



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

### Salem Terminal TO SARAS 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.

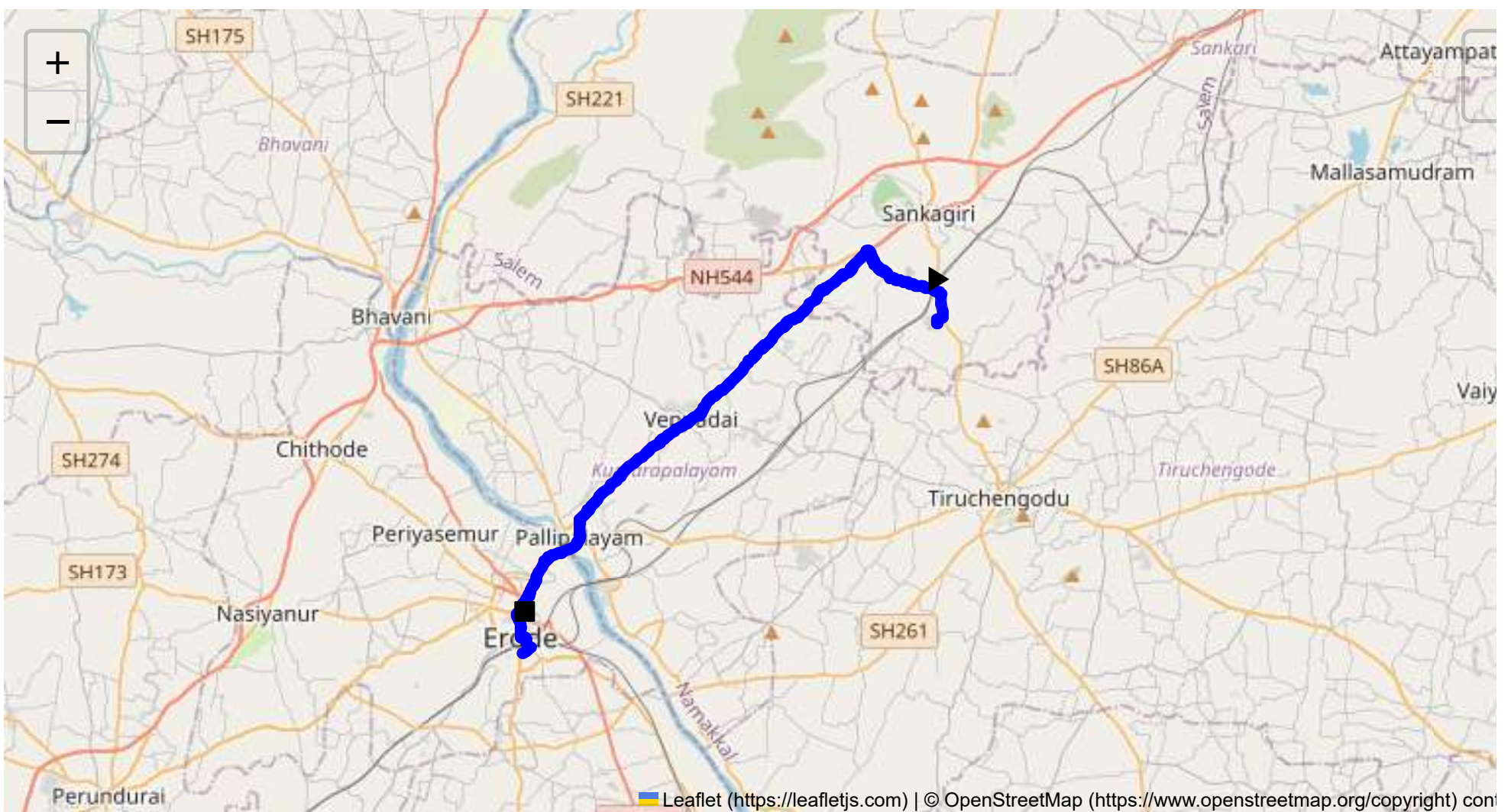
## **Compliance with Government Directives**

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: 26.69 km**  
**Estimated Duration: 0.7 hours**  
**Adjusted Duration (Heavy Vehicle): 0.9 hours**  
**Start: (11.4381, 77.8734)**  
**End: (11.324832, 77.728326)**



## Welcome to the Journey Risk Management Study

### 1. Overview of the Route Map

The route from Sangagiri to Erode involves traveling through rural areas and semi-urban regions. Starting at CVQF+23W in Sangagiri, the journey proceeds northeast, passing through Puthur and Erode before reaching the destination at Chettipalayam. This route is approximately 26.69 kilometers and is primarily comprised of regional roads that connect smaller towns and larger city environments.



