



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal TO SAKTHI SUGARS EMP COOP SOCIETY

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

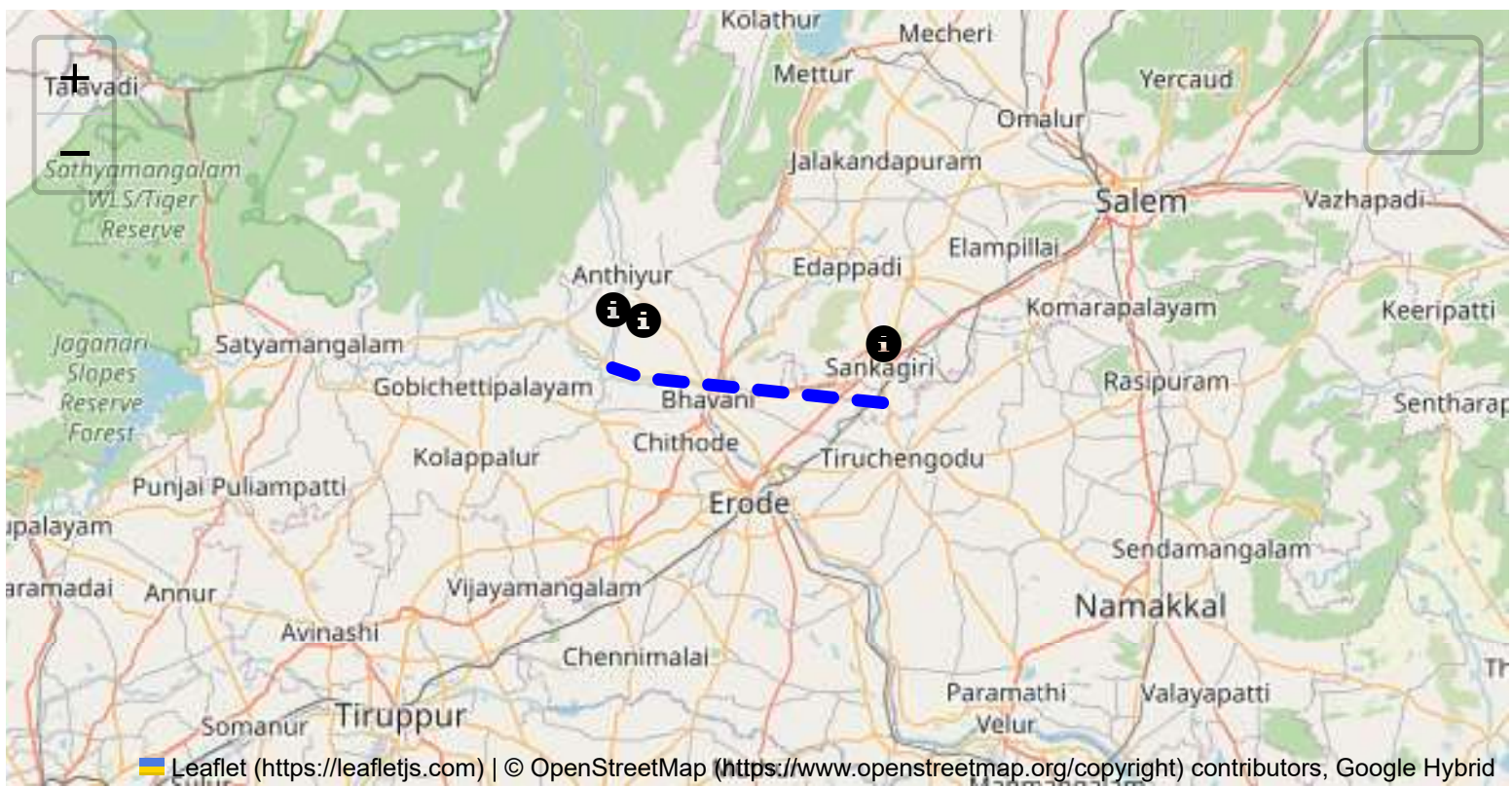
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

