



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal to SRI SANGAMASHWARAA & CO

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

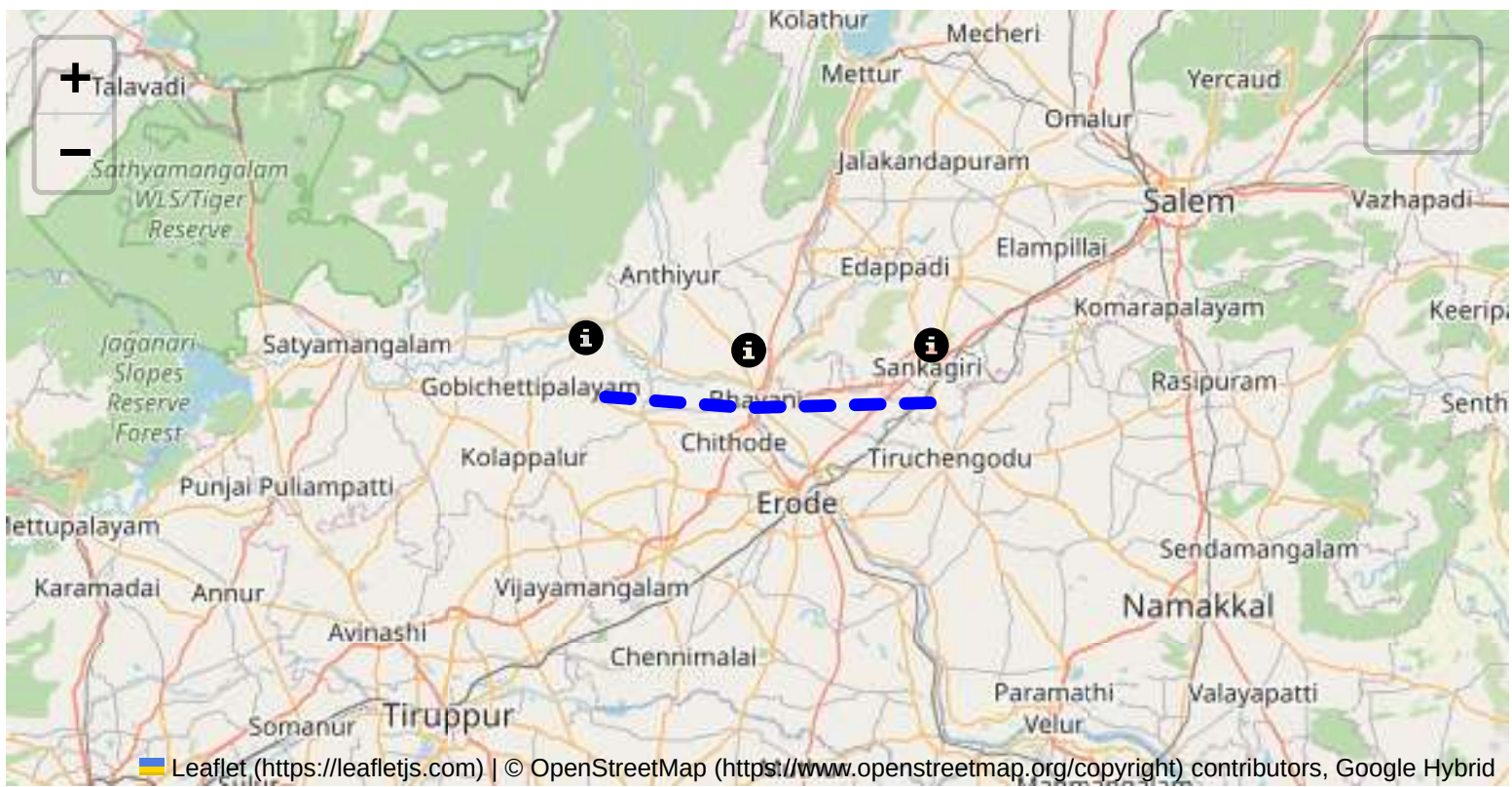
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

