



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

### Salem Terminal to ANNAMAR 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.

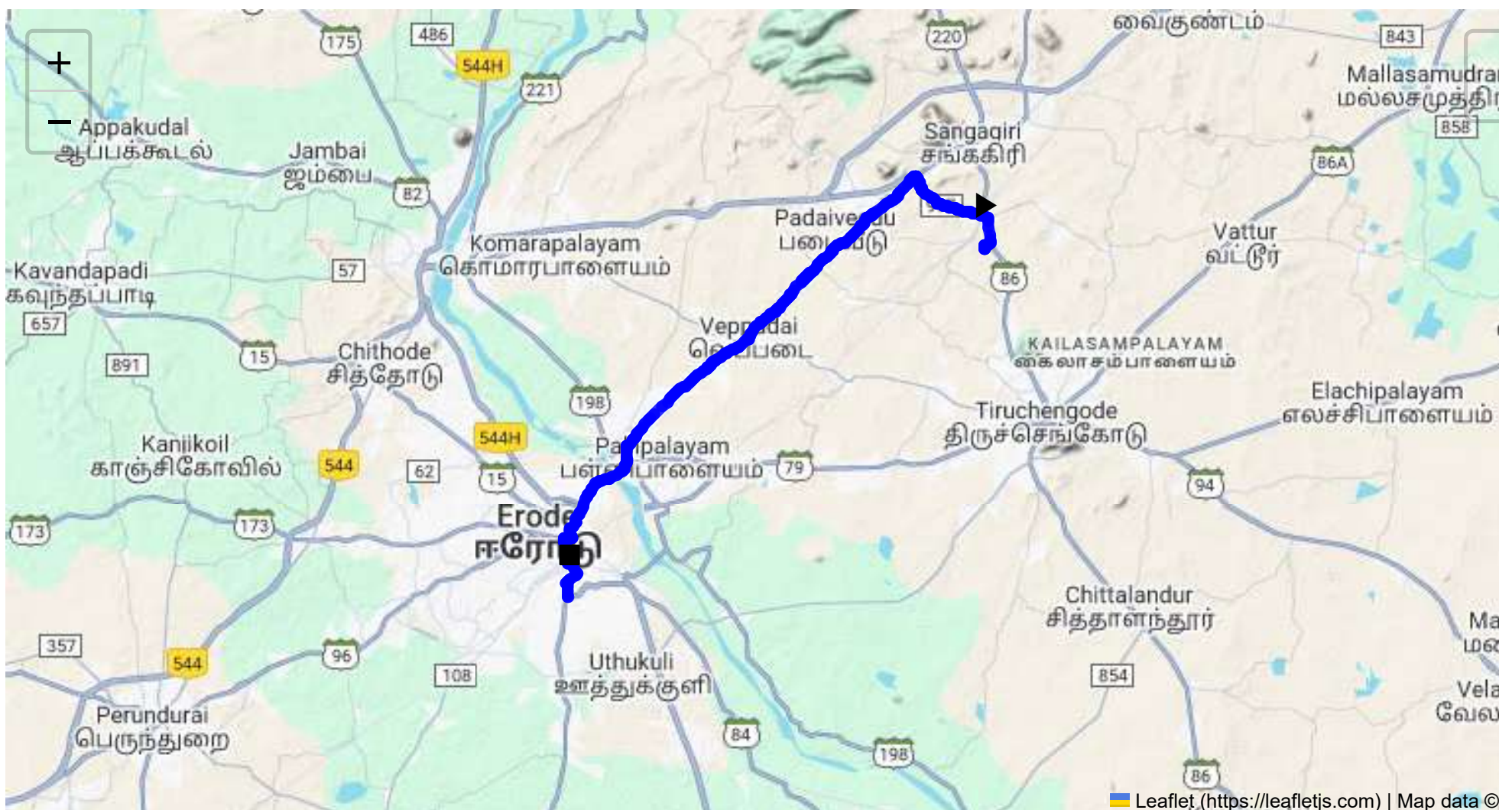
## **Compliance with Government Directives**

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: 27.42 km**  
**Estimated Duration: 0.8 hours**  
**Adjusted Duration (Heavy Vehicle): 1.0 hours**  
**Start: (11.4381, 77.8734)**  
**End: (11.318815, 77.727452)**



## Welcome to the Journey Risk Management Study

### 1. Overview of the Route Map

The route from Sangagiri to Erode spans approximately 27.42 kilometers. It typically involves traveling on national and state highways, which are generally well-maintained and have clear signage. The roads primarily connect through rural and semi-urban areas, transitioning from Sangagiri to the city environment of Erode.



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

The region experiences a tropical climate. During the monsoon season (June to September), heavy rainfall can lead to waterlogging and reduced visibility. Summers (March to May) can get extremely hot, causing road surfaces to soften, which may impact vehicle handling. Fog and mist can be expected during early mornings, particularly in winter (November to February), reducing visibility.

