



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal to SRS FUELS

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

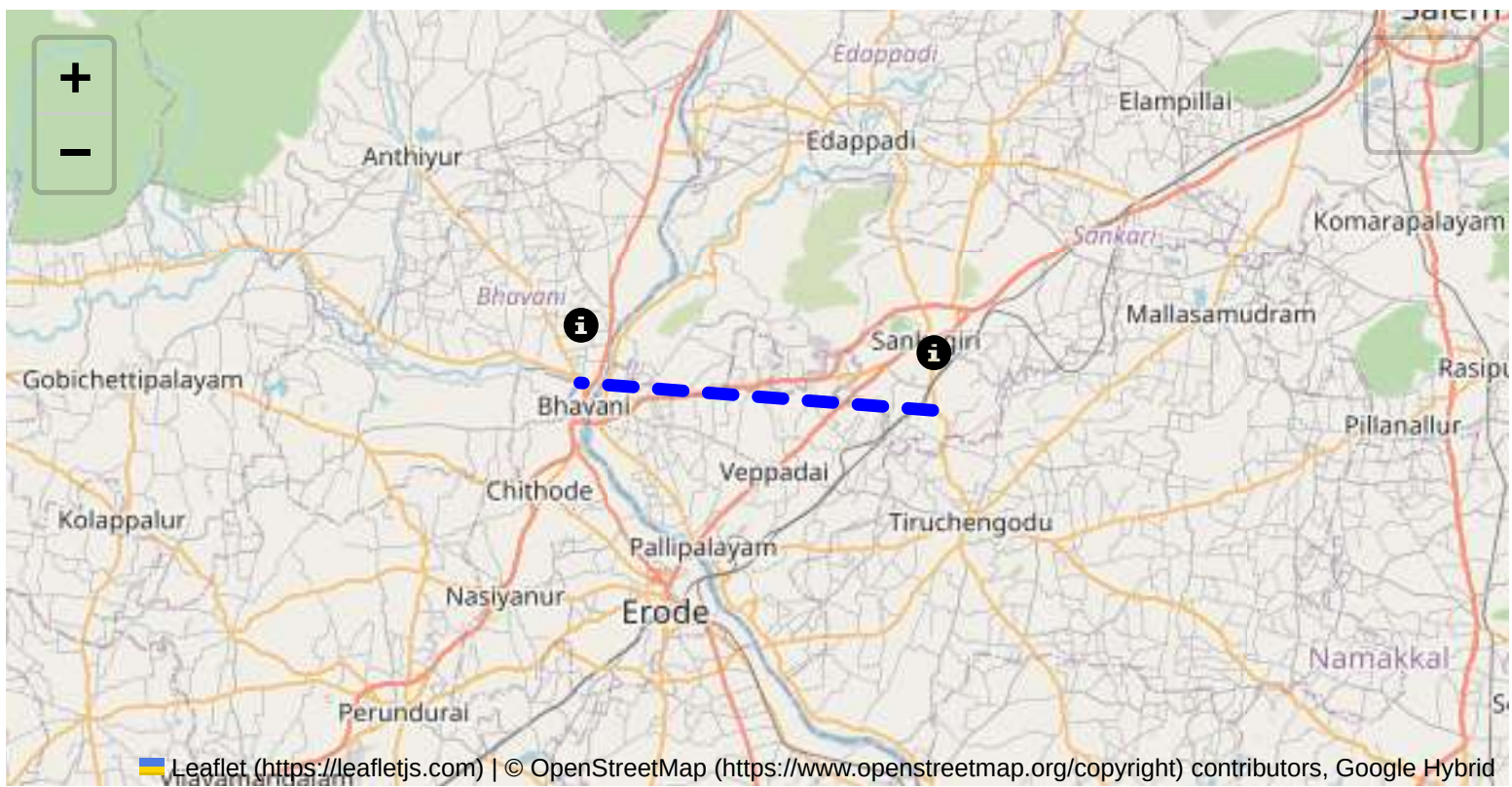
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

