



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

### Salem Terminal to AMMAN 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.

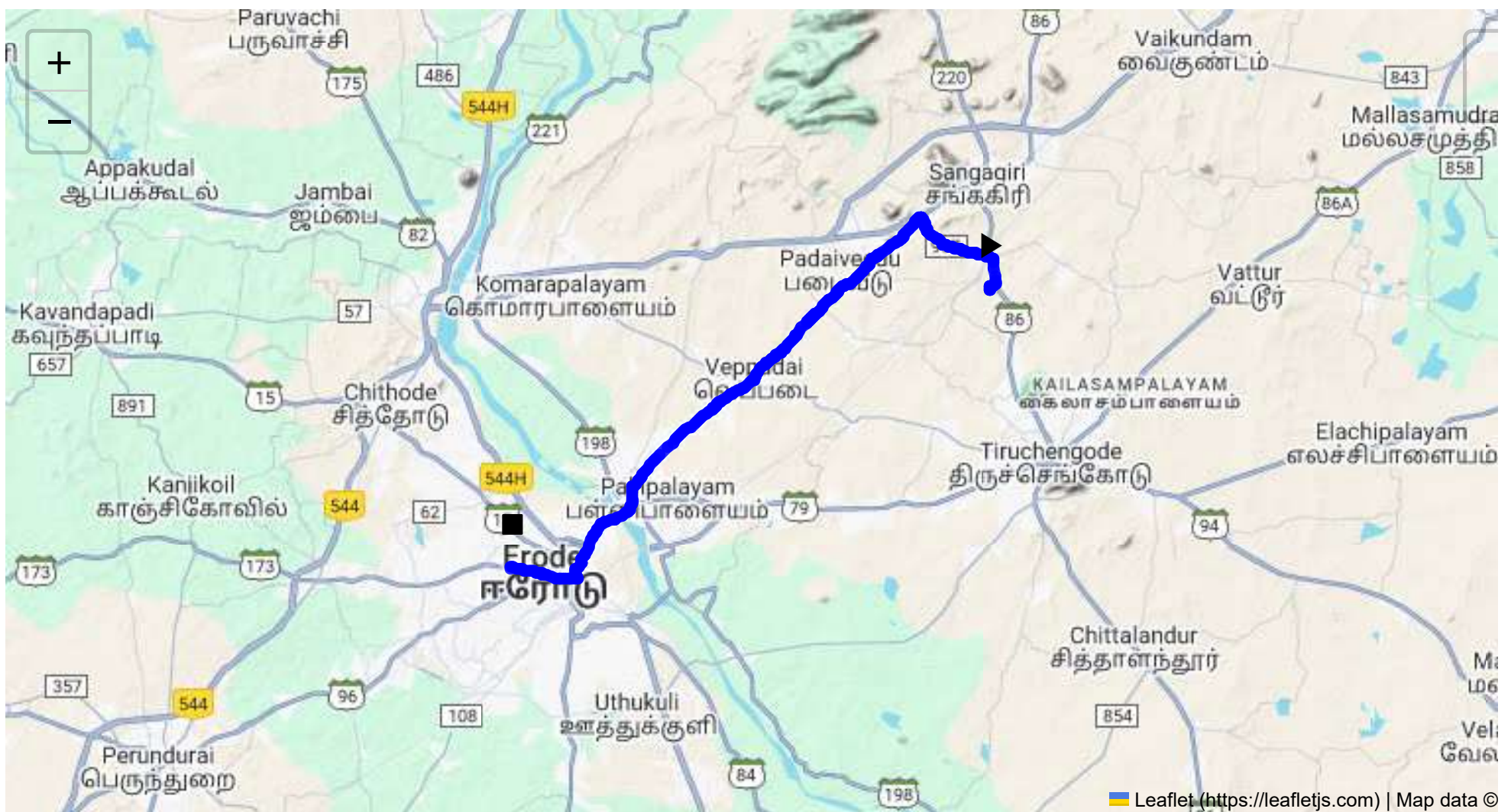
## **Compliance with Government Directives**

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: 27.23 km**  
**Estimated Duration: 0.8 hours**  
**Adjusted Duration (Heavy Vehicle): 1.0 hours**  
**Start: (11.4381, 77.8734)**  
**End: (11.342954, 77.705354)**



## Welcome to the Journey Risk Management Study

### Route Overview

The route from CVQF+23W, Sangagiri to 137/2AB, Nasiyanor Road, Erode, spans approximately 27.23 kilometers. It primarily navigates through regional and state highways, offering a direct connection between these two commercial hubs.



