



JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal To SREE SAI PETROLEUM AGENCY

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

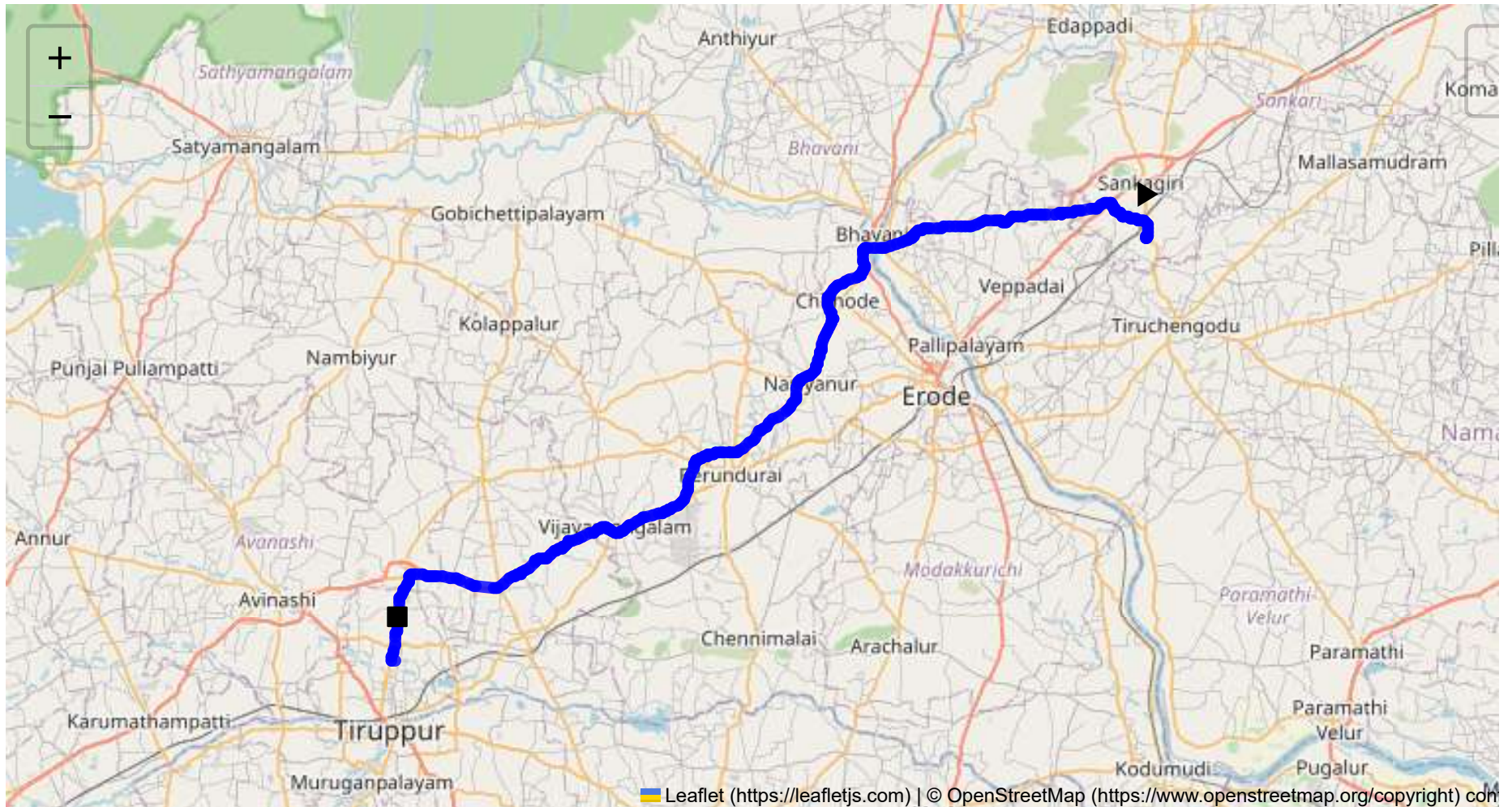
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 81.38 km
Estimated Duration: 1.6 hours
Adjusted Duration (Heavy Vehicle): 2.0 hours
Start: (11.4381, 77.8734)
End: (11.148644, 77.349335)



Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route from Sangagiri to Tiruppur via several key points covers approximately 81.38 kilometers, taking about 1.59 hours for heavy vehicles. The journey generally involves travelling through Tamil Nadu's State Highways and local roads, with a mixture of rural and semi-urban areas. The route passes through important junctions like Bhavani and Thiruvengadam Palayam, eventually leading to Tiruppur.

2. Typical Weather Conditions and Potential Weather-Related Hazards

Tamil Nadu experiences a tropical climate with high humidity. The route is likely to encounter:

- **Summer (March to June):** High temperatures may lead to road surface damage and increased vehicle load stress.
- **Monsoon (July to September):** Heavy rainfall can cause waterlogging and reduced visibility, especially in low-lying areas.
- **Winter (October to February):** Mild temperatures but occasional fog in the early mornings can affect visibility.

