



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal TO ERODE DIST TRACTOR OWNERS ASSN

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

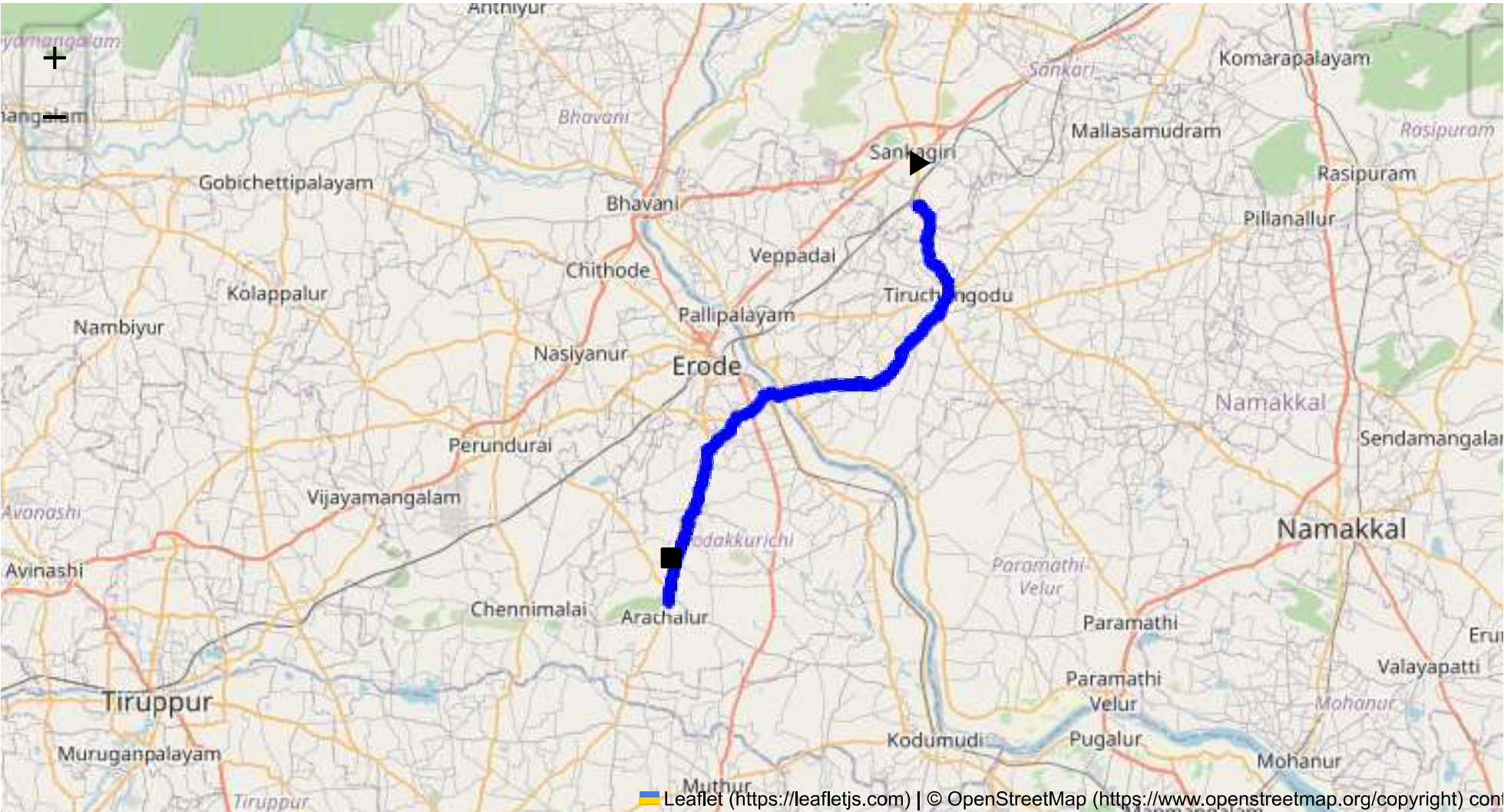
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 44.25 km
Estimated Duration: 1.1 hours
Adjusted Duration (Heavy Vehicle): 1.4 hours
Start: (11.4381, 77.8734)
End: (11.16957, 77.701469)



Welcome to the Journey Risk Management Study

Sure, let's analyze the route from Sangagiri to Arachalur.

