



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

### Salem Terminal TO PAAMS 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.

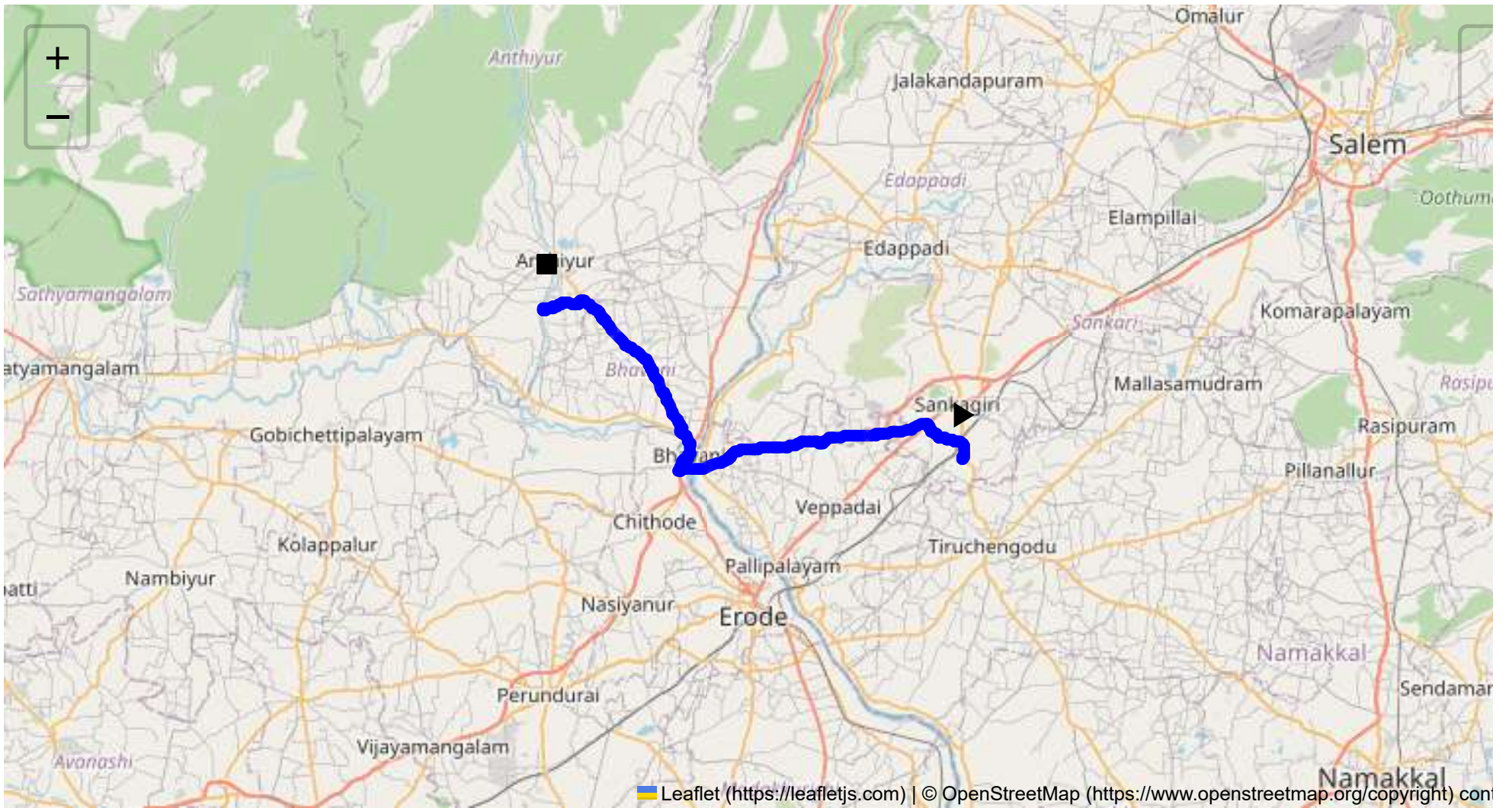
## **Compliance with Government Directives**

