



JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal To SRI MAHA 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

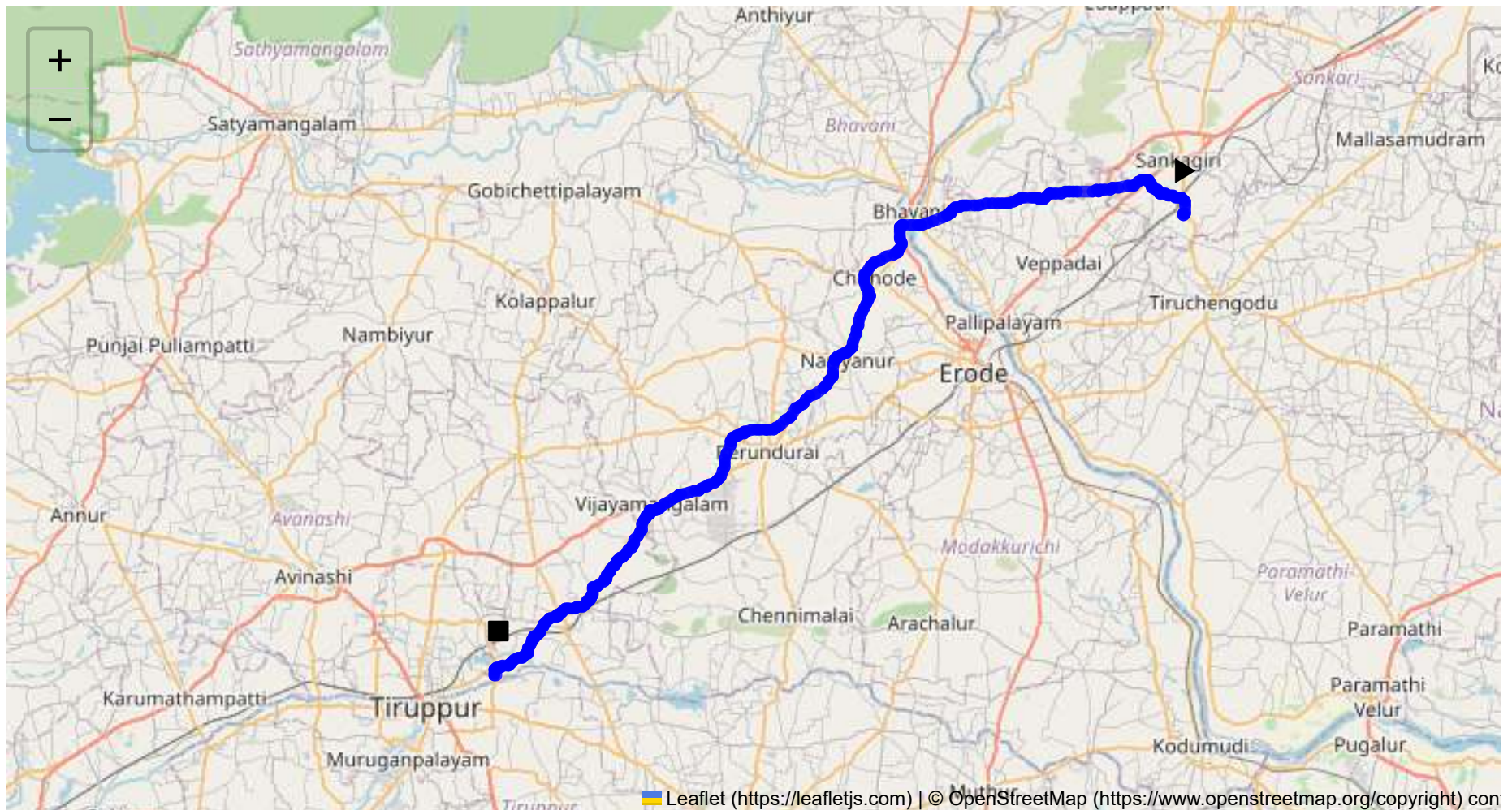
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 75.96 km
Estimated Duration: 1.5 hours
Adjusted Duration (Heavy Vehicle): 1.9 hours
Start: (11.4381, 77.8734)
End: (11.123494, 77.394149)



