



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal TO KUMARAN TRADERS

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

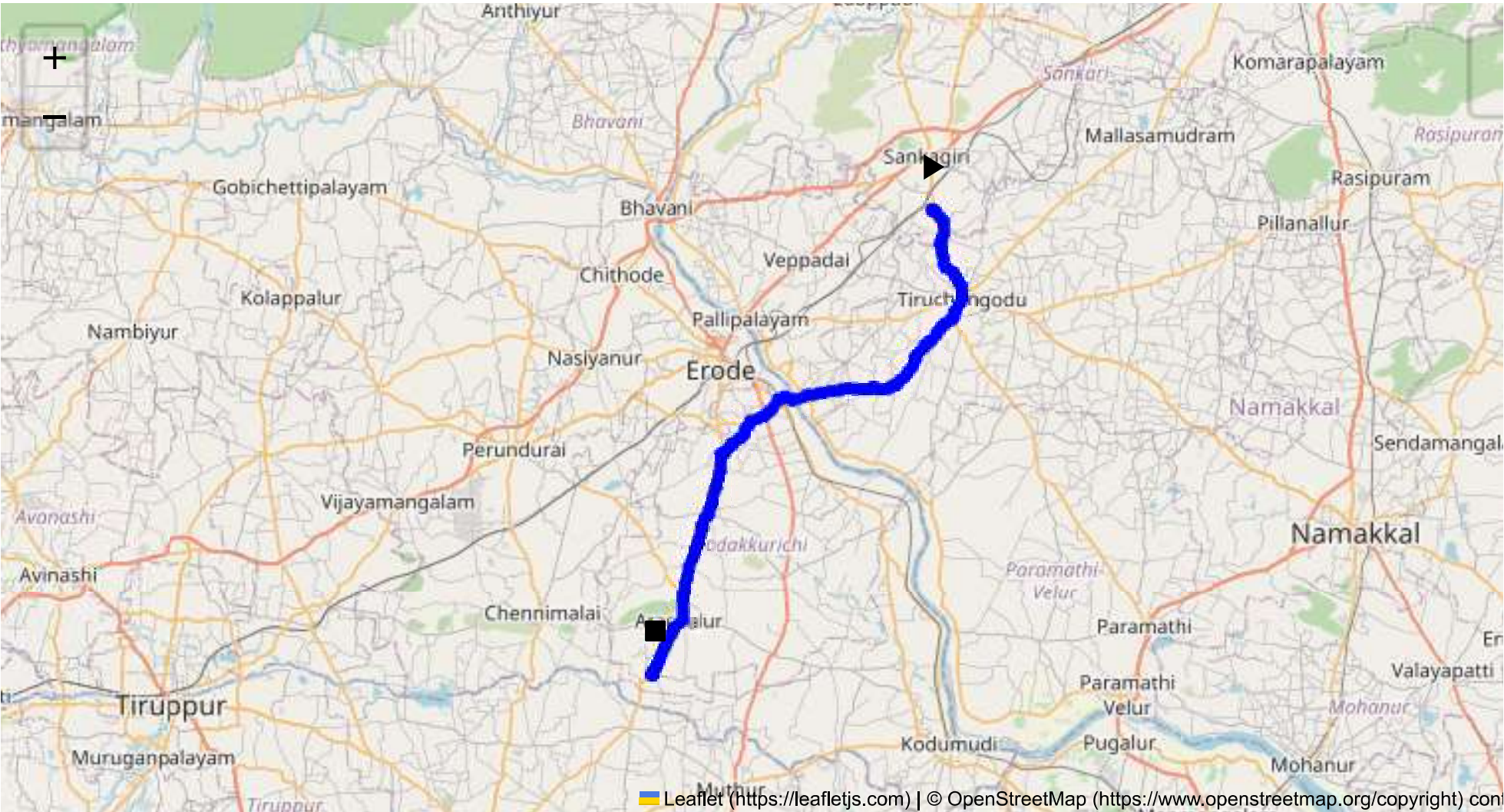
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 50.45 km
Estimated Duration: 1.3 hours
Adjusted Duration (Heavy Vehicle): 1.6 hours
Start: (11.4381, 77.8734)
End: (11.121295, 77.680176)



Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route from Sangagiri to Vadapalani in Tamil Nadu is a 50.45-kilometer stretch that traverses through a mix of urban and rural settings. The planned route likely involves major highways such as NH44 and state roads that connect smaller towns and villages.

2. Typical Weather Conditions and Potential Weather-Related Hazards

The region typically experiences a tropical climate. The primary weather concerns include:

- **Monsoon Season (June to September):** Heavy rainfall can cause flooding and reduced visibility.
- **Summer (March to May):** High temperatures raise the risk of vehicle overheating and discomfort for drivers.
- **Occasional Cyclones:** Although infrequent, cyclones can lead to severe weather disruptions.

3. Analysis of Traffic Patterns

- **Peak Hours:** Morning (8:00 - 10:00 AM) and evening (5:00 - 8:00 PM) see significant congestion, especially near urban centers.
- **Congestion-Prone Areas:** Entrance and exits of towns along the route, like near major junctions and marketplaces, can experience bottlenecks.

4. Assessment of Road Quality and Infrastructure

- Most highways have been recently upgraded with well-paved surfaces. However, smaller connecting roads may have uneven surfaces and limited signage.
- Some stretches may lack adequate lighting, thus posing a risk at night.

5. Suggestions for Alternative Routes for Emergencies

In case of roadblocks or closures:

- **NH544:** Can serve as an alternative for some segments, though longer.
- Local roads may bypass specific congested town centers but may not support heavy vehicle capacity uniformly.

