



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

### Salem Terminal to SRI THANGAMMAN TRADERS

#### 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.

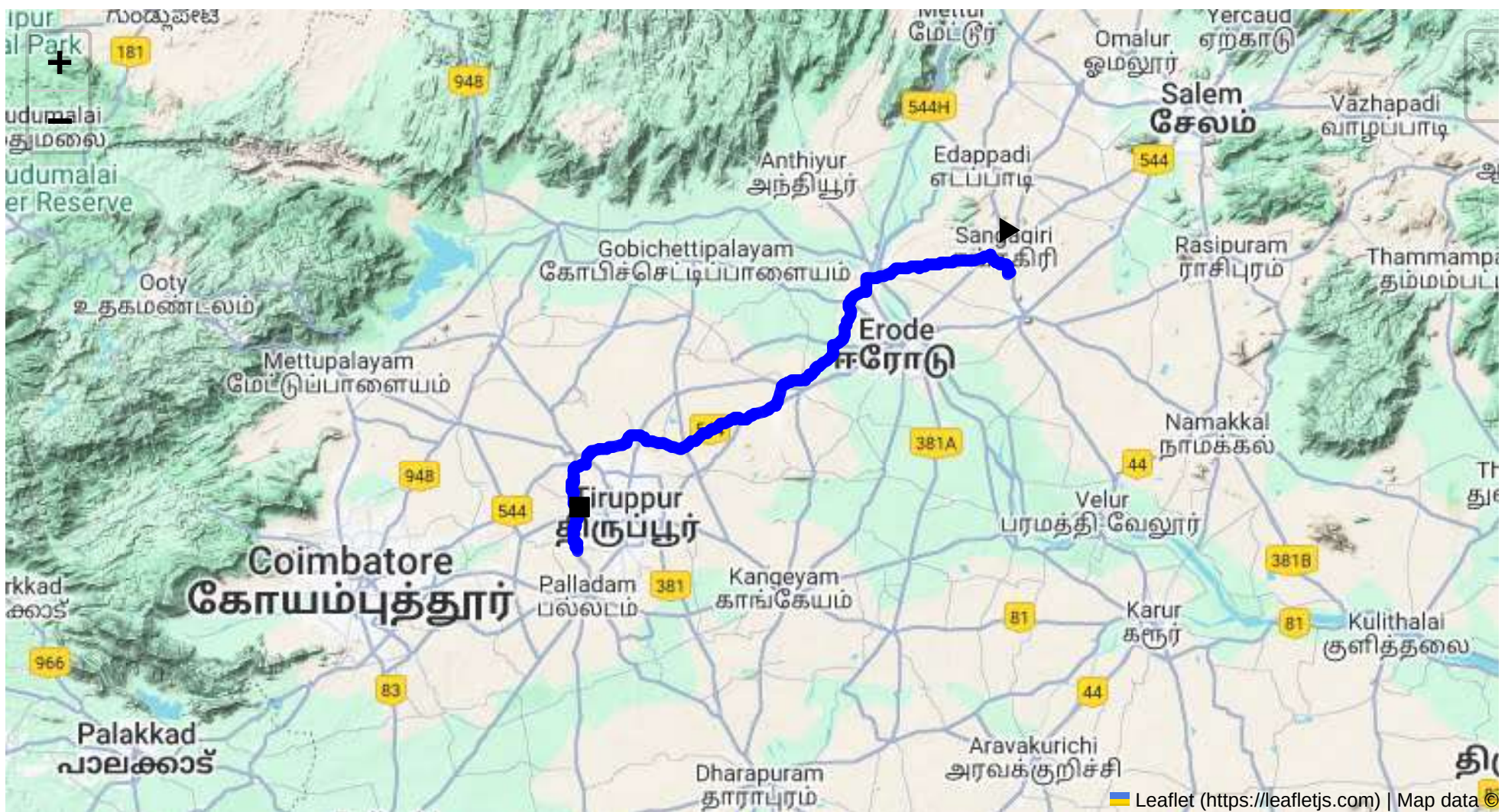
## **Compliance with Government Directives**