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: 45.55 km**  
**Estimated Duration: 1.1 hours**  
**Adjusted Duration (Heavy Vehicle): 1.4 hours**  
**Start: (11.4381, 77.8734)**  
**End: (11.542331, 77.580757)**



## Risk Spots

	RiskSpotType	Coordinates	Speed Limit	Distance from Start
0	Turn	11.43822, 77.87348	15 KM/Hr	0.01 km
1	Turn	11.43961, 77.87341	15 KM/Hr	0.14 km
2	Turn	11.44029, 77.87544	15 KM/Hr	0.31 km



	RiskSpotType	Coordinates	Speed Limit	Distance from Start
3	Turn	11.44893, 77.87413	15 KM/Hr	1.36 km
4	Turn	11.45350, 77.85700	15 KM/Hr	3.34 km
5	Turn	11.45845, 77.85141	15 KM/Hr	4.12 km
6	Turn	11.46046, 77.85037	15 KM/Hr	4.37 km
7	Turn	11.46303, 77.84945	15 KM/Hr	4.66 km
8	Turn	11.45542, 77.81725	15 KM/Hr	8.38 km
9	Blind Spot	11.45634, 77.81673	10 KM/Hr	8.52 km
10	Blind Spot	11.44530, 77.72783	10 KM/Hr	18.67 km
11	Turn	11.43001, 77.67575	15 KM/Hr	24.89 km
12	Turn	11.43782, 77.67821	15 KM/Hr	25.86 km
13	Turn	11.43865, 77.68226	15 KM/Hr	26.21 km
14	Turn	11.43965, 77.68224	15 KM/Hr	26.39 km
15	Turn	11.44101, 77.68186	15 KM/Hr	26.59 km
16	Turn	11.44291, 77.68256	15 KM/Hr	26.81 km
17	Turn	11.44853, 77.68331	15 KM/Hr	27.46 km
18	Turn	11.45408, 77.68022	15 KM/Hr	28.08 km
19	Turn	11.45649, 77.67621	15 KM/Hr	28.66 km
20	Turn	11.54439, 77.61209	15 KM/Hr	41.08 km
21	Turn	11.54788, 77.60926	15 KM/Hr	41.49 km
22	Turn	11.54647, 77.60523	15 KM/Hr	42.05 km
23	Turn	11.54400, 77.60400	15 KM/Hr	42.32 km
24	Turn	11.54557, 77.59516	15 KM/Hr	43.35 km
25	Turn	11.54557, 77.59337	15 KM/Hr	43.55 km
26	Turn	11.54461, 77.59261	15 KM/Hr	43.72 km
27	Turn	11.54372, 77.58934	15 KM/Hr	44.09 km
28	Turn	11.54252, 77.58690	15 KM/Hr	44.38 km
29	Turn	11.54161, 77.58211	15 KM/Hr	44.96 km
30	Turn	11.54075, 77.58165	15 KM/Hr	45.05 km
31	Blind Spot	11.54032, 77.58046	10 KM/Hr	45.22 km
32	Turn	11.54121, 77.58030	15 KM/Hr	45.30 km

