



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal to ASHWIN AUTOMOBILES

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

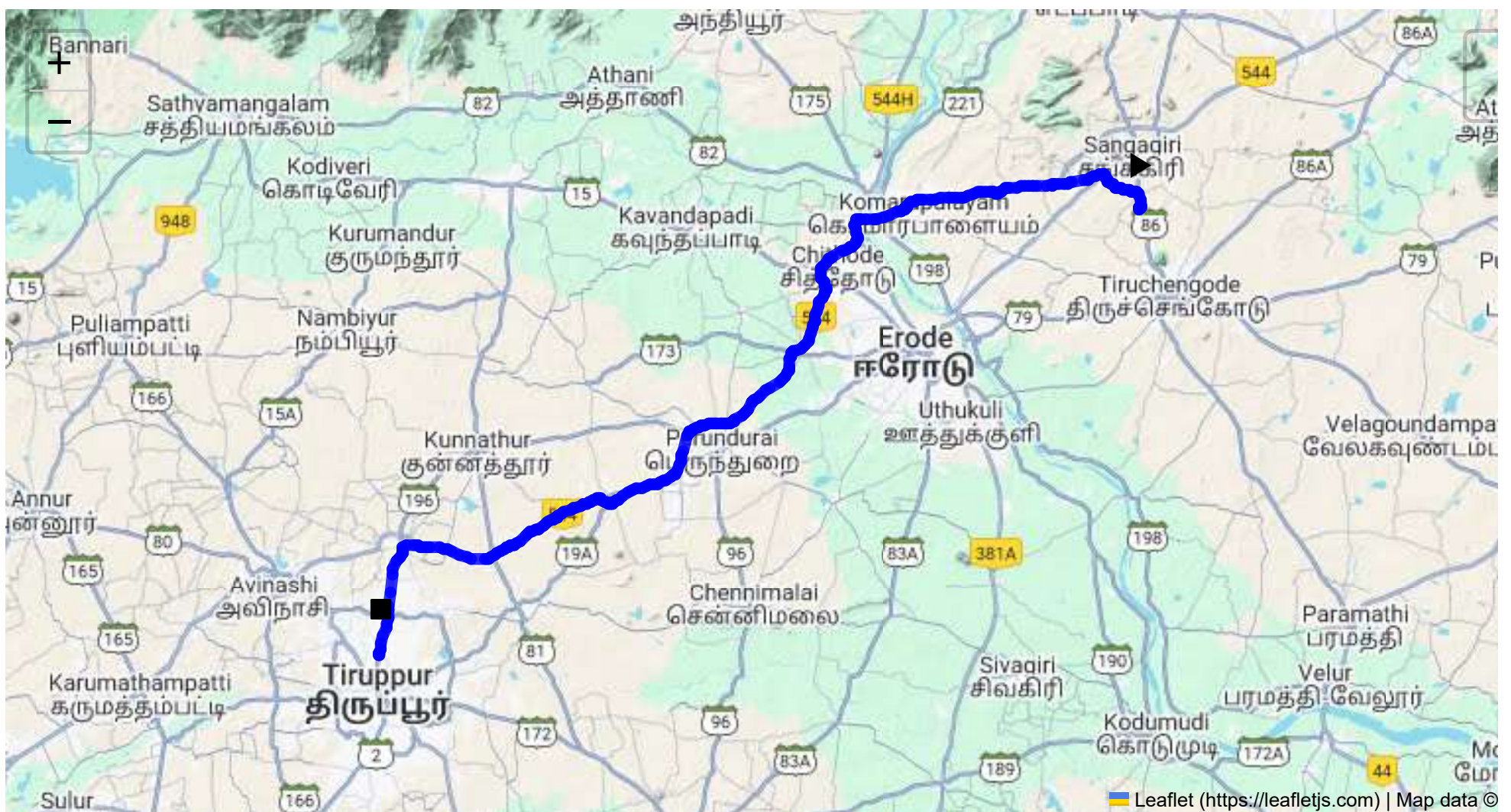
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 82.98 km
Estimated Duration: 1.6 hours
Adjusted Duration (Heavy Vehicle): 2.1 hours
Start: (11.4381, 77.8734)
End: (11.134269, 77.342299)



Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route from Sangagiri to Tiruppur covers approximately 83 kilometers and primarily follows NH 544. Starting from Sangagiri, you head southeast, passing through major towns such as Erode and Perundurai before reaching Tiruppur.

2. Typical Weather Conditions and Potential Weather-Related Hazards

Tamil Nadu experiences a tropical climate, with temperatures often high throughout the year. The monsoon season, particularly from October to December, can introduce heavy rainfall, potentially causing delays due to waterlogged roads or reduced visibility. Pre-monsoon showers from April to June can also impact road safety, especially in low-lying areas.

3. Analysis of Traffic Patterns

Traffic congestion is common near urban areas such as Erode and Tiruppur, especially during peak morning (8-10 AM) and evening (5-8 PM) hours. NH 544 generally has high traffic volume, including a significant number of heavy vehicles. Pay special attention near toll plazas and junctions.

