



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

**Salem Terminal to ADHOC SRI RAGAVENDRA FUELS
UNIT II 325143 SRM SANJAY PETROLEUM**

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

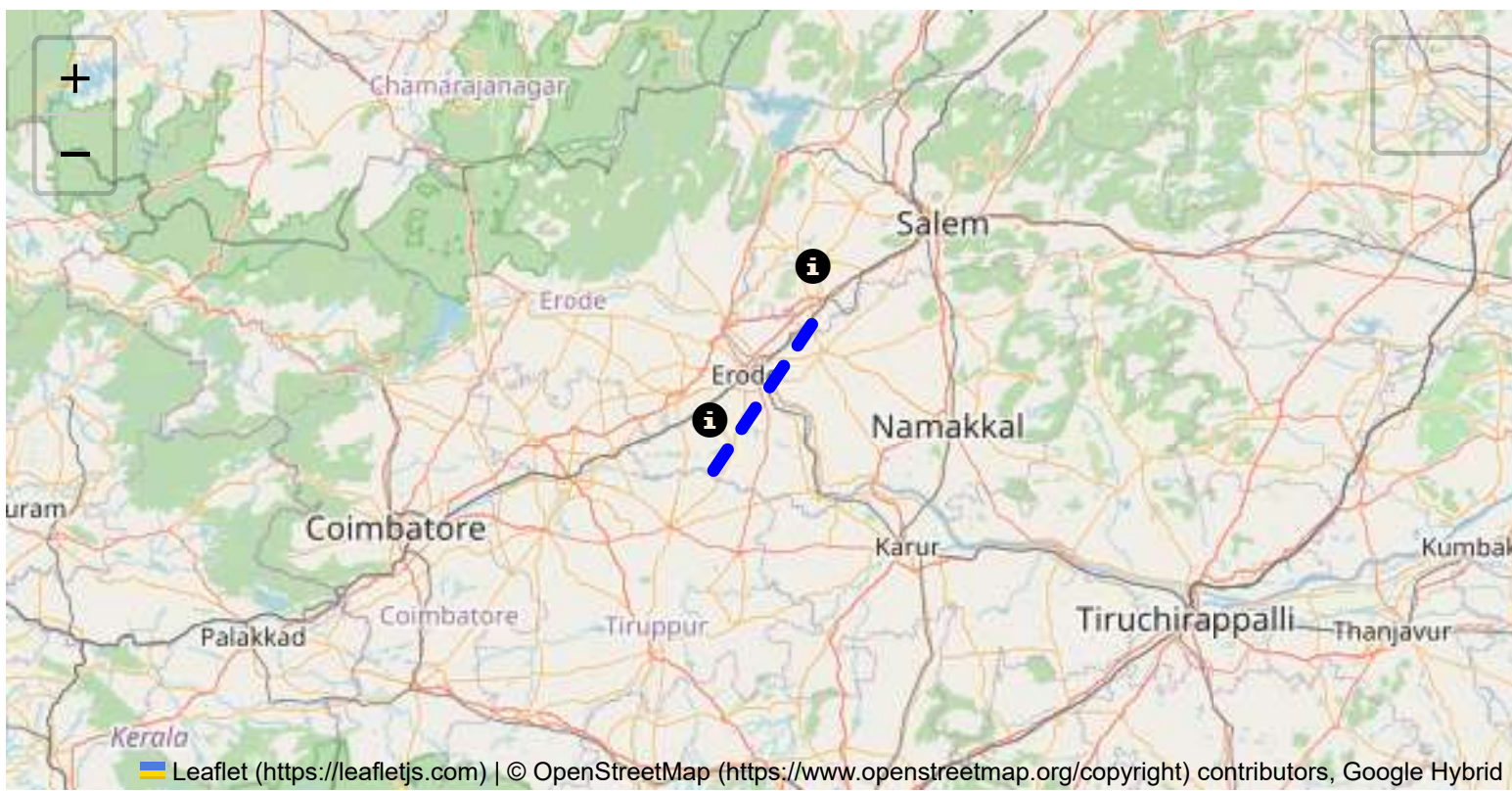
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

