



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal to AEGAN PETRO FILLS

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

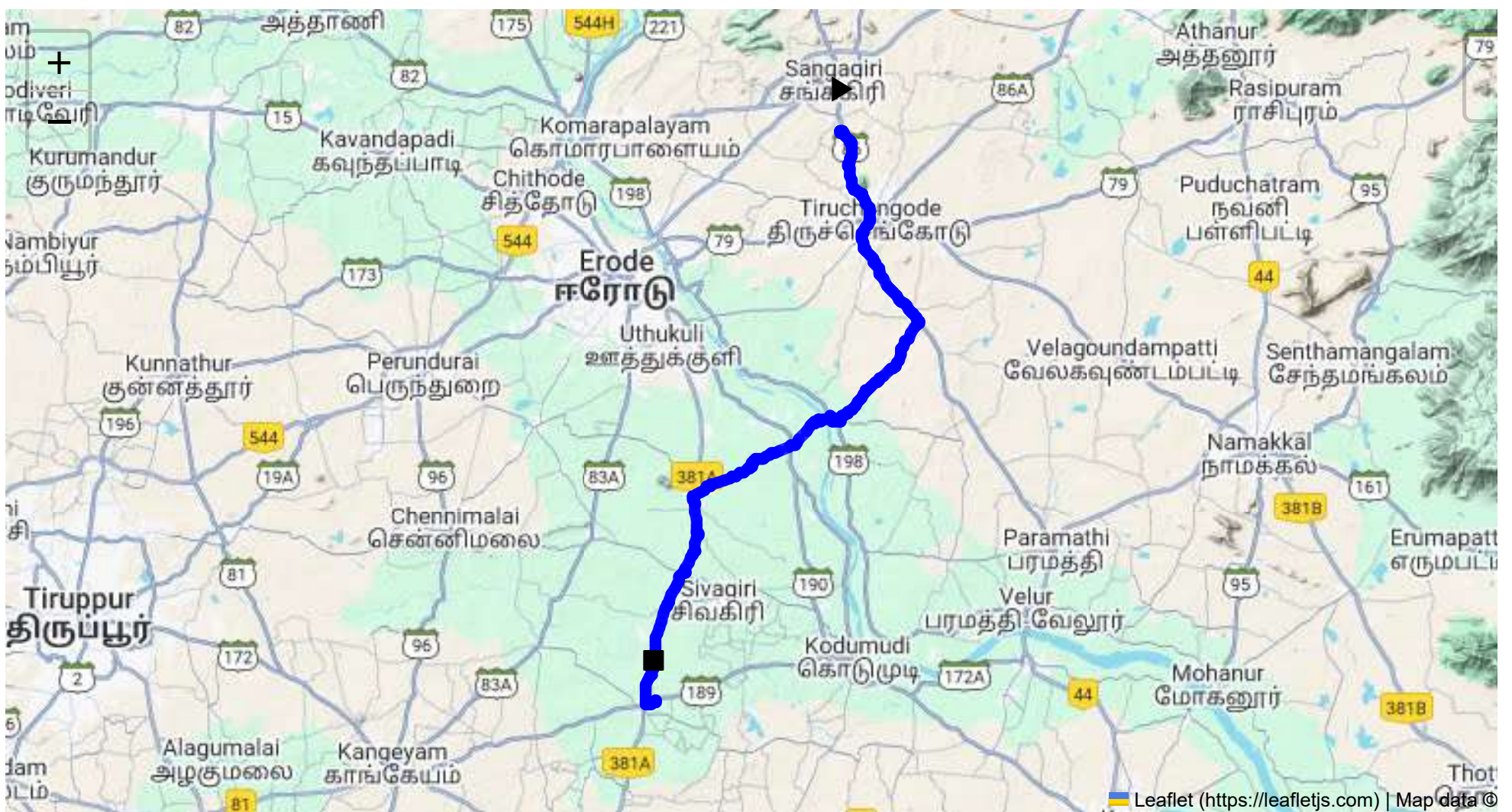
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 59.43 km
Estimated Duration: 1.4 hours
Adjusted Duration (Heavy Vehicle): 1.8 hours
Start: (11.4381, 77.8734)
End: (11.04604373, 77.74132309)



Welcome to the Journey Risk Management Study

Route Safety Analysis Report

1. Overview of the Route Map

The route starts from Sangagiri, Tamil Nadu (CVQF+23W) and proceeds to Muthur, Tamil Nadu (2PWR+GGJ) via MDR854 and Sullipalayam. The journey spans approximately 59.43 kilometers through

rural areas with small towns in between. The primary roads include MDR854, a moderately trafficked route often used by local commuters and freight vehicles.

2. Typical Weather Conditions

Tamil Nadu experiences a tropical climate with temperatures ranging from warm to hot throughout the year. The area is susceptible to the Northeast Monsoon (October to December) which may cause heavy rainfall and local flooding. Thus, between October and December, be cautious of reduced visibility, slippery roads, and potential washouts.

3. Traffic Patterns

Traffic is generally steady with increased congestion during peak hours (8 AM - 10 AM and 5 PM - 7 PM), especially near town centers and market areas like Sullipalayam. The weekend traffic might see an increase due to local activities and markets, requiring cautious navigation through populous areas.

