



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal to ABHI 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

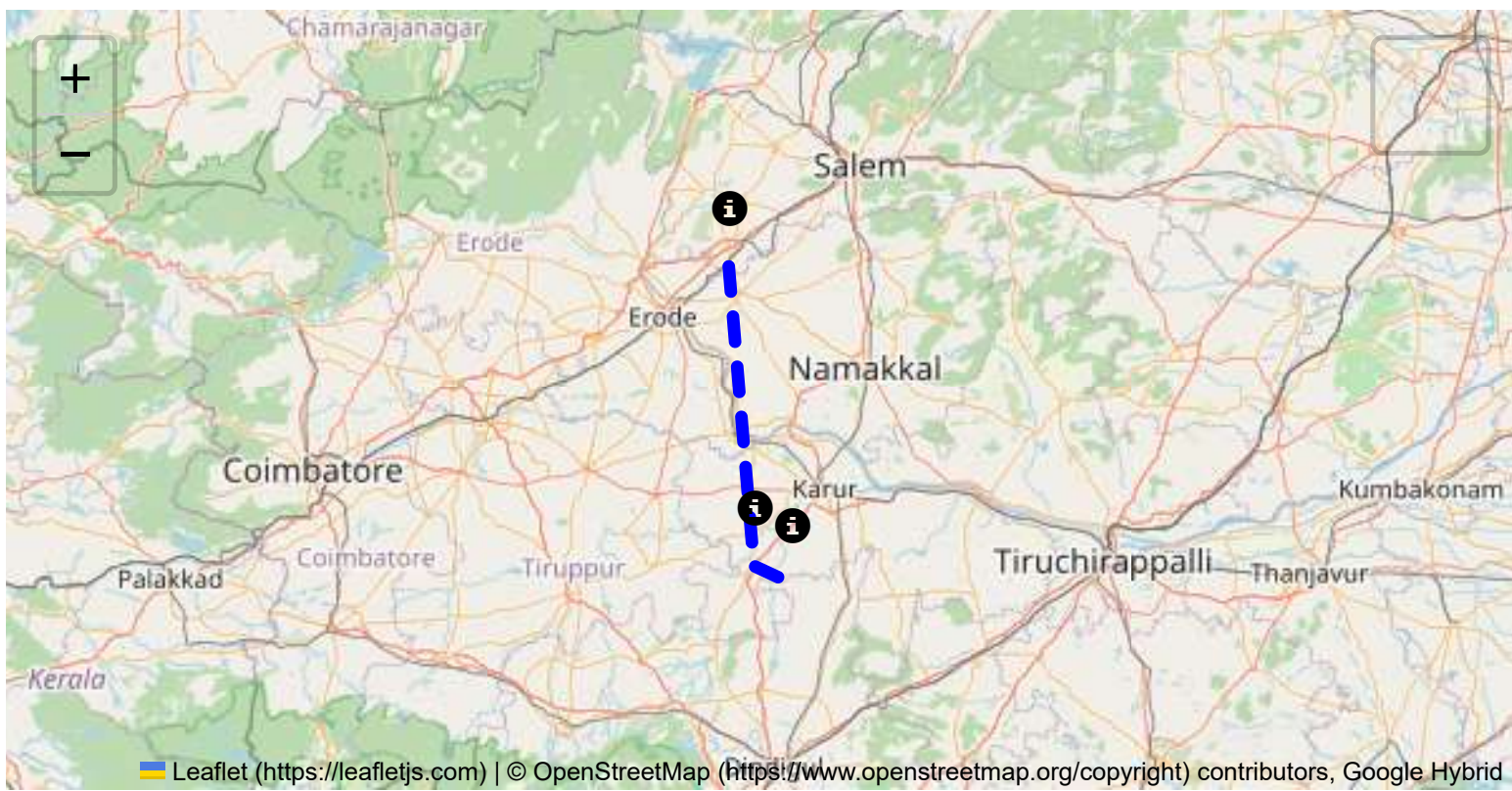
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

