



JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal To SRI KARTHIKEYA AGENCIES

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

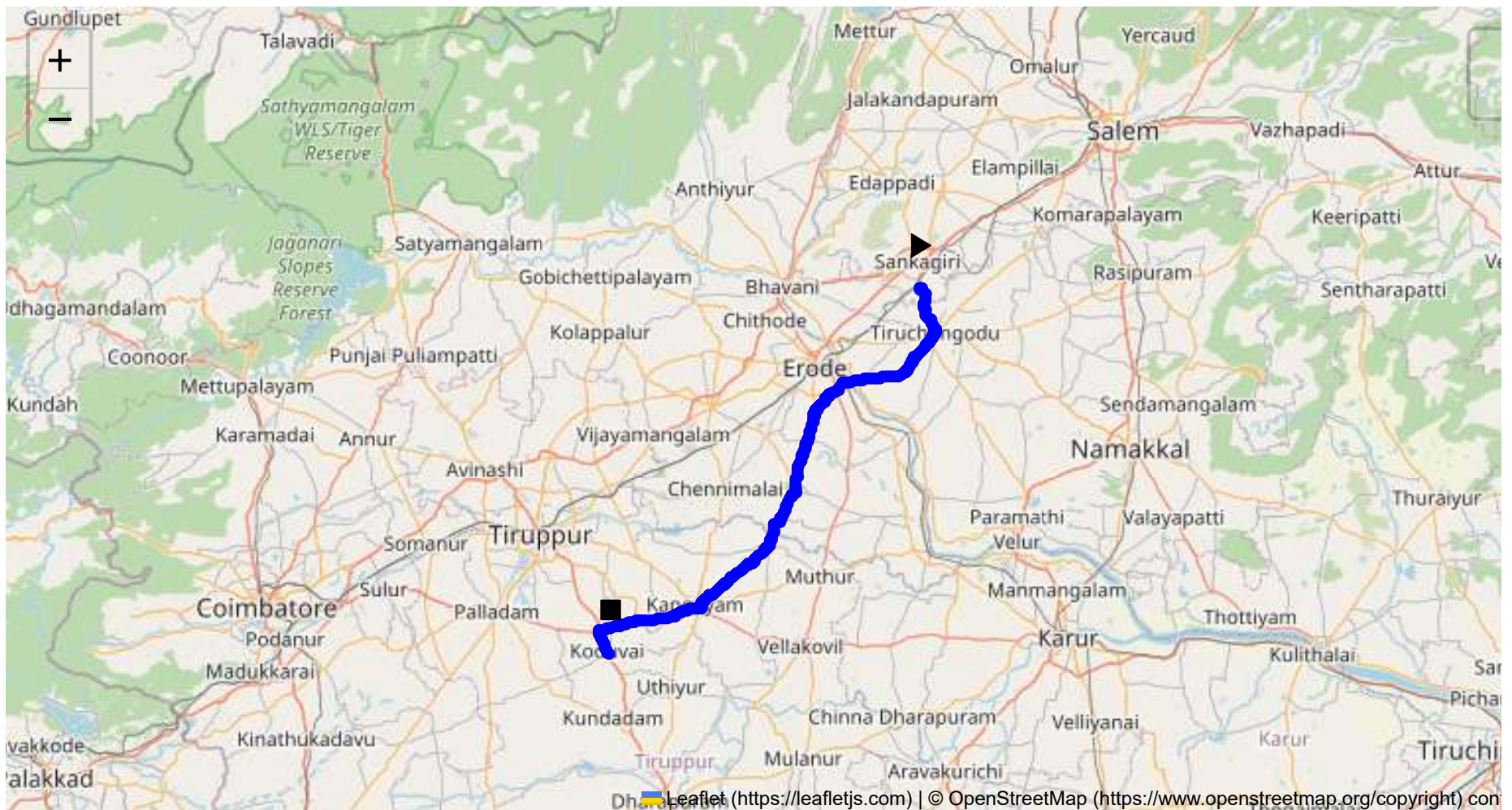
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 89.67 km
Estimated Duration: 2.0 hours
Adjusted Duration (Heavy Vehicle): 2.6 hours
Start: (11.4381, 77.8734)
End: (10.938507, 77.440428)



Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route spans approximately 89.67 kilometers from Sangagiri to Koduvai, passing through Kollapalayam, Kaspapettai, and Kangeyam. It primarily uses regional highways and state roads, known for their mixed urban and rural characteristics.