## 2. Typical Weather Conditions and Hazards

Tamil Nadu generally experiences hot and humid conditions, with significant rainfall during the monsoon (October to December). During rainy seasons, expect slippery roads and localized flooding, which can pose a hazard, especially in rural areas with inadequate drainage systems.

## 3. Traffic Patterns

Traffic tends to peak during morning (8:00-10:00 AM) and evening (6:00-8:00 PM) rush hours, especially near Erode. Rural stretches are generally less congested but be prepared for slow-moving agricultural vehicles.

## 4. Road Quality and Infrastructure

The road quality varies from well-paved urban stretches to less developed rural roads. Potholes and uneven surfaces may be encountered, particularly in areas with high rainfall. Infrastructure is better within Erode compared to surrounding areas.

## 5. Alternative Routes for Emergencies

For emergencies, consider:

- Taking state highways that bypass smaller towns.
- Utilizing the NH544 (Salem – Kochi Highway) for sections where feasible, allowing faster response and reduced congestion.

## 6. Local Regulations on Hazardous Material Transport

Transporting hazardous materials requires adhering to strict regulatory guidelines, including permits. Regulatory checks are more frequent near urban centers like Erode. Ensure updated documentation and compliance with Tamil Nadu's environmental and safety standards.

## 7. Historical Incidents Involving Heavy Vehicles

While specific incident data for this exact route may not be extensively documented, heavy vehicles in Tamil Nadu have previously encountered issues such as rollovers due to sharp curves and overloaded transport leading to accidents.

## 8. Environmental Considerations and Sensitive Areas

Be cautious near agricultural lands to avoid accidental spills, which can have severe impacts on local ecosystems. Wetlands or water bodies along the route also require careful navigation to prevent contamination.

## 9. Communication Coverage

Mobile network coverage is generally good near urban centers and along major highways but may be less reliable in remote rural areas between towns. Prepare for potential short dead zones, especially away from major intersections and populated areas.

## 10. Estimated Emergency Response Times

- Urban Segments (near Erode): Approximately 15-30 minutes due to relatively good infrastructure and proximity to emergency services.
- Rural Segments (between Sangagiri and Erode): Approximately 30-60 minutes, accounting for limited access and potentially challenging terrain.

## 12. Overall Summary of Risk Assessment

Overall, the route is moderately safe for transporting hazardous materials, with key risks related to weather conditions, road quality, and traffic congestion at urban intersections. Proper adherence to safety regulations and contingency planning for emergencies will mitigate many of these challenges. It is crucial to prepare for delayed responses in rural sections and ensure adherence to local environmental protections to minimize the impact of unexpected incidents.

### Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.37086, 77.74828	15 KM/Hr
1	Turn	High	11.43811, 77.87348	15 KM/Hr
2	Turn	Medium	11.43961, 77.87341	30 KM/Hr
3	Turn	Medium	11.43968, 77.87345	30 KM/Hr
4	Turn	High	11.44029, 77.87544	15 KM/Hr
5	Turn	High	11.45350, 77.85700	15 KM/Hr
6	Turn	Medium	11.46303, 77.84945	30 KM/Hr
7	Turn	Medium	11.46318, 77.84913	30 KM/Hr
8	Turn	Medium	11.46312, 77.84886	30 KM/Hr
9	Turn	Medium	11.36626, 77.74788	30 KM/Hr
10	Turn	Medium	11.34493, 77.73032	30 KM/Hr
11	Turn	Medium	11.34487, 77.73024	30 KM/Hr
12	Turn	Medium	11.34470, 77.73018	30 KM/Hr
13	Blind Spot	Blind Spot	11.33920, 77.72902	10 KM/Hr
14	Turn	High	11.33914, 77.72659	15 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
15	Turn	High	11.33890, 77.72637	15 KM/Hr
16	Turn	Medium	11.33093, 77.72776	30 KM/Hr
17	Turn	Medium	11.33083, 77.72873	30 KM/Hr
18	Turn	High	11.32694, 77.73073	15 KM/Hr