Journey Risk Mitigation

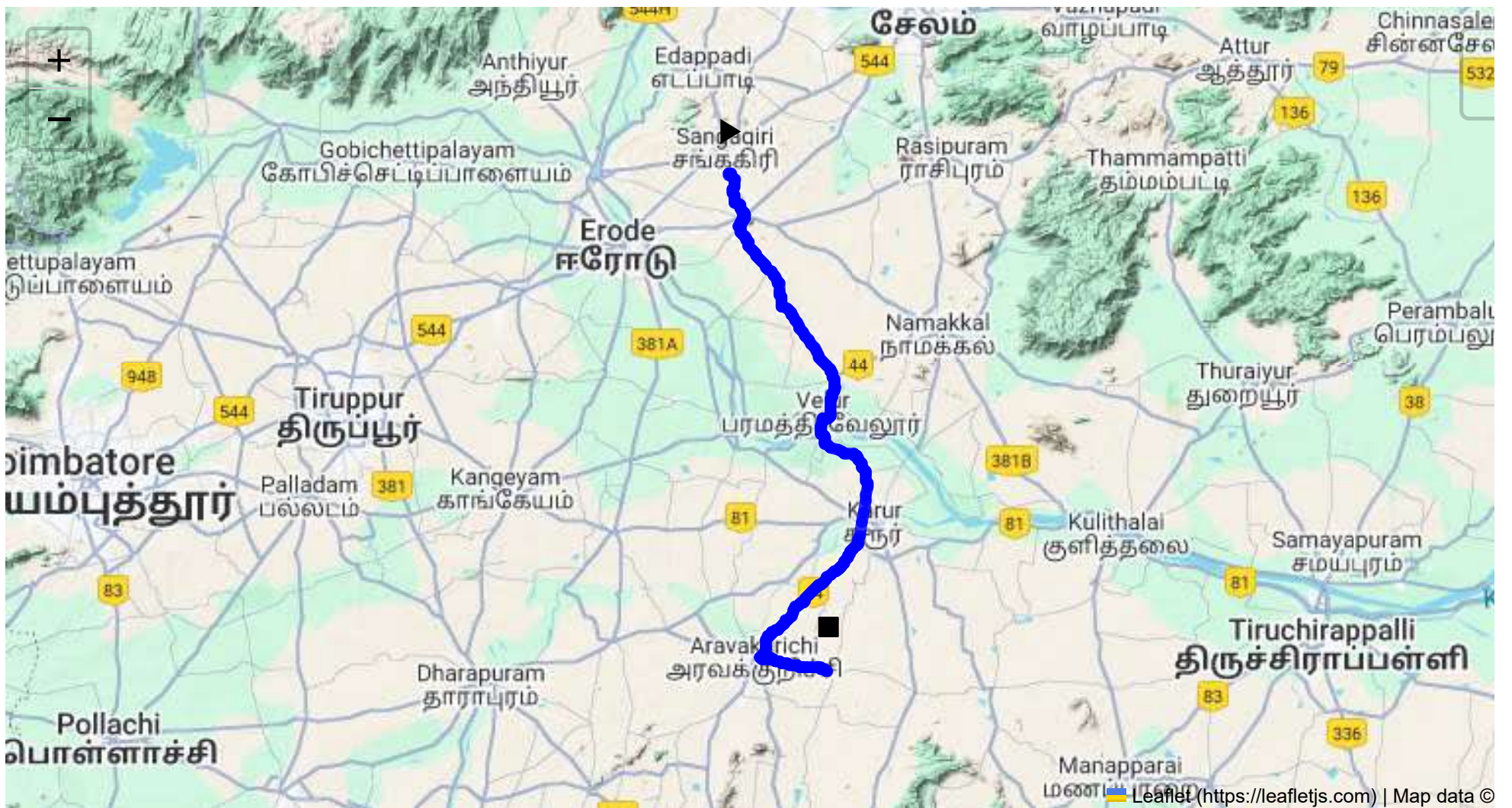
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 102.64 km
Estimated Duration: 1.8 hours
Adjusted Duration (Heavy Vehicle): 2.3 hours
Start: (11.4381, 77.8734)
End: (10.755982, 78.010099)



Welcome to the Journey Risk Management Study

Here's a comprehensive analysis of the route from CVQF+23W, Sangagiri to Q246+93W, Vellodu via Srinagar - Kanyakumari Hwy:

1. Overview of the Route Map:

- The route crosses through the heart of Tamil Nadu, roughly spanning 102.64 kilometers mainly on Srinagar - Kanyakumari Highway (NH 44). It passes through several smaller towns and

suburban areas.

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

- Weather in Tamil Nadu is generally hot and humid, with the possibility of heavy rains during the monsoon season (June to September). The monsoon can lead to waterlogging and slippery roads.
- Fog can also be an issue in the early mornings, particularly during the winter months (December to February).

3. Traffic Patterns:

- Peak hours typically coincide with school and office commutes, roughly 8:00 - 10:00 AM and 5:00 - 7:00 PM.
- Congestion-prone areas include urban entry/exit points and intersections near major towns like Salem and Dindigul.

