



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal TO LINGAM ENTERPRISES

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

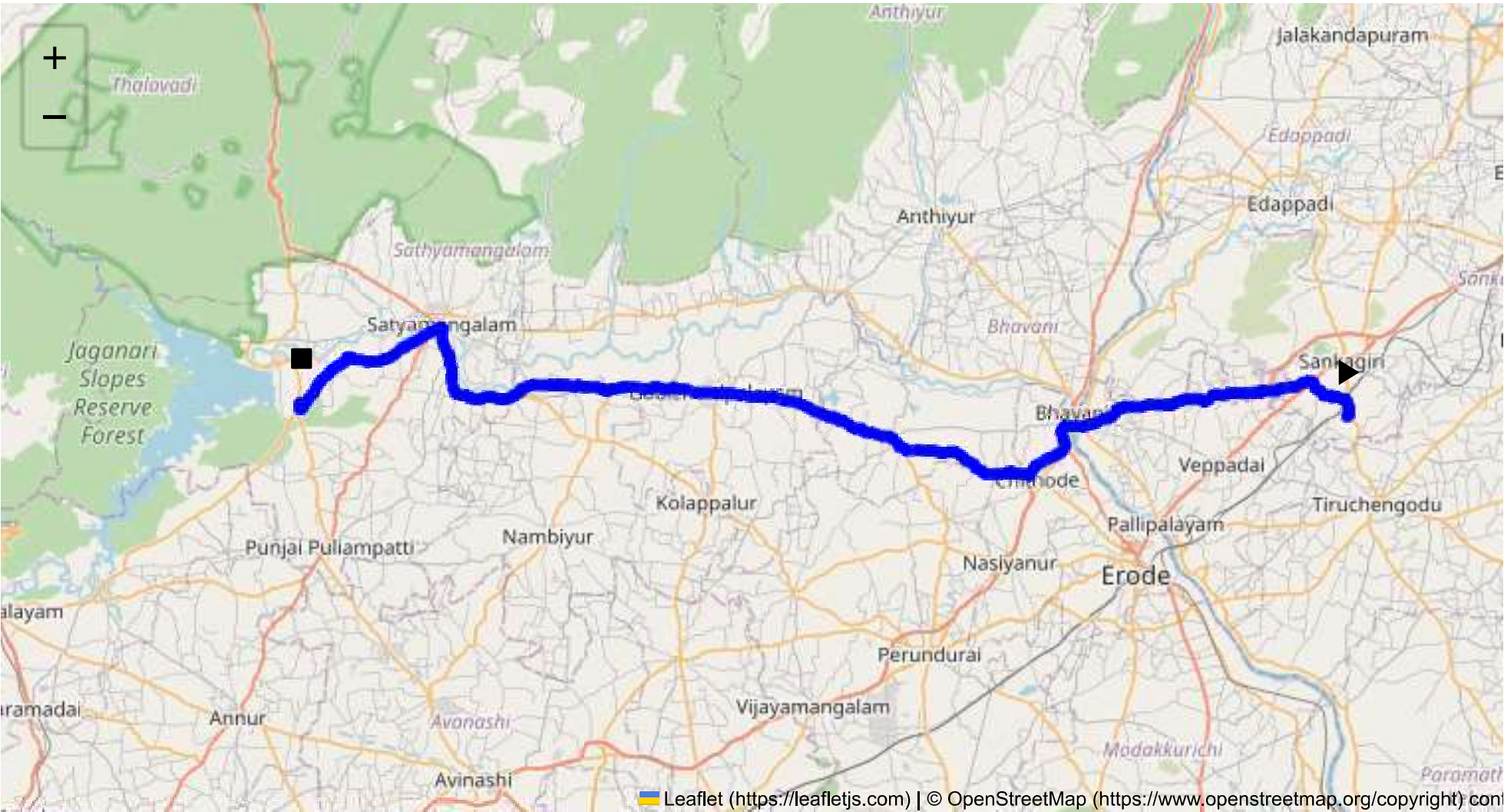
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 94.11 km
Estimated Duration: 1.9 hours
Adjusted Duration (Heavy Vehicle): 2.4 hours
Start: (11.4381, 77.8734)
End: (11.448338, 77.146328)