4. Assessment of Road Quality and Infrastructure

MDR854 is a major district road with a mix of well-paved and some less maintained sections. Expect occasional potholes and minimal road signage, particularly in remote sections. Road widening is limited, thereby affecting maneuverability for large vehicles such as trucks.

5. Suggestions for Alternative Routes

In case of emergencies or road blockages, an alternative is via NH544, which is a broader highway but involves a longer detour through major towns. Another option is through SH15 which adds some kilometers but offers better infrastructure.

6. Summary of Local Regulations for Hazardous Material Transport

Transporting hazardous materials requires compliance with state regulations including displaying the proper placards, obtaining necessary permits, and adhering to prescribed routes. Night transport might be restricted in populated or environmentally sensitive areas.

7. Historical Incidents Involving Heavy Vehicles

While the route has seen occasional accidents, particularly during monsoon seasons, major incidents involving hazardous materials have been relatively few. The stretches near marketplaces have reported minor collisions, often due to narrow roads and pedestrian activities.

8. Environmental Considerations and Sensitive Areas

The route passes through several agricultural zones that are sensitive to pollutants. Minimizing leakages and emissions is critical. Noise pollution near villages and market areas should be minimized, especially during early morning and evening hours.

9. Communication Coverage

Cellular network coverage is generally good along MDR854. However, expect occasional dead zones, particularly in remote and hilly segments. Emergency communication devices or two-way radios are advisable.

10. Estimated Emergency Response Times

Emergency services can typically respond between 30 to 45 minutes in populated areas but may take up to 1 hour in remote sections due to road conditions and limited facilities.

11. Overall Summary of Risk Assessment

While the route is feasible for transporting hazardous materials, emphasis on cautious driving is crucial, especially during peak traffic and adverse weather conditions. Regular maintenance checks before departure, compliance with safety regulations, and preparedness with emergency contacts are recommended to mitigate risks.

This analysis aims to provide a comprehensive safety picture for the route, aiding decision-makers and drivers to navigate carefully while transporting heavy or hazardous materials.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.38395, 77.89480	15 KM/Hr
1	Roundabout	High	11.04637, 77.73761	15 KM/Hr
2	Turn	Medium	11.43822, 77.87348	30 KM/Hr
3	Turn	High	11.43968, 77.87345	15 KM/Hr
4	Turn	High	11.44022, 77.87546	15 KM/Hr
5	Turn	High	11.37868, 77.89498	15 KM/Hr
6	Turn	Medium	11.37842, 77.89452	30 KM/Hr
7	Turn	High	11.30859, 77.92918	15 KM/Hr
8	Turn	High	11.24000, 77.87363	15 KM/Hr
9	Turn	Medium	11.24053, 77.86902	30 KM/Hr
10	Turn	Medium	11.24115, 77.86891	30 KM/Hr
11	Turn	Medium	11.24122, 77.86883	30 KM/Hr
12	Turn	High	11.24159, 77.86874	15 KM/Hr
13	Turn	High	11.24170, 77.86842	15 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
14	Turn	High	11.24248, 77.86829	15 KM/Hr
15	Turn	Medium	11.24257, 77.86776	30 KM/Hr
16	Blind Spot	Blind Spot	11.24384, 77.86689	10 KM/Hr
17	Turn	Medium	11.24101, 77.86034	30 KM/Hr
18	Turn	Medium	11.24103, 77.86020	30 KM/Hr
19	Turn	Medium	11.24197, 77.85905	30 KM/Hr
20	Turn	Medium	11.24196, 77.85856	30 KM/Hr
21	Turn	High	11.18856, 77.77110	15 KM/Hr
22	Turn	Medium	11.16404, 77.77379	30 KM/Hr
23	Turn	Medium	11.16377, 77.77421	30 KM/Hr
24	Turn	Medium	11.16354, 77.77435	30 KM/Hr
25	Turn	Medium	11.04718, 77.73742	30 KM/Hr
26	Turn	High	11.04826, 77.74469	15 KM/Hr
27	Blind Spot	Blind Spot	11.04848, 77.74469	10 KM/Hr
28	Turn	High	11.04838, 77.74455	15 KM/Hr
29	Turn	High	11.04821, 77.74461	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

	type	name	coordinates	speed_limit	risk_level
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	Government Hospital, Elumathur	11.18533, 77.772496	30 km/h	Medium
15	hospital	Malar Hospital, Muthur	11.0438049, 77.7361156	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
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: Roundabout
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.04637, 77.73761



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: High
Speed Limit: 15 KM/Hr
Coordinates: 11.30859, 77.92918



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.24000, 77.87363



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.24053, 77.86902



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.24115, 77.86891



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.24122, 77.86883



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.24159, 77.86874



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.24170, 77.86842



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.24248, 77.86829



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.24257, 77.86776



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.24384, 77.86689



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.24101, 77.86034



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.24103, 77.86020



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.24197, 77.85905



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.24196, 77.85856



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.18856, 77.77110



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.16404, 77.77379



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.16377, 77.77421



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.16354, 77.77435



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.04718, 77.73742



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.04826, 77.74469



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Coordinates: 11.04848, 77.74469



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.04838, 77.74455



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.04821, 77.74461
