



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal TO GEE AR AGENCY

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

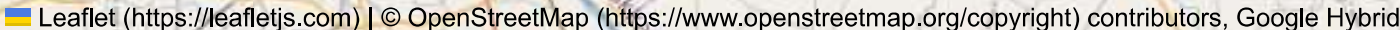
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental impacts during transport.

Journey Risk Mitigation

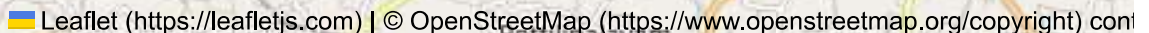
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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.



End: (11.350616, 77.702919)



3/15

Weather Conditions

Tamil Nadu's weather can be unpredictable, primarily influenced by tropical wet and dry conditions. The route may face:

- **Monsoon Season (June to September):** Expect heavy rainfall, leading to potential flooding and reduced visibility.
- **Summer (March to May):** High temperatures can lead to road surface damage and driver fatigue.
- **Winter (October to February):** Mild conditions but with occasional fog, reducing visibility early in the morning.

Traffic Patterns

- **Peak Hours:** Traffic congestion typically increases during 8:00-10:00 AM and 5:00-8:00 PM due to local commute patterns.
- **Congestion-Prone Areas:** Watch for slowdowns around urban centers near Erode and Sangagiri.

Road Quality and Infrastructure

The roads range from national highways to local roads:

- **NH 544 & NH 381A:** These highways are well-maintained with multiple lanes, but construction or maintenance work can cause delays.
- **Local Roads:** These may be narrower, with potholes and uneven surfaces, increasing the risk for heavy vehicles.

Alternative Routes

For emergencies, consider:

- Using SH 86—if accessible—to bypass congested areas or traffic incidents.
- Smaller routes through agricultural fields may offer limited access but should be confirmed for truck suitability.

Local Regulations on Hazardous Material Transport

- Abide by Tamil Nadu's guidelines for transporting hazardous materials, requiring appropriate signage, permits, and driving under specified speed limits.
- Utilize designated routes for hazardous materials where applicable.

Historical Incidents

- Historical data does not suggest high incidents along this specific route. However, nearby Erode has seen occasional accidents involving heavy vehicles, often due to driver fatigue or mechanical failure.

Environmental Considerations

- Several agricultural lands and water bodies are along the route; contamination from hazardous materials needs stringent controls.

Communication Coverage

- Generally good along most of NH 544 and NH 381A.
- Potential dead zones on local roads, suggesting reliance on GPS with offline capabilities.

Emergency Response Times

- **Highways (NH 544 & NH 381A):** Fast response, typically within 15-30 minutes from local emergency services.
- **Local Roads:** May experience delays up to 45 minutes due to accessibility issues.

Overall Risk Assessment Summary

The route poses moderate risk for transporting hazardous materials, primarily due to weather conditions, road quality, and potential congestion. Attention to local regulations and real-time traffic updates, along with contingency plans for emergencies, are essential for safe transport. Adequate preparation for environmental protection and emergency response can mitigate significant risks. The overall infrastructure is capable of handling the transport, provided due diligence is maintained.

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	High	11.34678, 77.73104	15 KM/Hr
12	Turn	High	11.34678, 77.72581	15 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
13	Blind Spot	Blind Spot	11.34803, 77.72478	10 KM/Hr
14	Blind Spot	Blind Spot	11.34625, 77.72392	10 KM/Hr
15	Turn	High	11.34796, 77.71921	15 KM/Hr
16	Turn	Medium	11.34784, 77.71903	30 KM/Hr
17	Turn	High	11.34389, 77.71797	15 KM/Hr
18	Turn	Medium	11.35059, 77.70315	30 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

	type	name	coordinates	speed_limit	risk_level
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	hospital	Kaviraj Siddha Hospital	11.347153, 77.720863	30 km/h	Medium
20	pharmacy	Chinthamani Medical Department	11.347629, 77.7190874	30 km/h	Medium
21	hospital	SG MET Hospital	11.34467, 77.720405	30 km/h	Medium
22	pharmacy	Pasumai Pharmacy	11.3452083, 77.7183883	30 km/h	Medium
23	pharmacy	Deepa Medicals	11.3466632, 77.718547	30 km/h	Medium
24	clinic	K G Nursing Home	11.3456845, 77.7188784	30 km/h	Medium
25	hospital	Priya Hospital	11.346512, 77.718023	30 km/h	Medium
26	hospital	Sri Jai Shakthi Dentistry, Speciality Children Dental Hospital	11.3476429, 77.7186408	30 km/h	Medium
27	hospital	Nalli Hospital	11.3463567, 77.7171556	30 km/h	Medium
28	hospital	KS Eye Hospital	11.3465289, 77.7175494	30 km/h	Medium
29	hospital	Cauvery Nature Cure Hospital	11.3459862, 77.7171349	30 km/h	Medium
30	hospital	TAT Ent Hospital	11.34639, 77.716936	30 km/h	Medium
31	hospital	Arasan Eye Hospital	11.3464182, 77.7163893	30 km/h	Medium
32	pharmacy	Tava Drug Mart	11.3436578, 77.7182673	30 km/h	Medium
33	hospital	Dr. Agarwal's Eye Hospital Ltd. - Erode	11.3421842, 77.7173066	30 km/h	Medium
34	hospital	Abisek Medical Centre	11.3415975, 77.7191789	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
35	clinic	Vanalika Homoeo Centre	11.341349, 77.717987	30 km/h	Medium
36	hospital	Shri Vijaiah Trauma Care Hospital	11.3418935, 77.7193036	30 km/h	Medium
37	hospital	SRC Hospital	11.3413999, 77.7177834	30 km/h	Medium
38	clinic	Dr. Chandran Skin Laser Centre	11.3413527, 77.7174891	30 km/h	Medium
39	hospital	Arun Hospital	11.3447248, 77.7138215	30 km/h	Medium
40	hospital	Vanjee Multispeciality Dental Centre	11.3418385, 77.7132218	30 km/h	Medium
41	hospital	Veerappanchataram Government Hospital	11.34858, 77.713203	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: 11.45357, 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: 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: 11.34796, 77.71921



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.34784, 77.71903



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.34389, 77.71797



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.35059, 77.70315