



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal TO ERODE DT CON CO OP WHOLESALE STORES

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

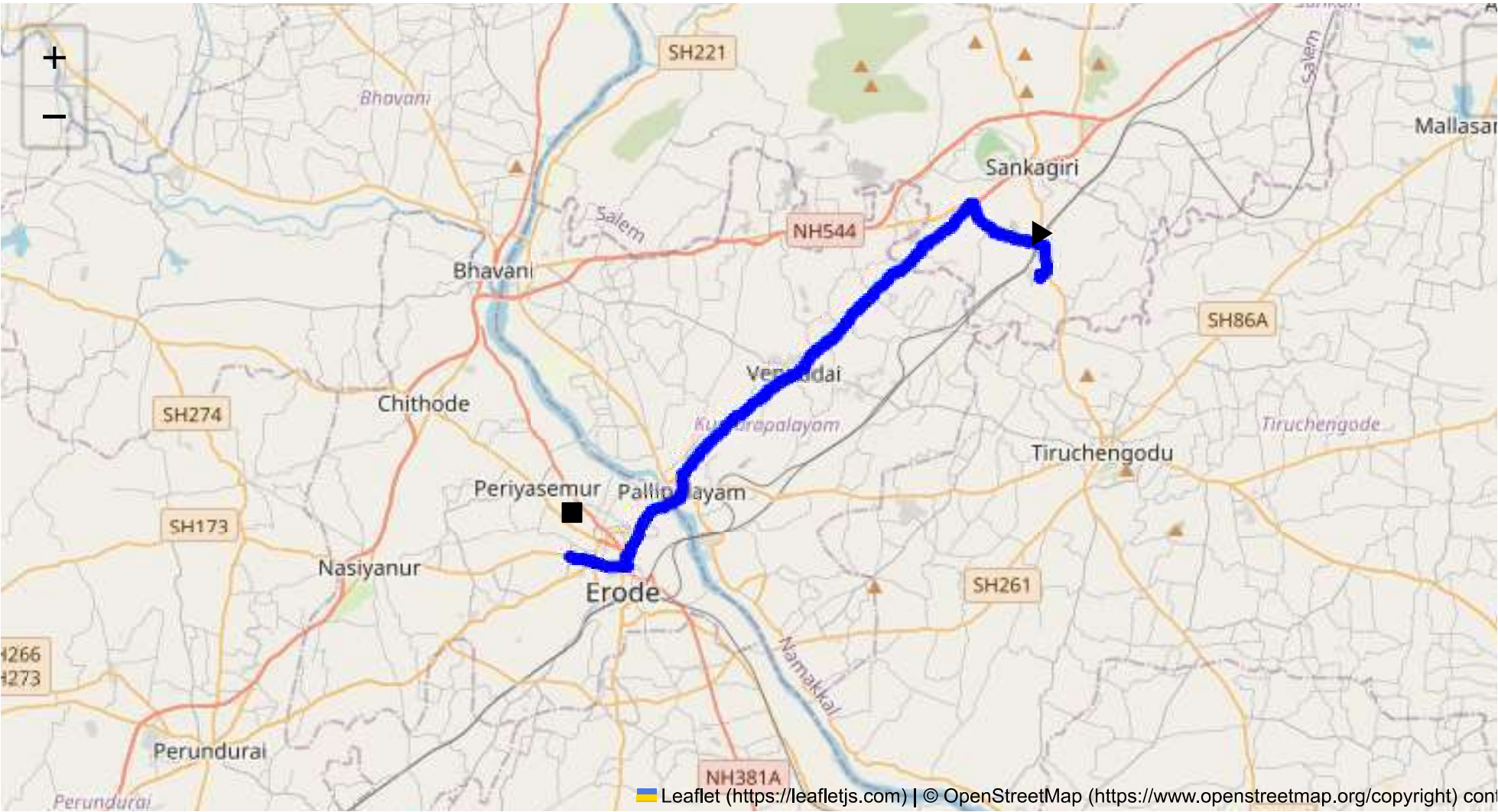
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 26.81 km
Estimated Duration: 0.8 hours
Adjusted Duration (Heavy Vehicle): 0.9 hours
Start: (11.4381, 77.8734)
End: (11.342422, 77.708939)



Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route from Sangagiri to Erode spans approximately 26.81 kilometers. It generally follows the main arterial roads, starting from CVQF+23W in Sangagiri and ending at Sampath Nagar Rd, Sanjay Nagar, Erode. The journey moves predominantly northeast along a combination of state highways and local roads, characterized by stretches of agricultural and urban landscapes.

