



JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal To SMS 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

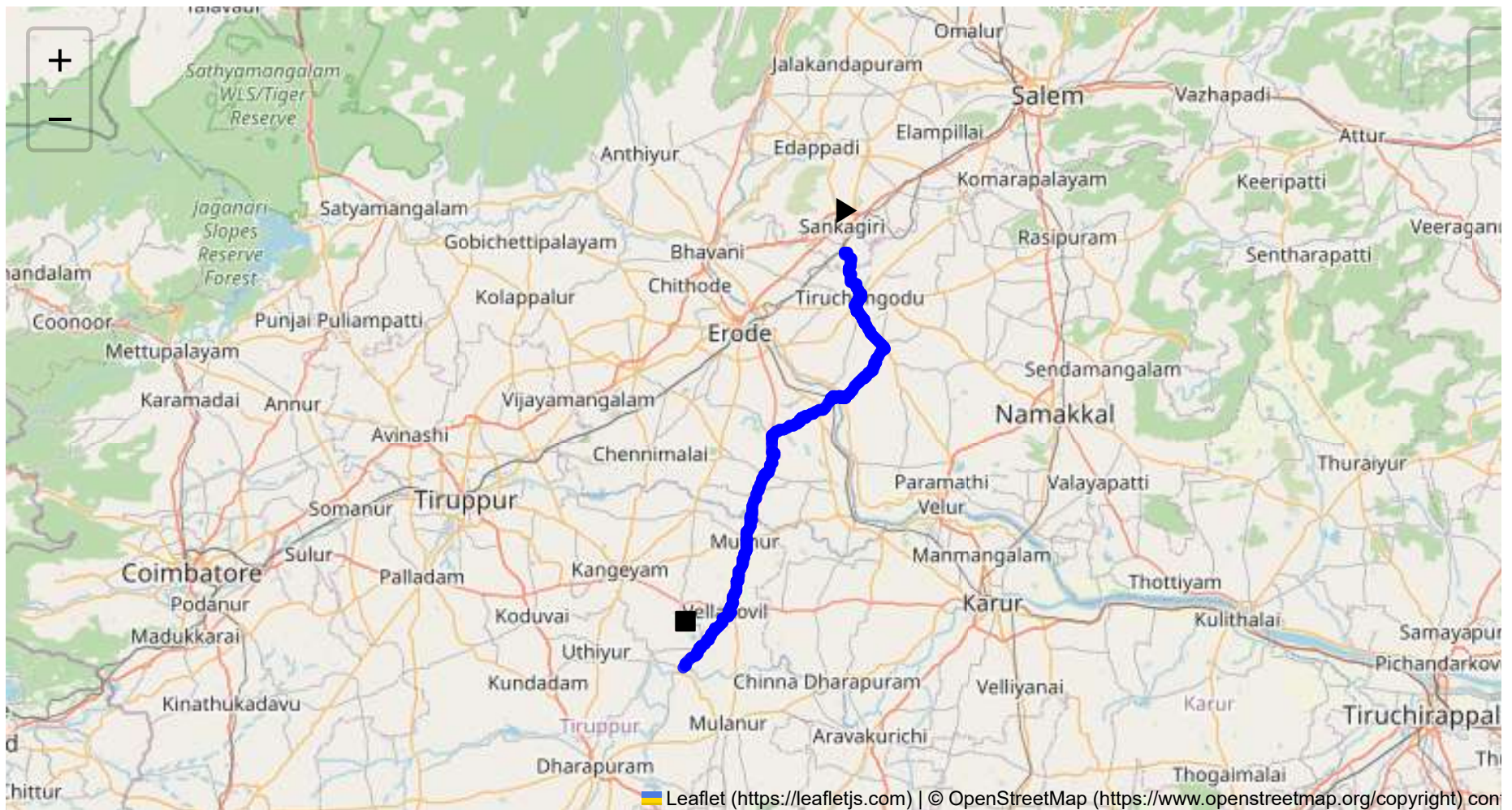
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 80.98 km
Estimated Duration: 1.9 hours
Adjusted Duration (Heavy Vehicle): 2.3 hours
Start: (11.4381, 77.8734)
End: (10.87253, 77.649486)



Welcome to the Journey Risk Management Study

Route Overview

The route from Sangagiri to Vellakoil covers approximately 81 kilometers, primarily along rural and semi-urban roads. It includes a combination of state highways (SH 86) and smaller connecting roads. This journey typically takes around 1.86 hours for heavy vehicles carrying hazardous materials.

Typical Weather Conditions

The region typically experiences a tropical climate. The months from March to June are hot and dry, while the monsoon season from July to September may result in heavy rainfall, potentially causing waterlogged and slippery roads. Thunderstorms are also possible during this time. Winter months from October to February are relatively cooler and ideal for travel, though occasional fog in early mornings may reduce visibility.

Traffic Patterns and Congestion

Peak traffic hours are generally in the morning between 8-10 AM and the evening from 5-8 PM. Traffic congestion is likely near towns like Sangagiri and along SH 86. The rural connecting roads experience minimal traffic, but occasional agricultural vehicles may slow traffic flow.

