



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal to AVS 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

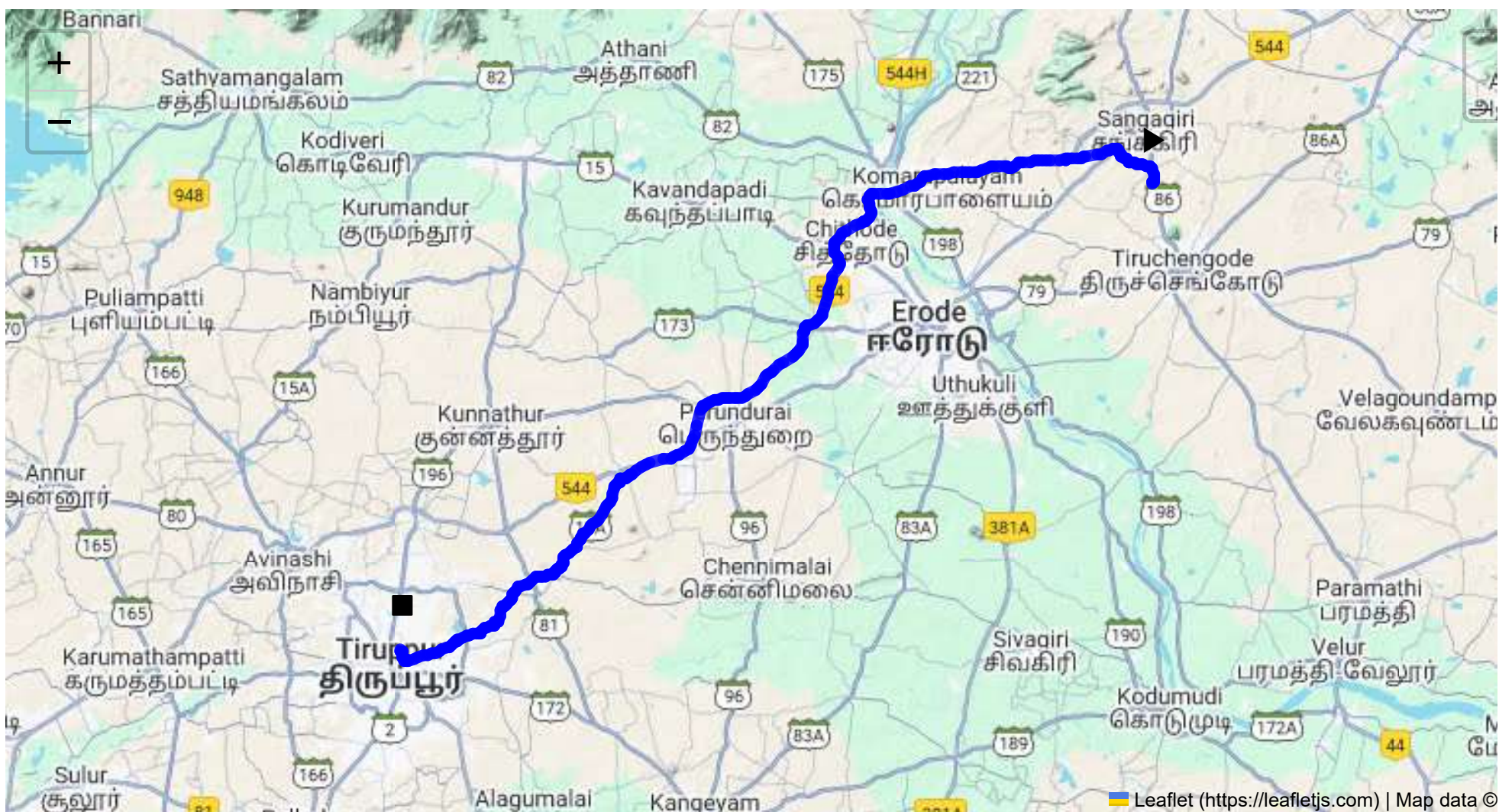
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 81.74 km
Estimated Duration: 1.8 hours
Adjusted Duration (Heavy Vehicle): 2.2 hours
Start: (11.4381, 77.8734)
End: (11.11891, 77.34734)



Welcome to the Journey Risk Management Study

Route Safety Analysis: Sangagiri to Tiruppur via SH 19A

1. **Route Overview:** The route spans approximately 81.74 kilometers from CVQF+23W, Sangagiri to 55-2, Om Sakthi Kovil Main Rd, Tiruppur, via SH 19A, passing through Pagallayur and Vijayapuri in Tamil Nadu, India. It typically takes about 1.75 hours for heavy vehicles.
2. **Weather Conditions:**

- **Typical Weather:** The region experiences a tropical climate with hot summers, mild monsoons, and moderate winters.
- **Potential Hazards:** Heavy rains during the monsoon (June to September) can lead to slippery roads and reduced visibility. Summer months can result in dry and dusty conditions.