2. Typical Weather Conditions and Potential Weather-Related Hazards

Tamil Nadu generally experiences a tropical climate, with high temperatures and humidity. The region is subject to:

- **Monsoon Season (June to September):** Heavy rains can lead to waterlogging on roads, making driving hazardous due to reduced visibility and slick surfaces.
- **Summer Season (March to May):** Heatwaves could impact vehicle performance and driver fatigue levels.
- **Cyclones (October to December):** Although less common inland, regional cyclones can cause heavy rainfall and strong winds, affecting road conditions.

3. Analysis of Traffic Patterns

- **Peak Hours:** Typically, the morning rush (8 AM to 10 AM) and evening (5 PM to 8 PM) see increased traffic.
- **Congestion-Prone Areas:**
 - Sangagiri main town area.
 - Junctions entering and exiting Erode, especially near bus terminals and local markets.

4. Assessment of Road Quality and Infrastructure

- **Pavement Conditions:** Generally decent on main highways but can be patchy or potholed in more rural connectors.
- **Infrastructure:** Adequate signage, though some rural stretches lack proper road demarcation. Bridges and overpasses are structurally sound but require cautious navigation, especially during adverse weather.

5. Suggestions for Alternative Routes for Emergencies

- **Route via SH 84:** Could be used as a detour if the main road faces significant blockage or incidents.
- **Local Roads:** Several local roads can serve as short detours in emergencies, though they might require navigating narrow, less-maintained roads.

6. Summary of Local Regulations Affecting Hazardous Material Transport

- **Regulations:** Mandatory permits for transporting hazardous materials, adherence to speed limits, and designated truck lanes where applicable.
- **Timing:** Certain areas may prohibit hazardous material transit during peak hours or through specific zones.

7. Overview of Historical Incidents Involving Heavy Vehicles or Hazardous Materials

- **Historical Data:** Accidents involving heavy vehicles have occurred, most often linked to speeding and vehicular malfunction.
- **Hazardous Material Spills:** Limited incidents, with corrective measures improving response times and containment strategies.

8. Environmental Considerations and Sensitive Areas

- **Agricultural Zones:** Agriculture is predominant, so transport should minimize risks of contamination via accidents.
- **Settlements:** Proximity to populated areas, necessitating heightened caution and adherence to speed and noise regulations.

9. Analysis of Communication Coverage

- **Network Coverage:** Generally robust along highways. However, some rural stretches may experience weak signals or dead zones.
- **Emergency Communication:** Ensure drivers have alternate communication means like satellite phones or radio systems.

10. Estimated Emergency Response Times for Different Route Segments

- **Urban Areas (Erode):** Approximately 10-15 minutes due to access to nearby facilities.
- **Rural Areas:** Could range up to 30 minutes or more, depending on proximity to nearest emergency services and road accessibility.

11. Overall Summary of Risk Assessment

The route generally features decent infrastructure and manageable traffic, but the driver must remain vigilant, especially during adverse weather conditions. Peak traffic times pose moderate risks of congestion. Communication should be assessed pre-departure, and alternative routes must be planned for emergencies. Overall, the risk is moderate, contingent on adherence to regulations and proactive mitigation of environmental and road hazards.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.37086, 77.74828	15 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
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	Medium	11.34493, 77.73032	30 KM/Hr
11	Turn	Medium	11.34483, 77.73022	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	Blind Spot	Blind Spot	11.34068, 77.71709	10 KM/Hr
15	Turn	High	11.34097, 77.71715	15 KM/Hr
16	Turn	Medium	11.34166, 77.71442	30 KM/Hr
17	Turn	High	11.34258, 77.70901	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

	type	name	coordinates	speed_limit	risk_level
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
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

	type	name	coordinates	speed_limit	risk_level
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
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

	type	name	coordinates	speed_limit	risk_level
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
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

	type	name	coordinates	speed_limit	risk_level
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
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

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: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.34493, 77.73032



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.34483, 77.73022



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: 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: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.34258, 77.70901