## Weather Conditions

- **Typical Weather:** The region experiences a tropical climate, with hot summers, moderate monsoons, and mild winters.
- **Weather-related Hazards:** During the monsoon season (June to September), heavy rainfall might lead to reduced visibility and slippery road conditions. Occasionally, waterlogging can occur in low-lying areas, affecting traffic flow and safety.

## Traffic Patterns

- **Peak Hours:** Congestion is typically observed during morning hours (7:00 AM - 9:00 AM) and evening hours (5:00 PM - 7:00 PM) due to commuter traffic.
- **Congestion-prone Areas:** Watch for increased traffic near town centers and intersections, especially as you approach Erode where urban traffic can intensify.

## Road Quality and Infrastructure

- **Road Quality:** Mixed, with certain stretches well-maintained but others having potholes and uneven surfaces, particularly after the monsoon.
- **Infrastructure:** Adequate signage is present, but some rural stretches might lack sufficient street lighting.

## Alternative Routes

- **For Emergencies:** Consider diverting through NH544 (Salem-Kochi Highway) as an alternate route if the primary path is compromised, although this may increase travel distance.

## Local Regulations for Hazardous Materials

- **Regulations:** Ensure compliance with Tamil Nadu's transport safety standards for hazardous materials, including proper labeling, safety checks, and possession of necessary permits. Transport during night hours might be restricted.

## Historical Incidents

- **Incidents Involving Heavy Vehicles:** There have been few recorded incidents, primarily attributed to driver error or mechanical failure. These usually involve goods rather than hazardous material, but caution is advised.

## Environmental Considerations

- **Sensitive Areas:** Avoid routes through residential zones and proximity to school zones when possible. Take care near water bodies to prevent contamination in case of leaks.

## Communication Coverage

- **Coverage:** Good coverage throughout most of the route, although sporadic dead zones might exist in more rural or low terrain areas. Major telecom providers generally cover this region.

## Emergency Response Times

- **Response Times:** In urban areas like Erode, expect emergency response within 20-30 minutes. In rural or highway stretches, response times might extend to 45 minutes or longer.

## Overall Risk Assessment Summary

- **Safety Recommendations:** Given the mix of urban and rural stretches, the primary risks are due to weather conditions and road quality, especially during monsoon season. It is crucial to ensure vehicles are in optimal condition and drivers are aware of the road conditions and traffic regulations. Always have a secondary route planned in case of emergencies and ensure driver's familiarity with communication protocols and emergency contacts.