Welcome to the Journey Risk Management Study

To conduct a comprehensive analysis of the route from CVQF+23W, Sangagiri, Tamil Nadu, India to C4XW+8G Nalroad, Tamil Nadu, for truck drivers transporting hazardous materials, here is a detailed report addressing the points requested:

1. Overview of the Route Map:

- The route spans approximately 94.11 kilometers and takes about 1.95 hours. The most direct path likely involves primary state highways and possibly sections of national highways. The journey will typically proceed southeast through rural and semi-urban areas.

2. Typical Weather Conditions and Potential Hazards:

- Tamil Nadu generally experiences a tropical climate. Weather conditions vary seasonally, with the northeast monsoon from October to December bringing heavy rains that can flood roads and reduce visibility. During the summer months (March to June), high temperatures can lead to road surface deterioration.

3. Traffic Patterns:

- Traffic is relatively light in rural areas but can be congested near towns and intersections, particularly during morning and evening rush hours (7-10 AM and 5-8 PM). Market days in towns increase congestion. Vehicle density typically heightens near educational institutions and industrial areas.

4. Assessment of Road Quality and Infrastructure:

- Roads are a mix of well-maintained highways and some secondary roads that may have potholes or narrow bridges. Attention should be paid to sections undergoing construction or repair, which are common after monsoon season.

5. Suggestions for Alternative Routes during Emergencies:

- National highways, where available, are preferable for detours due to better infrastructure. Ensure local alternate rural roads are pre-assessed for suitability, as they might be narrower or less maintained.

6. Local Regulations Affecting Hazardous Material Transport:

- Transporting hazardous materials requires adherence to specific permits in Tamil Nadu. Regulations dictate transit times and restrict routes through sensitive areas. Compliance with the Rules on the Transportation of Dangerous Goods in India is essential.

7. Historical Incidents Involving Heavy Vehicles or Hazardous Materials:

- While specific incidents on this exact route may not be well-documented, typical historical risks include vehicle overturns in sharp curves on rural roads and spillage due to road bumps or sudden braking.

8. Environmental Considerations and Sensitive Areas:

- Several agricultural zones and minor water bodies may be encountered along the route. Care should be taken to prevent contamination from leaks or spills, particularly near waterways and fertile lands.

9. Communication Coverage:

- Mobile network coverage is generally good along national highways but may become patchy on less-traveled rural roads. Dead zones are more likely near remote farmlands or in hilly terrain.

10. Estimated Emergency Response Times:

- In urban or semi-urban areas, emergency response times range from 15 to 30 minutes. Rural areas may experience delays of 45 minutes to an hour due to infrastructure and distance.

11. Overall Summary of Risk Assessment:

- The route is generally navigable with typical rural road challenges compounded by weather-related and infrastructure limitations. Key risk factors include road conditions in monsoon seasons, traffic congestion at peak times and in specific towns, and the need to follow stringent regulations for hazardous material transport. Constant communication with traffic control and emergency services is advised. Careful planning and an awareness of alternative routes and emergency contacts are critical for safe transit.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.49613, 77.23785	15 KM/Hr
1	Turn	High	11.43968, 77.87345	15 KM/Hr
2	Turn	High	11.44024, 77.87528	15 KM/Hr
3	Turn	High	11.44898, 77.87410	15 KM/Hr
4	Turn	Medium	11.45357, 77.85789	30 KM/Hr
5	Turn	High	11.45352, 77.85698	15 KM/Hr
6	Turn	Medium	11.45847, 77.85140	30 KM/Hr
7	Turn	Medium	11.45898, 77.85135	30 KM/Hr
8	Turn	High	11.46303, 77.84945	15 KM/Hr
9	Turn	Medium	11.45509, 77.81383	30 KM/Hr
10	Turn	Medium	11.45085, 77.77020	30 KM/Hr
11	Turn	Medium	11.43165, 77.67734	30 KM/Hr
12	Turn	High	11.39829, 77.65233	15 KM/Hr
13	Turn	Medium	11.45763, 77.36309	30 KM/Hr
14	Turn	Medium	11.45750, 77.35617	30 KM/Hr
15	Turn	Medium	11.45345, 77.29440	30 KM/Hr
16	Turn	Medium	11.45536, 77.25423	30 KM/Hr
17	Turn	Medium	11.49069, 77.24436	30 KM/Hr
18	Blind Spot	Blind Spot	11.49929, 77.24500	10 KM/Hr
19	Turn	High	11.49933, 77.24485	15 KM/Hr
20	Blind Spot	Blind Spot	11.44360, 77.14632	10 KM/Hr