Journey Risk Mitigation

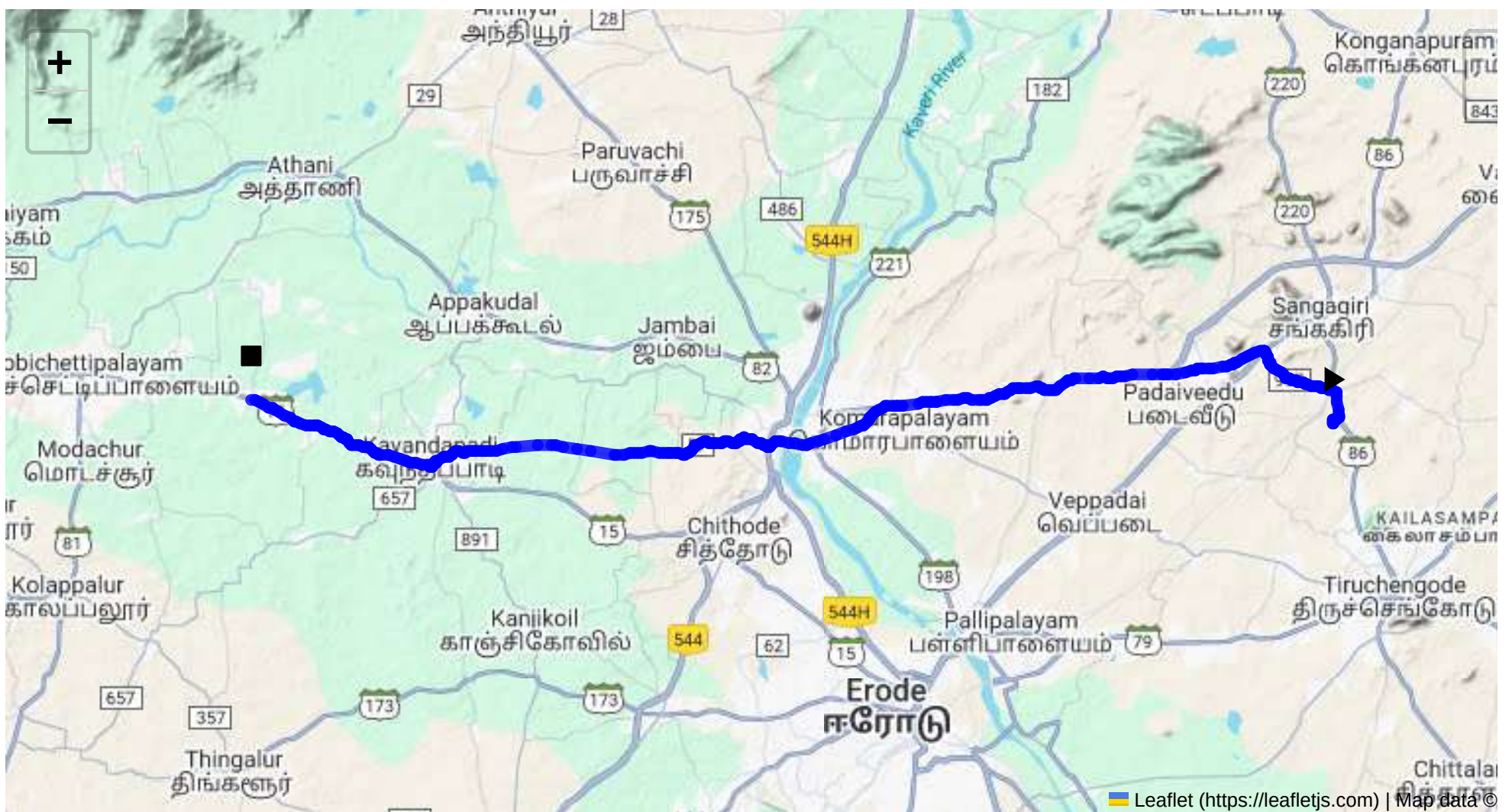
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 45.74 km
Estimated Duration: 1.0 hours
Adjusted Duration (Heavy Vehicle): 1.2 hours
Start: (11.4381, 77.8734)
End: (11.446334, 77.49443)



Welcome to the Journey Risk Management Study

1. Overview of the Route Map:

The route from CVQF+23W, Sangagiri to CFVW+GQ Kuhalur, via Bhavani, follows along state highways and smaller roads that weave through rural and semi-urban areas. It covers approximately 45.74 kilometers and includes a mix of city streets, rural landscapes, and major highways.

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

The region typically experiences a tropical climate with significant heat and humidity. Common weather-related hazards include:

- **Monsoon Season (June to September):** Heavy rains can lead to waterlogged roads and decreased visibility.
- **Summer Months (March to May):** Extreme heat can affect vehicle performance, especially cooling systems.
- **Fog in Winter Months (December to February):** Occasional fog can reduce visibility during early mornings and late evenings.

