



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal TO MUTHULAKSHMI 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

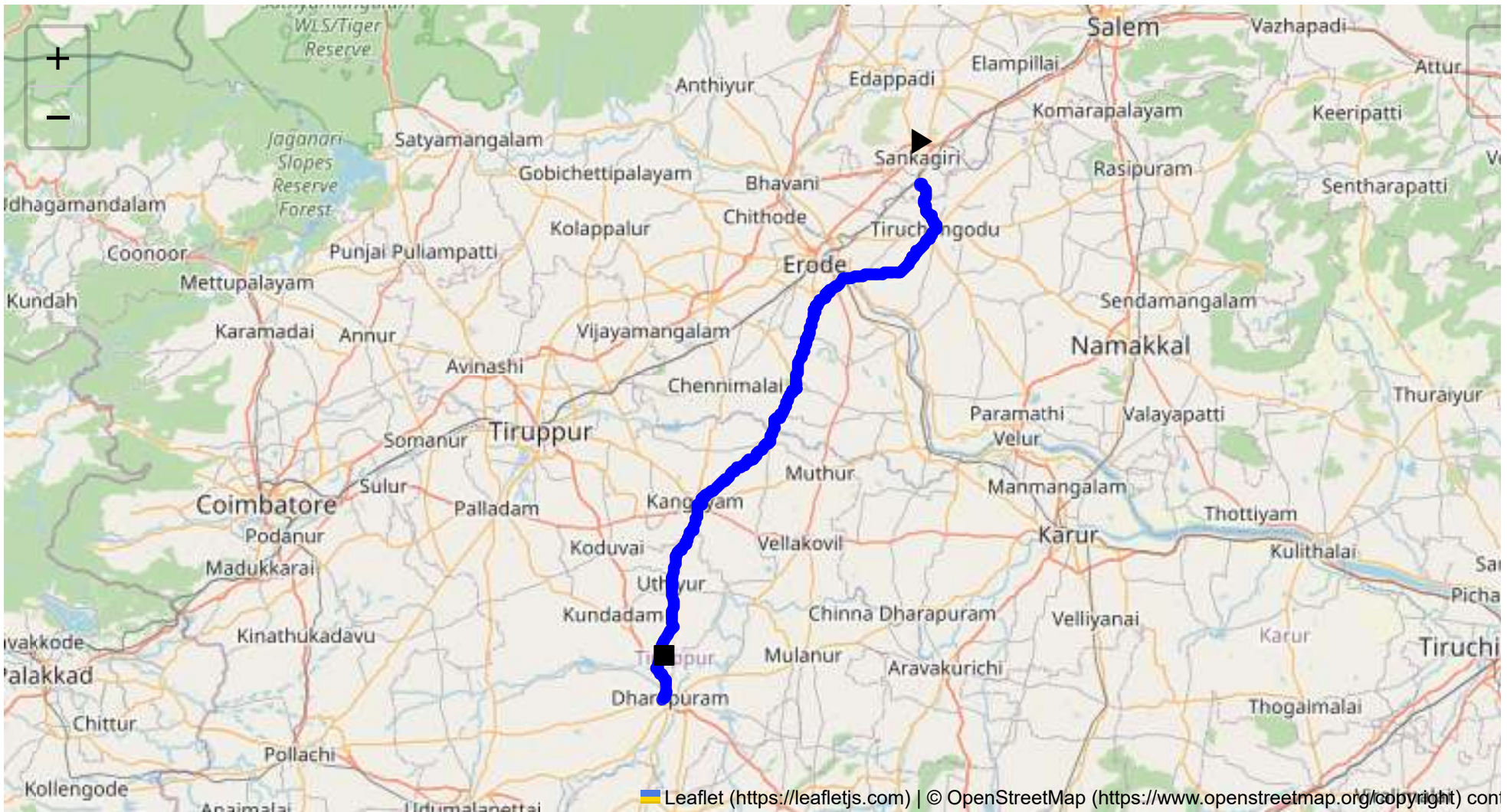
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 102.73 km
Estimated Duration: 2.3 hours
Adjusted Duration (Heavy Vehicle): 2.9 hours
Start: (11.4381, 77.8734)
End: (10.734621, 77.5141464)



