



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal TO S K M 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

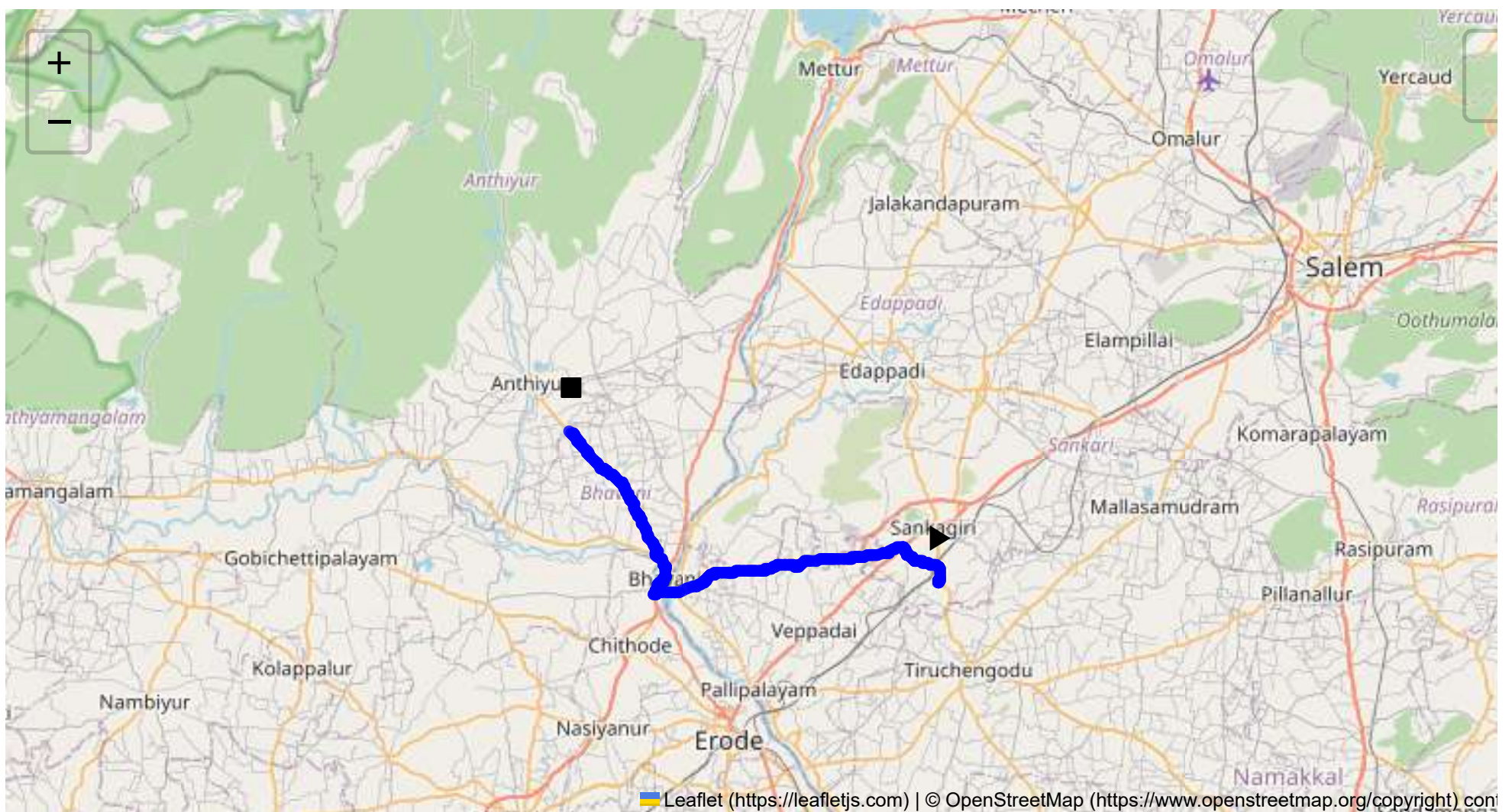
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 40.71 km
Estimated Duration: 0.9 hours
Adjusted Duration (Heavy Vehicle): 1.1 hours
Start: (11.4381, 77.8734)
End: (11.5422, 77.6158)



Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route from Sangagiri to Koothadiyur via Puthur, Padaiveedu, and Paruvachi spans approximately 40.71 kilometers. This route primarily traverses rural and semi-urban areas with a combination of state highways and local roads.