Journey Risk Mitigation

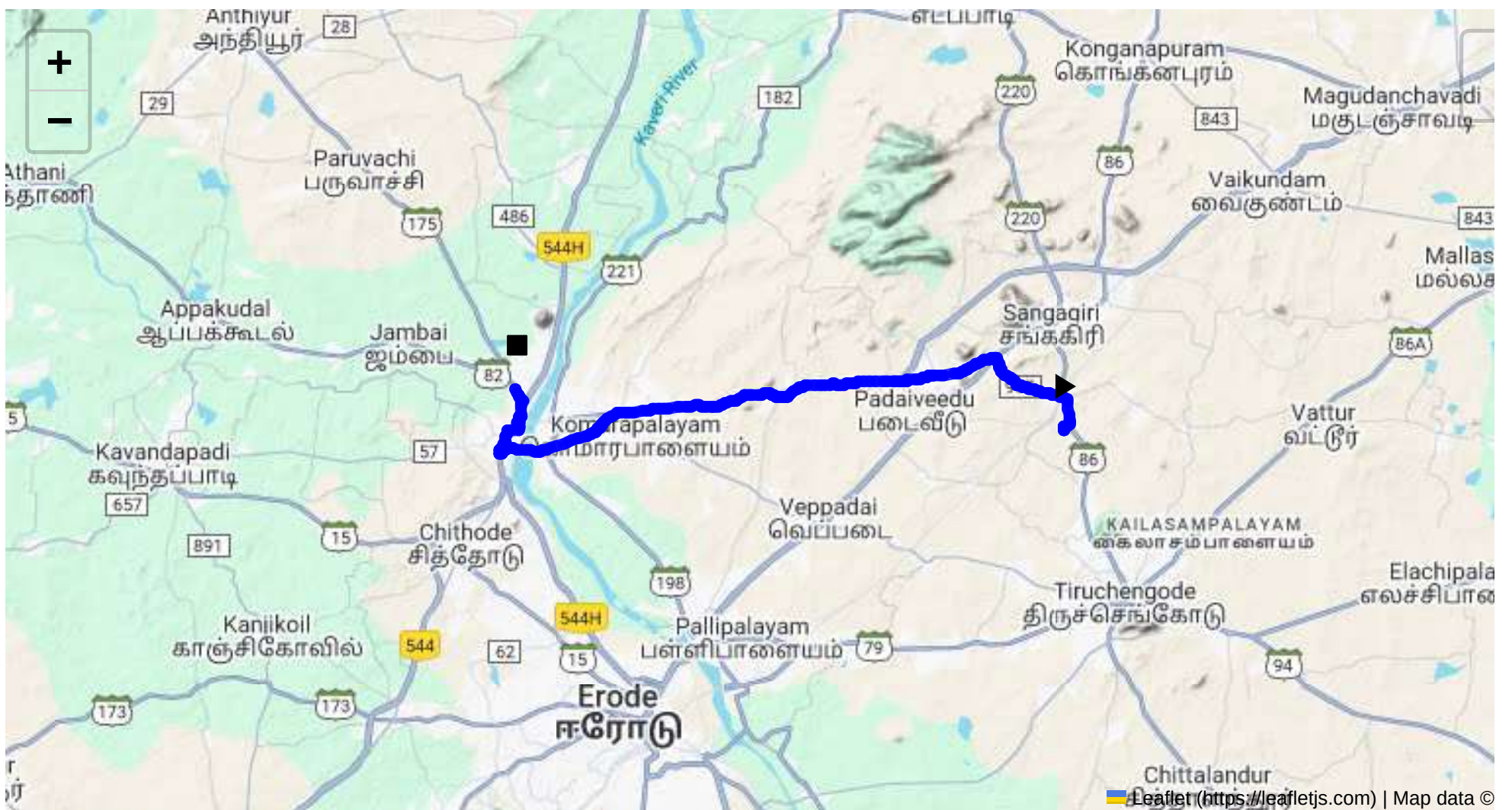
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 27.77 km
Estimated Duration: 0.6 hours
Adjusted Duration (Heavy Vehicle): 0.8 hours
Start: (11.4381, 77.8734)
End: (11.452447, 77.680781)



Welcome to the Journey Risk Management Study

Route Overview

The route from CVQF+23W, Sangagiri, Tamil Nadu 637301, to FM3J+478, SH 82, Varanapuram, Bhavani, Tamil Nadu 638301, spans approximately 27.77 kilometers. The journey typically takes heavy vehicles around 38 minutes (0.63 hours). This route primarily follows state highways and local roads.

Weather Conditions and Hazards

- **Typical Weather:** The region experiences a tropical climate, with the hottest months being April to June and the monsoon season predominantly from June to October.
- **Potential Hazards:** During the monsoon, roads may become slippery and prone to waterlogging in certain sections, increasing the risk of hydroplaning and reduced visibility.

Traffic Patterns

- **Peak Hours:** Morning (7:00 AM - 9:00 AM) and evening (5:00 PM - 7:00 PM) reflect peak traffic volumes.
- **Congestion-Prone Areas:** Small towns and intersections near markets tend to have higher congestion, particularly Palayapalayam and sections near Bhavani.

Road Quality and Infrastructure

- **Road Quality:** Generally, the state highways are well-maintained, although local roads may have some potholes and uneven surfaces.
- **Infrastructure:** Adequate signage is present, but lighting can be sparse in rural stretches, necessitating caution during nighttime driving.