Journey Risk Mitigation

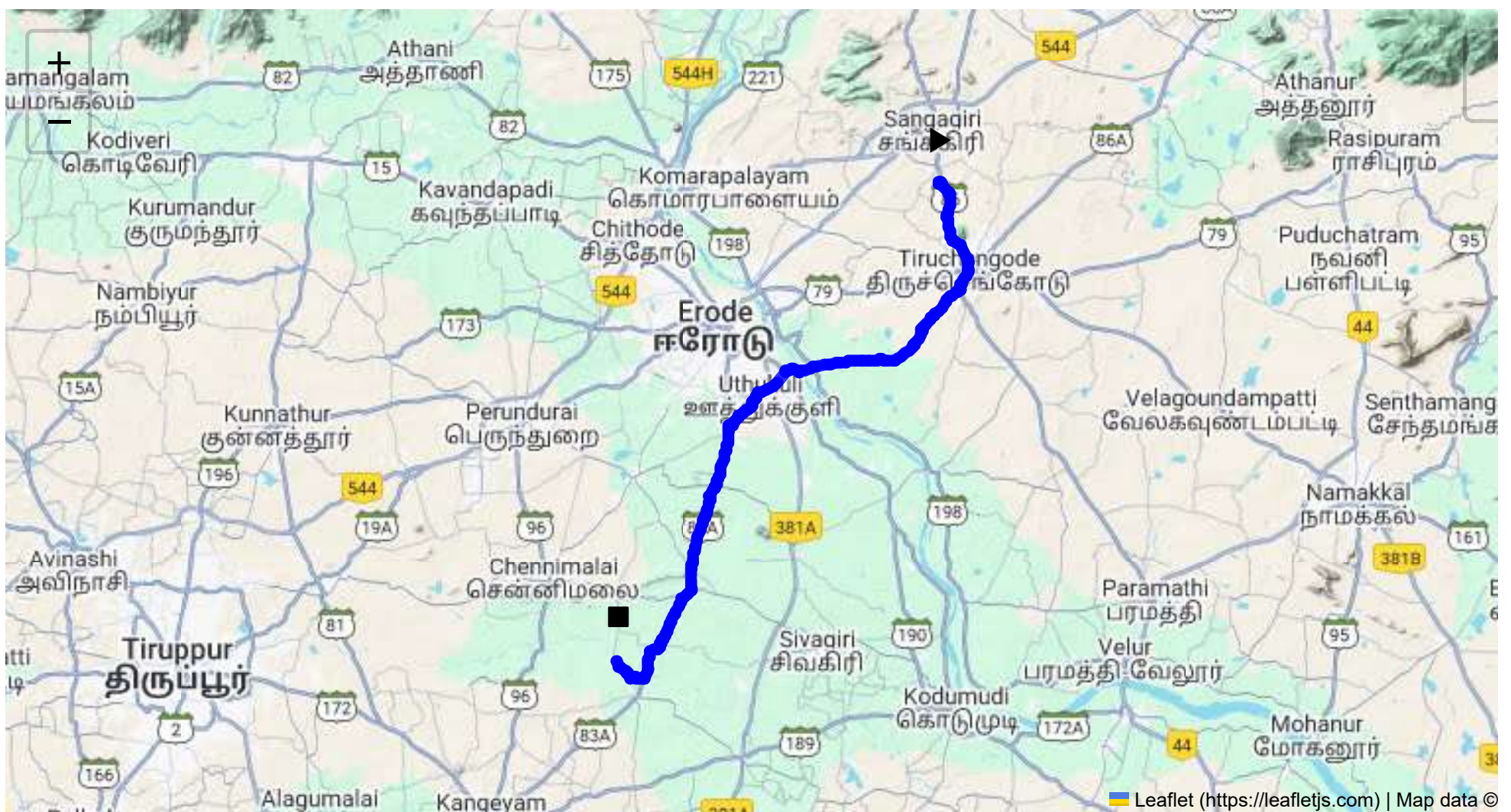
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 56.31 km
Estimated Duration: 1.4 hours
Adjusted Duration (Heavy Vehicle): 1.8 hours
Start: (11.4381, 77.8734)
End: (11.110624, 77.648047)



Welcome to the Journey Risk Management Study

Analyzing the route from CVQF+23W, Sangagiri, Tamil Nadu to 4J6X+759, Chennimalai Main Road, Marudurai, Tamil Nadu, here are the insights considering the major safety aspects you requested:

1. Overview of the Route Map:

- The route covers approximately 56.31 kilometers. The main highways involved include NH544 and other regional roads. The route traverses through a mix of highways and rural roads, passing

through small towns such as Tiruchengode.