**Emergency Services**

	type	name	coordinates	side_of_road
1	hospital	Government Hospital	11.4525596, 77.7749426	Opposite Side
3	hospital	Dhanvantri Multi Speciality Hospital	11.451362, 77.766602	Opposite Side
4	hospital	Dhanvanthri Hospital	11.4496712, 77.7593772	Opposite Side
5	hospital	J.K.K. Trust Hospital	11.4445841, 77.7307962	Driver's Side
7	hospital	Shri Sathyanarayana Hospital	11.4291297, 77.6913408	Driver's Side
9	hospital	Thanish Siddha Hospital	11.430003, 77.674964	Driver's Side
10	clinic	Harshitha Clinic	11.4313207, 77.674718	Driver's Side
11	hospital	Sri Kaalangi Siddhar Mooligai Vaithiya Nilayam	11.432369, 77.674894	Driver's Side
12	clinic	G.K Clinic	11.4297244, 77.6749715	Driver's Side
13	hospital	Maha Hospital	11.4372003, 77.6781345	Opposite Side
14	hospital	Jothikumar Hospital	11.43687, 77.678407	Opposite Side
15	hospital	Sutha Hospital	11.4365526, 77.6796472	Opposite Side
16	hospital	SKMH Hospital	11.4379787, 77.6780268	Driver's Side
17	clinic	Sri Dharshan Diabetes Care	11.437649, 77.6778126	Driver's Side
18	clinic	Velavan Homoeo Clinic	11.4367087, 77.6761472	Driver's Side
19	hospital	Kavin Hospital	11.4399114, 77.6838194	Opposite Side
20	clinic	Thangam Acupuncture	11.4418816, 77.6832318	Opposite Side
21	hospital	Sumangali Hospital	11.4427668, 77.6827131	Opposite Side
22	hospital	Annusiya Hospital	11.4432777, 77.6813562	Driver's Side
23	hospital	Kandasamy Hospital	11.4450062, 77.6832304	Opposite Side
24	hospital	Ashok Krishna Hospital	11.4483344, 77.6856579	Opposite Side
25	hospital	Senthil Hospital	11.4475854, 77.6844482	Opposite Side
26	hospital	S.N.A. Siddha Hospital	11.44704, 77.682877	Driver's Side
27	hospital	Shri Mani Hospital	11.44771, 77.6838471	Opposite Side
28	clinic	Sri Hari Clinic	11.4483503, 77.6850963	Opposite Side
29	hospital	Sri Saravana Hospital	11.4506202, 77.6829676	Opposite Side
30	hospital	Immiaditya Hospital	11.4501276, 77.6836088	Opposite Side
31	hospital	Government Hospital	11.45112, 77.682149	Opposite Side
32	hospital	Vijay Hospital	11.45091, 77.682019	Opposite Side
33	hospital	Anbe Sivam Hospital	11.4508139, 77.6854947	Opposite Side
34	clinic	Kalyani Nursing Home	11.452097, 77.6808974	Driver's Side
35	hospital	Government Hospital	11.4519113, 77.6819742	Opposite Side

## Rest Stops

	type	name	coordinates	side_of_road
0	fuel	SLOA Bunk - Unit II	11.4543854, 77.8052665	Driver's Side
2	restaurant	Canteen	11.4478386, 77.7705441	Driver's Side
6	fuel	Reliance	11.4325168, 77.6912865	Opposite Side
8	fuel	Indian Oil	11.4321177, 77.6765153	Opposite Side

## Welcome to the Journey Risk Management Study

### 1. Overview of the Route Map

The route from Sangagiri, Tamil Nadu to Anthiyur, Tamil Nadu spans approximately 45.55 kilometers. It passes through Puthur, Padaiveedu, and Bhavani Main Road. The route generally consists of state highways and main roads which are commonly used for transporting goods. Navigation involves a mix of rural and semi-urban areas.

### 2. Typical Weather Conditions and Potential Weather-Related Hazards

Tamil Nadu has a tropical climate, with major weather patterns including:

- Monsoon Season (June to September):** Heavy rainfall can cause waterlogging and reduce visibility.
- Summer (March to June):** High temperatures might lead to heatwaves and discomfort for drivers.
- Potential Hazards:** Monsoon rains can result in slippery roads and decreased traction. Flash floods in some areas may temporarily block routes.

### 3. Analysis of Traffic Patterns

- Peak Hours:** Morning (8:00-10:00 AM) and evening (5:00-7:00 PM).
- Congestion-Prone Areas:** Urban junctions in Sangagiri and market areas in Anthiyur typically experience delays. The Bhavani Main Road may also face congestion due to local traffic.

### 4. Assessment of Road Quality and Infrastructure

- The state highways are mostly well-maintained, though certain rural sections may have potholes or uneven surfaces.
- Look out for narrow bridges and sharp bends especially in the rural sections which may not be well-lit.

### 5. Suggestions for Alternative Routes for Emergencies

- In case of road blockage, an alternative route is taking the Bhavani-Anthiyur road which runs parallel to the primary route, though it may add extra travel time.
- Local village roads could also be used but require caution due to smaller road width and lower maintenance.