Alternative Routes for Emergencies

- **Option 1:** An alternate route via SH-15 may be considered, though longer, it diverts heavy congestion areas.
- **Option 2:** Local roads can serve as detours, especially during roadblocks or accidents, but require careful navigation to avoid delays.

Local Regulations on Hazardous Material Transport

- Transporters must adhere to both state and national regulations for hazardous materials, including permissible routes, transport timings (often restricted at night in some regions), and safety certification.

Historical Incidents

- **Incidents Recorded:** There have been sporadic reports of accidents involving heavy vehicles, often due to overspeeding or loss of control on challenging sections.
- **Hazardous Material Incidents:** Limited data on hazardous material spills; however, general road safety protocols are emphasized.

Environmental Considerations

- **Sensitive Areas:** Proximity to water bodies and agricultural lands requires stringent adherence to environmental safety norms to prevent contamination.
- **Wildlife Crossings:** Minimal wildlife activity, but caution in less populated areas is advisable.

Communication Coverage

- **Coverage Overview:** Generally reliable mobile network coverage; however, occasional dead zones may be experienced in rural or densely vegetated areas.
- **Recommendations:** Equip vehicles with CB radios or satellite communication devices in case of emergencies.

Estimated Emergency Response Times

- **Rural Segments:** 30-60 minutes due to distance from emergency services.
- **Urban Areas:** 15-30 minutes owing to proximity to firefighting and medical facilities in small towns like Bhavani.

Overall Risk Assessment Summary

The route from Sangagiri to Bhavani is relatively straightforward, with standard risks associated with heavy vehicle transportation in rural Indian settings. Weather conditions, particularly during the monsoon, and traffic congestion during peak hours present the main challenges. Emergency response is adequate in urban areas but can be delayed in more isolated regions. Continuous communication and adherence to safety protocols for hazardous material transport will mitigate most risks.

Note: This analysis should be complemented with real-time updates and local traffic advisories to ensure comprehensive journey management and safety for truck drivers carrying 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	11.43956, 77.87340	30 KM/Hr
2	Turn	Medium	11.43971, 77.87348	30 KM/Hr
3	Turn	High	11.44029, 77.87544	15 KM/Hr
4	Turn	Medium	11.44898, 77.87410	30 KM/Hr
5	Turn	Medium	11.45348, 77.85706	30 KM/Hr
6	Turn	Medium	11.46318, 77.84913	30 KM/Hr
7	Turn	Medium	11.45697, 77.82719	30 KM/Hr
8	Turn	High	11.45516, 77.81346	15 KM/Hr
9	Turn	High	11.45521, 77.81343	15 KM/Hr
10	Turn	Medium	11.43994, 77.71111	30 KM/Hr
11	Turn	Medium	11.43982, 77.71084	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
12	Turn	High	11.43001, 77.67575	15 KM/Hr
13	Turn	High	11.43026, 77.67525	15 KM/Hr
14	Turn	Medium	11.43865, 77.68226	30 KM/Hr
15	Turn	Medium	11.43965, 77.68224	30 KM/Hr
16	Turn	Medium	11.44105, 77.68187	30 KM/Hr
17	Turn	Medium	11.44107, 77.68189	30 KM/Hr
18	Turn	Medium	11.44122, 77.68219	30 KM/Hr
19	Turn	Medium	11.44291, 77.68256	30 KM/Hr
20	Turn	Medium	11.44300, 77.68275	30 KM/Hr
21	Turn	High	11.44858, 77.68333	15 KM/Hr
22	Turn	High	11.45231, 77.68109	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	Sutha Hospital	11.4365526, 77.6796472	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
14	clinic	Velavan Homoeo Clinic	11.4367087, 77.6761472	30 km/h	Medium
15	hospital	Maha Hospital	11.4372003, 77.6781345	30 km/h	Medium
16	hospital	Jothikumar Hospital	11.43687, 77.678407	30 km/h	Medium
17	hospital	SKMH Hospital	11.4379787, 77.6780268	30 km/h	Medium
18	clinic	Sri Dharshan Diabetes Care	11.437649, 77.6778126	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
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

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: 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: 11.46318, 77.84913



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.45697, 77.82719



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.45516, 77.81346



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.45521, 77.81343



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.43994, 77.71111



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.43982, 77.71084



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



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: 11.43865, 77.68226



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.43965, 77.68224



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.44105, 77.68187



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.44107, 77.68189



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.44122, 77.68219



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.44291, 77.68256



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.44300, 77.68275



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.44858, 77.68333



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.45231, 77.68109