Road Quality and Infrastructure Assessment

The state highway SH 86 is generally well-maintained, but some connecting rural roads may have uneven surfaces and be narrower, with potential potholes or shoulder drop-offs. Road signage varies in quality; drivers should be cautious and watch for local information.

Suggestions for Alternative Routes

In case of roadblocks or adverse conditions on SH 86, consider using NH544 to the west or SH21 to the south as potential detours, monitoring local advisories for real-time updates on road conditions.

Local Regulations for Hazardous Material Transport

Transport of hazardous materials is regulated under local traffic laws, requiring permits and adherence to specified time windows, typically avoiding congested areas during peak hours. Check for local updates before departure.

Historical Incidents

While specific historical incidents on the mentioned route involving hazardous materials are sparse, Tamil Nadu has seen incidents involving chemical spills and vehicle overturns. Awareness of sharp turns and vehicle securement practices is critical.

Environmental Considerations

The route passes through agricultural areas with sensitive ecosystems that can be impacted by chemical spills. Drivers should ensure proper containment measures. Additionally, avoid idling near farming zones to minimize air pollution.

Communication Coverage

Most of the route has adequate mobile network coverage. However, certain rural and less developed segments might experience weak signals or short dead zones. It is advisable for drivers to carry emergency communication tools.

Emergency Response Times

Response times vary: in urban areas like Sangagiri, emergency services can arrive within 15-20 minutes, whereas rural segments might see delays up to 45-60 minutes due to distance and road access.

Overall Summary

This route involves moderate risk for transporting hazardous materials, mainly due to weather unpredictability during monsoon, potential for road congestion near urban centers, and variable road conditions on rural segments. Adequate preparation, including route planning and emergency preparedness, is vital to mitigate risks. Regular communication checks and adherence to local regulations are crucial. Adjust travel time estimates to include potential delays, prioritizing safety above haste.

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	High	11.43961, 77.87341	15 KM/Hr
3	Turn	High	11.44029, 77.87544	15 KM/Hr
4	Turn	Medium	11.39671, 77.88878	30 KM/Hr
5	Turn	High	11.37862, 77.89488	15 KM/Hr
6	Turn	High	11.37850, 77.89453	15 KM/Hr
7	Turn	Medium	11.34151, 77.90137	30 KM/Hr
8	Turn	High	11.30859, 77.92918	15 KM/Hr
9	Turn	Medium	11.24421, 77.87541	30 KM/Hr
10	Turn	Medium	11.24192, 77.87363	30 KM/Hr
11	Turn	High	11.24001, 77.87368	15 KM/Hr
12	Turn	High	11.24061, 77.86899	15 KM/Hr
13	Turn	High	11.24157, 77.86876	15 KM/Hr
14	Turn	High	11.24167, 77.86843	15 KM/Hr
15	Turn	High	11.24242, 77.86833	15 KM/Hr
16	Turn	Medium	11.24252, 77.86780	30 KM/Hr
17	Blind Spot	Blind Spot	11.24384, 77.86689	10 KM/Hr
18	Turn	High	11.24101, 77.86023	15 KM/Hr
19	Turn	Medium	11.24198, 77.85893	30 KM/Hr
20	Turn	Medium	11.24198, 77.85860	30 KM/Hr
21	Turn	High	11.18850, 77.77113	15 KM/Hr
22	Turn	Medium	11.16450, 77.77357	30 KM/Hr
23	Turn	Medium	11.16407, 77.77376	30 KM/Hr
24	Turn	Medium	11.16357, 77.77434	30 KM/Hr
25	Turn	High	11.13667, 77.76526	15 KM/Hr
26	Turn	Medium	11.04703, 77.73745	30 KM/Hr
27	Turn	Medium	11.04528, 77.73627	30 KM/Hr
28	Turn	High	10.99029, 77.72513	15 KM/Hr
29	Turn	Medium	10.98961, 77.72379	30 KM/Hr
30	Turn	High	10.94597, 77.71319	15 KM/Hr
31	Turn	High	10.94582, 77.71257	15 KM/Hr
32	Turn	Medium	10.93825, 77.70342	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	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
16	hospital	SIBI Hospital, Vellakoil	10.9569141, 77.7160216	30 km/h	Medium
17	hospital	KG Hospital, Vellakoil	10.9511, 77.714116	30 km/h	Medium
18	hospital	Vellakoil Government Hospital	10.9410661, 77.7110372	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: 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: 11.44029, 77.87544



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.39671, 77.88878



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.37862, 77.89488



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.37850, 77.89453



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.34151, 77.90137



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.30859, 77.92918



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.24421, 77.87541



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.24192, 77.87363



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.24001, 77.87368



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.24061, 77.86899



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.24157, 77.86876



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.24167, 77.86843



Risk Type: Turn
Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.24242, 77.86833



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.24252, 77.86780



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.24384, 77.86689



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.24101, 77.86023



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.24198, 77.85893



Risk Type: Turn
Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.24198, 77.85860



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.18850, 77.77113



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.16450, 77.77357



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.16407, 77.77376



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.16357, 77.77434



Risk Type: Turn
Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.13667, 77.76526



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.04703, 77.73745



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.04528, 77.73627



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.99029, 77.72513



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.98961, 77.72379



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.94597, 77.71319



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.94582, 77.71257



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.93825, 77.70342