## 6. Summary of Local Regulations Affecting Hazardous Material Transport

- There are strict regulations regarding the timing of transporting hazardous materials, often restricting movement during peak traffic hours.
- Necessary permits need to be in place, and adherence to speed limits and road signs is mandatory.

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

- Past incidents have included vehicular collisions near urban junctions, often attributed to speeding or brake failure on downhill roads.
- No major incidents specifically involving hazardous materials reported recently, but standard caution is advised.

## 8. Environmental Considerations and Sensitive Areas

- The route passes through some rural agricultural regions; spills can contaminate soil and local water supplies.
- Minimizing noise pollution is important when driving through populated areas.

## 9. Analysis of Communication Coverage

- Overall, cellular coverage is fairly reliable with major providers covering the entire route.
- Potential dead zones may exist in rural stretches, notably near the village roads between Puthur and Anthiyur.

## 10. Estimated Emergency Response Times for Different Route Segments

- In urban or semi-urban settings such as Sangagiri and Anthiyur, emergency services can typically respond within 20-30 minutes.
- In more rural stretches, response times may extend to 40-60 minutes due to access challenges.

## 11. Overall Summary of Risk Assessment

This route generally presents a moderate risk profile for transporting heavy trucks carrying hazardous materials. The main risks entail traffic congestion, inclement weather, and varying road quality. Mitigation strategies should include careful time planning to avoid peak hours, rigorous adherence to local transport



regulations, and incorporation of alternative routes in case of emergencies. Preparing for weather changes and ensuring communication devices are charged is also advised.

## Route Photos of Risky Spots



**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 0.31 km

**Coordinates:** 11.44029, 77.87544



**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 1.36 km

**Coordinates:** 11.44893, 77.87413





**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 3.34 km**

**Coordinates: 11.45350, 77.85700**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 4.12 km**

**Coordinates: 11.45845, 77.85141**





**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 4.37 km**

**Coordinates: 11.46046, 77.85037**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 4.66 km**

**Coordinates: 11.46303, 77.84945**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 8.38 km**

**Coordinates: 11.45542, 77.81725**





**Risk Type:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Distance from Start:** 8.52 km  
**Coordinates:** 11.45634, 77.81673



**Risk Type:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Distance from Start:** 18.67 km  
**Coordinates:** 11.44530, 77.72783





**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 24.89 km**

**Coordinates: 11.43001, 77.67575**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 25.86 km**

**Coordinates: 11.43782, 77.67821**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 26.21 km**

**Coordinates: 11.43865, 77.68226**





**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 26.39 km**

**Coordinates: 11.43965, 77.68224**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 26.59 km**

**Coordinates: 11.44101, 77.68186**





**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 26.81 km**

**Coordinates: 11.44291, 77.68256**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 27.46 km**

**Coordinates: 11.44853, 77.68331**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 28.08 km**

**Coordinates: 11.45408, 77.68022**





**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 28.66 km

**Coordinates:** 11.45649, 77.67621



**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 41.08 km

**Coordinates:** 11.54439, 77.61209





**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 41.49 km**

**Coordinates: 11.54788, 77.60926**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 42.05 km**

**Coordinates: 11.54647, 77.60523**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 42.32 km**

**Coordinates: 11.54400, 77.60400**





**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 43.35 km

**Coordinates:** 11.54557, 77.59516



**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 43.55 km

**Coordinates:** 11.54557, 77.59337





**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 43.72 km**

**Coordinates: 11.54461, 77.59261**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 44.09 km**

**Coordinates: 11.54372, 77.58934**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 44.38 km**

**Coordinates: 11.54252, 77.58690**





**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 44.96 km**

**Coordinates: 11.54161, 77.58211**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 45.05 km**

**Coordinates: 11.54075, 77.58165**





**Risk Type:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Distance from Start:** 45.22 km  
**Coordinates:** 11.54032, 77.58046



**Risk Type:** Turn  
**Speed Limit:** 15 KM/Hr  
**Distance from Start:** 45.30 km  
**Coordinates:** 11.54121, 77.58030

---

[Download Interactive Map](#)