991





**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 11.27330, 77.72711



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.23047, 77.71792



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.22378, 77.71384





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.15952, 77.70067



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.15943, 77.70068





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.11733, 77.67191



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.10471, 77.67058



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.09508, 77.66612





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.08722, 77.66431



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.08274, 77.65832





**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.06187, 77.63939



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.00826, 77.56962



**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 11.00058, 77.56882

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