



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

### Salem Terminal TO SASTI MURUGAN 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.

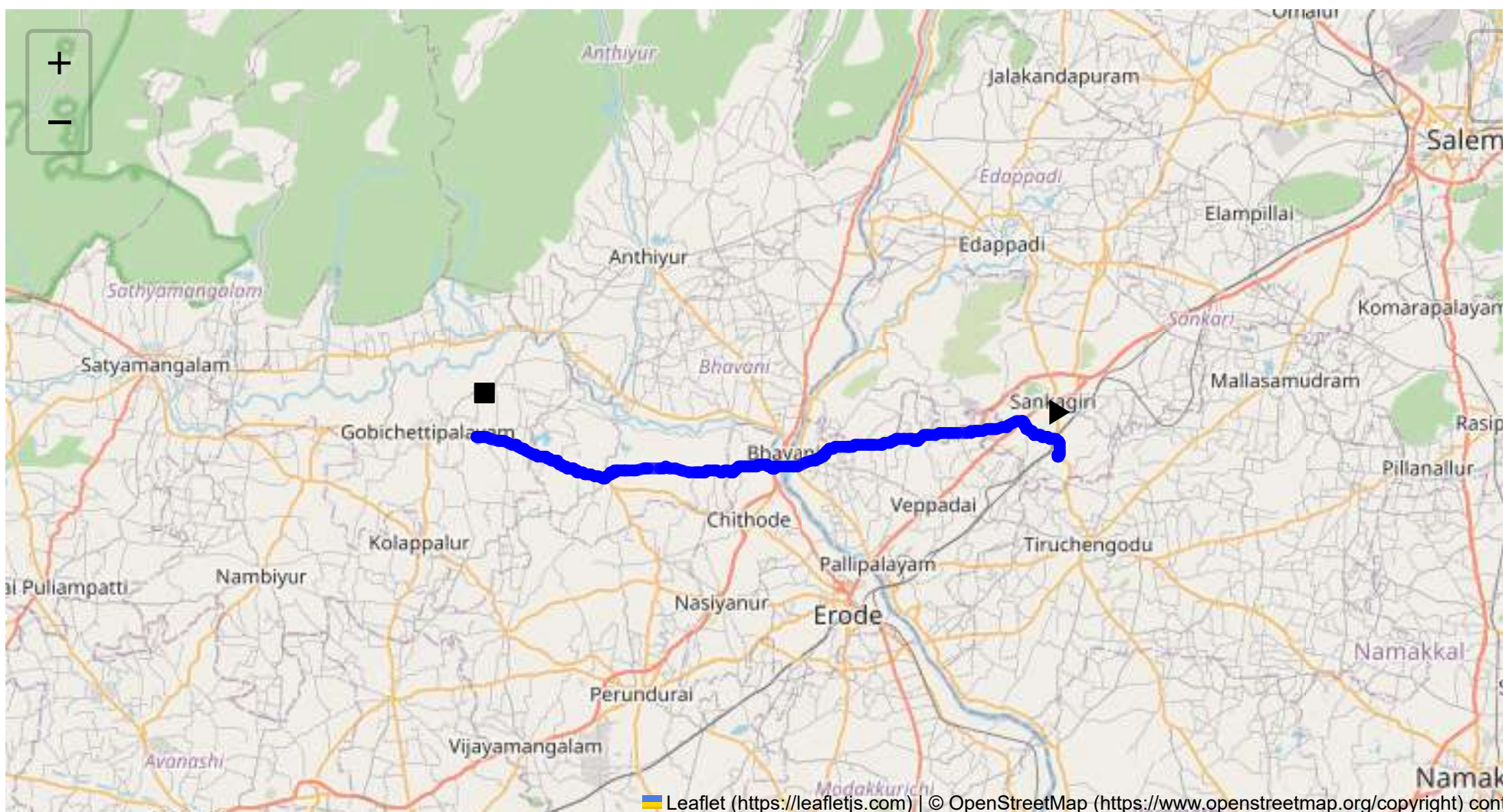
## **Compliance with Government Directives**

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: 49.31 km**  
**Estimated Duration: 1.0 hours**  
**Adjusted Duration (Heavy Vehicle): 1.3 hours**  
**Start: (11.4381, 77.8734)**  
**End: (11.452126, 77.472543)**



## Welcome to the Journey Risk Management Study

### Route Overview

The route from CVQF+23W, Sangagiri to FF2F+R2J, SH 15 in Tamil Nadu is approximately 49.31 kilometers long. It typically takes about 1.04 hours to traverse with a heavy vehicle carrying hazardous materials. This route passes through several key points including Puthur, Padaiveedu, Sevagoundanur, and Kavindapadi, involving a mix of state highways and main roads.



## Weather Conditions

The typical climate in Tamil Nadu is tropical with frequent variations. The region generally experiences hot and humid conditions, especially from March to June. Monsoon season runs from June to September, which can bring heavy rains and potential flooding, affecting road conditions and visibility. It is crucial for drivers to check weather forecasts, particularly during the monsoon season, for any alerts on severe weather conditions.

## Traffic Patterns

Traffic congestion is likely to occur during peak hours, commonly between 8-10 AM and 5-8 PM. High traffic is expected near major junctions and urban settings within towns like Sangagiri and Kavindapadi. Markets or local festivities can also cause sporadic traffic spikes. Keeping abreast with real-time traffic updates can help in navigating through congested sections efficiently.

