



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

### Salem Terminal to ANTHIYUR THAVITTUPALAYAM LORRY

#### 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.

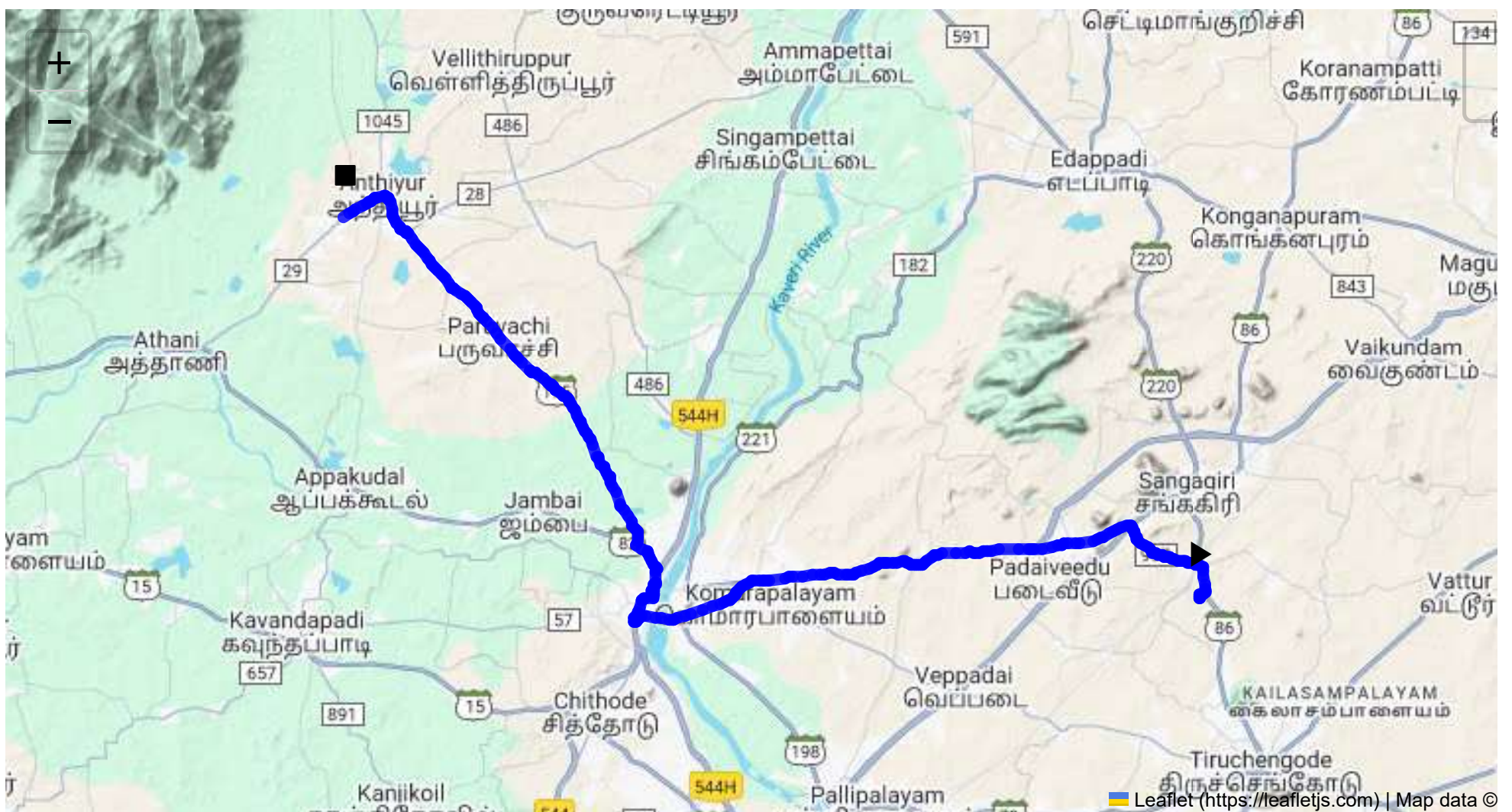
## **Compliance with Government Directives**

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: 47.24 km**  
**Estimated Duration: 1.1 hours**  
**Adjusted Duration (Heavy Vehicle): 1.4 hours**  
**Start: (11.4381, 77.8734)**  
**End: (11.568465, 77.573654)**



## Welcome to the Journey Risk Management Study

### Route Safety Analysis: Sangagiri to Erode, Tamil Nadu

#### 1. Overview of the Route Map

The route from CVQF+23W, Sangagiri to HH9F+9C4, Erode in Tamil Nadu is approximately 47.24 kilometers long. It mainly traverses through rural and semi-urban areas, utilizing National Highways and State



Highways. The primary highways likely involved are NH544 and some local roads leading into Erode.