2. Typical Weather Conditions and Potential Hazards:

- Weather in Tamil Nadu is tropical, with a hot, dry climate most of the year, but the monsoon season (typically June to September) can bring heavy rains that may lead to slippery roads and flooding, particularly in low-lying areas. Winds during cyclonic conditions can be hazardous for heavy vehicles.

3. Traffic Patterns:

- Peak traffic occurs during morning (8-10 AM) and evening (5-8 PM) commuting hours. Congestion often occurs near towns due to local traffic and market activities, particularly in Tiruchengode. Weekends might see increased traffic due to local events.

4. Road Quality and Infrastructure:

- Highways such as NH544 are generally well-maintained, offering good driving conditions for heavy vehicles. However, regional and rural roads may have uneven surfaces, potholes, and limited lighting, which could be challenging for night driving or during adverse weather.

5. Suggestions for Alternative Routes:

- In emergencies, consider alternate roads like SH86 to avoid major congestion points. Navigational apps should be consulted in real-time to adjust based on the latest traffic and road conditions.

6. Summary of Local Regulations Affecting Hazardous Material Transport:

- Transport of hazardous materials is regulated under the Motor Vehicles Act and Hazardous and Other Wastes (Management and Transboundary Movement) Rules. Obey speed limits, adhere to designated routes, and carry appropriate documentation.

7. Historical Incidents:

- Some incidents like traffic accidents involving heavy vehicles have occurred, mainly due to human error and road conditions. However, specific incidents involving hazardous materials in the region are minimal but emphasize the need for caution in handling.

8. Environmental Considerations and Sensitive Areas:

- The route crosses agricultural areas, which are sensitive to spills or emissions from vehicles carrying hazardous materials. Proximity to water bodies requires added caution to prevent contamination.

9. Communication Coverage:

- Mobile network coverage is generally reliable along the highways but might drop in rural stretches. Dead zones may occur in remote areas or when crossing underpasses or dense foliage areas.

10. Estimated Emergency Response Times:

- Emergency services can typically reach spots on NH544 within 30 minutes, but response times in rural or less accessible areas can extend beyond an hour.

11. Overall Summary of Risk Assessment:

- The route comprises both well-maintained highways and challenging rural roads, with specific risks like traffic congestion during peak hours, potential weather hazards during the monsoon, and environmental sensitivity. While communication is generally reliable, the presence of dead zones is a concern, and emergency response times vary. Adhering to local regulations and being prepared for changing conditions will be vital for the safe transport of hazardous materials along this route.

