



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal to BAKYA LAKSHMI 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

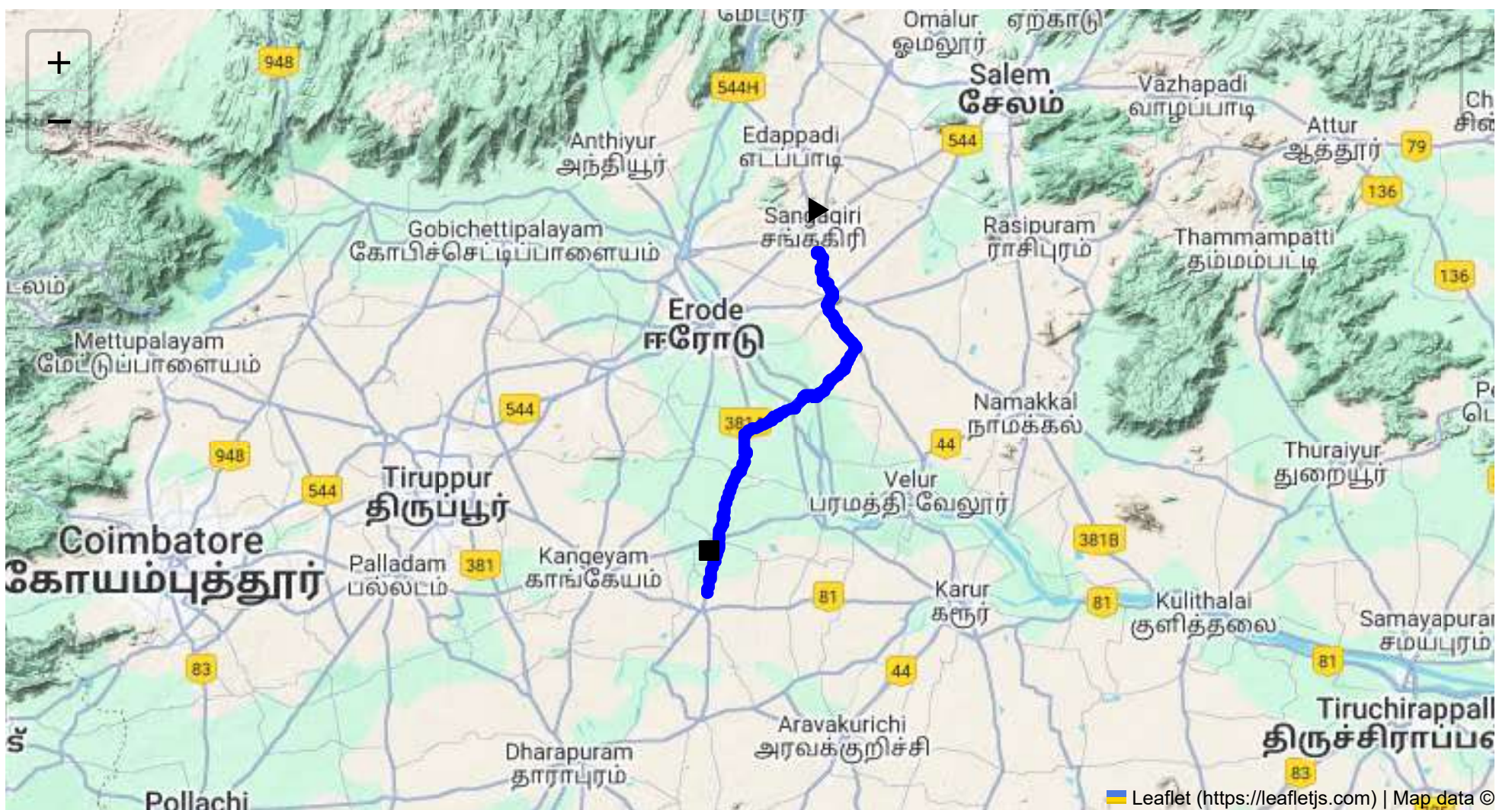
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 67.16 km
Estimated Duration: 1.6 hours
Adjusted Duration (Heavy Vehicle): 1.9 hours
Start: (11.4381, 77.8734)
End: (10.969499, 77.718803)



Welcome to the Journey Risk Management Study

Route Map Overview

The route from Sangagiri to Vellakoil via Sullipalayam spans approximately 67.16 kilometers, primarily along state highways. This route is a mixture of SH 86 and SH 84A, passing through small towns and rural areas. The terrain is relatively flat, with the road running parallel to agricultural lands, small local businesses, and residential zones.

Weather Conditions and Hazards

Typical Weather Conditions:

- **Summer (March to May):** Hot and dry with temperatures reaching up to 40°C.
- **Monsoon (June to September):** Medium to heavy rainfall can lead to slippery roads and reduced visibility.
- **Winter (October to February):** Mild temperatures with minimal precipitation.

Weather-Related Hazards:

- **Monsoon flooding:** Potential for short-term road closures or diversions due to waterlogging.
- **Heat effects during summer:** Increased risk of road degradation and potential for tire blowouts.

