



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

### Salem Terminal to V K AGENCIES

#### 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.

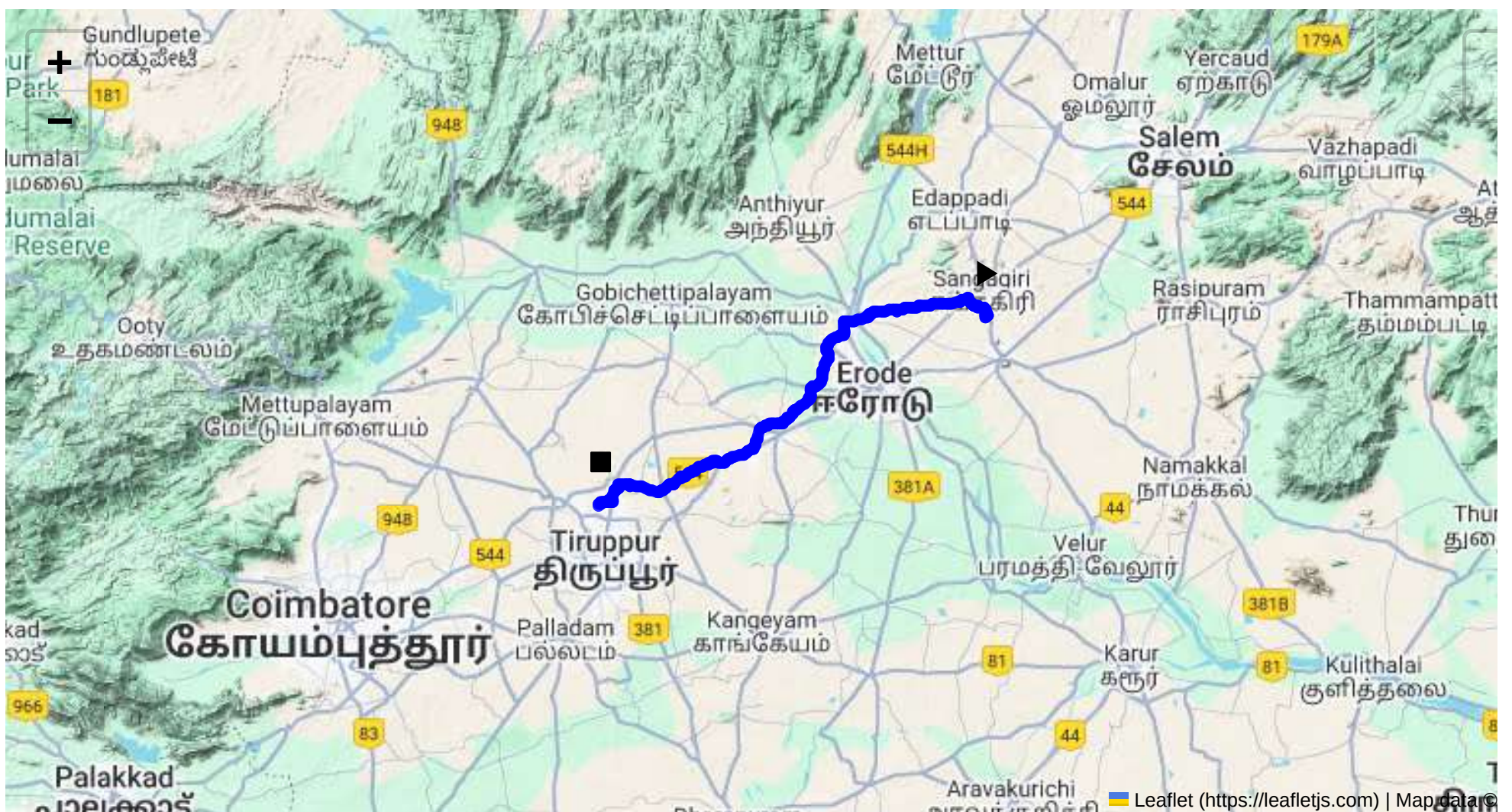
## **Compliance with Government Directives**

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: 79.46 km**  
**Estimated Duration: 1.5 hours**  
**Adjusted Duration (Heavy Vehicle): 1.9 hours**  
**Start: (11.4381, 77.8734)**  
**End: (11.179449, 77.332169)**



## Welcome to the Journey Risk Management Study

**1. Overview of the Route Map:** The route from Sangagiri to Kalampalayam in Tamil Nadu spans approximately 79.46 kilometers. Starting at CVQF+23W, Sangagiri, the route primarily follows major state highways with transitions towards local roads as you approach Kalampalayam (58HJ+QV). The path directly links smaller towns and agricultural areas, moving through less densely populated regions before nearing urbanized zones.