Welcome to the Journey Risk Management Study

- Overview of the Route Map:** The route spans approximately 76 kilometers from Sangagiri to Koolipalayam, passing through key points such as SH 79A and NH544. It includes a mix of state highways and national highways, often characterized by considerable truck and commercial vehicle traffic.
- Typical Weather Conditions and Potential Weather-Related Hazards:** The region usually experiences hot and dry conditions, especially from March to June. The monsoon season, from June to September, can bring heavy rains that may result in waterlogging or flooding, particularly in low-lying areas, which could create hazardous driving conditions.
- Analysis of Traffic Patterns:** Traffic congestion is often observed in the morning (7–10 AM) and evening (5–8 PM) hours. The NH544 is a major national highway frequently used by commercial transport, and Sangagiri is a known bottleneck due to its commercial activity. The Bhavani area may also see congestion due to local markets and intercity buses.
- Assessment of Road Quality and Infrastructure:** National highways like NH544 are generally well-maintained, though local roads, especially around Bhavani, may have uneven surfaces and smaller lanes that require cautious driving, particularly for heavy vehicles. Watch for roadwork or potholes, primarily after the monsoon season.
- Suggestions for Alternative Routes for Emergencies:** Possible alternatives include using NH44 via Salem, which is slightly longer but provides a bypass around potential congestion zones. Local

connection roads can divert through smaller towns like Thiruchengode, though these may lack proper facilities for heavy vehicles.

- 6. **Summary of Local Regulations Affecting Hazardous Material Transport:** Compliance with state transport regulations for hazardous materials is mandatory. This includes appropriate labeling, documentation, and adherence to designated travel times to avoid peak urban traffic zones. Overnight travel is restricted in some areas for safety reasons.
- 7. **Overview of Historical Incidents:** Occasional accidents involving heavy vehicles have been reported, often attributed to driver fatigue or mechanical failure. The NH544 is noted for past incidents involving tanker trucks, often due to sudden braking by smaller vehicles ahead.
- 8. **Environmental Considerations and Sensitive Areas:** The route passes close to agricultural zones and water bodies, where spills could cause significant environmental impact. Drivers should be aware of wildlife crossings and ensure no contaminating materials are discharged.
- 9. **Analysis of Communication Coverage:** Mobile network coverage is generally good along NH544, though some rural stretches, especially near Bhavani, might experience weak signals or dead zones. Drivers should ensure communication equipment is functional and pre-set for emergencies.
- 10. **Estimated Emergency Response Times:** Emergency response times may vary from 15 to 45 minutes depending on the segment. Urban areas with emergency services are quicker to respond, while rural areas might have delays due to distance or response resource availability.
- 11. **Overall Summary of Risk Assessment:** While the route is well-connected by major highways, drivers should remain aware of potential weather impacts during the monsoon, traffic congestion during peak periods, and the condition of local roads. Proper adherence to regulations and emergency preparedness is essential due to the proximity of sensitive environmental zones. Communication readiness and awareness of alternative routes further mitigate the risks associated with this journey.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Turn	High	11.43961, 77.87341	15 KM/Hr
1	Turn	High	11.44029, 77.87544	15 KM/Hr
2	Turn	High	11.44893, 77.87413	15 KM/Hr
3	Turn	Medium	11.45127, 77.86734	30 KM/Hr
4	Turn	High	11.45350, 77.85700	15 KM/Hr
5	Turn	Medium	11.45845, 77.85141	30 KM/Hr
6	Turn	Medium	11.45889, 77.85136	30 KM/Hr
7	Turn	High	11.46303, 77.84945	15 KM/Hr
8	Turn	Medium	11.46317, 77.84906	30 KM/Hr
9	Turn	Medium	11.29141, 77.58266	30 KM/Hr
10	Turn	Medium	11.23724, 77.50686	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
11	Turn	High	11.23704, 77.50676	15 KM/Hr
12	Turn	Medium	11.23685, 77.50236	30 KM/Hr
13	Turn	High	11.23675, 77.50215	15 KM/Hr
14	Turn	Medium	11.23622, 77.50210	30 KM/Hr
15	Turn	Medium	11.23396, 77.50105	30 KM/Hr
16	Turn	Medium	11.23329, 77.49966	30 KM/Hr
17	Turn	Medium	11.18329, 77.46249	30 KM/Hr
18	Turn	Medium	11.17851, 77.46169	30 KM/Hr
19	Turn	Medium	11.17497, 77.45961	30 KM/Hr
20	Turn	Medium	11.17383, 77.45750	30 KM/Hr
21	Turn	Medium	11.17133, 77.45590	30 KM/Hr
22	Turn	Medium	11.16959, 77.44438	30 KM/Hr
23	Turn	Medium	11.16950, 77.44376	30 KM/Hr
24	Turn	Medium	11.16381, 77.43700	30 KM/Hr
25	Turn	Medium	11.16259, 77.43103	30 KM/Hr
26	Turn	Medium	11.15161, 77.42320	30 KM/Hr
27	Turn	Medium	11.14985, 77.42215	30 KM/Hr
28	Turn	Medium	11.14892, 77.42022	30 KM/Hr
29	Turn	Medium	11.13578, 77.41299	30 KM/Hr
30	Turn	Medium	11.13007, 77.40331	30 KM/Hr
31	Turn	High	11.12775, 77.39347	15 KM/Hr
32	Blind Spot	Blind Spot	11.12333, 77.39381	10 KM/Hr

