



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal to AKM NATARAJAN CHETTY

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

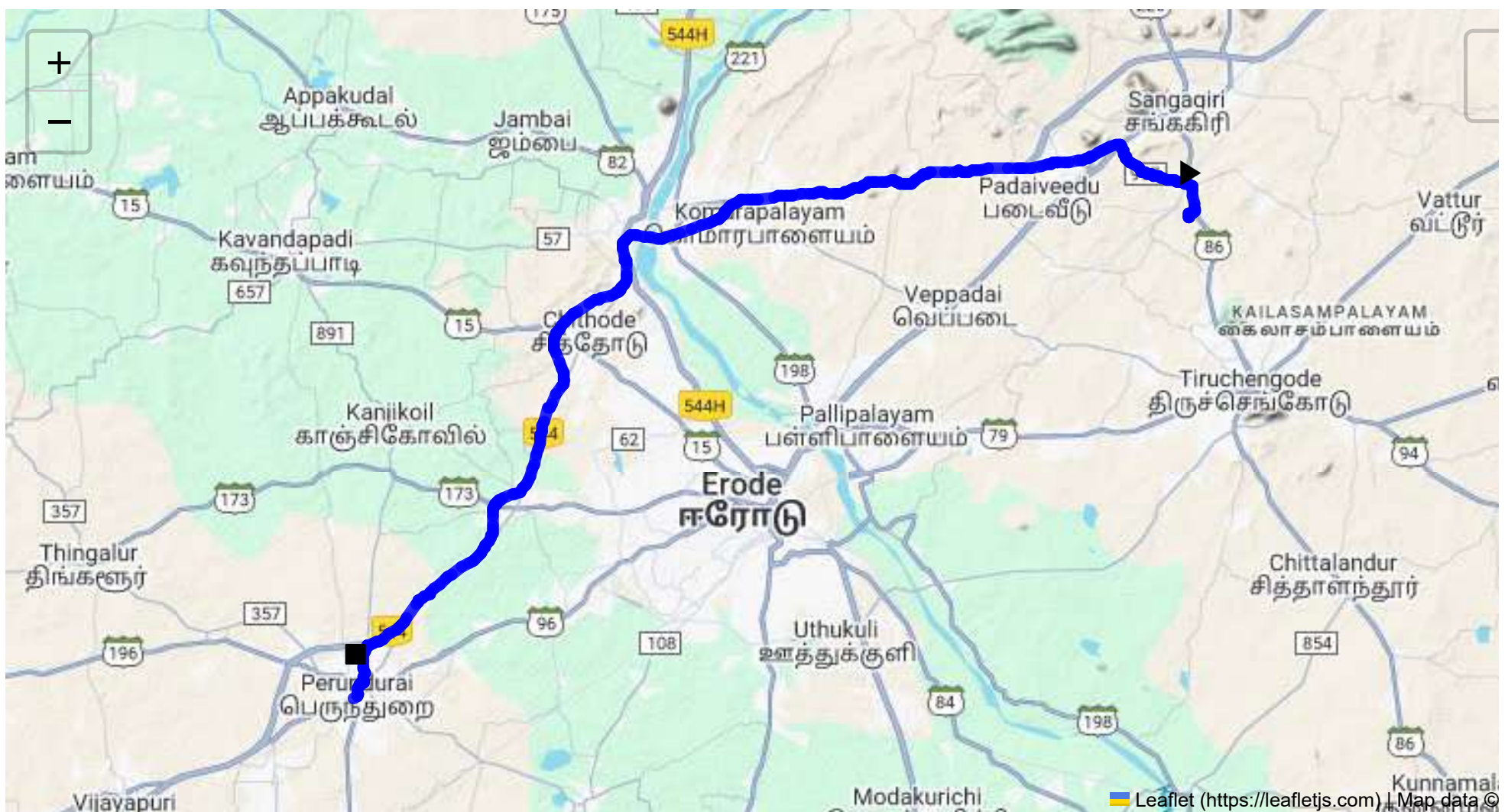
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 47.11 km
Estimated Duration: 0.9 hours
Adjusted Duration (Heavy Vehicle): 1.2 hours
Start: (11.4381, 77.8734)
End: (11.273456, 77.58121)



Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route from Sangagiri to Perundurai involves traveling primarily along National Highway 47. It covers approximately 47.11 kilometers and is characterized by mostly rural and semi-urban terrain. The road is relatively straight with a few curves and intersections, connecting several smaller towns and communities.

2. Typical Weather Conditions and Potential Weather-Related Hazards

Tamil Nadu generally experiences a hot and humid climate with distinct monsoon seasons.

- **Summer (April to June):** High temperatures can exceed 40°C, potentially causing road heat damage and vehicle overheating.
- **Monsoon (July to September):** Heavy rains can lead to waterlogging and reduced road visibility. This is a common challenge in low-lying areas.
- **Post-Monsoon (October to December):** While less intense, rain can still cause occasional flooding.
- **Winter (January to March):** Generally mild, but fog can occur in the mornings, reducing visibility.

3. Traffic Patterns

- **Peak Hours:** Mornings (8 AM - 10 AM) and evenings (6 PM - 8 PM) see higher traffic volumes, especially near Sangagiri town and the approach to Perundurai.
- **Congestion-Prone Areas:** Watch for congestion around market areas in Sangagiri and near junctions connecting smaller roads to NH 47.

4. Assessment of Road Quality and Infrastructure

- **Road Surface:** The highway is generally well-maintained with few potholes, but village roads branching off may be less reliable.
- **Infrastructure:** Adequate signage and road markings. Street lighting is limited in certain stretches, which could pose risks during night travel.

