



# IndianOil

## **JOURNEY RISK MANAGEMENT (JRM) STUDY**

### **Salem Terminal to SRI SARAVANA AGENCIES PUDUPAI**

#### **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.

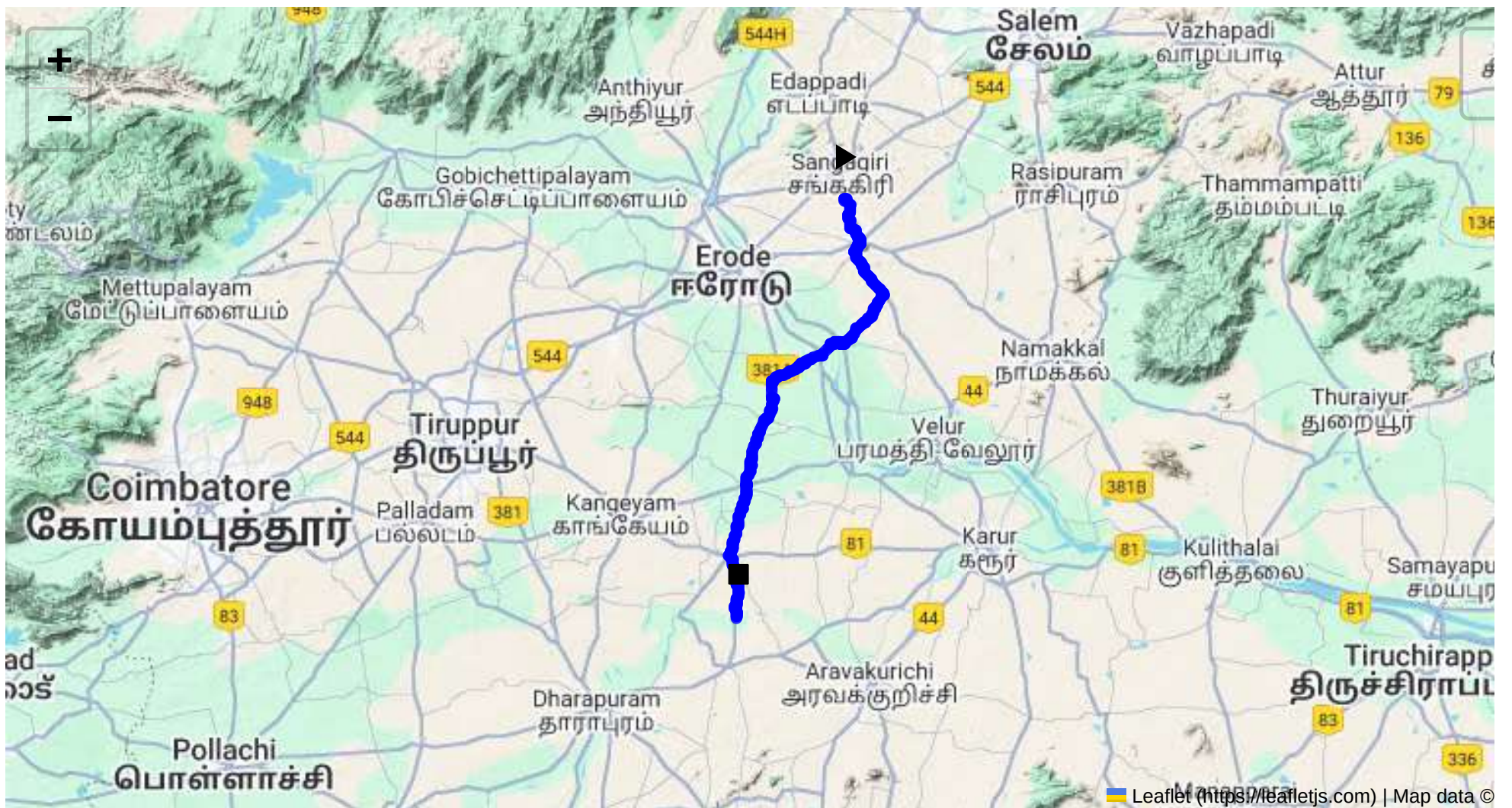
## **Compliance with Government Directives**

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: 79.77 km**  
**Estimated Duration: 1.8 hours**  
**Adjusted Duration (Heavy Vehicle): 2.3 hours**  
**Start: (11.4381, 77.8734)**  
**End: (10.863126, 77.721901)**



## Welcome to the Journey Risk Management Study

### 1. Overview of the Route Map:

The route from CVQF+23W, Sangagiri to VP7F+C6Q, Puduppai spans approximately 79.77 kilometers, taking around 1.83 hours for heavy vehicles. It follows mainly regional roads like MDR854 and passes through areas like Devanampalayam. The terrain is primarily flat and agricultural with several small towns along the route.



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

Tamil Nadu typically experiences a tropical climate. During monsoon seasons (June to September), heavy rains can lead to poor visibility and slippery roads. Flooding in low-lying areas is also a possibility. In contrast, the summer months (March to May) can bring extreme heat, impacting tire pressure and vehicle performance.

## 3. Analysis of Traffic Patterns:

Traffic congestion is generally observed in the early mornings (7-9 AM) and late afternoons (4-7 PM), especially near urban centers and market areas. The town centers along the route can create bottlenecks due to slow-moving vehicles like tractors and two-wheelers.

## 4. Assessment of Road Quality and Infrastructure:

The MDR854 and connecting roads have mixed infrastructure quality. The primary roads are relatively well-maintained but secondary roads and village connectors might suffer from potholes and uneven surfaces. Construction work can occasionally lead to diversions or temporary roadblocks.

## 5. Suggestions for Alternative Routes:

In emergencies, NH44 can be considered as an alternative for more efficient north-south travel. Although it detours slightly longer, it offers better road quality and support facilities.

