



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

**Salem Terminal to CHENTHUR KUMARAA AND CO**

### 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.

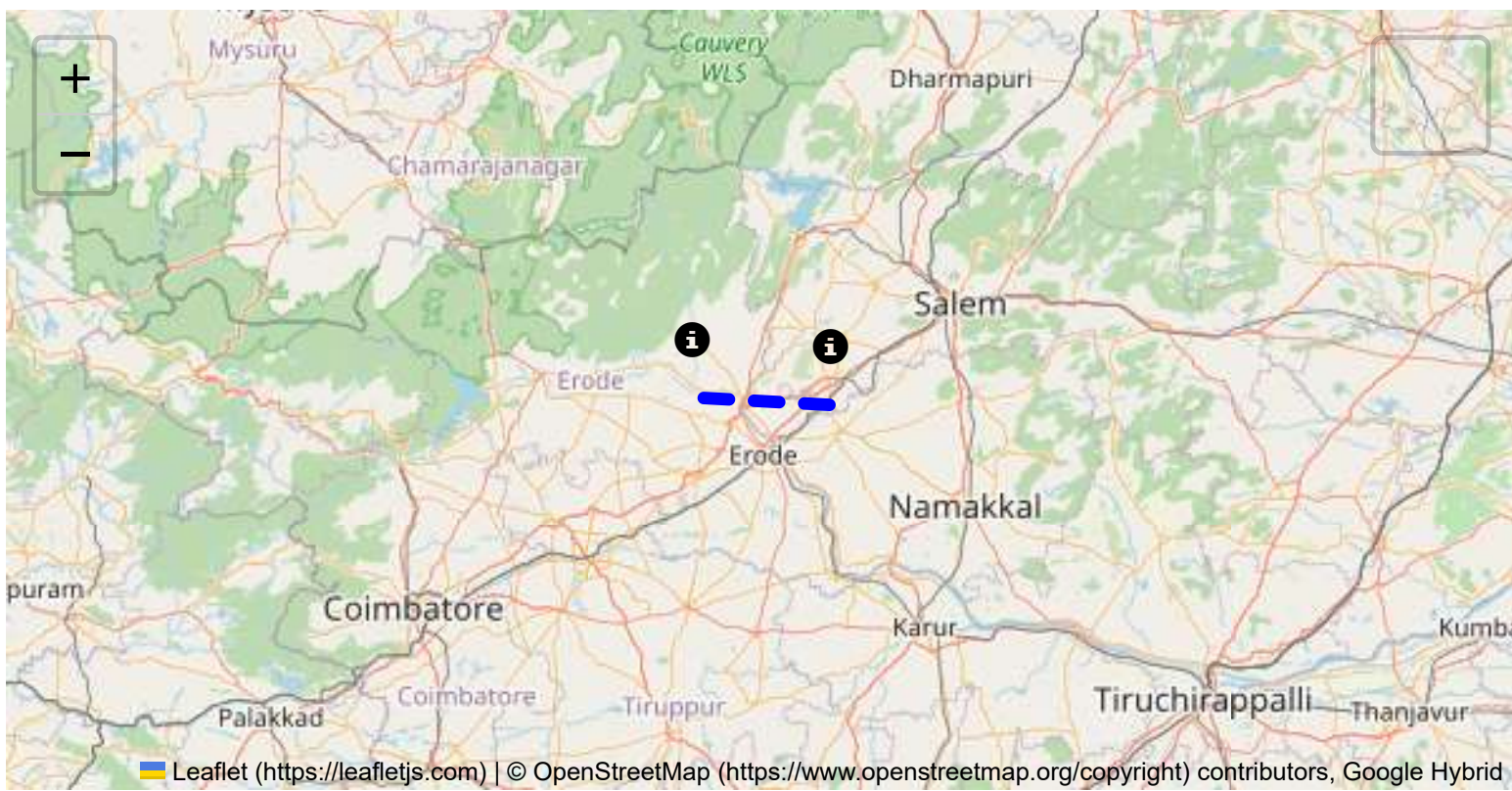
## **Journey Risk Mitigation**

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.