Emergency Locations

	type	name	coordinates	speed_limit	risk_level
3	hospital	Dhanvantri Multi Speciality Hospital	11.451362, 77.766602	30 km/h	Medium
4	hospital	Dhanvanthri Hospital	11.4496712, 77.7593772	30 km/h	Medium
5	hospital	J.K.K. Trust Hospital	11.4445841, 77.7307962	30 km/h	Medium
7	hospital	Shri Sathyanarayana Hospital	11.4291297, 77.6913408	30 km/h	Medium
8	hospital	Thanish Siddha Hospital	11.430003, 77.674964	30 km/h	Medium
9	clinic	Harshitha Clinic	11.4313207, 77.674718	30 km/h	Medium
10	hospital	Sri Kaalangi Siddhar Mooligai Vaithiya Nilayam	11.432369, 77.674894	30 km/h	Medium
11	clinic	G.K Clinic	11.4297244, 77.6749715	30 km/h	Medium
12	hospital	Naarayani Hospital	11.4157401, 77.5773087	30 km/h	Medium
13	hospital	P K Hospital	11.4175923, 77.5640962	30 km/h	Medium
14	hospital	Dharun Hospital	11.4223638, 77.5597735	30 km/h	Medium
15	hospital	Dr. Ramaswamy Hospital	11.4249065, 77.5535658	30 km/h	Medium
16	hospital	Dakshin Trauma Centre	11.454593, 77.4461819	30 km/h	Medium
17	hospital	Sri Varahi Herbal Research Centre and Hospital	11.4539333, 77.4427438	30 km/h	Medium
18	hospital	Dakshin Hospital	11.4546301, 77.445905	30 km/h	Medium
19	clinic	Germen Homeopathy Clinic	11.4536305, 77.4394692	30 km/h	Medium
20	hospital	JP Hospital	11.454765, 77.438257	30 km/h	Medium
21	hospital	KKS Hospital	11.4551792, 77.4392927	30 km/h	Medium
23	hospital	Siranjeeve Hospitals	11.453132, 77.4344382	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
24	clinic	Anandhan Clinic	11.4548037, 77.4349074	30 km/h	Medium
25	hospital	Ramachandran Hospital	11.452242, 77.434641	30 km/h	Medium
26	hospital	Kumaran Hospital	11.4533971, 77.4349621	30 km/h	Medium
27	hospital	Dr. Rathinasamy Hospital	11.457562, 77.4327752	30 km/h	Medium
28	hospital	Gobi Neuro Mind Care	11.4548344, 77.434649	30 km/h	Medium
29	hospital	Hariharan Hospital	11.4523578, 77.4299287	30 km/h	Medium
30	hospital	Vasanth Hospital	11.4526864, 77.4292173	30 km/h	Medium
31	clinic	Jeeva Nursing Home	11.4533031, 77.4294145	30 km/h	Medium
32	hospital	Sathya Hospital	11.4561856, 77.4298694	30 km/h	Medium
33	hospital	S K Hospital	11.4540106, 77.430108	30 km/h	Medium
34	hospital	Sivakami Hospital	11.4531846, 77.4299288	30 km/h	Medium
35	clinic	Sri Sudha Physiotherapy Clinic	11.4559915, 77.4300217	30 km/h	Medium
36	hospital	Best Hospital	11.4543558, 77.4263617	30 km/h	Medium
37	clinic	Anand Nursing Home	11.4553169, 77.4296248	30 km/h	Medium
38	clinic	Kanmani Child Care Clinic	11.4545273, 77.428668	30 km/h	Medium
39	hospital	Rajasekaran Hospital	11.454463, 77.4262	30 km/h	Medium
40	hospital	Samuel Hospital	11.4542555, 77.4271194	30 km/h	Medium
41	hospital	Sivasakthi Hospital	11.4544711, 77.4297229	30 km/h	Medium
42	hospital	SS Children's Hospital	11.4555386, 77.4296357	30 km/h	Medium
43	clinic	Sri Dhanvantari Siddha Clinic	11.4561216, 77.4295797	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
44	hospital	Neha Hospital	11.4560138, 77.4270219	30 km/h	Medium
45	hospital	M.S Children's Hospital	11.4556012, 77.4301006	30 km/h	Medium
46	hospital	Gobi Diabetic Hospital	11.455394, 77.4301181	30 km/h	Medium
47	clinic	Dr. Ramesh Babu Clinic	11.4560871, 77.4296353	30 km/h	Medium
48	hospital	Sankareswari Eye Hospital	11.4572997, 77.428765	30 km/h	Medium
49	hospital	Arun Hospital	11.4548852, 77.4250314	30 km/h	Medium
52	hospital	Government Hospital	11.4565126, 77.4288768	30 km/h	Medium
53	hospital	Sri Chakra Hospital	11.4544464, 77.4228363	30 km/h	Medium
54	hospital	U M Hospital	11.4544151, 77.4240386	30 km/h	Medium
55	hospital	Dr. Gopal Hospital	11.455258, 77.422901	30 km/h	Medium
56	clinic	VG Ortho Centre	11.4550504, 77.4225102	30 km/h	Medium
57	clinic	Palaniappa Clinic	11.4555925, 77.4202828	30 km/h	Medium
58	hospital	Abi SK Hospital	11.457163, 77.412487	30 km/h	Medium
59	clinic	Nalam Vazh S.K Siddha and Varma Clinic	11.457576, 77.412164	30 km/h	Medium
61	clinic	Singiripalayam Natarajan Siddha Ortho Care	11.4603252, 77.3183801	30 km/h	Medium
63	hospital	Pee Vee Hospital	11.4960866, 77.2437224	30 km/h	Medium
64	hospital	Sakthi Hospital	11.498927, 77.2433702	30 km/h	Medium
65	hospital	Anush Hospital	11.500453, 77.2449535	30 km/h	Medium

