



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

### Salem Terminal to ADVG 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.

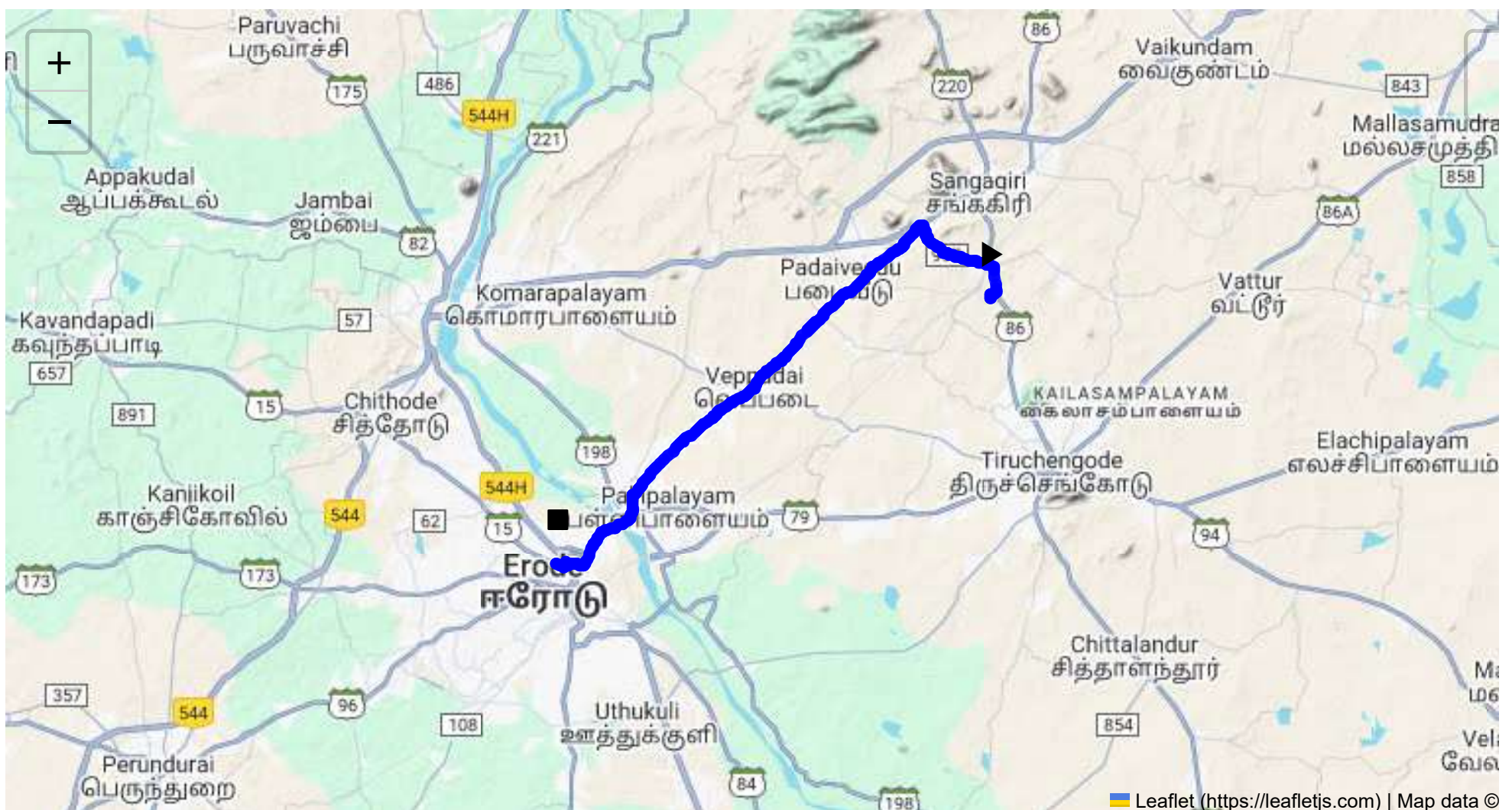
## **Compliance with Government Directives**

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: 24.90 km**  
**Estimated Duration: 0.7 hours**  
**Adjusted Duration (Heavy Vehicle): 0.8 hours**  
**Start: (11.4381, 77.8734)**  
**End: (11.347583, 77.721287)**



## Welcome to the Journey Risk Management Study

### Route Safety Analysis Report

#### 1. Overview of the Route Map

The route from Sangagiri to Thirunagar Colony, Erode, spans approximately 24.90 km, primarily following the NH 544 and then branching onto regional roads toward Erode. It is a straightforward route without



significant detours, predominantly traveling through rural and semi-urban areas of Tamil Nadu.

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

- **Weather Conditions:** The region experiences a tropical climate with hot summers (April to June), moderate monsoons (July to September), and milder winters (December to February).
- **Hazards:** During monsoon season, the area might experience heavy rains leading to slippery roads and potential flooding, especially in low-lying sections.