## Road Quality and Infrastructure

The road quality is mixed, with state highways generally maintained but smaller roads potentially having potholes or uneven surfaces. Street lighting may not be adequate in rural sections at night, contributing to safety hazards. Drivers need to exercise caution in these areas, especially where infrastructure might be under maintenance or development.

## Alternative Routes

In case of closures or emergency detours, consider:

- NH 544 for a more direct and potentially faster alternative.
- Using local paths around major towns if there's congestion on the main route. These alternatives should be verified for weight restrictions due to the nature of hazardous material cargo.

## Local Regulations on Hazardous Material Transport

Tamil Nadu has specific regulations regarding the transport of hazardous materials, including designated routes and timing restrictions. It is important to be mindful of permissible transport hours and acquire necessary permits. The driver must also carry all relevant documentation demonstrating compliance with safety standards and regulations.

## Historical Incidents

The region has a history of occasional road accidents involving heavy vehicles, predominantly caused by speeding and inadequate vehicle maintenance. However, specific incidents involving hazardous materials are less frequent but necessitate rigorous safety checks before embarking.

## Environmental Considerations

The route passes through agricultural regions and near areas that might have protected environmental zones. Avoid any spillage, adhere to prescribed routes, and minimize noise pollution to protect sensitive

environments throughout the trip.

## Communication Coverage

Cellular network coverage is adequate in towns and along highways but may be intermittent in rural stretches and less populated areas. Investing in a multi-network SIM or a satellite phone may be useful for maintaining communication throughout the trip.

## Emergency Response Times

Emergency response services in urban areas like Sangagiri are typically swift, averaging 20-30 minutes. In rural settings, response times may extend up to 45 minutes or more due to limited accessibility and resources. Being equipped with first-aid kits and emergency contact details is advised.

## Overall Risk Assessment

The main risks associated with this route include adverse weather impacts, traffic congestion, and variable road conditions. With adequate preparation, including real-time navigation updates and regulatory compliance, the risks can be effectively managed, ensuring a safer journey for hazardous material transport.

In summary, this route analysis highlights the importance of preparedness, situational awareness, and adherence to safety practices to ensure safe transport through Tamil Nadu.

### Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	U-Turn	High	11.4518258, 77.4689619	10 KM/Hr
1	Turn	High	11.43811, 77.87348	15 KM/Hr
2	Turn	Medium	11.43961, 77.87341	30 KM/Hr
3	Turn	Medium	11.43968, 77.87345	30 KM/Hr
4	Turn	High	11.44029, 77.87544	15 KM/Hr
5	Turn	Medium	11.44893, 77.87413	30 KM/Hr
6	Turn	High	11.45350, 77.85700	15 KM/Hr
7	Turn	Medium	11.46046, 77.85037	30 KM/Hr
8	Turn	Medium	11.46303, 77.84945	30 KM/Hr
9	Turn	Medium	11.46316, 77.84921	30 KM/Hr
10	Turn	High	11.45542, 77.81725	15 KM/Hr
11	Blind Spot	Blind Spot	11.45634, 77.81673	10 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
12	Blind Spot	Blind Spot	11.45543, 77.81740	10 KM/Hr
13	Blind Spot	Blind Spot	11.44530, 77.72783	10 KM/Hr
14	Blind Spot	Blind Spot	11.44513, 77.72786	10 KM/Hr
15	Turn	High	11.43001, 77.67575	15 KM/Hr
16	Turn	Medium	11.43000, 77.67564	30 KM/Hr
17	Turn	Medium	11.43009, 77.67540	30 KM/Hr
18	Turn	High	11.43026, 77.67525	15 KM/Hr
19	Blind Spot	Blind Spot	11.43073, 77.67536	10 KM/Hr
20	Turn	High	11.43278, 77.67024	15 KM/Hr
21	Turn	Medium	11.43346, 77.66700	30 KM/Hr
22	Turn	Medium	11.43225, 77.66561	30 KM/Hr
23	Turn	Medium	11.42837, 77.56935	30 KM/Hr
24	Turn	Medium	11.42707, 77.56407	30 KM/Hr
25	Turn	High	11.42329, 77.55798	15 KM/Hr
26	Turn	High	11.45183, 77.46896	15 KM/Hr
27	Blind Spot	Blind Spot	11.45196, 77.46891	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

	type	name	coordinates	speed_limit	risk_level
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	hospital	PST Mahaa Hospital	11.4312903, 77.6585751	30 km/h	Medium
14	hospital	Dharun Hospital	11.4223638, 77.5597735	30 km/h	Medium
15	hospital	Dr. Ramaswamy Hospital	11.4249065, 77.5535658	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

Route Photos of Risky Spots





**Risk Type: U-Turn**

**Risk Level: High**

**Speed Limit: 10 KM/Hr**

**Coordinates: 11.4518258, 77.4689619**



**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: 11.44893, 77.87413**





**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:** 11.46046, 77.85037





**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:** 11.46316, 77.84921



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.45542, 77.81725





**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 11.45634, 77.81673



**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 11.45543, 77.81740





**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 11.44530, 77.72783



**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 11.44513, 77.72786



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.43001, 77.67575





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.43000, 77.67564



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.43009, 77.67540





**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.43026, 77.67525



**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 11.43073, 77.67536



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.43278, 77.67024





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.43346, 77.66700



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.43225, 77.66561





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.42837, 77.56935



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.42707, 77.56407



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.42329, 77.55798





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.45183, 77.46896



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Coordinates:** 11.45196, 77.46891

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