2. Typical Weather Conditions and Potential Weather-Related Hazards

Tamil Nadu generally experiences tropical weather, with high temperatures and humidity. The area has distinct seasons: the Northeast monsoon (October to December) may pose rainy conditions, leading to waterlogging and slippery roads. During summer (March to June), heat waves might affect driver performance and vehicle conditions.

3. Analysis of Traffic Patterns

Traffic is heavier during peak morning (8:00-10:00 AM) and evening hours (5:00-7:00 PM). Urban areas like Tiruchengode and Kangeyam experience congestion, particularly near market areas. Sundays and public holidays may see reduced traffic.

4. Assessment of Road Quality and Infrastructure

The road quality varies along the route. Major highways typically offer better maintenance and wider lanes. However, rural sections, especially near smaller towns like Kollapalayam, might have potholes and narrower lanes, requiring cautious driving, especially for heavy vehicles.

5. Suggestions for Alternative Routes for Emergencies

In case of route blockages, an alternative route could involve detouring through SH 86 after Tiruchengode towards Erode and then reconnecting to SH 174 via NH 544. This might add to the travel distance but could offer better infrastructure.

6. Summary of Local Regulations Affecting Hazardous Material Transport

Transport of hazardous materials requires adherence to state and national transport regulations, including obtaining the necessary permits. Night travel may be restricted in certain sections due to safety policies. Specific checkpoints may also necessitate additional documentation.

7. Overview of Historical Incidents

There have been periodic accidents involving heavy vehicles, often attributed to speeding or brake failures, particularly during the monsoon. No major incidents involving hazardous materials have been reported recently, but regional accident rates necessitate caution.

8. Environmental Considerations and Sensitive Areas

The route passes through a mix of agricultural and urban areas. Areas surrounding Kangeyam are environmentally sensitive due to agricultural activity. Drivers should be cautious to minimize emissions and noise pollution, especially near residential areas.

9. Analysis of Communication Coverage

Most of the route is well-covered by major telecom providers. However, rural stretches between Kaspapettai and Kangeyam might experience sporadic connectivity issues, potentially impacting GPS and communication.

10. Estimated Emergency Response Times

Emergency response times can vary, with urban areas like Tiruchengode having access to quicker responses (15-30 minutes). Rural areas might experience longer wait times due to distance (up to an hour).

11. (Correction) Overall Summary of Risk Assessment

The route is moderately safe for transporting hazardous materials, provided precautions are observed. Major risks include road conditions, traffic congestion, and weather-related issues. Efficient planning, adherence to regulations, and awareness of emergency procedures can mitigate these risks. Regular

