



## **JOURNEY RISK MANAGEMENT (JRM) STUDY**

### **Salem Terminal To SK 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

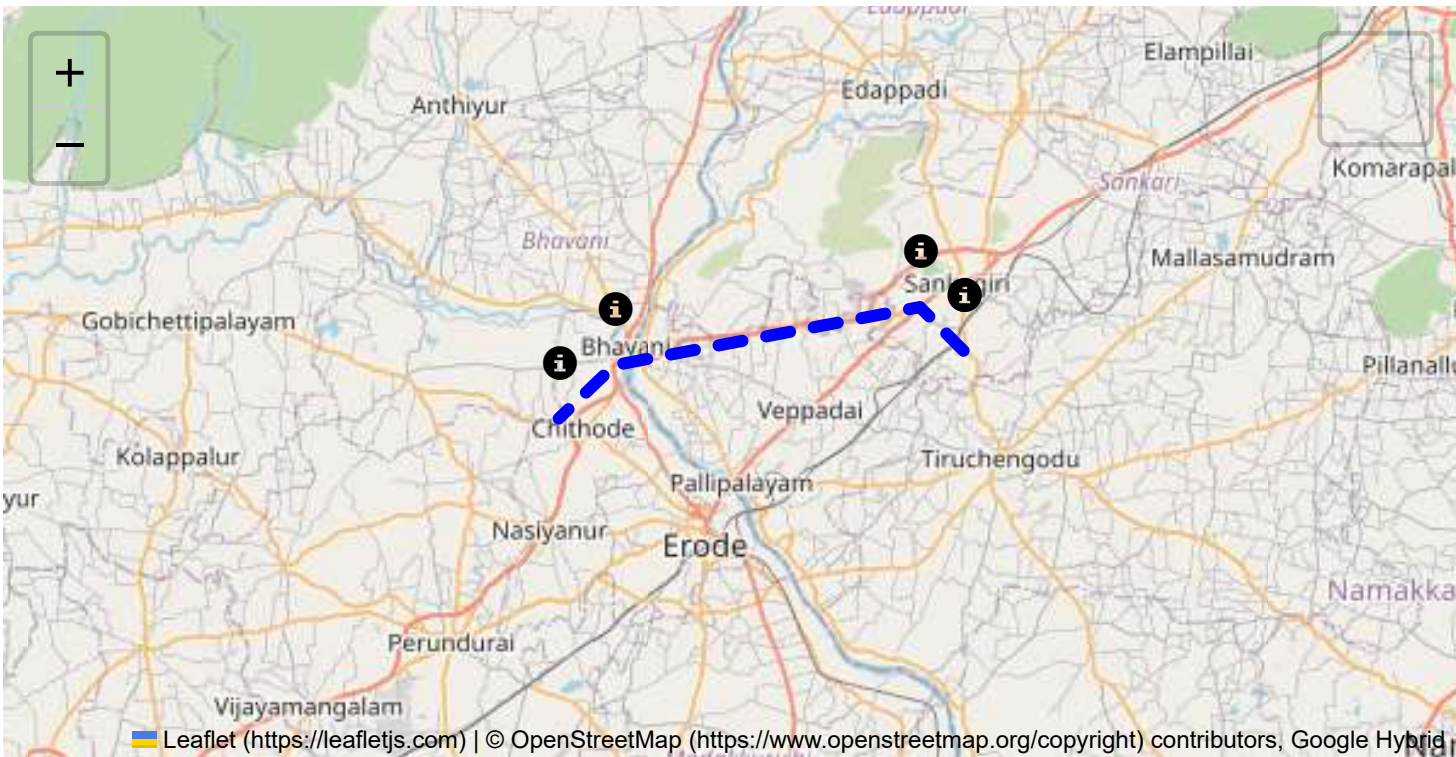
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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.

