



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal TO HARSITA 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

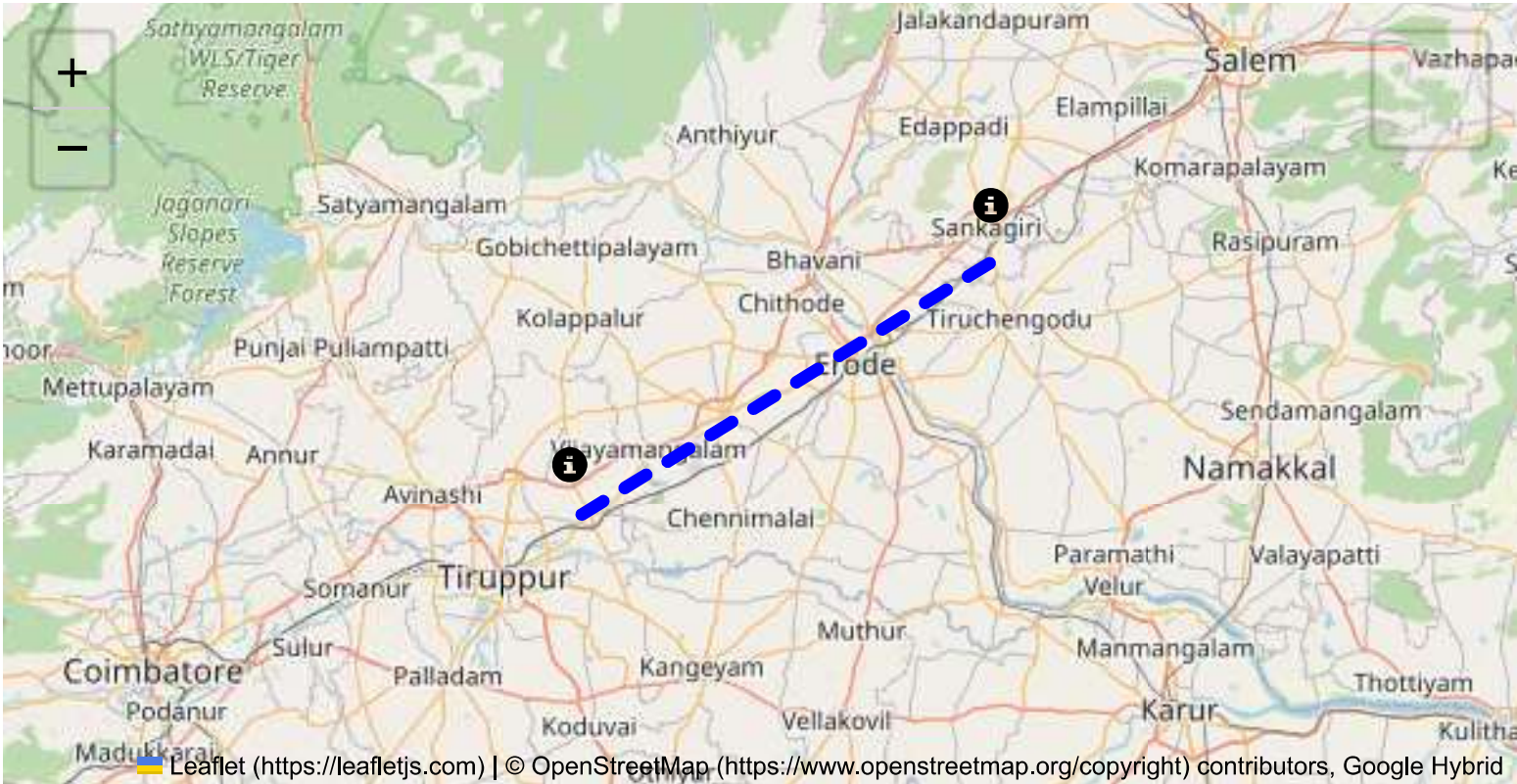
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