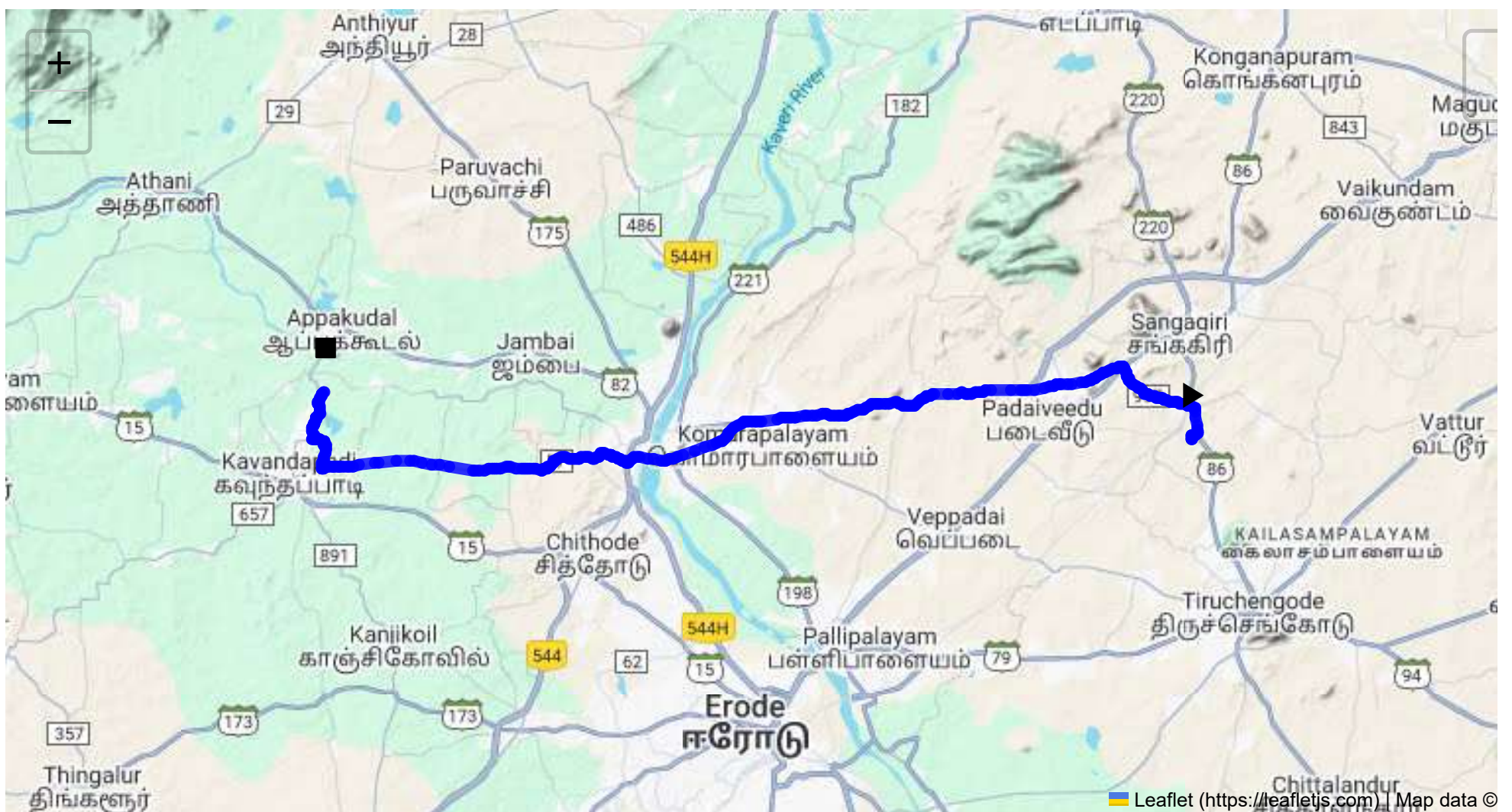
## **Compliance with Government Directives**

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: 40.37 km**  
**Estimated Duration: 0.9 hours**  
**Adjusted Duration (Heavy Vehicle): 1.1 hours**  
**Start: (11.4381, 77.8734)**  
**End: (11.454438, 77.569407)**



## Welcome to the Journey Risk Management Study

**Route Safety Analysis: CVQF+23W, Sangagiri to FH39+PMQ, P.Mettupalayam, Tamil Nadu**

### 1. Overview of the Route Map



The route from Sangagiri to P.Mettupalayam in Tamil Nadu covers approximately 40.37 kilometers, typically traversing rural roads, state highways, and small town areas. This route is predominantly linear with some curves and passes through agricultural and semi-urban regions.

## 2. Typical Weather Conditions and Potential Hazards

- **Weather Patterns:** The area experiences a tropical savanna climate with summer temperatures reaching up to 38°C and mild winters around 20°C.
- **Monsoon Risks:** Heavy rainfall occurs from October to December, which may cause slippery roads and visibility issues.
- **Fog:** Occasional morning fog can reduce visibility, especially during winter.

## 3. Traffic Patterns and Congestion

- **Peak Hours:** Typically morning (8-10 AM) and evening (5-7 PM) see increased local traffic, especially near town entries and exits.
- **Congestion Points:** Sangagiri town center and the intersection with larger highways experience congestion, especially during peak hours.