3. Analysis of Traffic Patterns

- **Peak Hours:** Morning (7:30-9:30 AM) and evening (5:00-7:30 PM) witness significant traffic due to local commuting. Especially near towns like Bhavani and Tiruppur.
- **Congestion-Prone Areas:** Market areas, junctions, and narrow roads, particularly entering and exiting towns.

4. Assessment of Road Quality and Infrastructure

- **Sangagiri to Bhavani:** Generally good road conditions, though some stretches may have potholes and uneven surfaces.
- **Bhavani to Thiruvengadam Palayam:** Roads are decent but watch for narrow sections and local traffic.
- **Approaching Tiruppur:** Better infrastructure with wider roads, though urban congestion is prominent.

5. Suggestions for Alternative Routes for Emergencies

- **From Bhavani to Tiruppur:** An alternative is via NH544 through Perumanallur, although it could be longer, it is a high-speed corridor.

6. Summary of Local Regulations Affecting Hazardous Material Transport

Tamil Nadu mandates adherence to national guidelines for hazardous material transport, including:

- Permits for transportation
- Adherence to safety protocols
- Specific routes designated for hazardous cargo to avoid sensitive zones

7. Overview of Historical Incidents Involving Heavy Vehicles or Hazardous Materials

Past incidents have involved overturned lorries and spillage in monsoon due to slippery roads. Bhavani district has recorded significant accidents due to road design flaws in certain spots.

8. Environmental Considerations and Sensitive Areas

- Passing through rural and agricultural zones requires precaution to prevent any spillage.
- Tiruppur is a key textile zone, so adherence to environmental norms is critical.

9. Analysis of Communication Coverage

- **Coverage:** Generally good, but expect potential dead zones in rural stretches between towns.
- **Major Dead Zones:** Predominantly in interior village paths and minor roads.

10. Estimated Emergency Response Times

- **Sangagiri to Bhavani:** Approximately 20-30 minutes, with local services available.
- **Bhavani to Tiruppur:** 30-45 minutes especially during off-peak hours.

12. Overall Summary of Risk Assessment

The route presents moderate risks, primarily due to weather during monsoon, traffic congestion near urban areas, and road conditions. It is crucial to maintain communication tools, follow restricted speeds, and adhere to transport regulations rigorously. Emergency response, while competent, should be prepared for quick mobilization. Regular route assessment and monitoring of traffic and weather conditions can further mitigate potential risks.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Turn	Medium	11.43822, 77.87348	30 KM/Hr
1	Turn	High	11.43961, 77.87341	15 KM/Hr
2	Turn	High	11.44029, 77.87544	15 KM/Hr
3	Turn	High	11.44893, 77.87413	15 KM/Hr
4	Turn	Medium	11.45127, 77.86734	30 KM/Hr
5	Turn	Medium	11.45354, 77.85798	30 KM/Hr
6	Turn	High	11.45350, 77.85700	15 KM/Hr
7	Turn	Medium	11.45845, 77.85141	30 KM/Hr
8	Turn	High	11.46303, 77.84945	15 KM/Hr
9	Turn	Medium	11.46317, 77.84906	30 KM/Hr
10	Turn	Medium	11.29141, 77.58266	30 KM/Hr
11	Turn	High	11.20728, 77.35914	15 KM/Hr
12	Turn	Medium	11.20246, 77.35895	30 KM/Hr
13	Blind Spot	Blind Spot	11.14829, 77.34631	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

	type	name	coordinates	speed_limit	risk_level
6	hospital	J.K.K. Trust Hospital	11.4445841, 77.7307962	30 km/h	Medium
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
19	hospital	Dr. N Viswanathan Hospital	11.2412783, 77.5005502	30 km/h	Medium
20	clinic	P.M. Clinic	11.2281078, 77.4647296	30 km/h	Medium
22	hospital	Sri Renu Hospital	11.1990225, 77.4219937	30 km/h	Medium
23	hospital	Akshitha Hospital- Perumanallur	11.2050424, 77.3584876	30 km/h	Medium
25	hospital	Malarpriya Medical Centre - Tiruppur	11.16584, 77.351437	30 km/h	Medium
26	hospital	Jacob Hospital	11.1645096, 77.3496992	30 km/h	Medium
27	clinic	Sri Dhanvanthri Clinic	11.160539, 77.349578	30 km/h	Medium
28	hospital	Revathi Charity Trust Hospital	11.1588612, 77.34966	30 km/h	Medium
29	hospital	Sree Saran Medical Centre	11.1488, 77.346725	30 km/h	Medium
30	hospital	Kadhasamy Hospital	11.148674, 77.350663	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
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
21	marketplace	Weekly Market (sandhai)	11.2287229, 77.4646676	30 km/h	Medium
24	school	Sharadha Vidhyalaya	11.1690521, 77.3485671	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: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.45354, 77.85798



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: 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: High

Speed Limit: 15 KM/Hr

Coordinates: 11.20728, 77.35914



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.20246, 77.35895



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.14829, 77.34631