**2. Typical Weather Conditions and Potential Weather-Related Hazards:** Tamil Nadu experiences tropical weather. Peak summer temperatures can lead to road stress, while the monsoon season from June to September poses a risk of heavy rainfall and potential flooding, leading to slick roads and reduced visibility. Be cautious of waterlogging in low-lying areas and increased braking distances due to wet conditions.

**3. Traffic Patterns, Peak Hours, and Congestion-Prone Areas:** Traffic is typically light to moderate, especially in rural parts. However, expect congestion during school timings (8-9 AM, 3-4 PM) and late afternoons (5-7 PM) in towns. Nearby markets can create ad hoc traffic jams. Sangagiri and the outskirts of Coimbatore may face increased congestion due to local traffic merging with highway travelers.

**4. Road Quality and Infrastructure:** The majority of the route follows state highways with reasonably maintained roads, but watch for transitions to smaller roads, which might have occasional potholes and narrower lanes. Signage is usually in Tamil and English, caution is advised at night due to limited lighting on local roads.

**5. Suggestions for Alternative Routes for Emergencies:** Alternate paths include taking National Highway 544, though longer, avoiding smaller roads. Northern detours via Salem could provide safer passage during emergencies with more accessibility to services.

**6. Summary of Local Regulations Affecting Hazardous Material Transport:** Tamil Nadu requires permits for transporting hazardous materials, adherence to safety guidelines as per the Motor Vehicles Act 1988, and compliance with local police protocols. Routing through populated areas during off-peak hours is preferred to minimize risks.

**7. Historical Incidents Involving Heavy Vehicles or Hazardous Materials:** No major incidents recorded recently; however, heavy traffic accidents generally align with monsoon seasons and festival periods when roads are congested, stressing vehicle condition checks and proper loading.

**8. Environmental Considerations and Sensitive Areas:** The route traverses agricultural zones; careful disposal of waste and adherence to noise pollution restrictions are mandatory to avoid harming local ecosystems.

**9. Communication Coverage and Potential Dead Zones:** While major roads have good cellular coverage, signal could weaken in rural or forested sections. It's critical to have offline navigation and established communication protocols.

**10. Estimated Emergency Response Times for Different Route Segments:** In urban areas, emergency services can respond within 20-30 minutes; however, in rural sections, response time could stretch to 45 minutes or more due to less accessible infrastructure. Having key local emergency contacts is essential.

**12. Overall Summary of Risk Assessment:** The Sangagiri to Kalampalayam route presents moderate risks for hazardous material transport. While weather and road conditions are generally manageable, potential hazards include monsoon-related incidents, congestion in urban areas, and rural communication gaps. Preparedness for emergency detours, adherence to transport regulations, and proactive communication strategies are crucial for minimizing operational risks. Additionally, maintaining vehicle and load compliance with safety standards will further secure safe transport.

## Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Turn	Medium	11.43822, 77.87348	30 KM/Hr
1	Turn	High	11.43968, 77.87345	15 KM/Hr
2	Turn	High	11.44029, 77.87544	15 KM/Hr
3	Turn	High	11.44898, 77.87410	15 KM/Hr
4	Turn	Medium	11.45357, 77.85789	30 KM/Hr
5	Turn	High	11.45352, 77.85698	15 KM/Hr
6	Turn	Medium	11.45847, 77.85140	30 KM/Hr
7	Turn	Medium	11.45898, 77.85135	30 KM/Hr
8	Turn	Medium	11.46303, 77.84945	30 KM/Hr
9	Turn	Medium	11.46314, 77.84928	30 KM/Hr
10	Turn	Medium	11.45509, 77.81383	30 KM/Hr
11	Turn	High	11.20728, 77.35914	15 KM/Hr
12	Turn	Medium	11.20246, 77.35895	30 KM/Hr
13	Turn	High	11.18416, 77.35188	15 KM/Hr
14	Turn	High	11.18451, 77.34879	15 KM/Hr
15	Turn	Medium	11.18464, 77.34868	30 KM/Hr
16	Turn	High	11.18501, 77.34861	15 KM/Hr
17	Turn	High	11.18497, 77.33917	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

	type	name	coordinates	speed_limit	risk_level
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
13	clinic	Erode Cancer Centre	11.3732, 77.649152	30 km/h	Medium
15	hospital	Irt Hospital	11.2803603, 77.5644118	30 km/h	Medium
17	hospital	Gen Siddha Hospital	11.2375033, 77.5059797	30 km/h	Medium
18	hospital	Vijayamangalm Government Hospital	11.2382827, 77.501687	30 km/h	Medium
19	hospital	Dr. N Viswanathan Hospital	11.2412783, 77.5005502	30 km/h	Medium
20	clinic	P.M. Clinic	11.2281078, 77.4647296	30 km/h	Medium
22	hospital	Sri Renu Hospital	11.1990225, 77.4219937	30 km/h	Medium
23	hospital	Akshitha Hospital- Perumanallur	11.2050424, 77.3584876	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



	type	name	coordinates	speed_limit	risk_level
7	school	SSM Matriculation Higher Secondary School	11.4321653, 77.6880046	30 km/h	Medium
14	college	Government polytechnic college	11.2907053, 77.5698726	30 km/h	Medium
16	school	Bharathi Matriculation School	11.2494613, 77.5307028	30 km/h	Medium
21	marketplace	Weekly Market (sandhai)	11.2287229, 77.4646676	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:** High