## 2. Typical Weather Conditions

Tamil Nadu generally has a tropical climate, with distinct wet and dry seasons. The monsoon (June to September) can bring heavy rains, potentially leading to slippery roads and flooding, especially on rural roads. The post-monsoon period (October to December) also poses similar challenges. Summers (March to May) can cause heat-related wear on vehicles.

## 3. Traffic Patterns

The route is moderately busy, with peak hours usually from 8:00 AM - 10:00 AM and 5:00 PM - 8:00 PM. Towns along the route may experience congestion, particularly during local markets or festivals. NH544 can be particularly busy, as it is a major trunk road.

## 4. Assessment of Road Quality and Infrastructure

The NH544 is generally in good condition with multiple lanes and signage, although maintenance varies. State highways and rural roads may have potholes, uneven surfaces, and narrower lanes. Roads leading directly into Erode can be crowded and less maintained.

## 5. Suggestions for Alternative Routes

In case of an emergency or roadblocks, consider taking other local roads that link to NH544, although they may be narrower and less direct. Alternate routes may take longer, so continuous monitoring of road conditions is advised.

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

Transporting hazardous materials in Tamil Nadu requires adherence to strict State and Central regulations. Vehicles must display proper signage, and transporters need necessary permits from the Pollution Control Board. Night driving restrictions might apply in some areas.

## 7. Overview of Historical Incidents

While there may be occasional accidents due to narrow roads and local traffic, specific historical data regarding hazardous material incidents may need consultation with local transport and safety authorities. Corrosion issues with older vehicles have been a contributing factor in incidents historically.

## 8. Environmental Considerations and Sensitive Areas

The route may pass through agricultural zones and areas near water bodies, which can be environmentally sensitive. Avoid spillages or leakages of hazardous materials, and follow environmental protection regulations strictly.

## 9. Communication Coverage

The route largely passes through areas with reasonable mobile coverage, but occasional dead zones can occur in rural or less populated stretches. Major providers like Airtel, Jio, and Vodafone have decent coverage overall.

## 10. Estimated Emergency Response Times

Emergency services in urban Erode are robust, with response times typically within 15-30 minutes. However, in rural stretches, it could extend to an hour or more due to accessibility and distance from major health or safety centers.

## 11. Overall Summary of Risk Assessment

The route requires careful planning and vigilance due to varying road conditions, weather impacts, and potential traffic congestion. Proper vehicle maintenance, awareness of local regulations, and quick access to alternative routes can mitigate risks. Communication systems should be verified, and drivers must be prepared for slower emergency response in rural sections.

Overall, while manageable, the route does warrant caution, especially for heavy vehicles transporting hazardous materials. Regular updates on weather, road, and traffic conditions can significantly enhance safety.

### Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.56355, 77.59597	15 KM/Hr
1	Roundabout	High	11.57607, 77.58841	15 KM/Hr
2	Turn	High	11.43811, 77.87348	15 KM/Hr
3	Turn	High	11.43968, 77.87345	15 KM/Hr
4	Turn	High	11.44029, 77.87544	15 KM/Hr
5	Turn	Medium	11.44898, 77.87410	30 KM/Hr
6	Turn	Medium	11.45357, 77.85789	30 KM/Hr
7	Turn	Medium	11.45352, 77.85698	30 KM/Hr
8	Turn	Medium	11.46048, 77.85036	30 KM/Hr
9	Turn	Medium	11.46303, 77.84945	30 KM/Hr
10	Turn	Medium	11.46318, 77.84913	30 KM/Hr
11	Turn	High	11.43001, 77.67575	15 KM/Hr
12	Turn	Medium	11.43003, 77.67551	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
13	Turn	High	11.43026, 77.67525	15 KM/Hr
14	Turn	Medium	11.43769, 77.67810	30 KM/Hr
15	Turn	High	11.43863, 77.68223	15 KM/Hr
16	Turn	Medium	11.43871, 77.68228	30 KM/Hr
17	Turn	Medium	11.43965, 77.68224	30 KM/Hr
18	Turn	Medium	11.43997, 77.68198	30 KM/Hr
19	Turn	High	11.44105, 77.68187	15 KM/Hr
20	Turn	High	11.44119, 77.68217	15 KM/Hr
21	Turn	Medium	11.44295, 77.68261	30 KM/Hr
22	Turn	High	11.44300, 77.68275	15 KM/Hr
23	Turn	High	11.44853, 77.68331	15 KM/Hr
24	Turn	High	11.45649, 77.67621	15 KM/Hr
25	Turn	Medium	11.57510, 77.58991	30 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
8	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