## Emergency Locations

	type	name	coordinates	speed_limit	risk_level
1	hospital	Cheran Hospital	11.3680302, 77.7481976	30 km/h	Medium
2	hospital	Sri Kumaran E N T Hospital	11.3657814, 77.7477763	30 km/h	Medium
3	pharmacy	Pharmacy	11.3652161, 77.7486375	30 km/h	Medium
4	hospital	Visaalam Hospitals	11.3651528, 77.747808	30 km/h	Medium
5	hospital	Sri Krishna Hospital	11.3656648, 77.7477783	30 km/h	Medium
6	police	Police Station	11.3630177, 77.7476505	30 km/h	Medium
7	hospital	Government Hospital	11.3608508, 77.747453	30 km/h	Medium
9	hospital	Sri Hari Sakthivel Hospital	11.3526901, 77.7323055	30 km/h	Medium
10	hospital	Senthil Prakash Hospital	11.352639, 77.732267	30 km/h	Medium
11	hospital	V K Hospital	11.3513792, 77.7313976	30 km/h	Medium
12	hospital	Dhanvantri Critical Care Center	11.3504266, 77.7311274	30 km/h	Medium
13	hospital	Indrajith Yoga Nature Cure Hospital	11.3499973, 77.732974	30 km/h	Medium
15	hospital	Dhanvantri Critical Care Centre	11.35099, 77.730508	30 km/h	Medium
16	hospital	Kumudha Hospital	11.3467172, 77.7306797	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
17	hospital	City Hospital	11.3451151, 77.7300887	30 km/h	Medium
18	clinic	K.B.N. Nursing Home	11.344835, 77.7310771	30 km/h	Medium
19	clinic	Kpn Nursing Home	11.3437022, 77.7304525	30 km/h	Medium
20	hospital	Milan Hospital	11.343591, 77.733182	30 km/h	Medium
21	hospital	Kaviraj Ayurveda Hospital	11.3400349, 77.7298199	30 km/h	Medium
22	hospital	Dr Kokilasekar Nursing Hospital	11.3395874, 77.7269838	30 km/h	Medium
23	clinic	M.R Nursing Home	11.3386746, 77.7294262	30 km/h	Medium
25	hospital	Government Maternity Hospital, Agathiar	11.33716, 77.727075	30 km/h	Medium
26	clinic	Naseer Nursing Home	11.3364485, 77.7271691	30 km/h	Medium
27	hospital	Vikram Hospital, Erode	11.3356411, 77.7280569	30 km/h	Medium
28	hospital	Shabeer Hospital	11.33529, 77.7285236	30 km/h	Medium
29	hospital	Dr. R.M. Habibullah Hospital	11.335246, 77.7266028	30 km/h	Medium
30	hospital	Kumarasamy Hospital	11.334273, 77.7259118	30 km/h	Medium
31	hospital	Thangam Hospital, Erode	11.3340961, 77.7262437	30 km/h	Medium
32	hospital	J.B. Clinic And Hospital	11.3351769, 77.7282031	30 km/h	Medium
33	hospital	Ck Hospital	11.3326562, 77.7282011	30 km/h	Medium
34	hospital	Immick Hospital	11.332617, 77.728073	30 km/h	Medium
35	fire_station	Erode District Fire Station	11.3326366, 77.7272532	30 km/h	Medium
36	hospital	Jai Maaruthi Hospital	11.332, 77.727272	30 km/h	Medium
37	hospital	Shubiksha Hospital	11.3318174, 77.7299544	30 km/h	Medium
38	hospital	JJ hospital	11.33168, 77.728823	30 km/h	Medium
39	hospital	Bethesda Hospital	11.3314183, 77.7266231	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
40	hospital	Lotus Hospital	11.3266236, 77.7306301	30 km/h	Medium
41	hospital	Lotus Hospital	11.3259471, 77.7302149	30 km/h	Medium
42	clinic	Monika Diabetes Centre	11.3229084, 77.7269179	30 km/h	Medium

### Crowded Spots

	type	name	coordinates	speed_limit	risk_level
0	school	Ssri Valliappa Vidhayalayam mat hr school	11.4004878, 77.7794381	30 km/h	Medium
8	marketplace	Weekly Market	11.3605669, 77.7488199	30 km/h	Medium
14	school	Municipality Girls Higher secondary school	11.3495618, 77.7325011	30 km/h	Medium
24	school	E.V.R. Govt Girls Hr. Sec School	11.3371265, 77.7266283	30 km/h	Medium

### Route Photos of Risky Spots



**Risk Type:** Roundabout

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.37086, 77.74828





**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:** 11.45350, 77.85700





**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:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.46312, 77.84886





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.36626, 77.74788



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.34493, 77.73032





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.34487, 77.73024



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.34470, 77.73018



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Coordinates:** 11.33920, 77.72902





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.33914, 77.72659



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.33890, 77.72637





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.33093, 77.72776



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.33083, 77.72873



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.32694, 77.73073

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