Journey Risk Mitigation

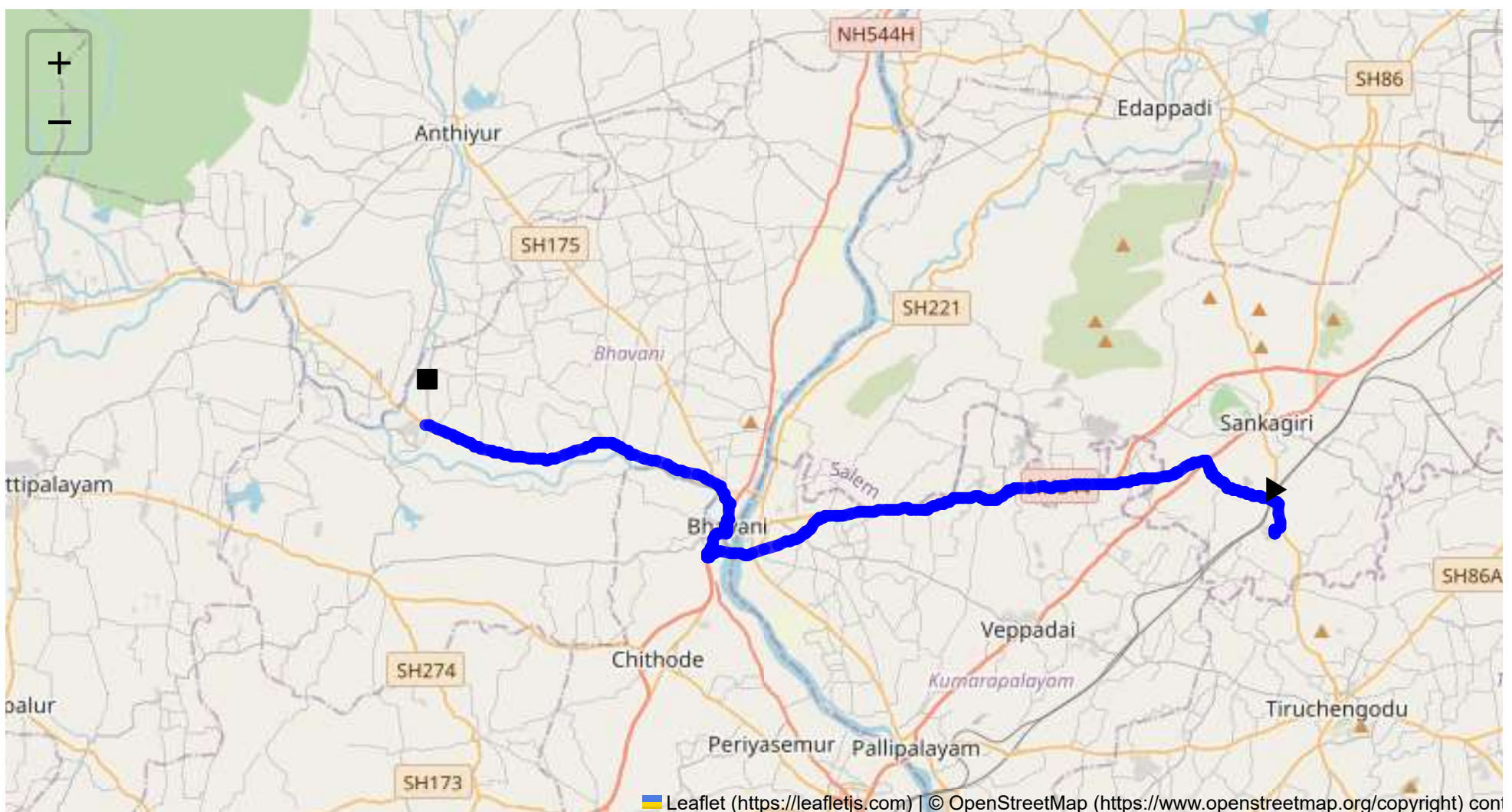
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 39.90 km
Estimated Duration: 0.9 hours
Adjusted Duration (Heavy Vehicle): 1.1 hours
Start: (11.4381, 77.8734)
End: (11.475808, 77.57743)



Welcome to the Journey Risk Management Study

1. Overview of the Route Map:

The route from Sangagiri to Appakudal via Puthur and Oricheri follows State Highway 82. It traverses mainly rural and semi-urban areas in Tamil Nadu, featuring a mix of two-lane roads through agricultural landscapes and small towns. The route is approximately 39.90 kilometers and typically takes about 0.89 hours for heavy vehicles carrying hazardous materials.