## 3. Analysis of Traffic Patterns

- **Peak Hours:** Morning hours (7:00-9:00 AM) and evening hours (5:00-8:00 PM) generally see increased traffic due to local commuters.
- **Congestion-Prone Areas:** The junctions and town areas within Erode experience heightened congestion during peak hours.

## 4. Assessment of Road Quality and Infrastructure

- **Road Quality:** The NH 544 is generally well-maintained, offering smooth driving conditions. However, some regional roads leading into Erode might have uneven surfaces and potholes.
- **Infrastructure:** Adequate signage and lighting are present on major parts of the route, though peripheral roads could have limited amenities.

## 5. Suggestions for Alternative Routes for Emergencies

In case of obstructions or emergencies, an alternative route via NH 47 extending east before diverting onto SH 82 can be considered. This is somewhat longer but provides relief from congested spots on the primary route.

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

- **Regulations:** Transport of hazardous materials requires permits from local authorities, adherence to designated hours (usually non-peak), and compliance with safety protocols including marking and signaling.
- **Restrictions:** Night traffic might be restricted in certain areas for hazardous materials.

## 7. Overview of Historical Incidents

- Historical data indicates a few incidents involving heavy vehicles on NH 544, primarily due to reckless driving and weather-induced skidding. The section near Erode has instances of minor accidents during peak traffic.

## 8. Environmental Considerations and Sensitive Areas

- **Considerations:** The route passes through areas with agricultural activity. Caution is advised to prevent spillage of hazardous material which could impact soil and water supplies.
- **Sensitive Areas:** Proximity to water bodies or farmland requires additional care to avoid contamination.

## 9. Analysis of Communication Coverage

- **Coverage:** Major telecom operators provide extensive coverage along this route, with potential dead zones primarily in rural, less populated areas.

## 10. Estimated Emergency Response Times

- **Urban Segments:** Approximately 15-20 minutes in major towns like Erode due to closer proximity to emergency services.
- **Rural Areas:** Response times could extend to 30-45 minutes in more remote sections.

## 12. Overall Summary of Risk Assessment

The route from Sangagiri to Thirunagar Colony is generally safe for transporting hazardous materials, provided drivers adhere to safety protocols and regulations. The main risks include traffic congestion, road quality in some areas, and weather-related hazards. By considering alternative routes, being prepared for varied weather conditions, and following local regulations, risks can be effectively mitigated. Regular updates on traffic and weather conditions, along with effective communication between route segments, are recommended to ensure ongoing safety.

### 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	11.43956, 77.87340	30 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	11.45348, 77.85706	30 KM/Hr
7	Turn	Medium	11.45352, 77.85698	30 KM/Hr
8	Turn	Medium	11.46318, 77.84913	30 KM/Hr
9	Turn	Medium	11.46312, 77.84886	30 KM/Hr
10	Turn	High	11.34678, 77.73104	15 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
11	Turn	High	11.34678, 77.72581	15 KM/Hr
12	Blind Spot	Blind Spot	11.34803, 77.72478	10 KM/Hr
13	Blind Spot	Blind Spot	11.34625, 77.72392	10 KM/Hr
14	Turn	High	11.34727, 77.72138	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	pharmacy	Pharmacy	11.3652161, 77.7486375	30 km/h	Medium
3	hospital	Sri Kumaran E N T Hospital	11.3657814, 77.7477763	30 km/h	Medium
4	hospital	Sri Krishna Hospital	11.3656648, 77.7477783	30 km/h	Medium
5	hospital	Visaalam Hospitals	11.3651528, 77.747808	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	Dhanvantri Critical Care Centre	11.35099, 77.730508	30 km/h	Medium
14	hospital	Indrajith Yoga Nature Cure Hospital	11.3499973, 77.732974	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
16	hospital	Kumudha Hospital	11.3467172, 77.7306797	30 km/h	Medium
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	hospital	Kaviraj Siddha Hospital	11.347153, 77.720863	30 km/h	Medium
20	hospital	SG MET Hospital	11.34467, 77.720405	30 km/h	Medium
21	pharmacy	Chinthamani Medical Department	11.347629, 77.7190874	30 km/h	Medium
22	clinic	K G Nursing Home	11.3456845, 77.7188784	30 km/h	Medium
23	hospital	Sri Jai Shakthi Dentistry, Speciality Children Dental Hospital	11.3476429, 77.7186408	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
15	school	Municipality Girls Higher secondary school	11.3495618, 77.7325011	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:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.44898, 77.87410



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.45348, 77.85706



**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:** 11.46318, 77.84913



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.46312, 77.84886





**Risk Type: Turn**

**Risk Level: High**

**Speed Limit: 15 KM/Hr**

**Coordinates: 11.34678, 77.73104**



**Risk Type: Turn**

**Risk Level: High**

**Speed Limit: 15 KM/Hr**

**Coordinates: 11.34678, 77.72581**



**Risk Type: Blind Spot**

**Risk Level: Blind Spot**

**Speed Limit: 10 KM/Hr**

**Coordinates: 11.34803, 77.72478**





**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Coordinates:** 11.34625, 77.72392



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.34727, 77.72138