4. Assessment of Road Quality and Infrastructure:

- NH 44 is a well-maintained national highway, but some sections may have potholes and uneven surfaces, especially post-monsoon.
- Road signage is generally adequate, but caution is advised at busy intersections and junctions.

5. Suggestions for Alternative Routes for Emergencies:

- Consider secondary routes through state highways if NH 44 is blocked. State highways like SH 86 or SH 97 can serve as viable detours depending on the specific location of the emergency.

6. Summary of Local Regulations Affecting Hazardous Material Transport:

- Transportation of hazardous materials is regulated by the Indian Petroleum & Explosives Safety Organisation (PESO). Proper documentation and adherence to prescribed routes and travel times are mandatory.

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

- There have been occasional reports of overturned tankers and spills mainly due to sharp turns and speeding. Safety protocols must be strictly followed to avoid such incidents.

8. Environmental Considerations and Sensitive Areas:

- The route does pass near agricultural lands where care is needed to prevent any spillage affecting crops.
- Wildlife crossings may exist near the hilly sections; stay alert for animal crossing signs.

9. Communication Coverage:

- Mobile network coverage is generally good along NH 44 but might weaken in rural or forested sections.

10. Estimated Emergency Response Times:

- Response times can vary: urban areas offer quicker assistance (15-30 minutes), whereas rural stretches could see delays up to an hour due to distance from emergency services.

11. Overall Summary of Risk Assessment:

- While the route is fairly straightforward on a major highway, risks are associated with congestion during peak hours, monsoon-related challenges, and the necessity for careful navigation through traffic-heavy zones.
- Awareness of local regulations and adherence to safety standards for hazardous materials is crucial.
- Drivers should stay informed about weather forecasts, plan for potential detours, and maintain communication with their transport company to ensure timely support in case of emergencies.

Safety training and periodic reviews are recommended to ensure drivers are prepared for any eventualities they might encounter on this route.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.38395, 77.89480	15 KM/Hr
1	Turn	High	11.43968, 77.87345	15 KM/Hr
2	Turn	High	11.44022, 77.87546	15 KM/Hr
3	Turn	High	11.37868, 77.89498	15 KM/Hr
4	Turn	Medium	11.37857, 77.89473	30 KM/Hr
5	Turn	Medium	11.34135, 77.90145	30 KM/Hr
6	Turn	Medium	11.26050, 77.94758	30 KM/Hr
7	Turn	Medium	11.16755, 78.01568	30 KM/Hr
8	Turn	Medium	11.15579, 78.02169	30 KM/Hr
9	Turn	High	11.14545, 78.02208	15 KM/Hr
10	Turn	High	11.14485, 78.02282	15 KM/Hr
11	Turn	Medium	10.79871, 77.92719	30 KM/Hr
12	Blind Spot	Blind Spot	10.77306, 77.91788	10 KM/Hr
13	Turn	High	10.77230, 77.93223	15 KM/Hr
14	Turn	High	10.77294, 77.93238	15 KM/Hr
15	Turn	Medium	10.77303, 77.93269	30 KM/Hr
16	Turn	Medium	10.76865, 77.93912	30 KM/Hr
17	Turn	Medium	10.76392, 77.96575	30 KM/Hr
18	Turn	Medium	10.76265, 77.96714	30 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	police	கரட்டுப்பாளையம் காவல் நிலையம்	11.357586, 77.8922539	30 km/h	Medium
14	hospital	Goverment Hospital, Nallur	11.2679698, 77.946863	30 km/h	Medium
16	hospital	Goverment Hospital	11.156647, 78.0213586	30 km/h	Medium
18	hospital	Government Hospital, Manmangalam	11.0275504, 78.0646437	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
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

	type	name	coordinates	speed_limit	risk_level
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
15	school	Sivabakkiam Muthusamy Matriculation Higher Secondary School	11.1788177, 78.0061696	30 km/h	Medium
17	school	Goverment Higher Secondary School	11.1511724, 78.0200723	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: 11.37857, 77.89473



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.34135, 77.90145



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.26050, 77.94758



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.16755, 78.01568



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.15579, 78.02169



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.14545, 78.02208



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.14485, 78.02282



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.79871, 77.92719



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Coordinates: 10.77306, 77.91788



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.77230, 77.93223



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.77294, 77.93238



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.77303, 77.93269



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.76865, 77.93912



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.76392, 77.96575