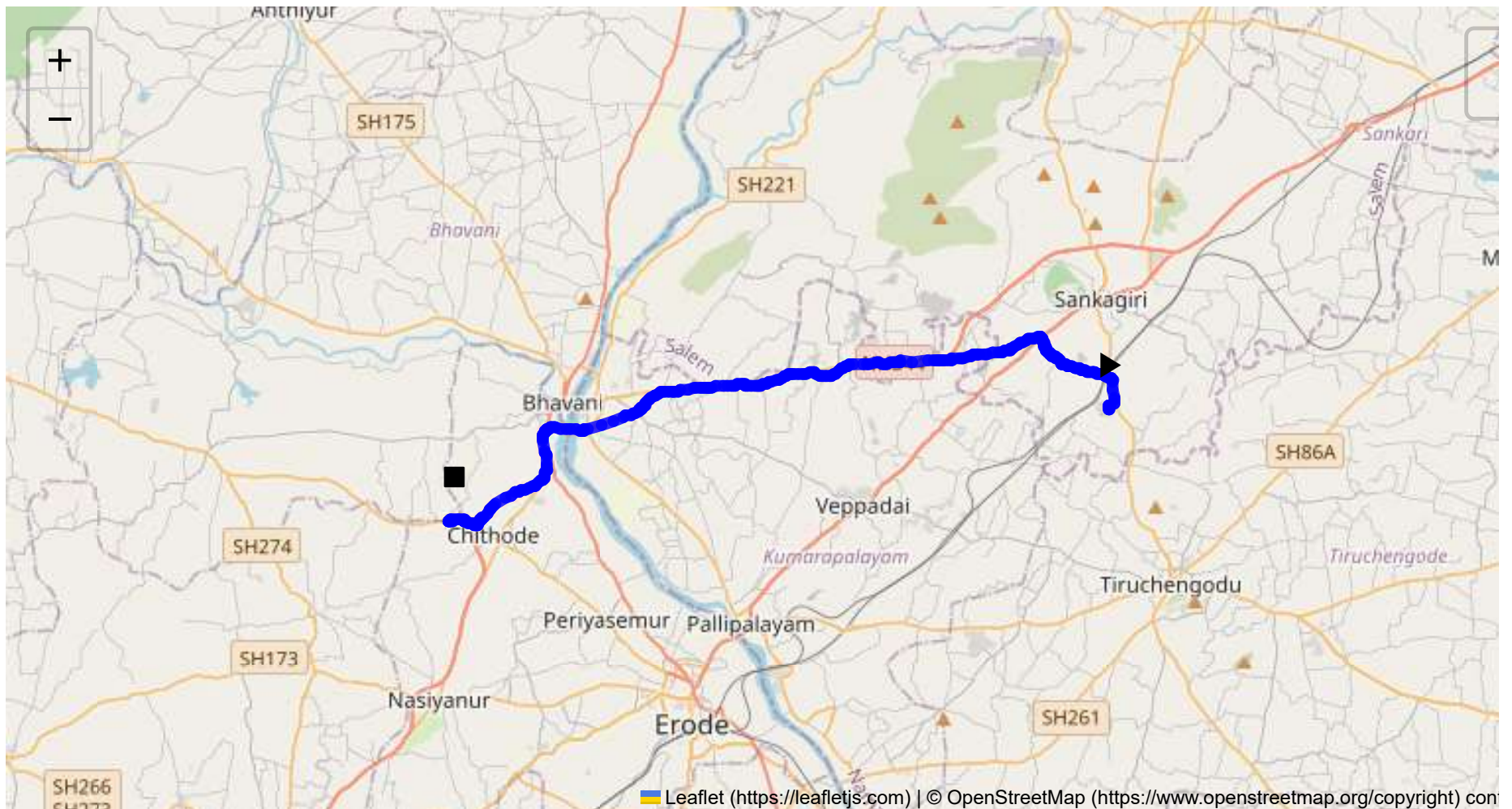
## Compliance with Government Directives

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: 31.08 km**  
**Estimated Duration: 0.6 hours**  
**Adjusted Duration (Heavy Vehicle): 0.8 hours**  
**Start: (11.4381, 77.8734)**  
**End: (11.4001465, 77.6439204)**



## Welcome to the Journey Risk Management Study

### Route Overview

The route spans approximately 31.08 kilometers starting from Sangagiri (CVQF+23W), proceeding through SH 79A with the midpoint at Lakshmi Nagar Bus Stop, and terminating at Bhavani (CJ2V+C9Q). This journey typically takes about 38 minutes for heavy vehicles transporting hazardous materials, factoring in traffic and stop times.

### Weather Conditions

In Tamil Nadu, this route experiences tropical weather conditions. The region experiences dry seasons from January to March and from June to October, while cyclone-related rainfall may occur between November and December. During peak monsoon, there is a risk of road flooding and reduced visibility, which can affect driving conditions and safety.