Journey Risk Mitigation

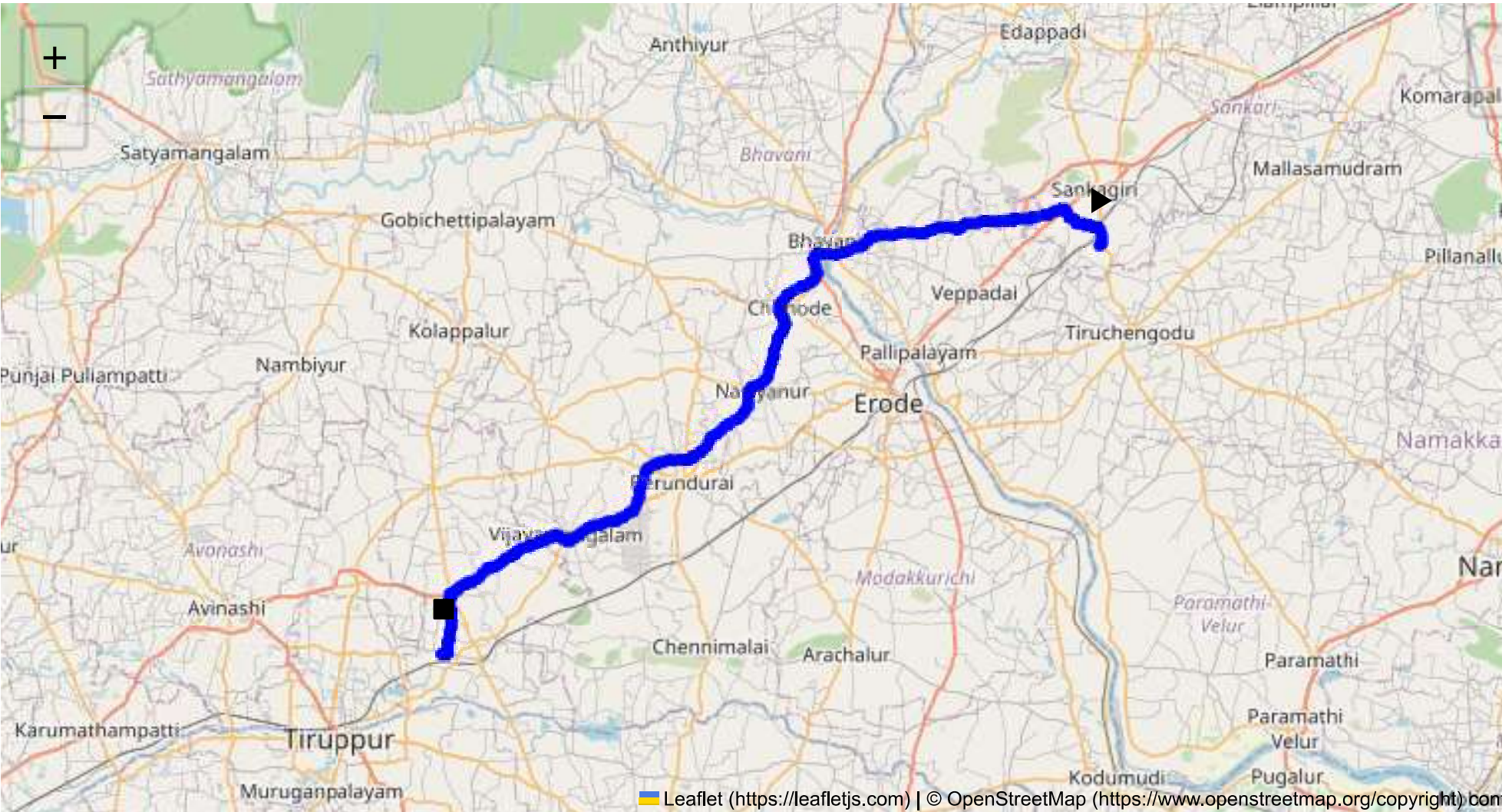
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 72.38 km
Estimated Duration: 1.4 hours
Adjusted Duration (Heavy Vehicle): 1.8 hours
Start: (11.4381, 77.8734)
End: (11.159483, 77.416152)



Welcome to the Journey Risk Management Study

Route Overview

The route from CVQF+23W, Sangagiri, Tamil Nadu to 5C58+R52, Kavandampalayam, Morattupalayam, Tamil Nadu spans approximately 72.38 kilometers and is an estimated 1.41-hour drive for heavy vehicles. The journey primarily involves traveling through NH544 and a series of regional roads, traversing a mix of rural and lightly urbanized areas.

Weather Conditions

- **Typical Weather:** Tamil Nadu experiences a tropical climate with significant rainfall during the monsoon months (June to August and October to December) and high temperatures during the summer (March to May).
- **Potential Hazards:** Heavy rainfall can lead to slippery roads and reduced visibility, while high temperatures may stress vehicle systems such as engines and tires.

Traffic Patterns

- **Peak Hours:** Traffic congestion typically peaks during morning (8:00 AM - 10:00 AM) and late afternoon (5:00 PM - 7:00 PM) when commuters are traveling to and from work.
- **Congestion Areas:** Expect slower traffic near town centers and intersections, especially around Sangagiri's marketplace and junctions on NH544.

Road Quality and Infrastructure

- **Assessment:** Most parts of NH544 are well-maintained with appropriate signage and lane markings. However, smaller regional roads may have uneven surfaces, potholes, and narrower lanes.
- **Infrastructure:** Rest stops and truck parking are available along NH544, but less frequent on smaller roads.