2. Typical Weather Conditions and Potential Weather-Related Hazards

- **Climate:** The region typically experiences a tropical climate with hot summers and moderate monsoons.
- **Monsoon:** Heavy rains during the monsoon (June to September) can lead to waterlogging and reduced visibility.
- **Summer:** High temperatures in the summer months (March to May) can lead to road surface deterioration and tire blowouts.
- **Hazards:** The primary weather-related hazards include slippery roads during rains, fog in winter mornings, and potential flooding in low-lying areas.

3. Analysis of Traffic Patterns

- **Peak Hours:** Traffic tends to peak during the early morning (7:30-9:30 AM) and late afternoon (5:00-7:00 PM).
- **Congestion:** Congestion is more common near the towns and major intersections, particularly around Bhavani Main Road in Padaiveedu.
- **Local Markets:** Local market days may also increase traffic congestion and pedestrian movement.

4. Assessment of Road Quality and Infrastructure

- **Road Surface:** The roads vary in quality, with state highways tending to be well-maintained compared to local roads which might have potholes and uneven surfaces.
- **Infrastructure:** Look out for narrow bridges and underpasses along the route which could pose challenges for larger vehicles.

5. Suggestions for Alternative Routes for Emergencies

- **Detours:** In case of road blockages, diversion through local villages or alternative state highways can be considered.
- **Avoidance:** Consider avoiding Bhavani Main Road in Padaiveedu during heavy congestion by taking a parallel route.

6. Summary of Local Regulations Affecting Hazardous Material Transport

- **Permits:** Ensure all necessary permits for transporting hazardous materials are secured.
- **Time Restrictions:** Some areas may have time restrictions for heavy vehicle movement to reduce road congestion during peak hours.

7. Overview of Historical Incidents

- **Accidents:** Reports indicate occasional heavy vehicle accidents, mainly due to road conditions and sharp bends.
- **Hazardous Material Spills:** There have been few recorded incidents, but constant vigilance and adherence to safety norms are advised.

8. Environmental Considerations and Sensitive Areas

- **Eco-sensitive Zones:** Avoid disposing of any material near agricultural lands and water bodies along the route.
- **Wildlife Crossings:** Although not frequent, be aware of potential wildlife crossings in rural areas.

9. Analysis of Communication Coverage

- **Connectivity:** Mobile network coverage is generally reliable along the major parts of the route.
- **Dead Zones:** Some remote stretches between villages may have poor network reception.

10. Estimated Emergency Response Times

- **Urban Areas:** Faster response times (approximately 15-30 minutes), especially near Paruvachi and Padaiveedu.
- **Rural Segments:** Longer response times (up to 45 minutes) are expected in rural stretches due to distance from emergency facilities.

11. Overall Summary of Risk Assessment

The route from Sangagiri to Koothadiyur presents moderate risks primarily due to weather conditions, road infrastructure, and traffic congestion. It is essential to travel during non-peak hours when possible, maintain communication tools for emergency use, and ensure compliance with all transport regulations related to hazardous materials. Regular updates on weather and traffic conditions are recommended to minimize risks.