3. Traffic Patterns:

- **Peak Hours:** Congestion is common during morning (7-10 AM) and evening (5-8 PM) peak hours, especially near towns and industrial areas.
- **Congestion Areas:** Tiruppur, being an industrial hub, often sees heavy traffic. Urban areas around Tiruchengode and Vijayapuri may also experience slow-moving traffic.

4. Road Quality and Infrastructure:

- The SH 19A is generally in good condition but can have potholes and uneven surfaces, especially after the monsoon. Narrow sections and sharp bends require cautious driving.

5. Alternative Routes:

- **Detour Options:** In case of emergencies, NH 544 can serve as an alternative route although it is longer. Local roads through smaller towns like Erode can also be considered if SH 19A is blocked.

6. Local Regulations:

- **Hazardous Material Transport:** Regulations require proper permits and vehicles must adhere to speed restrictions. Night driving for trucks may have additional restrictions.

7. Historical Incidents:

- While specific records are not provided, industrial traffic in Tiruppur might lead to occasional accidents involving heavy vehicles. Proper safety measures and vehicle maintenance are essential.

8. Environmental Considerations:

- Nearby forests or agricultural areas need to be considered for reduced speed and caution to prevent environmental harm or disturbances.

9. Communication Coverage:

- Generally good in urban and semi-urban areas, potential dead zones might exist in rural stretches. Ensure alternative communication methods like satellite phones if required.

10. Emergency Response Times:

- Urban sections: 15-30 minutes, depending on traffic.
- Rural sections: 30-45 minutes; local knowledge can assist in speeding up the response.

11. Overall Summary of Risk Assessment:

- **Risks Identified:** Weather-related road conditions, traffic congestion, communication dead zones, and potential for vehicular accidents.
- **Recommendations:** Regular checks for weather updates, efficient route planning to avoid peak times, and ensuring that vehicle communications are functional to ensure driver safety and compliance with local regulations.

This comprehensive risk analysis aims to prepare drivers to handle potential hazards and ensure the safe transport of hazardous materials along this route.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Turn	High	11.43968, 77.87345	15 KM/Hr
1	Turn	High	11.44024, 77.87528	15 KM/Hr
2	Turn	High	11.44898, 77.87410	15 KM/Hr
3	Turn	Medium	11.45357, 77.85789	30 KM/Hr
4	Turn	High	11.45352, 77.85698	15 KM/Hr
5	Turn	Medium	11.45847, 77.85140	30 KM/Hr
6	Turn	Medium	11.45898, 77.85135	30 KM/Hr
7	Turn	High	11.46303, 77.84945	15 KM/Hr
8	Turn	Medium	11.45509, 77.81383	30 KM/Hr
9	Turn	Medium	11.45085, 77.77020	30 KM/Hr
10	Turn	Medium	11.43165, 77.67734	30 KM/Hr
11	Turn	Medium	11.23724, 77.50686	30 KM/Hr
12	Turn	High	11.23704, 77.50676	15 KM/Hr
13	Blind Spot	Blind Spot	11.23686, 77.50216	10 KM/Hr
14	Turn	Medium	11.23649, 77.50219	30 KM/Hr
15	Turn	High	11.23396, 77.50105	15 KM/Hr
16	Turn	Medium	11.23329, 77.49966	30 KM/Hr
17	Turn	Medium	11.17869, 77.46175	30 KM/Hr
18	Turn	Medium	11.17528, 77.45982	30 KM/Hr
19	Turn	Medium	11.17373, 77.45734	30 KM/Hr
20	Turn	Medium	11.17120, 77.45567	30 KM/Hr
21	Turn	High	11.16960, 77.44406	15 KM/Hr
22	Turn	Medium	11.16385, 77.43707	30 KM/Hr
23	Turn	Medium	11.16282, 77.43145	30 KM/Hr
24	Turn	Medium	11.15141, 77.42304	30 KM/Hr
25	Turn	Medium	11.14904, 77.42031	30 KM/Hr
26	Turn	Medium	11.13860, 77.41623	30 KM/Hr
27	Turn	Medium	11.12993, 77.40310	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
28	Turn	Medium	11.12467, 77.38652	30 KM/Hr
29	Turn	Medium	11.12236, 77.38293	30 KM/Hr
30	Turn	High	11.11160, 77.35231	15 KM/Hr
31	Turn	High	11.11209, 77.35220	15 KM/Hr
32	Blind Spot	Blind Spot	11.11159, 77.34993	10 KM/Hr
33	Turn	High	11.11840, 77.34951	15 KM/Hr
34	Turn	High	11.11837, 77.34764	15 KM/Hr