4. Assessment of Road Quality and Infrastructure

The NH 544 is generally well-maintained, but periodic patches may have potholes or uneven surfaces. From Erode to Tiruppur, some local roads may be narrower, requiring caution, especially in rural areas where signage might be lacking or in poor condition.

5. Suggestions for Alternative Routes for Emergencies

- **Alternative Route 1:** From Sangagiri, consider taking the state highway SH 86 towards Gobichettipalayam, then connecting to SH 81 towards Tiruppur. This route might be less congested but requires careful navigation due to narrower roads.
- **Alternative Route 2:** Another alternative is NH 79 from Sangagiri to Salem, then on to NH 544 via the Salem bypass. This is slightly longer but can be a valuable detour in the event of severe congestion or roadblocks.

6. Summary of Local Regulations Affecting Hazardous Material Transport

Transport of hazardous material is subject to regulations under the Motor Vehicles Act and rules regarding classification, packaging, and handling. Adherence to specific transport timings and obtaining the relevant permits is mandatory. Each vehicle must carry necessary documentation and display warning placards.

7. Overview of Historical Incidents

While comprehensive historical data is not available, incidents involving heavy vehicles are not uncommon on NH 544, primarily due to congestion and driver fatigue. Historical accidents highlight the importance of adhering to speed limits and maintaining safe driving practices, especially during poor weather conditions.

8. Environmental Considerations and Sensitive Areas

Drivers passing through agricultural zones should be cautious of local wildlife crossings, tractor movement, and pedestrian traffic. The region includes some ecologically sensitive zones, so minimizing noise and light pollution is recommended.

9. Analysis of Communication Coverage

The route generally has good mobile coverage, but there may be temporary dead zones in rural stretches, particularly around forested or hilly areas. Ensure communication devices are charged, and have provider-specific apps to inform about any network outages.

10. Estimated Emergency Response Times

- Sangagiri to Erode:** Roughly 20-30 minutes for emergency services because of proximity to urban areas.
- Erode to Perundurai:** 30-45 minutes, as the area is moderately urban.
- Perundurai to Tiruppur:** 20-35 minutes, with faster response expected closer to Tiruppur due to enhanced urban infrastructure.

12. Overall Summary of Risk Assessment

The assessed route is generally safe for transporting hazardous materials but requires careful attention to traffic patterns, especially during peak hours, and adverse weather conditions. Preparation for potential delays in communication is recommended, and emergency routes should be pre-marked. Drivers should be thoroughly familiar with all local transportation regulations and ensure their vehicles comply with safety standards. In summary, proper planning and strict adherence to safety protocols ensure the relatively safe transport of hazardous materials along this route.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	U-Turn	High	11.1328729, 77.3421741	10 KM/Hr
1	Turn	Medium	11.43822, 77.87348	30 KM/Hr
2	Turn	High	11.43968, 77.87345	15 KM/Hr
3	Turn	High	11.44029, 77.87544	15 KM/Hr
4	Turn	High	11.44898, 77.87410	15 KM/Hr
5	Turn	Medium	11.45357, 77.85789	30 KM/Hr
6	Turn	High	11.45352, 77.85698	15 KM/Hr
7	Turn	Medium	11.45847, 77.85140	30 KM/Hr
8	Turn	Medium	11.45898, 77.85135	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
9	Turn	Medium	11.46303, 77.84945	30 KM/Hr
10	Turn	Medium	11.46314, 77.84928	30 KM/Hr
11	Turn	Medium	11.45509, 77.81383	30 KM/Hr
12	Turn	High	11.20728, 77.35914	15 KM/Hr
13	Turn	Medium	11.20246, 77.35895	30 KM/Hr
14	Blind Spot	Blind Spot	11.13289, 77.34212	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
8	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	clinic	Harshitha Clinic	11.4313207, 77.674718	30 km/h	Medium
11	hospital	Sri Kaalangi Siddhar Mooligai Vaithiya Nilayam	11.432369, 77.674894	30 km/h	Medium
12	clinic	G.K Clinic	11.4297244, 77.6749715	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

	type	name	coordinates	speed_limit	risk_level
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
24	hospital	Malarpriya Medical Centre - Tiruppur	11.16584, 77.351437	30 km/h	Medium
25	hospital	Jacob Hospital	11.1645096, 77.3496992	30 km/h	Medium
27	hospital	Revathi Charity Trust Hospital	11.1588612, 77.34966	30 km/h	Medium
28	hospital	Sree Saran Medical Centre	11.1488, 77.346725	30 km/h	Medium
29	hospital	Sri Kumaran Hospital, Tiruppur	11.1307528, 77.3412468	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
7	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
26	school	Sharadha Vidhyalaya	11.1690521, 77.3485671	30 km/h	Medium

Route Photos of Risky Spots



Risk Type: U-Turn

Risk Level: High

Speed Limit: 10 KM/Hr

Coordinates: 11.1328729, 77.3421741



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: 11.44898, 77.87410



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.45357, 77.85789



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.45352, 77.85698



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.45847, 77.85140



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.45898, 77.85135



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.46303, 77.84945



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.46314, 77.84928



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.45509, 77.81383



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: 11.13289, 77.34212