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	High	11.45350, 77.85700	15 KM/Hr
5	Turn	Medium	11.46303, 77.84945	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
6	Turn	Medium	11.46316, 77.84921	30 KM/Hr
7	Turn	High	11.45542, 77.81725	15 KM/Hr
8	Turn	High	11.45631, 77.81668	15 KM/Hr
9	Turn	High	11.45636, 77.81678	15 KM/Hr
10	Blind Spot	Blind Spot	11.45543, 77.81740	10 KM/Hr
11	Blind Spot	Blind Spot	11.44530, 77.72783	10 KM/Hr
12	Blind Spot	Blind Spot	11.44513, 77.72786	10 KM/Hr
13	Turn	High	11.43001, 77.67575	15 KM/Hr
14	Turn	Medium	11.43000, 77.67564	30 KM/Hr
15	Turn	Medium	11.43009, 77.67540	30 KM/Hr
16	Turn	High	11.43026, 77.67525	15 KM/Hr
17	Turn	Medium	11.43782, 77.67821	30 KM/Hr
18	Turn	High	11.43865, 77.68226	15 KM/Hr
19	Turn	Medium	11.43965, 77.68224	30 KM/Hr
20	Turn	High	11.44107, 77.68189	15 KM/Hr
21	Turn	Medium	11.44115, 77.68214	30 KM/Hr
22	Turn	Medium	11.44122, 77.68219	30 KM/Hr
23	Turn	High	11.44291, 77.68256	15 KM/Hr
24	Turn	High	11.44301, 77.68276	15 KM/Hr
25	Turn	High	11.44858, 77.68333	15 KM/Hr
26	Turn	High	11.45649, 77.67621	15 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

	type	name	coordinates	speed_limit	risk_level
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
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	Sutha Hospital	11.4365526, 77.6796472	30 km/h	Medium
14	clinic	Velavan Homoeo Clinic	11.4367087, 77.6761472	30 km/h	Medium
15	hospital	Maha Hospital	11.4372003, 77.6781345	30 km/h	Medium
16	hospital	Jothikumar Hospital	11.43687, 77.678407	30 km/h	Medium
17	hospital	SKMH Hospital	11.4379787, 77.6780268	30 km/h	Medium
18	clinic	Sri Dharshan Diabetes Care	11.437649, 77.6778126	30 km/h	Medium
19	hospital	Kavin Hospital	11.4399114, 77.6838194	30 km/h	Medium
20	clinic	Thangam Acupuncture	11.4418816, 77.6832318	30 km/h	Medium
21	hospital	Sumangali Hospital	11.4427668, 77.6827131	30 km/h	Medium
22	hospital	Annusiya Hospital	11.4432777, 77.6813562	30 km/h	Medium
23	hospital	Kandasamy Hospital	11.4450062, 77.6832304	30 km/h	Medium
24	hospital	Ashok Krishna Hospital	11.4483344, 77.6856579	30 km/h	Medium
25	hospital	Senthil Hospital	11.4475854, 77.6844482	30 km/h	Medium
26	hospital	S.N.A. Siddha Hospital	11.44704, 77.682877	30 km/h	Medium
27	hospital	Shri Mani Hospital	11.44771, 77.6838471	30 km/h	Medium
28	clinic	Sri Hari Clinic	11.4483503, 77.6850963	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
29	hospital	Sri Saravana Hospital	11.4506202, 77.6829676	30 km/h	Medium
30	hospital	Immiaditya Hospital	11.4501276, 77.6836088	30 km/h	Medium
31	hospital	Government Hospital	11.45112, 77.682149	30 km/h	Medium
32	hospital	Vijay Hospital	11.45091, 77.682019	30 km/h	Medium
33	hospital	Anbe Sivam Hospital	11.4508139, 77.6854947	30 km/h	Medium
34	clinic	Kalyani Nursing Home	11.452097, 77.6808974	30 km/h	Medium
35	hospital	Government Hospital	11.4519113, 77.6819742	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: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.44029, 77.87544



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: 11.46303, 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: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.45631, 77.81668



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.45636, 77.81678



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: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.43782, 77.67821



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.43865, 77.68226



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.43965, 77.68224



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.44107, 77.68189



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.44115, 77.68214



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.44122, 77.68219



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.44291, 77.68256



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.44301, 77.68276



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.44858, 77.68333



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.45649, 77.67621