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: 99.93 km**  
**Estimated Duration: 1.9 hours**  
**Adjusted Duration (Heavy Vehicle): 2.4 hours**  
**Start: (11.4381, 77.8734)**  
**End: (11.058396, 77.271889)**



## Welcome to the Journey Risk Management Study

### Route Safety Analysis Report

#### 1. Overview of the Route Map

The route from Sangagiri to Velampalayam covers approximately 100 kilometers via major highways like NH 544 and some secondary roads. The journey involves navigating both urban and rural settings, with



stretches of highway and narrower, local roads. This route traverses several small towns and intersects major junctions, requiring attention to both local traffic and highway conditions.

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

- **Weather Overview:** Tamil Nadu generally experiences a tropical climate, with hot summers, a monsoon season from June to September, and mild winters.
- **Weather-Related Hazards:** During the monsoon season, heavy rainfall can lead to waterlogging and increased risk of road accidents due to slippery surfaces. Fog may occur in early mornings during winter, reducing visibility.

## 3. Analysis of Traffic Patterns

- **Peak Hours:** Traffic congestion is common during morning (8:00 AM - 10:00 AM) and evening (5:00 PM - 8:00 PM) rush hours, especially near major urban intersections and towns.
- **Congestion-Prone Areas:** Sivagiri and Perundurai tend to have slower moving traffic due to local commercial activities. The vicinity near industrial areas can also experience congestion due to heavy vehicles.

## 4. Assessment of Road Quality and Infrastructure

- **Road Quality:** Major highways like NH 544 are generally well-maintained, but secondary roads may have uneven surfaces, potholes, and less illumination. Bridges and flyovers are adequate but should be approached with caution due to occasional repair works.
- **Infrastructure Concerns:** Limited signage and poor road markings on rural roads can be hazardous. Some stretches do not have effective drainage, exacerbating waterlogging issues during heavy rains.

## 5. Suggestions for Alternative Routes

- In emergencies, you can consider taking detours through less congested rural roads like SH 129, although they may extend travel time.
- Another alternative is using the NH 47. However, it's advisable to remain updated with local traffic news for real-time conditions, construction, or obstructions.

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

- **Permits Required:** Transportation of hazardous materials requires specific permits from local authorities.
- **Time Restrictions:** Certain urban areas may impose restrictions on heavy vehicle movement during peak hours to reduce congestion.
- **Route Designations:** Some roads may be designated as unsuitable for hazardous materials, requiring adherence to specified routes.

## 7. Overview of Historical Incidents

- Generally, the route has a low incidence of major accidents involving heavy vehicles, but minor incidents, particularly at intersections and during severe weather, have been reported.
- In recent years, there have been isolated cases of spills due to improper securing of hazardous loads, highlighting the need for ensuring cargo safety.

## 8. Environmental Considerations and Sensitive Areas

- **Protected Areas:** There are no significant wildlife or environmental protected areas directly on the route, but considerations must be made for pollution near water bodies and agricultural lands.
- **Noise and Emission Limitations:** Urban areas may have noise and emission regulations to protect air quality and minimize disturbances.

## 9. Analysis of Communication Coverage

- **Coverage:** Major highway segments typically have adequate mobile network coverage. However, rural and interior areas might experience dead zones, especially in hilly or densely vegetated stretches.
- **Recommended Action:** Keep communication equipment ready and inform dispatch regularly when in known coverage areas.

## 10. Estimated Emergency Response Times

- **Urban Areas:** Emergency services (hospital, police, and firefighting) typically respond within 20-30 minutes.
- **Rural Areas:** Response times can extend to 45 minutes to an hour due to distance and accessibility issues.

## 12. Overall Summary of Risk Assessment

The route from Sangagiri to Velampalayam presents moderate risks primarily from weather conditions, road infrastructure quality, and congestion. Adequate preparation, adherence to regulations, and selecting the right time for travel can mitigate many of these risks. It is crucial to maintain communication with central dispatch to stay informed and responsive to any unforeseen events. Proper training and awareness of drivers regarding route intricacies, local regulations, and emergency procedures will further minimize potential hazards and improve safety for hazardous material transport.

### Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.17250, 77.26863	15 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
1	Turn	High	11.43968, 77.87345	15 KM/Hr
2	Turn	High	11.44024, 77.87528	15 KM/Hr
3	Turn	High	11.44898, 77.87410	15 KM/Hr
4	Turn	High	11.45352, 77.85698	15 KM/Hr
5	Turn	Medium	11.45847, 77.85140	30 KM/Hr
6	Turn	Medium	11.45898, 77.85135	30 KM/Hr
7	Turn	High	11.46303, 77.84945	15 KM/Hr
8	Turn	Medium	11.44965, 77.77565	30 KM/Hr
9	Turn	Medium	11.44953, 77.77344	30 KM/Hr
10	Turn	Medium	11.45085, 77.77020	30 KM/Hr
11	Turn	Medium	11.43165, 77.67734	30 KM/Hr
12	Turn	Medium	11.18808, 77.28672	30 KM/Hr
13	Turn	Medium	11.16848, 77.26757	30 KM/Hr
14	Turn	Medium	11.14580, 77.26363	30 KM/Hr
15	Turn	Medium	11.10890, 77.27134	30 KM/Hr
16	Turn	Medium	11.10680, 77.27043	30 KM/Hr
17	Turn	Medium	11.06989, 77.26801	30 KM/Hr
18	Turn	Medium	11.06826, 77.27076	30 KM/Hr
19	Turn	Medium	11.06781, 77.27098	30 KM/Hr

## Emergency Locations

	type	name	coordinates	speed_limit	risk_level
3	hospital	Dhanvantri Multi Speciality Hospital	11.451362, 77.766602	30 km/h	Medium
4	hospital	Dhanvanthri Hospital	11.4496712, 77.7593772	30 km/h	Medium
5	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
8	hospital	Thanish Siddha Hospital	11.430003, 77.674964	30 km/h	Medium
9	clinic	Harshitha Clinic	11.4313207, 77.674718	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
10	hospital	Sri Kaalangi Siddhar Mooligai Vaithiya Nilayam	11.432369, 77.674894	30 km/h	Medium
11	clinic	G.K Clinic	11.4297244, 77.6749715	30 km/h	Medium
12	clinic	Erode Cancer Centre	11.3732, 77.649152	30 km/h	Medium
14	hospital	Irt Hospital	11.2803603, 77.5644118	30 km/h	Medium
16	hospital	Gen Siddha Hospital	11.2375033, 77.5059797	30 km/h	Medium
17	hospital	Vijayamangalm Government Hospital	11.2382827, 77.501687	30 km/h	Medium
18	hospital	Dr. N Viswanathan Hospital	11.2412783, 77.5005502	30 km/h	Medium
19	clinic	P.M. Clinic	11.2281078, 77.4647296	30 km/h	Medium
21	hospital	Sri Renu Hospital	11.1990225, 77.4219937	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
6	school	SSM Matriculation Higher Secondary School	11.4321653, 77.6880046	30 km/h	Medium
13	college	Government polytechnic college	11.2907053, 77.5698726	30 km/h	Medium
15	school	Bharathi Matriculation School	11.2494613, 77.5307028	30 km/h	Medium
20	marketplace	Weekly Market (sandhai)	11.2287229, 77.4646676	30 km/h	Medium



## Route Photos of Risky Spots



**Risk Type:** Roundabout

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.17250, 77.26863



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.44024, 77.87528





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.44898, 77.87410



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.45352, 77.85698





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.45847, 77.85140



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.45898, 77.85135



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.46303, 77.84945





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.44965, 77.77565



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.44953, 77.77344





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.45085, 77.77020



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.43165, 77.67734



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.18808, 77.28672





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.16848, 77.26757



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.14580, 77.26363





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.10890, 77.27134



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.10680, 77.27043



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.06989, 77.26801





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.06826, 77.27076



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.06781, 77.27098

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