1. Overview of the Route Map

The route spans approximately 44.25 kilometers from Sangagiri in Erode district to Arachalur in Tamil Nadu. The journey typically takes around 1.12 hours for heavy vehicles, indicating a combination of

highways and local roads, likely encountering both urban and rural driving conditions.

2. Typical Weather Conditions and Potential Weather-Related Hazards

Tamil Nadu experiences a tropical climate. Monsoon seasons (June to September and October to December) can bring heavy rainfall, which could result in reduced visibility, slippery roads, and potential flooding in low-lying areas. The months of April to June are typically hot, with high temperatures possibly affecting vehicle performance.

3. Analysis of Traffic Patterns

Traffic is generally moderate in rural areas but could be heavier in towns. Peak hours are typically between 8:00 - 10:00 AM and 5:00 - 8:00 PM, when locals commute to and from work. Roads near city centers, marketplaces, or schools might experience congestion, particularly during school start and end times.

4. Assessment of Road Quality and Infrastructure

Primary roads in Tamil Nadu are generally paved but can vary in quality. Highways are typically well-maintained, whereas rural roads may suffer from potholes and insufficient markings. Inspections should focus on bridge conditions and rural road shoulders.

5. Suggestions for Alternative Routes for Emergencies

In case of roadblocks or accidents on the main route, alternative paths through nearby highways or connecting roads between major towns should be planned. Specific alternative routes depend on real-time traffic and road conditions but generally involve state highways connecting through Erode or Bhavani.

6. Summary of Local Regulations Affecting Hazardous Material Transport

Transporting hazardous materials in Tamil Nadu requires adherence to national road safety regulations, including valid permits, proper vehicle signage, and adherence to speed limits. Transport is often restricted in densely populated areas and during peak hours.

7. Overview of Historical Incidents Involving Heavy Vehicles or Hazardous Materials

The region has occasionally experienced incidents due to overloaded trucks or mechanical failures. Hazardous material accidents are rare but have primarily resulted from non-compliance with safety measures. Monitoring vehicle conditions and compliance records is advised.

8. Environmental Considerations and Sensitive Areas

Potential environmental risks involve traversing agricultural lands, which could be sensitive to chemical spills. Awareness of wildlife crossings, especially in rural sections, is crucial to avoid animal-vehicle

collisions. Noise and emissions should be minimized when passing through populated areas.

9. Analysis of Communication Coverage

While urban areas generally have good mobile network coverage, rural sections may experience communication dead zones. Drivers should ensure GPS devices or backup maps are available, and predefined emergency contact points should be established before the journey.

10. Estimated Emergency Response Times for Different Route Segments

Emergency response times in urban areas could be within 15-30 minutes due to proximity to services. In rural sections, this could increase to 45 minutes or more, depending on the distance from the nearest emergency services and road conditions.

12. Overall Summary of Risk Assessment

The journey from Sangagiri to Arachalur involves navigating a mix of highway and rural roads. The main risks include weather-related challenges, variable road conditions, and potential congested zones. Effective risk management involves stringent adherence to safety regulations, preparedness for adverse weather, planning for alternative routes, and maintaining communication lines. Continuous monitoring of road conditions and traffic updates is recommended to ensure safe and efficient transport of hazardous materials.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.38395, 77.89480	15 KM/Hr
1	Turn	High	11.43811, 77.87348	15 KM/Hr
2	Turn	High	11.43968, 77.87345	15 KM/Hr
3	Blind Spot	Blind Spot	11.44029, 77.87544	10 KM/Hr
4	Turn	High	11.37868, 77.89498	15 KM/Hr
5	Turn	High	11.37850, 77.89453	15 KM/Hr
6	Turn	High	11.36604, 77.88887	15 KM/Hr
7	Turn	Medium	11.34067, 77.86347	30 KM/Hr
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	Medium	11.29141, 77.74662	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
12	Turn	High	11.29129, 77.74657	15 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

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	hospital	T.C.A Hospital Tiruchengode	11.3791885, 77.8965774	30 km/h	Medium
6	hospital	Soorya Multispecialty Hospital	11.3786429, 77.8931912	30 km/h	Medium
7	clinic	Kongu Nursing Home	11.3783065, 77.8961134	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

	type	name	coordinates	speed_limit	risk_level
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: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Coordinates: 11.44029, 77.87544



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.37868, 77.89498



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.37850, 77.89453



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: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.29141, 77.74662



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.29129, 77.74657



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