**Speed Limit: 15 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: 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:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.46303, 77.84945



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.46314, 77.84928



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.45509, 77.81383

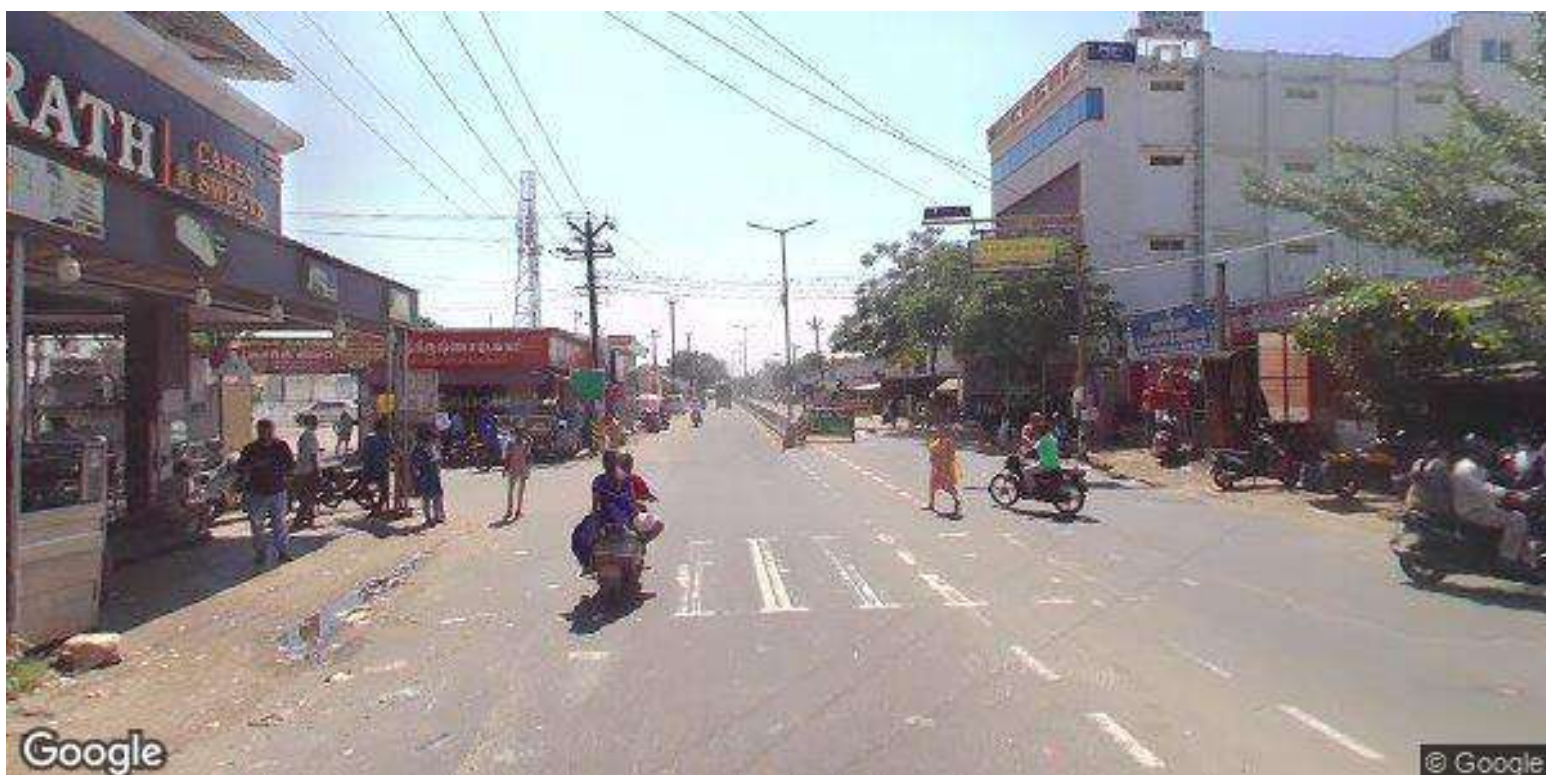




**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.20728, 77.35914



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.20246, 77.35895





**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.18416, 77.35188



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.18451, 77.34879



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.18464, 77.34868





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.18501, 77.34861



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.18497, 77.33917

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