Emergency Locations

	type	name	coordinates	speed_limit	risk_level
3	hospital	Government Hospital	11.4525596, 77.7749426	30 km/h	Medium
4	hospital	Dhanvantri Multi Speciality Hospital	11.451362, 77.766602	30 km/h	Medium
5	hospital	Dhanvanthri Hospital	11.4496712, 77.7593772	30 km/h	Medium
6	hospital	J.K.K. Trust Hospital	11.4445841, 77.7307962	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
7	hospital	Shri Sathyanarayana Hospital	11.4291297, 77.6913408	30 km/h	Medium
9	hospital	Thanish Siddha Hospital	11.430003, 77.674964	30 km/h	Medium
10	hospital	Sri Kaalangi Siddhar Mooligai Vaithiya Nilayam	11.432369, 77.674894	30 km/h	Medium
11	clinic	G.K Clinic	11.4297244, 77.6749715	30 km/h	Medium
12	clinic	Harshitha Clinic	11.4313207, 77.674718	30 km/h	Medium
13	clinic	Erode Cancer Centre	11.3732, 77.649152	30 km/h	Medium
15	hospital	Irt Hospital	11.2803603, 77.5644118	30 km/h	Medium
17	hospital	Gen Siddha Hospital	11.2375033, 77.5059797	30 km/h	Medium
18	hospital	Vijayamangalm Government Hospital	11.2382827, 77.501687	30 km/h	Medium
20	hospital	Aravind Eye Care Hospital	11.1729469, 77.4574467	30 km/h	Medium
21	clinic	Sri Maha Annai Clinic	11.1707162, 77.4536498	30 km/h	Medium
22	hospital	Ram Doctor Hospital	11.1709391, 77.4532808	30 km/h	Medium
23	clinic	Kumaran Clinic	11.1697553, 77.451543	30 km/h	Medium
24	hospital	Sri Aravindhar Hospital	11.1697756, 77.4448276	30 km/h	Medium
25	clinic	Dr. Raja Clinic	11.1278464, 77.3927768	30 km/h	Medium

Crowded Spots

	type	name	coordinates	speed_limit	risk_level
0	school	KRP Matric. Hr. Sec School	11.4546193, 77.8142445	30 km/h	Medium
1	college	Vivekanandha Engineering College	11.4589312, 77.7899284	30 km/h	Medium
2	marketplace	Monday market	11.452863, 77.775989	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
8	school	SSM Matriculation Higher Secondary School	11.4321653, 77.6880046	30 km/h	Medium
14	college	Government polytechnic college	11.2907053, 77.5698726	30 km/h	Medium
16	school	Bharathi Matriculation School	11.2494613, 77.5307028	30 km/h	Medium
19	college	Sasurie Engineering College	11.2171482, 77.4898552	30 km/h	Medium

Route Photos of Risky Spots



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.44029, 77.87544



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.44893, 77.87413



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.45127, 77.86734



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.45350, 77.85700



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.45845, 77.85141



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.45889, 77.85136



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.46303, 77.84945



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.46317, 77.84906



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.29141, 77.58266



Risk Type: Turn
Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.23724, 77.50686



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.23704, 77.50676



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.23685, 77.50236



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.23675, 77.50215



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.23622, 77.50210



Risk Type: Turn
Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.23396, 77.50105



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.23329, 77.49966



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.18329, 77.46249



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.17851, 77.46169



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.17497, 77.45961



Risk Type: Turn
Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.17383, 77.45750



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.17133, 77.45590



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.16959, 77.44438



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.16950, 77.44376



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.16381, 77.43700



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.16259, 77.43103



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.15161, 77.42320



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.14985, 77.42215



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.14892, 77.42022



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.13578, 77.41299



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.13007, 77.40331



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.12775, 77.39347



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.12333, 77.39381