3. Analysis of Traffic Patterns:

- **Peak Hours:** Morning (8:00-10:00 AM) and evening (6:00-8:00 PM) are generally busy, with additional congestion near urban centers and market areas.
- **Congestion-Prone Areas:** Expect congestion in populated areas like Bhavani town, especially near intersections and market zones.

4. Assessment of Road Quality and Infrastructure:

- **Sangagiri to Bhavani:** Roads are generally well-maintained but may have some potholes, especially post-monsoon.
- **Bhavani to Kuhalur:** Quality can vary, with some narrower sections and occasional rough patches.

5. Suggestions for Alternative Routes for Emergencies:

In case of roadblocks or extreme weather conditions, consider:

- **Alternate Route 1:** Utilize other rural roads that parallel major highways.
- **Alternate Route 2:** If moving towards the east, use state highway diversions as directed by local authorities.

6. Summary of Local Regulations Affecting Hazardous Material Transport:

- Heavy vehicles must adhere to time restrictions in urban areas, often prohibiting entry during peak hours.
- Proper labeling and documentation are mandatory for all hazardous materials.
- Follow speed limits and local advisories regarding transport safety regulations.

7. Overview of Historical Incidents:

- **Common Incidents:** The region has experienced isolated incidents of overturned trucks, typically linked to excessive speed or poorly maintained vehicles.
- **Major Hazards:** Past hazardous material spills have resulted from poor loading practices and vehicle malfunctions.

8. Environmental Considerations and Sensitive Areas:

- **Bhavani River:** Crossing areas and vicinity near this river are sensitive zones.
- **Protected Flora and Fauna:** Areas near wildlife reserves or forested roads should be approached cautiously to avoid environmental impact.

9. Analysis of Communication Coverage:

- **Strong Coverage:** Towns and urban centers have strong mobile networks.
- **Potential Dead Zones:** Rural stretches may have intermittent coverage; ensure communications are tested.

10. Estimated Emergency Response Times:

- **Urban Areas (e.g., Bhavani):** 15-20 minutes for emergency services response.
- **Rural Areas:** May extend to 30-45 minutes due to distance and road conditions.

11. Overall Summary of Risk Assessment:

This route involves moderate risk, primarily due to potential weather impacts and road quality variations. Key risk factors include weather-induced visibility issues, traffic congestion, and rural road conditions. Preparation involves regular vehicle maintenance checks, adherence to local regulations, and real-time monitoring of traffic and weather conditions.

Overall, the route is typically navigable with adequate planning and adherence to local regulations, minimizing potential risks effectively.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Turn	High	11.43811, 77.87348	15 KM/Hr
1	Turn	Medium	11.43956, 77.87340	30 KM/Hr
2	Turn	High	11.43968, 77.87345	15 KM/Hr
3	Turn	High	11.44029, 77.87544	15 KM/Hr
4	Turn	Medium	11.44898, 77.87410	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
5	Turn	Medium	11.45357, 77.85789	30 KM/Hr
6	Turn	Medium	11.45352, 77.85698	30 KM/Hr
7	Turn	Medium	11.46303, 77.84945	30 KM/Hr
8	Turn	Medium	11.46318, 77.84913	30 KM/Hr
9	Turn	High	11.43001, 77.67575	15 KM/Hr
10	Turn	Medium	11.43003, 77.67551	30 KM/Hr
11	Turn	High	11.43026, 77.67525	15 KM/Hr
12	Blind Spot	Blind Spot	11.43073, 77.67536	10 KM/Hr
13	Turn	High	11.43278, 77.67024	15 KM/Hr
14	Turn	Medium	11.43344, 77.66693	30 KM/Hr
15	Turn	Medium	11.42838, 77.56943	30 KM/Hr
16	Turn	Medium	11.42828, 77.56554	30 KM/Hr
17	Turn	Medium	11.42704, 77.56397	30 KM/Hr
18	Turn	Medium	11.42505, 77.55919	30 KM/Hr
19	Turn	High	11.42329, 77.55798	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
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

	type	name	coordinates	speed_limit	risk_level
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: 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: 11.44898, 77.87410



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.45357, 77.85789



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.45352, 77.85698



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: 11.46318, 77.84913



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: 11.43003, 77.67551



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: 11.43344, 77.66693



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.42838, 77.56943



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.42828, 77.56554



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.42704, 77.56397



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.42505, 77.55919



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.42329, 77.55798