5. Suggestions for Alternative Routes for Emergencies

- **Via SH 84A:** In case of incidents or closures, consider using SH 84A to divert through adjacent towns for rejoining NH 47 later.
- **Local Detours:** Local roads can serve as temporary bypasses but may not be suitable for heavy vehicles due to width and infrastructure limitations.

6. Summary of Local Regulations Affecting Hazardous Material Transport

Transport of hazardous materials is regulated by the Chief Controller of Explosives and local authorities. Ensure compliance with the Petroleum and Explosives Safety Organization (PESO) guidelines and adhere to permits required for certain materials. Notably, night travel may require special permissions.

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

The route has recorded incidents primarily due to brake failures and improper cargo securing. A notable incident involved a chemical spill due to a vehicle overturn. Such events reinforce the need for stringent

safety checks.

8. Environmental Considerations and Sensitive Areas

- **Sensitive Areas:** Avoid spilling substances near bodies of water and agricultural fields. The region supports local biodiversity and agriculture that could be impacted by contamination.
- **Wildlife Crossings:** Occasionally occur, requiring caution, especially during night travel.

9. Analysis of Communication Coverage

- **Coverage:** Major telecom operators provide reasonable coverage along NH 47, but signal strength may weaken in more rural and less densely populated areas.
- **Dead Zones:** Potential signal drop near dense terrain and villages; advisable to have alternate communication methods like radio.

10. Estimated Emergency Response Times

- **Sangagiri to Erode Segment:** Average response time is approximately 20-30 minutes due to proximity to healthcare and emergency services.
- **Erode to Perundurai Segment:** Could extend to 30-45 minutes; lower density of facilities demands reliance on more distant services.

11. Overall Summary of Risk Assessment

This route entails moderate risk for transporting hazardous materials, primarily mitigated by awareness of potential weather impacts, and local traffic conditions. Key concerns include road surface conditions during monsoon and environmental protection. Mitigating these risks involves ensuring vehicle maintenance, emergency preparedness, and compliance with all transportation regulations for hazardous materials. Regular communication checks and familiarity with alternative routes are also advised to ensure a safe and efficient journey.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.27925, 77.58494	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

	Risk Type	Risk Level	Coordinates	Speed Limit
6	Turn	Medium	11.45357, 77.85789	30 KM/Hr
7	Turn	Medium	11.45352, 77.85698	30 KM/Hr
8	Turn	Medium	11.46303, 77.84945	30 KM/Hr
9	Turn	Medium	11.46318, 77.84913	30 KM/Hr
10	Turn	Medium	11.29288, 77.59029	30 KM/Hr
11	Turn	Medium	11.29164, 77.58610	30 KM/Hr
12	Turn	Medium	11.29158, 77.58600	30 KM/Hr
13	Turn	Medium	11.28223, 77.58511	30 KM/Hr
14	Turn	High	11.27446, 77.58267	15 KM/Hr
15	Turn	Medium	11.27446, 77.58255	30 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
8	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	clinic	Erode Cancer Centre	11.3732, 77.649152	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
14	hospital	Marutham Hospital	11.2796906, 77.5864262	30 km/h	Medium
15	hospital	KMCH Hospital	11.2788797, 77.5848796	30 km/h	Medium
16	hospital	Sakthi Dental Hospital	11.2788566, 77.5849413	30 km/h	Medium
17	clinic	VP Medical Centre & Eye Foundation	11.2784922, 77.5836374	30 km/h	Medium
18	hospital	Santhi Hospital	11.2787879, 77.5872993	30 km/h	Medium
19	pharmacy	Nathan Medicals	11.2773384, 77.5829441	30 km/h	Medium
20	police	Police Station	11.277733, 77.5865812	30 km/h	Medium
21	clinic	Logeshwaran Homeo Clinic	11.277675, 77.583065	30 km/h	Medium
22	hospital	Sivakumar Hospital	11.2770302, 77.5852952	30 km/h	Medium
23	clinic	Dass Homoeo Clinic	11.2771706, 77.5841177	30 km/h	Medium
24	hospital	N V Nursing Home	11.2780408, 77.5848735	30 km/h	Medium
25	clinic	Ravi Clinic	11.2768201, 77.5836969	30 km/h	Medium
26	hospital	Anu Child Care	11.2765928, 77.5848408	30 km/h	Medium
27	clinic	Thulasi Clinic	11.2766687, 77.5869752	30 km/h	Medium
28	clinic	Avm Physiotherapy Clinic	11.2766435, 77.5842715	30 km/h	Medium
29	hospital	Priya Hospital	11.2761, 77.584773	30 km/h	Medium
30	clinic	Gks Child Clinic	11.2759154, 77.5832766	30 km/h	Medium
31	clinic	Sri Clinic	11.27555, 77.586134	30 km/h	Medium
32	clinic	Sridar Clinic	11.2755095, 77.5861442	30 km/h	Medium
33	clinic	Baby Dental and Poly Clinic	11.2753902, 77.5829593	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
7	school	SSM Matriculation Higher Secondary School	11.4321653, 77.6880046	30 km/h	Medium
34	school	Kongu Vellalar Matriculation Higher Sec School	11.2722171, 77.5817369	30 km/h	Medium

Route Photos of Risky Spots



Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.27925, 77.58494



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: 11.45352, 77.85698



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: 11.29288, 77.59029



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.29164, 77.58610



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.29158, 77.58600



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.28223, 77.58511



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.27446, 77.58267



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.27446, 77.58255