Risk Spots

	RiskSpotType	Coordinates	Speed Limit	Distance from Start
2	Turn	11.43961, 77.87341	15 KM/Hr	0.08 km
3	Turn	11.44029, 77.87544	15 KM/Hr	0.28 km
4	Turn	11.39983, 77.88377	15 KM/Hr	5.05 km

	RiskSpotType	Coordinates	Speed Limit	Distance from Start
5	Turn	11.39706, 77.88825	15 KM/Hr	5.63 km
0	Roundabout	11.38395, 77.89480	15 KM/Hr	7.42 km
6	Turn	11.37868, 77.89498	15 KM/Hr	7.90 km
7	Turn	11.36602, 77.88875	15 KM/Hr	9.45 km
8	Turn	11.33882, 77.86218	15 KM/Hr	13.70 km
9	Turn	11.31747, 77.84240	15 KM/Hr	17.14 km
10	Turn	11.30951, 77.77608	15 KM/Hr	24.39 km
11	Turn	11.31118, 77.77139	15 KM/Hr	25.00 km
12	Turn	11.29473, 77.74685	15 KM/Hr	28.43 km
13	Turn	11.29133, 77.74660	15 KM/Hr	28.76 km
14	Turn	11.28844, 77.74319	15 KM/Hr	29.31 km
15	Turn	11.28558, 77.74271	15 KM/Hr	29.60 km
16	Turn	11.27360, 77.73008	15 KM/Hr	31.59 km
17	Blind Spot	11.27330, 77.72711	10 KM/Hr	31.90 km
18	Turn	11.23090, 77.71808	15 KM/Hr	36.74 km
19	Turn	11.22378, 77.71384	15 KM/Hr	37.64 km
20	Turn	11.15952, 77.70067	15 KM/Hr	45.09 km
21	Turn	11.11943, 77.67799	15 KM/Hr	50.26 km
22	Turn	11.11733, 77.67191	15 KM/Hr	50.99 km
23	Turn	11.10471, 77.67058	15 KM/Hr	52.37 km
24	Turn	11.09508, 77.66612	15 KM/Hr	53.57 km
25	Turn	11.08722, 77.66431	15 KM/Hr	54.40 km
26	Turn	11.08274, 77.65832	15 KM/Hr	55.26 km
27	Turn	11.06187, 77.63939	15 KM/Hr	58.49 km
28	Turn	11.00847, 77.56981	15 KM/Hr	68.26 km
29	Blind Spot	11.00058, 77.56882	10 KM/Hr	69.29 km
1	Roundabout	11.00172, 77.56268	15 KM/Hr	69.95 km
30	Turn	10.94900, 77.54681	15 KM/Hr	76.17 km
31	Turn	10.94694, 77.54703	15 KM/Hr	76.54 km
32	Turn	10.93853, 77.53921	15 KM/Hr	77.76 km
33	Turn	10.93703, 77.53642	15 KM/Hr	78.12 km
34	Turn	10.93101, 77.53281	15 KM/Hr	78.93 km
35	Turn	10.93006, 77.53262	15 KM/Hr	79.03 km
36	Turn	10.89465, 77.52809	15 KM/Hr	82.98 km

	RiskSpotType	Coordinates	Speed Limit	Distance from Start
37	Turn	10.89185, 77.52641	15 KM/Hr	83.37 km
38	Turn	10.83431, 77.52934	15 KM/Hr	89.61 km
39	Turn	10.77602, 77.50716	15 KM/Hr	96.93 km
40	Turn	10.75794, 77.51938	15 KM/Hr	99.29 km
41	Turn	10.73541, 77.51760	15 KM/Hr	101.85 km