Emergency Locations

	type	name	coordinates	speed_limit	risk_level
3	hospital	Dhanvantri Multi Speciality Hospital	11.451362, 77.766602	30 km/h	Medium
4	hospital	Dhanvanthri Hospital	11.4496712, 77.7593772	30 km/h	Medium
5	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
8	hospital	Thanish Siddha Hospital	11.430003, 77.674964	30 km/h	Medium
9	clinic	Harshitha Clinic	11.4313207, 77.674718	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	Erode Cancer Centre	11.3732, 77.649152	30 km/h	Medium
14	hospital	Irt Hospital	11.2803603, 77.5644118	30 km/h	Medium
16	hospital	Gen Siddha Hospital	11.2375033, 77.5059797	30 km/h	Medium
17	hospital	Vijayamangalm Government Hospital	11.2382827, 77.501687	30 km/h	Medium
19	hospital	Aravind Eye Care Hospital	11.1729469, 77.4574467	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
20	clinic	Sri Maha Annai Clinic	11.1707162, 77.4536498	30 km/h	Medium
21	hospital	Ram Doctor Hospital	11.1709391, 77.4532808	30 km/h	Medium
22	clinic	Kumaran Clinic	11.1697553, 77.451543	30 km/h	Medium
23	hospital	Sri Aravindhar Hospital	11.1697756, 77.4448276	30 km/h	Medium
24	clinic	Dr. Raja Clinic	11.1278464, 77.3927768	30 km/h	Medium
25	hospital	Sakthi Sugam Hospital - Tiruppur	11.1151517, 77.3621541	30 km/h	Medium
26	hospital	AG Hospital, Tiruppur	11.1090267, 77.3528045	30 km/h	Medium
27	hospital	Nallini Hospital	11.1091685, 77.353517	30 km/h	Medium
29	clinic	S R Nursing Home, Tiruppur	11.111432, 77.3489019	30 km/h	Medium
30	clinic	Immuno Lab & Health Care	11.1136966, 77.3487122	30 km/h	Medium
31	clinic	Roopa Nursing Home, Coimbatore	11.1147893, 77.3475668	30 km/h	Medium
32	clinic	Dr. Mohan Raj Clinic	11.1169283, 77.349534	30 km/h	Medium
33	clinic	Annai Clinic	11.1181643, 77.3497042	30 km/h	Medium
34	hospital	ESI Hospital	11.1196849, 77.3492741	30 km/h	Medium
35	hospital	Vishnu Medical Centre, Tiruppur	11.12036, 77.350179	30 km/h	Medium
36	clinic	Adithya Clinic	11.120882, 77.352199	30 km/h	Medium
37	clinic	Orgean Life Care	11.1210513, 77.3497341	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
6	school	SSM Matriculation Higher Secondary School	11.4321653, 77.6880046	30 km/h	Medium
13	college	Government polytechnic college	11.2907053, 77.5698726	30 km/h	Medium
15	school	Bharathi Matriculation School	11.2494613, 77.5307028	30 km/h	Medium
18	college	Sasurie Engineering College	11.2171482, 77.4898552	30 km/h	Medium
28	school	Chinnasamy Ammal Govt High School	11.1150455, 77.3489882	30 km/h	Medium

Route Photos of Risky Spots



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.44024, 77.87528



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: High

Speed Limit: 15 KM/Hr

Coordinates: 11.46303, 77.84945



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.45509, 77.81383



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.45085, 77.77020



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.43165, 77.67734



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: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.23686, 77.50216



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.23649, 77.50219



Risk Type: Turn
Risk Level: High
Speed Limit: 15 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: 11.17869, 77.46175



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.17528, 77.45982



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.17373, 77.45734



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.17120, 77.45567



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.16960, 77.44406



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.16385, 77.43707



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.16282, 77.43145



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.15141, 77.42304



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.14904, 77.42031



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.13860, 77.41623



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.12993, 77.40310



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.12467, 77.38652



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.12236, 77.38293



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.11160, 77.35231



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.11209, 77.35220



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.11159, 77.34993



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.11840, 77.34951



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.11837, 77.34764