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

Indian transport regulations require that vehicles carrying hazardous materials have proper labeling and documentation. Night driving of hazardous goods is often restricted, and specific routes may require special permits, especially near populated areas.

## 7. Overview of Historical Incidents:

There have been instances of heavy vehicle rollovers and collisions primarily due to driver fatigue and improper vehicle maintenance. No major hazardous material incidents have been noted in recent years, but minor spillages have occurred due to road accidents.

## 8. Environmental Considerations and Sensitive Areas:

The route passes through several agricultural zones where spillage could significantly impact crops. A few water bodies alongside the road also require careful navigation to prevent contamination.

## 9. Analysis of Communication Coverage:

Mobile network coverage is generally reliable throughout the route. However, occasional dead zones may occur especially in rural stretches outside towns. Primary communication providers like Airtel and

Vodafone have broader coverage.

## 10. Estimated Emergency Response Times:

Response times vary along the route—urban sections typically have faster response times (approximately 20-30 minutes), while rural sections may suffer delays of up to an hour due to distance from emergency services.

## 11. Overall Summary of Risk Assessment:

The route presents moderate risk for transporting hazardous materials. Major concerns include weather-related road conditions, congestion in town centers, and variable emergency response times in rural stretches. Proactive measures like selecting clear travel windows and ensuring vehicle maintenance can mitigate most risks. Coordination with local authorities for route conditions and emergency contacts is advisable before commencing transit.

### Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.38395, 77.89480	15 KM/Hr
1	Roundabout	High	11.04637, 77.73761	15 KM/Hr
2	Turn	High	11.43968, 77.87345	15 KM/Hr
3	Turn	High	11.44022, 77.87546	15 KM/Hr
4	Turn	High	11.37868, 77.89498	15 KM/Hr
5	Turn	Medium	11.37842, 77.89452	30 KM/Hr
6	Turn	Medium	11.30869, 77.92911	30 KM/Hr
7	Turn	Medium	11.30849, 77.92910	30 KM/Hr
8	Turn	Medium	11.27840, 77.91284	30 KM/Hr
9	Turn	Medium	11.24172, 77.87357	30 KM/Hr
10	Turn	High	11.24000, 77.87363	15 KM/Hr
11	Turn	Medium	11.24041, 77.86919	30 KM/Hr
12	Turn	High	11.24159, 77.86874	15 KM/Hr
13	Turn	High	11.24170, 77.86842	15 KM/Hr
14	Turn	High	11.24248, 77.86829	15 KM/Hr
15	Turn	High	11.24257, 77.86776	15 KM/Hr
16	Blind Spot	Blind Spot	11.24384, 77.86689	10 KM/Hr
17	Turn	High	11.24103, 77.86020	15 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
18	Turn	High	11.24200, 77.85882	15 KM/Hr
19	Turn	High	11.18856, 77.77110	15 KM/Hr
20	Turn	Medium	11.16441, 77.77358	30 KM/Hr
21	Turn	Medium	11.16404, 77.77379	30 KM/Hr
22	Turn	High	11.16377, 77.77421	15 KM/Hr
23	Turn	Medium	11.13664, 77.76524	30 KM/Hr
24	Turn	Medium	11.04699, 77.73747	30 KM/Hr
25	Turn	High	11.04515, 77.73621	15 KM/Hr
26	Turn	High	10.99026, 77.72511	15 KM/Hr
27	Turn	High	10.98974, 77.72388	15 KM/Hr
28	Blind Spot	Blind Spot	10.94597, 77.71319	10 KM/Hr
29	Turn	High	10.94571, 77.71574	15 KM/Hr
30	Turn	Medium	10.92251, 77.72391	30 KM/Hr
31	Turn	Medium	10.87191, 77.72259	30 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
8	hospital	Tiruchengode Government Hospital	11.37645, 77.89426	30 km/h	Medium
9	hospital	Tirukumaran Hospitals	11.3782118, 77.8914933	30 km/h	Medium
10	hospital	Krishna Hospital, Namakkal	11.3754811, 77.8931817	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
13	police	கரட்டுப்பாளையம் காவல் நிலையம்	11.357586, 77.8922539	30 km/h	Medium
14	hospital	Government Hospital, Elumathur	11.18533, 77.772496	30 km/h	Medium
15	hospital	Malar Hospital, Muthur	11.0438049, 77.7361156	30 km/h	Medium
16	hospital	SIBI Hospital, Vellakoil	10.9569141, 77.7160216	30 km/h	Medium
17	hospital	KG Hospital, Vellakoil	10.9511, 77.714116	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

## 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:** 11.04637, 77.73761



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.44022, 77.87546





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.37868, 77.89498



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.37842, 77.89452





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.30869, 77.92911



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.30849, 77.92910



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.27840, 77.91284





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.24172, 77.87357



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.24000, 77.87363





**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.24041, 77.86919**



**Risk Type: Turn**

**Risk Level: High**

**Speed Limit: 15 KM/Hr**

**Coordinates: 11.24159, 77.86874**



**Risk Type: Turn**

**Risk Level: High**

**Speed Limit: 15 KM/Hr**

**Coordinates: 11.24170, 77.86842**





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.24248, 77.86829



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.24257, 77.86776





**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 11.24384, 77.86689



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.24103, 77.86020



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.24200, 77.85882





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.18856, 77.77110



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.16441, 77.77358





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.16404, 77.77379



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.16377, 77.77421



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.13664, 77.76524





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.04699, 77.73747



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.04515, 77.73621





**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 10.99026, 77.72511



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 10.98974, 77.72388



**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 10.94597, 77.71319





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 10.94571, 77.71574



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 10.92251, 77.72391





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 10.87191, 77.72259

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