## 4. Road Quality and Infrastructure

- **State Highways:** Generally well-maintained with clear markings but may have occasional potholes.
- **Rural Sections:** Variable quality with potential for narrow and uneven roads.
- **Bridges and Culverts:** Some narrow bridges require caution, no reported structural issues.

## 5. Alternative Routes

- **Emergency Detours:** Consider using secondary roads that parallel major highways to bypass traffic jams or accidents; local maps may offer insight into feasible alternatives.

## 6. Local Regulations for Hazardous Material Transport

- **Permits Required:** Transport of hazardous materials requires state permits.
- **Speed Limits:** Generally lower speed limits set for heavy vehicles to reduce accident risks.

## 7. Historical Incidents

- **Accidents:** A historical review shows occasional incidents due to road quality and weather, but major hazardous material spills are rare.
- **Truck Rollovers:** Generally reported in curves and during monsoons.

## 8. Environmental Considerations

- **Protected Areas:** Proximity to agricultural fields requires careful navigation to prevent spillover.
- **Animal Crossings:** Possible animal crossings in rural areas; vigilance required.

## 9. Communication Coverage

- Dead Zones:** Spotty mobile network coverage in rural stretches may limit communication; plan for satellite communication in emergencies or use boosters.

## 10. Estimated Emergency Response Times

- Urban Areas:** Quick response within 20-30 minutes due to proximity to towns.
- Rural Sections:** Delays up to 45 minutes are expected due to distance and road accessibility.

## 11. Overall Summary of Risk Assessment

The route primarily involves moderate risk due to variable road conditions, congestion points, and weather impacts. Drivers transporting hazardous materials should prepare for emergency detours, ensure communication devices are functional, and comply strictly with safety and traffic regulations to mitigate identified risks.

By accounting for weather conditions, good route planning, and constant communication checks, this route can be managed effectively with minimized risk. It's crucial for drivers to stay informed and adapt to changing conditions while adhering to all safety protocols.

### Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Turn	High	11.43811, 77.87348	15 KM/Hr
1	Turn	Medium	11.43956, 77.87340	30 KM/Hr
2	Turn	High	11.43968, 77.87345	15 KM/Hr
3	Turn	High	11.44029, 77.87544	15 KM/Hr
4	Turn	Medium	11.44898, 77.87410	30 KM/Hr
5	Turn	Medium	11.45357, 77.85789	30 KM/Hr
6	Turn	Medium	11.45352, 77.85698	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	High	11.43001, 77.67575	15 KM/Hr
10	Turn	Medium	11.43003, 77.67551	30 KM/Hr
11	Turn	High	11.43026, 77.67525	15 KM/Hr
12	Blind Spot	Blind Spot	11.43073, 77.67536	10 KM/Hr
13	Turn	High	11.43278, 77.67024	15 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
14	Turn	Medium	11.43223, 77.65338	30 KM/Hr
15	Blind Spot	Blind Spot	11.42842, 77.56890	10 KM/Hr
16	Turn	High	11.43611, 77.57066	15 KM/Hr
17	Turn	High	11.43638, 77.56965	15 KM/Hr
18	Turn	Medium	11.43684, 77.56970	30 KM/Hr
19	Turn	Medium	11.43701, 77.56983	30 KM/Hr
20	Turn	Medium	11.43757, 77.56992	30 KM/Hr
21	Turn	High	11.43768, 77.56985	15 KM/Hr
22	Blind Spot	Blind Spot	11.43830, 77.56581	10 KM/Hr
23	Turn	High	11.44358, 77.56608	15 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
7	hospital	Shri Sathyanarayana Hospital	11.4291297, 77.6913408	30 km/h	Medium
9	hospital	Thanish Siddha Hospital	11.430003, 77.674964	30 km/h	Medium
10	clinic	Harshitha Clinic	11.4313207, 77.674718	30 km/h	Medium
11	hospital	Sri Kaalangi Siddhar Mooligai Vaithiya Nilayam	11.432369, 77.674894	30 km/h	Medium
12	clinic	G.K Clinic	11.4297244, 77.6749715	30 km/h	Medium
13	hospital	PST Mahaa Hospital	11.4312903, 77.6585751	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
8	school	SSM Matriculation Higher Secondary School	11.4321653, 77.6880046	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: 11.46303, 77.84945**



**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.46318, 77.84913**





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.43001, 77.67575



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.43003, 77.67551





**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.43026, 77.67525



**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 11.43073, 77.67536



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.43278, 77.67024





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.43223, 77.65338



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Coordinates:** 11.42842, 77.56890





**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.43611, 77.57066



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.43638, 77.56965



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.43684, 77.56970





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.43701, 77.56983



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.43757, 77.56992





**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.43768, 77.56985



**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 11.43830, 77.56581



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.44358, 77.56608

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