Crowded Spots

	type	name	coordinates	speed_limit	risk_level
0	school	KRP Matric. Hr. Sec School	11.4546193, 77.8142445	30 km/h	Medium
1	college	Vivekanandha Engineering College	11.4589312, 77.7899284	30 km/h	Medium
2	marketplace	Monday market	11.452863, 77.775989	30 km/h	Medium
6	school	SSM Matriculation Higher Secondary School	11.4321653, 77.6880046	30 km/h	Medium
22	school	Shree Vidyalaya Matric Higher Secondary School	11.4536114, 77.4383163	30 km/h	Medium
50	school	Diamond Jubilee Higher Secondary School	11.4529541, 77.4280306	30 km/h	Medium
51	school	CKK Palaniammal School	11.4569211, 77.4276828	30 km/h	Medium
60	school	Saratha Techno School	11.4544819, 77.379986	30 km/h	Medium
62	school	Saratha International School	11.4541471, 77.3032962	30 km/h	Medium

Route Photos of Risky Spots



Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.49613, 77.23785



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.44024, 77.87528



Risk Type: Turn
Risk Level: High
Speed Limit: 15 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: High
Speed Limit: 15 KM/Hr
Coordinates: 11.45352, 77.85698



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.45847, 77.85140



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.45898, 77.85135



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.46303, 77.84945



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.45509, 77.81383



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.45085, 77.77020



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.43165, 77.67734



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.39829, 77.65233



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.45763, 77.36309



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.45750, 77.35617



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.45345, 77.29440



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.45536, 77.25423



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.49069, 77.24436



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Coordinates: 11.49929, 77.24500



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.49933, 77.24485



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.44360, 77.14632