### Traffic Patterns

- Peak Hours:** Heavy traffic is typically seen during morning (8:00-10:00 AM) and evening (5:00-7:00 PM) hours due to local commuting.
- Congestion-Prone Areas:** Traffic congestion is often noticed near city centers and market areas of Sangagiri and Bhavani. The section near Lakshmi Nagar can be bottlenecked due to nearby bus stops and commercial activities.

# Road Quality and Infrastructure

- **SH 79A:** Generally well-maintained but can have patches with uneven surfaces and potholes, especially during the rainy season.
- **Signage and Lighting:** The route may have adequate signage; however, rural segments could have limited street lighting, posing night-time visibility issues.

## Alternative Routes

In case of emergencies, consider taking local roads that connect back to National Highway 544, although these alternatives could lack substantial infrastructure.

## Local Regulations on Hazardous Material Transport

Tamil Nadu imposes strict guidelines on the transport of hazardous materials, requiring compliance with regulations for specific vehicle types, routing, and timing restrictions (generally avoiding peak urban hours).

## Historical Incidents

No major incidents involving heavy vehicles have been recorded, but minor accidents related to turning maneuvers and traffic congestion have occurred. The need for vigilance is recommended in high-density areas.

## Environmental Considerations

Sensitive areas include agricultural fields and water bodies nearby, which may necessitate cautious driving to prevent contamination. The region is also home to local fauna; hence, awareness and speed management are advised.

## Communication Coverage

General network coverage is robust, particularly around urban centers, but rural stretches might experience dead zones where communication is less reliable.

## Emergency Response Times

- **Urban Segments (Sangagiri and Bhavani):** Emergency services response within approximately 15-20 minutes.
- **Rural Areas (Between major stops):** Can range up to 30-45 minutes due to distances.

## Overall Summary of Risk Assessment

The route from Sangagiri to Bhavani is moderately safe, with manageable risks primarily linked to weather conditions, peak-hour traffic congestion, and rural route sections with limited infrastructure. Truck drivers transporting hazardous materials should exercise caution, adhere to local transportation laws, and remain vigilant about the condition of their routes, especially during inclement weather or in response to emergency situations. Regular updates on traffic conditions and weather forecasts are recommended for safe travel.

## Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Turn	High	11.43811, 77.87348	15 KM/Hr
1	Turn	Medium	11.43961, 77.87341	30 KM/Hr
2	Turn	Medium	11.43968, 77.87345	30 KM/Hr
3	Turn	High	11.44029, 77.87544	15 KM/Hr
4	Turn	Medium	11.45350, 77.85700	30 KM/Hr
5	Turn	Medium	11.45833, 77.85146	30 KM/Hr
6	Turn	Medium	11.45697, 77.82719	30 KM/Hr
7	Turn	High	11.45518, 77.81344	15 KM/Hr
8	Turn	High	11.45521, 77.81343	15 KM/Hr
9	Turn	Medium	11.43994, 77.71111	30 KM/Hr
10	Turn	Medium	11.43982, 77.71084	30 KM/Hr
11	Turn	High	11.40046, 77.65371	15 KM/Hr
12	Turn	High	11.40035, 77.65383	15 KM/Hr
13	Turn	High	11.39827, 77.65237	15 KM/Hr
14	Turn	High	11.39972, 77.64797	15 KM/Hr
15	Turn	High	11.40025, 77.64811	15 KM/Hr
16	Blind Spot	Blind Spot	11.39995, 77.64214	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
7	hospital	Shri Sathyanarayana Hospital	11.4291297, 77.6913408	30 km/h	Medium



	type	name	coordinates	speed_limit	risk_level
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

## 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

## 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:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.45350, 77.85700



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.45833, 77.85146



**Risk Type:** Turn  
**Risk Level:** Medium



Speed Limit: 30 KM/Hr

Coordinates: 11.45697, 77.82719



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.45518, 77.81344



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.45521, 77.81343





**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.43994, 77.71111**



**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.43982, 77.71084**



**Risk Type: Turn**

**Risk Level: High**



**Speed Limit: 15 KM/Hr**

**Coordinates: 11.40046, 77.65371**



**Risk Type: Turn**

**Risk Level: High**

**Speed Limit: 15 KM/Hr**

**Coordinates: 11.40035, 77.65383**



**Risk Type: Turn**

**Risk Level: High**

**Speed Limit: 15 KM/Hr**

**Coordinates: 11.39827, 77.65237**





**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.39972, 77.64797



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.40025, 77.64811



**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot

**Speed Limit: 10 KM/Hr**  
**Coordinates: 11.39995, 77.64214**

---