6. Summary of Local Regulations Affecting Hazardous Material Transport

- **Permits Required:** Specific permits are needed for the transport of hazardous materials, obtained through local transport authorities.
- **Travel Time Restrictions:** Certain areas may restrict heavy vehicle movement during peak times or specific events. Compliance with weight limits is strictly enforced.

7. Overview of Historical Incidents

- There have been occasional spills related to chemical transport, typically due to vehicle mishandling or mechanical failure.
- Accidents are rare but have occurred, often due to driver fatigue or poor weather.

8. Environmental Considerations and Sensitive Areas

- The route passes through agricultural regions that might be affected by chemical spills.
- Several small water bodies and green spaces may be sensitive to pollution and disturbances.

9. Analysis of Communication Coverage

- Generally good coverage with major service providers.
- Potential dead zones are possible in rural sections, though improvements are ongoing.

10. Estimated Emergency Response Times

- **Urban Areas:** Response times are approximately 15-30 minutes.
- **Rural/Semi-urban Areas:** Can vary from 30 minutes to over an hour, depending on accessibility and the presence of emergency services.

12. Overall Summary of Risk Assessment

- The route presents moderate risks, primarily from weather, road conditions in less developed sections, and peak-time urban congestion.
- Adherence to regulations, checking weather forecasts, and ensuring vehicle maintenance will mitigate many risks.
- Regular communication checks and having emergency contact protocols will enhance safety substantially.

The route is generally safe if navigating strategically around peak times and weather disturbances while ensuring compliance with local regulations for transporting hazardous materials.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.38395, 77.89480	15 KM/Hr
1	Turn	Medium	11.43822, 77.87348	30 KM/Hr
2	Turn	High	11.43968, 77.87345	15 KM/Hr
3	Turn	High	11.44022, 77.87546	15 KM/Hr
4	Turn	High	11.37868, 77.89498	15 KM/Hr
5	Turn	Medium	11.37842, 77.89452	30 KM/Hr
6	Turn	High	11.36604, 77.88887	15 KM/Hr
7	Turn	Medium	11.34067, 77.86347	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
8	Turn	Medium	11.33882, 77.86218	30 KM/Hr
9	Turn	Medium	11.33778, 77.86236	30 KM/Hr
10	Turn	High	11.29490, 77.74685	15 KM/Hr
11	Turn	High	11.29141, 77.74662	15 KM/Hr
12	Turn	Medium	11.29125, 77.74646	30 KM/Hr
13	Turn	Medium	11.28844, 77.74319	30 KM/Hr
14	Turn	Medium	11.28573, 77.74281	30 KM/Hr
15	Turn	Medium	11.27336, 77.72999	30 KM/Hr
16	Turn	Medium	11.27319, 77.72981	30 KM/Hr
17	Turn	High	11.27328, 77.72705	15 KM/Hr
18	Turn	Medium	11.23054, 77.71796	30 KM/Hr
19	Turn	Medium	11.22387, 77.71385	30 KM/Hr
20	Turn	Medium	11.16078, 77.70122	30 KM/Hr
21	Turn	High	11.15942, 77.70068	15 KM/Hr
22	Blind Spot	Blind Spot	11.12126, 77.67929	10 KM/Hr

Emergency Locations

	type	name	coordinates	speed_limit	risk_level
0	hospital	Tiruchengode, Goverment Hospital	11.3903328, 77.8920627	30 km/h	Medium
1	hospital	SPM Medical Centre,Tiruchengode	11.3881331, 77.8931963	30 km/h	Medium
5	clinic	Kongu Nursing Home	11.3783065, 77.8961134	30 km/h	Medium
6	hospital	T.C.A Hospital Tiruchengode	11.3791885, 77.8965774	30 km/h	Medium
7	hospital	Soorya Multispecialty Hospital	11.3786429, 77.8931912	30 km/h	Medium
8	hospital	Tiruchengode Government Hospital	11.37645, 77.89426	30 km/h	Medium
9	hospital	Tirukumaran Hospitals	11.3782118, 77.8914933	30 km/h	Medium
10	hospital	Krishna Hospital, Namakkal	11.3754811, 77.8931817	30 km/h	Medium
13	hospital	Government Hospital	11.2343326, 77.719226	30 km/h	Medium

Crowded Spots

	type	name	coordinates	speed_limit	risk_level
2	school	அரசு ஆண்கள் மேல்நிலைப் பள்ளி	11.3850439, 77.8948279	30 km/h	Medium
3	school	அரசு பெண்கள் மேல்நிலைப் பள்ளி	11.3844247, 77.8949053	30 km/h	Medium
4	marketplace	திருச்செங்கோடு தினசரி காய்கறி சந்தை	11.3833608, 77.8970145	30 km/h	Medium
11	school	KSR Educational institution	11.3772013, 77.8908807	30 km/h	Medium
12	school	MDV School	11.3719843, 77.8915244	30 km/h	Medium

Route Photos of Risky Spots



Risk Type: Roundabout
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.38395, 77.89480



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.44022, 77.87546



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.37868, 77.89498



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.37842, 77.89452



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.36604, 77.88887



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.34067, 77.86347



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.33882, 77.86218



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.33778, 77.86236



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.29490, 77.74685



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.29141, 77.74662



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.29125, 77.74646



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.28844, 77.74319



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.28573, 77.74281



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.27336, 77.72999



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.27319, 77.72981



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.27328, 77.72705



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.23054, 77.71796



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.22387, 77.71385



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.16078, 77.70122



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.15942, 77.70068



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Coordinates: 11.12126, 77.67929