2. Typical Weather Conditions and Potential Weather-Related Hazards:

Tamil Nadu experiences a tropical climate with distinct wet and dry seasons. The dry season (winter) runs from December to February, characterized by mild temperatures and minimal rainfall. The summer season from March to May may see increased temperatures. The monsoon season, from June to September, can bring heavy rains and potential flooding, making road conditions hazardous due to waterlogging and reduced visibility.

3. Analysis of Traffic Patterns:

Traffic volume along SH 82 can vary, with heavier congestion during early morning (7-9 AM) and late afternoon (5-7 PM) as local residents commute to work and return home. Puthur and Oricheri, being small towns, may experience localized traffic, especially around marketplaces and schools. Expect reduced traffic flow during weekends except for market days.

4. Assessment of Road Quality and Infrastructure:

The road quality is generally fair, with well-maintained tarmac. However, sections may have potholes, particularly post-monsoon. The infrastructure is basic, with limited signalized intersections. Be cautious of sharp bends and rural traffic, including bicycles, livestock, and pedestrians.

5. Suggestions for Alternative Routes for Emergencies:

In case of roadblocks or emergencies along SH 82, consider local roads that parallel the state highway to the nearest major roads. Make use of NH 544 near Sankari, if accessible, which reconnects to SH 82 routes via major link roads, although these may involve longer travel times.

6. Summary of Local Regulations Affecting Hazardous Material Transport:

Tamil Nadu enforces strict regulations for hazardous material transport, including specific routes, mandatory safety equipment, and required permissions. Transport during night-time is typically discouraged or forbidden for such materials unless with special permits.

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

Historically, incidents along this route have included vehicle overturns mostly due to sharp turns or poor road conditions during monsoon. Adherence to speed limits and secure loading practices are critical to prevent accidents involving heavy vehicles.

8. Environmental Considerations and Sensitive Areas:

The route passes through agricultural areas, necessitating caution to protect soil and water quality from potential spills. Avoid routes near water bodies and designated forest zones to minimize environmental impact.

9. Analysis of Communication Coverage:

Mobile network coverage along the route is generally reliable, although patchy connectivity may occur in more rural or remote stretches, particularly between small villages and in hilly terrains.

10. Estimated Emergency Response Times for Different Route Segments:

Emergency services along SH 82 are relatively quick in populated areas, with response times ranging from 15 to 30 minutes. In more isolated stretches, this might extend to 45 minutes or longer given the distance from major towns and medical facilities.

12. Overall Summary of Risk Assessment:

The route from Sangagiri to Appakudal presents several challenges, including potential weather and road conditions, traffic bottlenecks near towns, and compliance with regulations. While generally manageable, drivers should be vigilant, particularly during monsoon for potential flooding and road deterioration. Planning emergency routes and ensuring smooth communication availability are crucial to maintaining a high level of safety during transit of hazardous materials.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Turn	High	11.43811, 77.87348	15 KM/Hr
1	Turn	Medium	11.43961, 77.87341	30 KM/Hr
2	Turn	Medium	11.43968, 77.87345	30 KM/Hr
3	Turn	High	11.44029, 77.87544	15 KM/Hr
4	Turn	High	11.45350, 77.85700	15 KM/Hr
5	Turn	Medium	11.46303, 77.84945	30 KM/Hr
6	Turn	Medium	11.46318, 77.84913	30 KM/Hr
7	Turn	Medium	11.45516, 77.81348	30 KM/Hr
8	Turn	Medium	11.45519, 77.81344	30 KM/Hr
9	Turn	Medium	11.44467, 77.72092	30 KM/Hr
10	Turn	High	11.43001, 77.67575	15 KM/Hr
11	Turn	Medium	11.43001, 77.67558	30 KM/Hr
12	Turn	High	11.43026, 77.67525	15 KM/Hr
13	Turn	Medium	11.43763, 77.67807	30 KM/Hr
14	Turn	High	11.43867, 77.68227	15 KM/Hr
15	Turn	Medium	11.43965, 77.68224	30 KM/Hr
16	Turn	High	11.44103, 77.68186	15 KM/Hr
17	Turn	Medium	11.44117, 77.68215	30 KM/Hr
18	Turn	High	11.44294, 77.68259	15 KM/Hr
19	Turn	High	11.44299, 77.68275	15 KM/Hr
20	Turn	High	11.44858, 77.68333	15 KM/Hr