Emergency Services

	type	name	coordinates	side_of_road
0	hospital	Tiruchengode, Goverment Hospital	11.3903328, 77.8920627	Driver's Side
1	hospital	SPM Medical Centre,Tiruchengode	11.3881331, 77.8931963	Opposite Side
2	clinic	Kongu Nursing Home	11.3783065, 77.8961134	Driver's Side
3	hospital	T.C.A Hospital Tiruchengode	11.3791885, 77.8965774	Driver's Side
4	hospital	Soorya Multispecialty Hospital	11.3786429, 77.8931912	Opposite Side
6	hospital	Tiruchengode Government Hospital	11.37645, 77.89426	Opposite Side
7	hospital	Krishna Hospital, Namakkal	11.3754811, 77.8931817	Opposite Side
8	hospital	Government Hospital	11.2343326, 77.719226	Driver's Side
10	police	Kangeyam Police Station	11.0011411, 77.562688	Opposite Side
13	hospital	J K Hospital	11.0042298, 77.5603345	Opposite Side
15	hospital	Sri Balaji Surya Hospital	10.735518, 77.5185388	Driver's Side
16	hospital	Ramana Hospital, Dharapuram	10.7351092, 77.517107	Driver's Side

Rest Stops

	type	name	coordinates	side_of_road
5	restaurant	Lijo	11.3805115, 77.8946385	Opposite Side
9	fuel	Hindustan Petroleum	11.001711, 77.565054	Opposite Side
11	restaurant	Hotel Surya Pure Veg	11.0016663, 77.5638487	Opposite Side
12	fuel	Bharat Petroleum	11.0017719, 77.5629134	Driver's Side
14	fuel	Bharat Petroleum	10.9903599, 77.5638924	Opposite Side
17	restaurant	Amaravathi Lodge	10.7341612, 77.5177641	Driver's Side

Welcome to the Journey Risk Management Study

Route Overview

The planned route from Sangagiri to Dharapuram spans approximately 102.73 kilometers and passes through the following locations: Puthur, Tiruchengode, Lakkapuram, Kangeyam, and Uthiyur. The journey involves both urban and rural road segments, often transitioning between highways and smaller roads.

Weather Conditions

- **Typical Weather:** The region experiences a tropical climate with high temperatures ranging from 25°C to 40°C. Seasonal monsoons occur from October to December, with heavy rainfall.
- **Potential Hazards:** During the monsoon, roads may become slippery or flooded, increasing the risks of hydroplaning, reduced visibility, and road closures.

Traffic Patterns

- **Peak Hours:** Traffic congestion is more likely during morning (7:30 AM to 9:30 AM) and evening (5:30 PM to 7:30 PM) rush hours, especially near urban areas like Tiruchengode and Kangeyam.
- **Congestion-Prone Areas:** The segments around Tiruchengode and the approach to Kangeyam are common choke points.

Road Quality and Infrastructure

- **General Condition:** The major highways are generally well-maintained, while rural segments may have uneven surfaces and narrower roads. Potholes and unfinished construction could be encountered.
- **Infrastructure:** Availability of roadside amenities like rest stops and fuel stations is better closer to major towns.

Alternative Routes

For emergencies, consider:

- NH 544 towards Salem as an alternative to part of the route toward Erode.
- Local bypass roads around major towns to avoid traffic congestion.

Local Regulations

- **Hazardous Material Transport:** Ensure adherence to specific transport regulations, including required permits and signage for vehicles carrying hazardous materials.
- **Speed Limits:** Varies from 30 km/h in towns to 80 km/h on highways.

Historical Incidents

- There have been reports of vehicular accidents in Tiruchengode due to high traffic volumes.

- Incidents involving heavy vehicles are commonly caused by overloading and speeding, particularly on narrow roads.

Environmental Considerations

- Vegetation encroachment in rural areas can obstruct view and cover road signs.
- Identified sensitive areas include any nearby wildlife crossings and agricultural zones, where limits on noise and emissions may be stricter.

Communication Coverage

- **Potential Dead Zones:** Rural stretches between Kangeyam and Dharapuram may face sporadic coverage issues.
- **Advice:** Prepare essential communications and route verification before entering potentially dead-zones.