## 3. Analysis of Traffic Patterns

Traffic tends to peak during morning hours between 8:00 AM to 10:00 AM and in the evening from 5:00 PM to 7:00 PM. Congestion is more common near urban centers and at intersections where local roads meet the highway, particularly around Sangagiri and upon reaching Erode.

## 4. Assessment of Road Quality and Infrastructure

The road infrastructure is generally good with regular maintenance. However, some stretches may have uneven surfaces or potholes, especially after the monsoon season. Bridge conditions should be monitored closely as they can be points of bottleneck.

## 5. Suggestions for Alternative Routes for Emergencies

In case of emergencies, consider using State Highway 6 as an alternate. Though slightly longer, it is well-connected and not usually congested. Additionally, local roads branching off from the main highway can provide access to nearby facilities and services in case of urgent need.

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

Vehicles carrying hazardous materials must adhere to Indian transport regulations, which include restrictions on travel during peak traffic hours and mandatory documentation for materials being transported. Compliance with load and speed limits is crucial.

## 7. Overview of Historical Incidents

Though specific details are limited, reports of past road incidents often cite human error and mechanical failures as primary causes for heavy vehicle accidents. Regular vehicle maintenance and driver alertness are critical for prevention.

## 8. Environmental Considerations and Sensitive Areas

The route passes through agricultural land, making it important to minimize pollution. Villages along the way may have schools and hospitals, so caution regarding speed and noise levels is advised to avoid disturbing the community.

## 9. Analysis of Communication Coverage

Communication coverage is generally good along the main highways with sporadic dead zones in less populated rural areas. Near urban centers, coverage and connectivity improve significantly.

## 10. Estimated Emergency Response Times

Emergency services can generally reach urban areas within 15-30 minutes. Response times in rural stretches might extend beyond 30 minutes due to lower service density and infrastructure.

## 11. Overall Summary of Risk Assessment

The route from Sangagiri to Erode is relatively short and manageable for heavy vehicles, but potential risks include weather effects, peak hour congestion, and specific road sections with compromised quality. Adherence to local regulations, awareness of environmental sensitivities, and preparedness for communication gaps will aid in minimizing risks. Maintaining vigilance during adverse weather and peak traffic times will further enhance safety for transportation of hazardous materials.

### 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	11.45357, 77.85789	30 KM/Hr
7	Turn	Medium	11.45348, 77.85706	30 KM/Hr
8	Turn	Medium	11.45352, 77.85698	30 KM/Hr
9	Turn	Medium	11.46318, 77.84913	30 KM/Hr
10	Turn	Medium	11.46312, 77.84886	30 KM/Hr
11	Turn	Medium	11.34493, 77.73032	30 KM/Hr
12	Blind Spot	Blind Spot	11.33920, 77.72902	10 KM/Hr
13	Turn	Medium	11.33914, 77.72659	30 KM/Hr
14	Turn	High	11.33890, 77.72637	15 KM/Hr
15	Turn	Medium	11.33115, 77.72752	30 KM/Hr
16	Turn	Medium	11.33093, 77.72776	30 KM/Hr
17	Turn	Medium	11.33083, 77.72873	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
18	Turn	Medium	11.33072, 77.72888	30 KM/Hr
19	Turn	High	11.32699, 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	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
16	hospital	Kumudha Hospital	11.3467172, 77.7306797	30 km/h	Medium
17	hospital	City Hospital	11.3451151, 77.7300887	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
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	J.B. Clinic And Hospital	11.3351769, 77.7282031	30 km/h	Medium
30	hospital	Dr. R.M. Habibullah Hospital	11.335246, 77.7266028	30 km/h	Medium
31	hospital	Kumarasamy Hospital	11.334273, 77.7259118	30 km/h	Medium
32	hospital	Thangam Hospital, Erode	11.3340961, 77.7262437	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	JJ hospital	11.33168, 77.728823	30 km/h	Medium
37	hospital	Jai Maaruthi Hospital	11.332, 77.727272	30 km/h	Medium
38	hospital	Shubiksha Hospital	11.3318174, 77.7299544	30 km/h	Medium
39	hospital	Bethesda Hospital	11.3314183, 77.7266231	30 km/h	Medium
40	hospital	Lotus Hospital	11.3266236, 77.7306301	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
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
43	hospital	Sri Jothi Hospitals	11.3217208, 77.7275956	30 km/h	Medium
44	clinic	Vasanth Clinic	11.3195299, 77.727194	30 km/h	Medium
45	clinic	Pulze Health Clinic	11.3179874, 77.7288603	30 km/h	Medium
46	hospital	Agathiyar Siddha Hospital	11.3174229, 77.7254599	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
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:** Medium  
**Speed Limit:** 30 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:** 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:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.34493, 77.73032



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Coordinates:** 11.33920, 77.72902





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 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:** 11.33115, 77.72752



**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:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.33072, 77.72888



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.32699, 77.73073

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