	type	name	coordinates	speed_limit	risk_level
13	hospital	Maha Hospital	11.4372003, 77.6781345	30 km/h	Medium
14	hospital	Jothikumar Hospital	11.43687, 77.678407	30 km/h	Medium
15	hospital	Sutha Hospital	11.4365526, 77.6796472	30 km/h	Medium
16	clinic	Velavan Homoeo Clinic	11.4367087, 77.6761472	30 km/h	Medium
17	hospital	SKMH Hospital	11.4379787, 77.6780268	30 km/h	Medium
18	clinic	Sri Dharshan Diabetes Care	11.437649, 77.6778126	30 km/h	Medium
19	hospital	Kavin Hospital	11.4399114, 77.6838194	30 km/h	Medium
20	clinic	Thangam Acupuncture	11.4418816, 77.6832318	30 km/h	Medium
21	hospital	Sumangali Hospital	11.4427668, 77.6827131	30 km/h	Medium
22	hospital	Annusiya Hospital	11.4432777, 77.6813562	30 km/h	Medium
23	hospital	Kandasamy Hospital	11.4450062, 77.6832304	30 km/h	Medium
24	hospital	Ashok Krishna Hospital	11.4483344, 77.6856579	30 km/h	Medium
25	hospital	Senthil Hospital	11.4475854, 77.6844482	30 km/h	Medium
26	hospital	S.N.A. Siddha Hospital	11.44704, 77.682877	30 km/h	Medium
27	hospital	Shri Mani Hospital	11.44771, 77.6838471	30 km/h	Medium
28	clinic	Sri Hari Clinic	11.4483503, 77.6850963	30 km/h	Medium
29	hospital	Immiaditya Hospital	11.4501276, 77.6836088	30 km/h	Medium
30	hospital	Sri Saravana Hospital	11.4506202, 77.6829676	30 km/h	Medium
31	hospital	Government Hospital	11.45112, 77.682149	30 km/h	Medium
32	hospital	Vijay Hospital	11.45091, 77.682019	30 km/h	Medium
33	hospital	Anbe Sivam Hospital	11.4508139, 77.6854947	30 km/h	Medium
34	clinic	Kalyani Nursing Home	11.452097, 77.6808974	30 km/h	Medium



	type	name	coordinates	speed_limit	risk_level
35	hospital	Government Hospital	11.4519113, 77.6819742	30 km/h	Medium
36	hospital	Sindhu Hospital	11.57417, 77.590371	30 km/h	Medium
37	hospital	Arun Gowri Hospital	11.57659, 77.588756	30 km/h	Medium
38	clinic	P G K Nursing Home	11.5785675, 77.5891802	30 km/h	Medium
39	hospital	Sri Arungani Hospital	11.5736078, 77.5826436	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	SSM Matriculation Higher Secondary School	11.4321653, 77.6880046	30 km/h	Medium

## Route Photos of Risky Spots



**Risk Type:** Roundabout

**Risk Level:** High



**Speed Limit: 15 KM/Hr**  
**Coordinates: 11.56355, 77.59597**



**Risk Type: Roundabout**  
**Risk Level: High**  
**Speed Limit: 15 KM/Hr**  
**Coordinates: 11.57607, 77.58841**



**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:** 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:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.43769, 77.67810





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.43863, 77.68223



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.43871, 77.68228





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.43965, 77.68224



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.43997, 77.68198



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.44105, 77.68187





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.44119, 77.68217



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.44295, 77.68261





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.44300, 77.68275



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.44853, 77.68331



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.45649, 77.67621





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.57510, 77.58991

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