Traffic Patterns

Peak Hours:

- **Morning:** 7:00 AM - 9:00 AM
- **Evening:** 5:00 PM - 7:00 PM

Congestion-Prone Areas:

- Entry and exit points near towns such as Sangagiri and Sullipalayam.
- Local markets causing slow-moving traffic, particularly near Sullipalayam.

Road Quality and Infrastructure

- **Overall Condition:** Generally good, with occasional potholes and rough patches.
- **Infrastructure:** Presence of narrow bridges and infrequent traffic signals.
- **Maintenance:** Regular maintenance observed, but localized roadworks might cause temporary diversions.

Emergency Alternative Routes

1. **Via NH544 to Tiruppur:** Provides a major highway alternative, though longer in distance.
2. **Through Namakkal, connecting via SH95:** A viable option if SH 86 is congested or under maintenance.

Local Regulations for Hazardous Materials

- **Speed Limits:** Strict enforcement of 60 km/h for heavy vehicles carrying hazardous materials.
- **Transport Permits:** Mandatory for all hazardous materials.
- **Prohibitions:** Certain materials may be prohibited during festivals or local events.

Historical Incidents

- **Common Issues:** In past, minor incidents have included tire blowouts and minor collisions mostly during monsoon.
- **Notable Incidents:** No significant major hazardous materials incidents reported recently in this route.

Environmental and Sensitive Areas

- **Agricultural Lands:** Careful driving required to prevent spillage and contamination.
- **Water Bodies:** Rivers and local water storage areas should be noted for potential contamination risks.

Communication Coverage

- **Overall Coverage:** Good coverage, with potential dead zones in rural stretches between Sullipalayam and Vellakoil. Notable issues might arise during severe weather.
- **Providers:** Reliance Jio, Airtel, and BSNL have intermittent coverage, especially in remote areas.

Emergency Response Times

- **Estimated Response Times:**
 - **Sangagiri to Sullipalayam:** Approximately 20-30 minutes during peak hours.
 - **Sullipalayam to Vellakoil:** Approximately 40-50 minutes; additional delays during monsoon.

Overall Risk Assessment Summary

This route, while generally safe, does present specific challenges such as weather-induced hazards during monsoon, minor road quality issues, and peak hour congestion. Given the infrequent but notable historical incidents, it remains essential for operators to adhere to local transport regulations, maintain communication with central dispatch, and take precautions during adverse weather conditions. With proper planning and preparedness, especially awareness of alternative routes, the risks can be managed effectively for trucks carrying 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

	Risk Type	Risk Level	Coordinates	Speed Limit
7	Turn	Medium	11.30869, 77.92911	30 KM/Hr
8	Turn	Medium	11.30849, 77.92910	30 KM/Hr
9	Turn	Medium	11.24172, 77.87357	30 KM/Hr
10	Turn	High	11.24000, 77.87363	15 KM/Hr
11	Turn	Medium	11.24053, 77.86902	30 KM/Hr
12	Turn	Medium	11.24115, 77.86891	30 KM/Hr
13	Turn	Medium	11.24122, 77.86883	30 KM/Hr
14	Turn	High	11.24159, 77.86874	15 KM/Hr
15	Turn	High	11.24170, 77.86842	15 KM/Hr
16	Turn	High	11.24248, 77.86829	15 KM/Hr
17	Turn	High	11.24257, 77.86776	15 KM/Hr
18	Blind Spot	Blind Spot	11.24384, 77.86689	10 KM/Hr
19	Turn	Medium	11.24101, 77.86034	30 KM/Hr
20	Turn	Medium	11.24103, 77.86020	30 KM/Hr
21	Turn	Medium	11.24200, 77.85882	30 KM/Hr
22	Turn	Medium	11.24196, 77.85856	30 KM/Hr
23	Turn	High	11.18856, 77.77110	15 KM/Hr
24	Turn	Medium	11.16404, 77.77379	30 KM/Hr
25	Turn	Medium	11.16377, 77.77421	30 KM/Hr
26	Turn	Medium	11.16354, 77.77435	30 KM/Hr
27	Turn	Medium	11.13664, 77.76524	30 KM/Hr
28	Turn	Medium	11.04718, 77.73742	30 KM/Hr
29	Turn	High	11.04515, 77.73621	15 KM/Hr
30	Turn	High	10.99026, 77.72511	15 KM/Hr
31	Turn	High	10.98974, 77.72388	15 KM/Hr
32	Blind Spot	Blind Spot	10.96959, 77.71867	10 KM/Hr

Emergency Locations

	type	name	coordinates	speed_limit	risk_level
0	hospital	Tiruchengode, Goverment Hospital	11.3903328, 77.8920627	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
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	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: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.30869, 77.92911



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.30849, 77.92910



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.24172, 77.87357



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: High

Speed Limit: 15 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: 11.24200, 77.85882



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: 11.13664, 77.76524



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: 11.04515, 77.73621



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.99026, 77.72511



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.98974, 77.72388



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 10.96959, 77.71867