communication checks and contingency planning for rerouting are recommended to manage unforeseen events effectively.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.38395, 77.89480	15 KM/Hr
1	Turn	High	11.43961, 77.87341	15 KM/Hr
2	Turn	High	11.44029, 77.87544	15 KM/Hr
3	Turn	Medium	11.39983, 77.88377	30 KM/Hr
4	Turn	Medium	11.39671, 77.88878	30 KM/Hr
5	Turn	Medium	11.37862, 77.89488	30 KM/Hr
6	Turn	Medium	11.37823, 77.89448	30 KM/Hr
7	Turn	High	11.36604, 77.88887	15 KM/Hr
8	Turn	Medium	11.34105, 77.86426	30 KM/Hr
9	Turn	Medium	11.34074, 77.86356	30 KM/Hr
10	Turn	High	11.33865, 77.86216	15 KM/Hr
11	Turn	Medium	11.33794, 77.86235	30 KM/Hr
12	Turn	Medium	11.31746, 77.84231	30 KM/Hr
13	Turn	Medium	11.30951, 77.77598	30 KM/Hr
14	Turn	High	11.29473, 77.74685	15 KM/Hr
15	Turn	High	11.29128, 77.74656	15 KM/Hr
16	Turn	Medium	11.28859, 77.74323	30 KM/Hr
17	Turn	Medium	11.28588, 77.74287	30 KM/Hr
18	Turn	High	11.27326, 77.72991	15 KM/Hr
19	Turn	High	11.27330, 77.72720	15 KM/Hr
20	Turn	High	11.27319, 77.72706	15 KM/Hr
21	Turn	Medium	11.23073, 77.71802	30 KM/Hr
22	Turn	Medium	11.22367, 77.71384	30 KM/Hr
23	Turn	Medium	11.15952, 77.70067	30 KM/Hr
24	Turn	High	11.15943, 77.70068	15 KM/Hr
25	Turn	Medium	11.11730, 77.67189	30 KM/Hr
26	Turn	Medium	11.10466, 77.67057	30 KM/Hr
27	Turn	Medium	11.09500, 77.66607	30 KM/Hr
28	Turn	Medium	11.08712, 77.66422	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
29	Turn	Medium	11.08264, 77.65828	30 KM/Hr
30	Turn	Medium	11.08104, 77.65762	30 KM/Hr
31	Turn	High	11.06185, 77.63934	15 KM/Hr
32	Turn	High	11.00840, 77.56963	15 KM/Hr
33	Blind Spot	Blind Spot	11.00074, 77.56886	10 KM/Hr
34	Turn	High	11.00171, 77.56267	15 KM/Hr
35	Turn	Medium	11.00168, 77.56265	30 KM/Hr
36	Turn	High	10.97027, 77.42726	15 KM/Hr
37	Turn	Medium	10.94381, 77.43639	30 KM/Hr
38	Turn	Medium	10.94243, 77.43815	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	Krishna Hospital, Namakkal	11.3754811, 77.8931817	30 km/h	Medium
10	hospital	Tirukumaran Hospitals	11.3782118, 77.8914933	30 km/h	Medium
13	hospital	Government Hospital	11.2343326, 77.719226	30 km/h	Medium
16	police	Kangeyam Police Station	11.0011411, 77.562688	30 km/h	Medium
17	hospital	J K Hospital	11.0042298, 77.5603345	30 km/h	Medium
18	hospital	Government Hospital, Koduvai	10.9421891, 77.438567	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
14	college	Government Arts and Science College, Kangeyam	11.0626738, 77.636227	30 km/h	Medium
15	school	Carmel Girls Higher Secondary School	11.0009019, 77.5710182	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: 11.44029, 77.87544



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.39983, 77.88377



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.39671, 77.88878



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.37862, 77.89488



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.37823, 77.89448



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.36604, 77.88887



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.34105, 77.86426



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.34074, 77.86356



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.33865, 77.86216



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.33794, 77.86235



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.31746, 77.84231



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.30951, 77.77598



Risk Type: Turn
Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.29473, 77.74685



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.29128, 77.74656



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.28859, 77.74323



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.28588, 77.74287



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.27326, 77.72991



Risk Type: Turn
Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.27330, 77.72720



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.27319, 77.72706



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.23073, 77.71802



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.22367, 77.71384



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.15952, 77.70067



Risk Type: Turn
Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.15943, 77.70068



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.11730, 77.67189



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.10466, 77.67057



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.09500, 77.66607



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.08712, 77.66422



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.08264, 77.65828



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.08104, 77.65762



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.06185, 77.63934



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.00840, 77.56963



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.00074, 77.56886



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.00171, 77.56267



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.00168, 77.56265



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.97027, 77.42726



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.94381, 77.43639



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.94243, 77.43815