Emergency Locations

	type	name	coordinates	speed_limit	risk_level
3	hospital	Government Hospital	11.4525596, 77.7749426	30 km/h	Medium
4	hospital	Dhanvantri Multi Speciality Hospital	11.451362, 77.766602	30 km/h	Medium
5	hospital	Dhanvanthri Hospital	11.4496712, 77.7593772	30 km/h	Medium
6	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
9	hospital	Thanish Siddha Hospital	11.430003, 77.674964	30 km/h	Medium
10	clinic	Harshitha Clinic	11.4313207, 77.674718	30 km/h	Medium
11	hospital	Sri Kaalangi Siddhar Mooligai Vaithiya Nilayam	11.432369, 77.674894	30 km/h	Medium
12	clinic	G.K Clinic	11.4297244, 77.6749715	30 km/h	Medium
13	hospital	Maha Hospital	11.4372003, 77.6781345	30 km/h	Medium
14	hospital	Jothikumar Hospital	11.43687, 77.678407	30 km/h	Medium
15	hospital	Sutha Hospital	11.4365526, 77.6796472	30 km/h	Medium
16	clinic	Velavan Homoeo Clinic	11.4367087, 77.6761472	30 km/h	Medium
17	clinic	Sri Dharshan Diabetes Care	11.437649, 77.6778126	30 km/h	Medium
18	hospital	SKMH Hospital	11.4379787, 77.6780268	30 km/h	Medium
19	hospital	Kavin Hospital	11.4399114, 77.6838194	30 km/h	Medium
20	clinic	Thangam Acupuncture	11.4418816, 77.6832318	30 km/h	Medium
21	hospital	Sumangali Hospital	11.4427668, 77.6827131	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
22	hospital	Annusiya Hospital	11.4432777, 77.6813562	30 km/h	Medium
23	hospital	Kandasamy Hospital	11.4450062, 77.6832304	30 km/h	Medium
24	hospital	Ashok Krishna Hospital	11.4483344, 77.6856579	30 km/h	Medium
25	hospital	Senthil Hospital	11.4475854, 77.6844482	30 km/h	Medium
26	hospital	S.N.A. Siddha Hospital	11.44704, 77.682877	30 km/h	Medium
27	hospital	Shri Mani Hospital	11.44771, 77.6838471	30 km/h	Medium
28	clinic	Sri Hari Clinic	11.4483503, 77.6850963	30 km/h	Medium
29	hospital	Immiaditya Hospital	11.4501276, 77.6836088	30 km/h	Medium
30	hospital	Sri Saravana Hospital	11.4506202, 77.6829676	30 km/h	Medium
31	hospital	Government Hospital	11.45112, 77.682149	30 km/h	Medium
32	hospital	Vijay Hospital	11.45091, 77.682019	30 km/h	Medium
33	hospital	Anbe Sivam Hospital	11.4508139, 77.6854947	30 km/h	Medium
34	clinic	Kalyani Nursing Home	11.452097, 77.6808974	30 km/h	Medium
35	hospital	Government Hospital	11.4519113, 77.6819742	30 km/h	Medium
36	hospital	Ragav Hospital	11.475895, 77.581045	30 km/h	Medium
37	hospital	NM Hospital	11.4765419, 77.5801178	30 km/h	Medium
38	hospital	Dr. Kandhasamy Hospital	11.4750159, 77.5798168	30 km/h	Medium
39	hospital	SPK Hospital	11.47498, 77.5798076	30 km/h	Medium
40	hospital	Sriram Child and Maternity Hospital	11.4739074, 77.5783099	30 km/h	Medium
41	clinic	Krithik Clinic	11.4756073, 77.5780846	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
8	school	SSM Matriculation Higher Secondary School	11.4321653, 77.6880046	30 km/h	Medium

Route Photos of Risky Spots



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.44029, 77.87544



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.45350, 77.85700



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.46303, 77.84945



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: 11.44467, 77.72092



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.43001, 77.67575



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.43001, 77.67558



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.43026, 77.67525



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.43763, 77.67807



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.43867, 77.68227



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.43965, 77.68224



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.44103, 77.68186



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.44117, 77.68215



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.44294, 77.68259



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.44299, 77.68275



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.44858, 77.68333