In conclusion, while the route is relatively short and direct, attention is needed for weather preparedness, adherence to regulations, and awareness of peak traffic times to ensure safe transport 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	Blind Spot	Blind Spot	11.34068, 77.71709	10 KM/Hr
14	Turn	High	11.34097, 77.71715	15 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
15	Turn	Medium	11.34166, 77.71442	30 KM/Hr
16	Blind Spot	Blind Spot	11.34331, 77.70546	10 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	clinic	Dr. R Kumaraswamy Sexologist Clinic	11.3396057, 77.7221701	30 km/h	Medium
28	clinic	Newlife Fertility Centre	11.3389396, 77.7213358	30 km/h	Medium
29	hospital	Guhan ENT Hospital	11.339489, 77.721001	30 km/h	Medium
30	clinic	Janet Nursing Home	11.3396455, 77.7203698	30 km/h	Medium
31	hospital	Dr. Pondiperumal Hospital	11.3390924, 77.7205408	30 km/h	Medium
32	hospital	Abisek Medical Centre	11.3415975, 77.7191789	30 km/h	Medium
33	hospital	Sri Vijaya Hitech Hospital	11.3400011, 77.7192251	30 km/h	Medium
34	hospital	Shri Vijaiah Trauma Care Hospital	11.3418935, 77.7193036	30 km/h	Medium
35	hospital	Surya Hospital	11.3400026, 77.7190977	30 km/h	Medium
37	hospital	Dr. Agarwal's Eye Hospital Ltd. - Erode	11.3421842, 77.7173066	30 km/h	Medium
38	hospital	Universal Hospital	11.3411046, 77.7185217	30 km/h	Medium
39	hospital	Duraisamy Hospital	11.3391625, 77.7187054	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
40	hospital	Srimathi Murugeshan Hospital	11.3389205, 77.7187791	30 km/h	Medium
41	hospital	Devi Hospital	11.34116, 77.718307	30 km/h	Medium
42	hospital	SCS Hospital And Urology Clinic	11.3410253, 77.718043	30 km/h	Medium
43	clinic	Vanalikaa Homoeo Centre	11.341349, 77.717987	30 km/h	Medium
44	clinic	Dr. Padmanaban Heart Clinic	11.337426, 77.7184453	30 km/h	Medium
45	hospital	Suriya Hospital	11.340248, 77.7186452	30 km/h	Medium
46	clinic	Skin Care Clinic	11.3409042, 77.7178413	30 km/h	Medium
47	hospital	Abitha Eye Hospital	11.34021, 77.7187589	30 km/h	Medium
48	hospital	SRC Hospital	11.3413999, 77.7177834	30 km/h	Medium
49	clinic	Dr. Chandran Skin Laser Centre	11.3413527, 77.7174891	30 km/h	Medium
50	hospital	District Hospital, Eroda	11.3393048, 77.717926	30 km/h	Medium
51	hospital	L.V.S. Eye Hospital	11.3385839, 77.7156597	30 km/h	Medium
52	hospital	Erode Kidney's Centre	11.3383801, 77.7164201	30 km/h	Medium
53	hospital	Shri Preethe Hospital	11.3385944, 77.7157979	30 km/h	Medium
54	hospital	KMCH Speciality Hospital	11.33911, 77.716284	30 km/h	Medium
55	hospital	Anusha Hospital	11.3397168, 77.7166805	30 km/h	Medium
56	hospital	Care Hospital	11.338443, 77.716511	30 km/h	Medium
57	hospital	Ortho Life Hospital	11.3395729, 77.7167329	30 km/h	Medium
58	clinic	Sathyavathi Ramalingam Clinic	11.3380366, 77.7166875	30 km/h	Medium
59	hospital	Gem Hospital	11.338106, 77.7155077	30 km/h	Medium
60	hospital	Nalan Hospital	11.3399703, 77.716773	30 km/h	Medium
61	hospital	Sri Hari Hospital	11.338357, 77.7164204	30 km/h	Medium



	type	name	coordinates	speed_limit	risk_level
62	hospital	Dr Nsk Hospital	11.3381737, 77.7153821	30 km/h	Medium
63	hospital	Keran Hospital	11.3400456, 77.7154808	30 km/h	Medium
64	hospital	Annai Ent and Head and Neck Care Center	11.3387785, 77.7149034	30 km/h	Medium
65	clinic	Madhu Surgical Clinic	11.3386602, 77.7143441	30 km/h	Medium
66	pharmacy	Tava Drug Mart	11.3436578, 77.7182673	30 km/h	Medium
67	hospital	Senthil Multispeciality Hospital	11.338983, 77.7138529	30 km/h	Medium
68	clinic	RB Kids Clinic	11.339221, 77.713915	30 km/h	Medium
69	hospital	Erode Trust Hospital	11.3399422, 77.7134188	30 km/h	Medium
70	hospital	Sri Athi Sathya Hospital	11.3392651, 77.7126583	30 km/h	Medium
71	hospital	Arc Fertility Hospital	11.3397231, 77.7130655	30 km/h	Medium
72	hospital	Vanjee Multispeciality Dental Centre	11.3418385, 77.7132218	30 km/h	Medium
73	clinic	Erode Women and Children Clinic	11.3420279, 77.7116815	30 km/h	Medium
74	hospital	Arun Hospital	11.3447248, 77.7138215	30 km/h	Medium
75	hospital	Ranm Malathy Vijayakumar Hospital	11.3413334, 77.708922	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

	type	name	coordinates	speed_limit	risk_level
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
36	school	Sengunthar matriculation School	11.3407075, 77.7195086	30 km/h	Medium
76	school	Nandha Central City School (City Campus)	11.3409392, 77.7047156	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:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Coordinates:** 11.34068, 77.71709





**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.34097, 77.71715



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.34166, 77.71442



**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 11.34331, 77.70546