Alternative Routes

- In case of emergencies or road closures, consider detouring via Salem to Bhavani before rejoining primary routes. While longer, this provides better highway conditions and facilities.

Local Regulations Affecting Hazardous Materials

- Strict regulations oversee the transport of hazardous materials, ensuring compliance with safety standards. Drivers should be aware of documentation requirements and zone restrictions, particularly around densely populated areas.

Historical Incidents

- Historically, this region has witnessed occasional accidents involving large vehicles primarily due to human error or mechanical failure. No significant hazardous material incidents have been documented recently.

Environmental Considerations

- The route passes near agricultural fields and small water bodies. Any spillages could affect local ecosystems, stressing the need for careful handling and quick response strategies.

Communication Coverage

- **Signal Strength:** Most of the route has good mobile coverage, especially along NH544. Potential signal dropouts may occur in more rural stretches approaching Morattupalayam.
- **Dead Zones:** Drivers should be cautious in remote areas, ensuring radios and other communication devices are operational.

Emergency Response Times

- **Highway Segments:** Emergency services alongside NH544 can typically respond within 30 minutes.
- **Rural Roads:** Response times may extend to an hour in less accessible segments due to road quality and distance to nearest service centers.

Overall Summary

This route is generally safe for heavy vehicles transporting hazardous materials, provided drivers adhere to safety regulations and remain cautious of weather-induced slick conditions and potential for congestion. Being prepared for communication and coordination in less-serviced areas, as well as mindful driving through environmentally sensitive zones, will significantly mitigate risks. Regular vehicle checks and adherence to local transport laws will further ensure safe passage along this route.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Turn	Medium	11.43822, 77.87348	30 KM/Hr
1	Turn	High	11.43968, 77.87345	15 KM/Hr
2	Turn	High	11.44029, 77.87544	15 KM/Hr
3	Turn	High	11.44898, 77.87410	15 KM/Hr
4	Turn	Medium	11.45357, 77.85789	30 KM/Hr
5	Turn	High	11.45352, 77.85698	15 KM/Hr
6	Turn	Medium	11.45847, 77.85140	30 KM/Hr
7	Turn	Medium	11.46303, 77.84945	30 KM/Hr
8	Turn	Medium	11.46314, 77.84928	30 KM/Hr
9	Turn	Medium	11.45509, 77.81383	30 KM/Hr
10	Turn	Medium	11.29288, 77.59029	30 KM/Hr
11	Turn	High	11.20358, 77.42732	15 KM/Hr
12	Turn	High	11.20335, 77.42730	15 KM/Hr
13	Turn	High	11.19962, 77.42240	15 KM/Hr
14	Blind Spot	Blind Spot	11.19748, 77.42349	10 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
15	Turn	High	11.19731, 77.42240	15 KM/Hr
16	Turn	Medium	11.18014, 77.42388	30 KM/Hr
17	Turn	High	11.15927, 77.42044	15 KM/Hr
18	Turn	Medium	11.15930, 77.41866	30 KM/Hr
19	Turn	Medium	11.15996, 77.41806	30 KM/Hr
20	Turn	Medium	11.16004, 77.41760	30 KM/Hr
21	Turn	Medium	11.15963, 77.41700	30 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
12	clinic	G.K Clinic	11.4297244, 77.6749715	30 km/h	Medium
13	clinic	Erode Cancer Centre	11.3732, 77.649152	30 km/h	Medium
15	hospital	Irt Hospital	11.2803603, 77.5644118	30 km/h	Medium
17	hospital	Gen Siddha Hospital	11.2375033, 77.5059797	30 km/h	Medium
18	hospital	Vijayamangalm Government Hospital	11.2382827, 77.501687	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
19	hospital	Dr. N Viswanathan Hospital	11.2412783, 77.5005502	30 km/h	Medium
20	clinic	P.M. Clinic	11.2281078, 77.4647296	30 km/h	Medium
22	hospital	Sri Renu Hospital	11.1990225, 77.4219937	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
14	college	Government polytechnic college	11.2907053, 77.5698726	30 km/h	Medium
16	school	Bharathi Matriculation School	11.2494613, 77.5307028	30 km/h	Medium
21	marketplace	Weekly Market (sandhai)	11.2287229, 77.4646676	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: 11.44898, 77.87410



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



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.45352, 77.85698



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.45847, 77.85140



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: 11.46314, 77.84928



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.45509, 77.81383



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.29288, 77.59029



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.20358, 77.42732



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.20335, 77.42730



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.19962, 77.42240



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.19748, 77.42349



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.19731, 77.42240



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.18014, 77.42388



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.15927, 77.42044



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.15930, 77.41866



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.15996, 77.41806



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.16004, 77.41760



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.15963, 77.41700