Emergency Response Times

- **Urban Areas:** Estimated response time is 20-30 minutes due to proximity to hospitals and fire stations.
- **Rural Areas:** Could extend to 45-60 minutes depending on terrain and road access.

Overall Summary of Risk Assessment

The journey covers mixed terrain and requires vigilance, especially in urban centers and during adverse weather. Potential challenges include typical congestion points, varying road conditions, and adherence to transport regulations. Through proper planning and by keeping abreast of weather forecasts and real-time traffic updates, many risks can be mitigated. Emergency alternatives should be identified along with ensuring reliable communication tools are on hand to address potential dead zones during the trip.

Route Photos of Risky Spots



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 0.28 km

Coordinates: 11.44029, 77.87544



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 5.05 km

Coordinates: 11.39983, 77.88377



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 5.63 km

Coordinates: 11.39706, 77.88825



Risk Type: Roundabout
Speed Limit: 15 KM/Hr
Distance from Start: 7.42 km
Coordinates: 11.38395, 77.89480



Risk Type: Turn
Speed Limit: 15 KM/Hr
Distance from Start: 7.90 km
Coordinates: 11.37868, 77.89498



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 9.45 km

Coordinates: 11.36602, 77.88875



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 13.70 km

Coordinates: 11.33882, 77.86218



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 17.14 km

Coordinates: 11.31747, 77.84240



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 24.39 km

Coordinates: 11.30951, 77.77608



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 25.00 km

Coordinates: 11.31118, 77.77139



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 28.43 km

Coordinates: 11.29473, 77.74685



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 28.76 km

Coordinates: 11.29133, 77.74660



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 29.31 km

Coordinates: 11.28844, 77.74319



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 29.60 km

Coordinates: 11.28558, 77.74271



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 31.59 km

Coordinates: 11.27360, 77.73008



Risk Type: Blind Spot
Speed Limit: 10 KM/Hr
Distance from Start: 31.90 km
Coordinates: 11.27330, 77.72711



Risk Type: Turn
Speed Limit: 15 KM/Hr
Distance from Start: 36.74 km
Coordinates: 11.23090, 77.71808



Risk Type: Turn
Speed Limit: 15 KM/Hr
Distance from Start: 37.64 km
Coordinates: 11.22378, 77.71384



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 45.09 km

Coordinates: 11.15952, 77.70067



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 50.26 km

Coordinates: 11.11943, 77.67799



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 50.99 km

Coordinates: 11.11733, 77.67191



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 52.37 km

Coordinates: 11.10471, 77.67058



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 53.57 km

Coordinates: 11.09508, 77.66612



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 54.40 km

Coordinates: 11.08722, 77.66431



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 55.26 km

Coordinates: 11.08274, 77.65832



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 58.49 km

Coordinates: 11.06187, 77.63939



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 68.26 km

Coordinates: 11.00847, 77.56981



Risk Type: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 69.29 km

Coordinates: 11.00058, 77.56882



Risk Type: Roundabout

Speed Limit: 15 KM/Hr

Distance from Start: 69.95 km

Coordinates: 11.00172, 77.56268



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 76.17 km

Coordinates: 10.94900, 77.54681



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 76.54 km

Coordinates: 10.94694, 77.54703



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 77.76 km

Coordinates: 10.93853, 77.53921



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 78.12 km

Coordinates: 10.93703, 77.53642



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 78.93 km

Coordinates: 10.93101, 77.53281



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 79.03 km

Coordinates: 10.93006, 77.53262



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 82.98 km

Coordinates: 10.89465, 77.52809



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 83.37 km

Coordinates: 10.89185, 77.52641



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 89.61 km

Coordinates: 10.83431, 77.52934



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 96.93 km

Coordinates: 10.77602, 77.50716



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 99.29 km

Coordinates: 10.75794, 77.51938



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 101.85 km

Coordinates: 10.73541, 77.51760

[Download Interactive Map](#)