This analysis emphasizes driving cautiously, especially during bad weather and through rural sectors, and maintaining regular communication with emergency services and traffic updates.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.38395, 77.89480	15 KM/Hr
1	Turn	Medium	11.43822, 77.87348	30 KM/Hr
2	Turn	High	11.43968, 77.87345	15 KM/Hr
3	Turn	High	11.44022, 77.87546	15 KM/Hr
4	Turn	High	11.37868, 77.89498	15 KM/Hr
5	Turn	Medium	11.37842, 77.89452	30 KM/Hr
6	Turn	Medium	11.36616, 77.88885	30 KM/Hr
7	Turn	Medium	11.36602, 77.88875	30 KM/Hr
8	Turn	Medium	11.34067, 77.86347	30 KM/Hr
9	Turn	Medium	11.33882, 77.86218	30 KM/Hr
10	Turn	Medium	11.33778, 77.86236	30 KM/Hr
11	Turn	Medium	11.30973, 77.76712	30 KM/Hr
12	Turn	High	11.29490, 77.74685	15 KM/Hr
13	Turn	High	11.29141, 77.74662	15 KM/Hr
14	Turn	Medium	11.28844, 77.74319	30 KM/Hr
15	Turn	Medium	11.28573, 77.74281	30 KM/Hr
16	Turn	Medium	11.27336, 77.72999	30 KM/Hr
17	Turn	Medium	11.27319, 77.72981	30 KM/Hr
18	Turn	High	11.27328, 77.72705	15 KM/Hr
19	Turn	Medium	11.23054, 77.71796	30 KM/Hr
20	Turn	Medium	11.22387, 77.71385	30 KM/Hr
21	Turn	Medium	11.20776, 77.70916	30 KM/Hr
22	Turn	Medium	11.16078, 77.70122	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
23	Turn	High	11.15942, 77.70068	15 KM/Hr
24	Turn	Medium	11.11932, 77.67786	30 KM/Hr
25	Turn	Medium	11.11710, 77.67175	30 KM/Hr
26	Turn	High	11.09884, 77.66786	15 KM/Hr
27	Turn	Medium	11.09931, 77.66252	30 KM/Hr
28	Turn	Medium	11.09945, 77.66218	30 KM/Hr
29	Turn	High	11.09991, 77.66186	15 KM/Hr
30	Blind Spot	Blind Spot	11.09944, 77.65833	10 KM/Hr
31	Turn	Medium	11.10092, 77.65837	30 KM/Hr
32	Turn	High	11.10200, 77.65646	15 KM/Hr

Emergency Locations

	type	name	coordinates	speed_limit	risk_level
0	hospital	Tiruchengode, Goverment Hospital	11.3903328, 77.8920627	30 km/h	Medium
1	hospital	SPM Medical Centre,Tiruchengode	11.3881331, 77.8931963	30 km/h	Medium
5	clinic	Kongu Nursing Home	11.3783065, 77.8961134	30 km/h	Medium
6	hospital	T.C.A Hospital Tiruchengode	11.3791885, 77.8965774	30 km/h	Medium
7	hospital	Soorya Multispecialty Hospital	11.3786429, 77.8931912	30 km/h	Medium
8	hospital	Tiruchengode Government Hospital	11.37645, 77.89426	30 km/h	Medium
9	hospital	Tirukumaran Hospitals	11.3782118, 77.8914933	30 km/h	Medium
10	hospital	Krishna Hospital, Namakkal	11.3754811, 77.8931817	30 km/h	Medium
13	hospital	Government Hospital	11.2343326, 77.719226	30 km/h	Medium

Crowded Spots

	type	name	coordinates	speed_limit	risk_level
2	school	அரசு ஆண்கள் மேல்நிலைப் பள்ளி	11.3850439, 77.8948279	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
3	school	அரசு பெண்கள் மேல்நிலைப் பள்ளி	11.3844247, 77.8949053	30 km/h	Medium
4	marketplace	திருச்செங்கோடு தினசரி காய்கறி சந்தை	11.3833608, 77.8970145	30 km/h	Medium
11	school	KSR Educational institution	11.3772013, 77.8908807	30 km/h	Medium
12	school	MDV School	11.3719843, 77.8915244	30 km/h	Medium

Route Photos of Risky Spots



Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.38395, 77.89480



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr
Coordinates: 11.44022, 77.87546



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.37868, 77.89498



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.37842, 77.89452



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.36616, 77.88885



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.36602, 77.88875



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.34067, 77.86347



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.33882, 77.86218



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.33778, 77.86236



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.30973, 77.76712



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.29490, 77.74685



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.29141, 77.74662



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.28844, 77.74319



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.28573, 77.74281



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.27336, 77.72999



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.27319, 77.72981



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.27328, 77.72705



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.23054, 77.71796



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.22387, 77.71385



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.20776, 77.70916



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.16078, 77.70122



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.15942, 77.70068



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.11932, 77.67786



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.11710, 77.67175



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.09884, 77.66786



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.09931, 77.66252



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.09945, 77.66218



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.09991, 77.66186



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Coordinates: 11.09944, 77.65833



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.10092, 77.65837



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.10200, 77.65646
