



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal to SRI VEERAKUMAR AUTO SERVICE

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

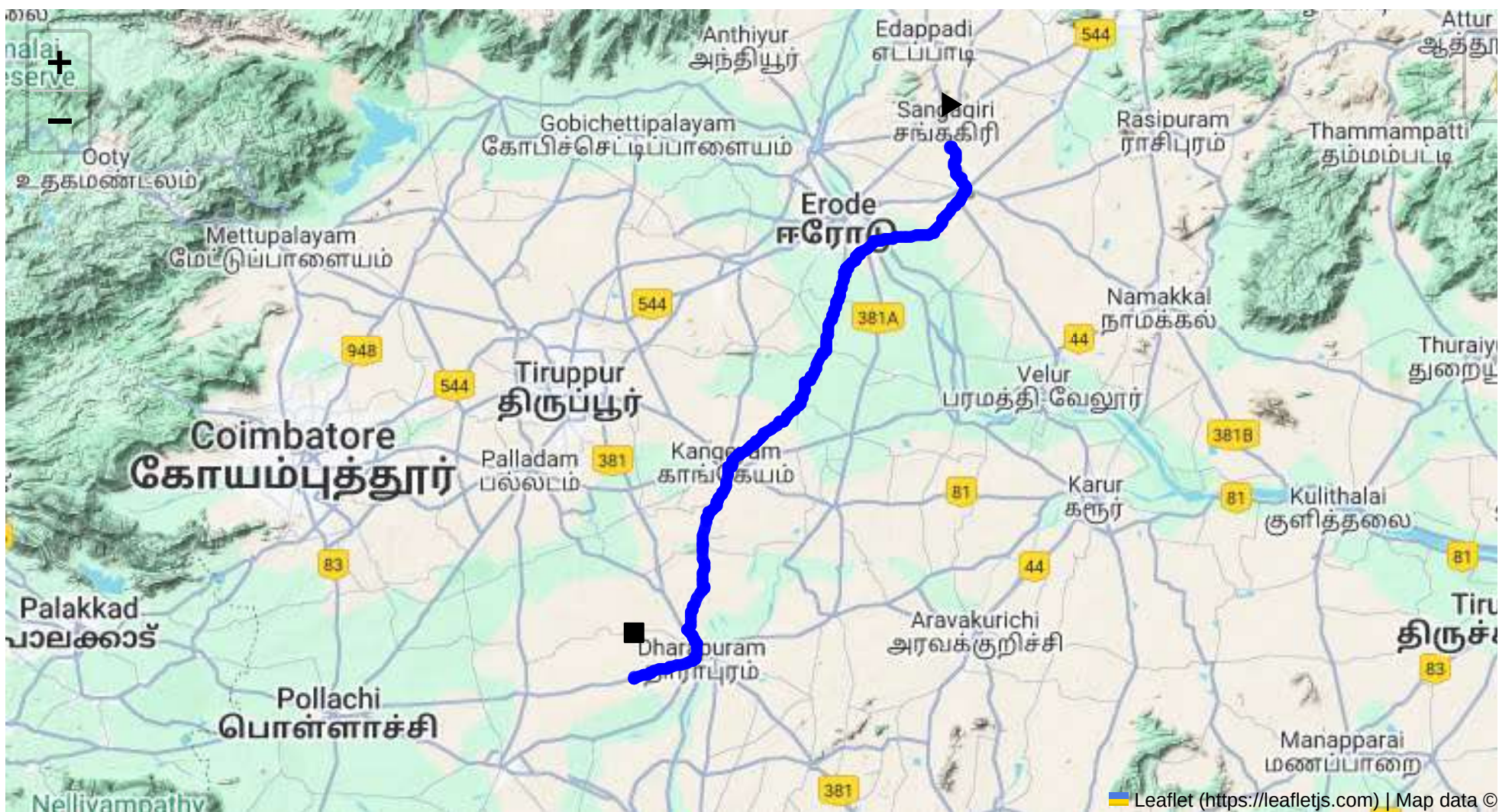
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 112.65 km
Estimated Duration: 2.5 hours
Adjusted Duration (Heavy Vehicle): 3.2 hours
Start: (11.4381, 77.8734)
End: (10.712079, 77.430122)



Welcome to the Journey Risk Management Study

Route Safety Analysis: Sangagiri to Chinnaputhur, Tamil Nadu

1. Overview of the Route Map:

- The route covers approximately 112.65 km, mainly via NH 544 and NH 544H. It passes through several rural and semi-urban areas, with key towns along the way including Erode and Perundurai. The journey begins in Sangagiri, progresses east, and concludes in Chinnaputhur.

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

- Tamil Nadu's climate is predominantly tropical. The region may experience heavy rain during the monsoon season (October to December) which can lead to flooding and reduced visibility. Summer temperatures (March to June) can soar above 40°C, increasing the risk of vehicle overheating. Fog can be an issue during winters (December to February) early in the mornings and late at night.

3. Traffic Patterns:

- Peak traffic hours are typically between 8:00 AM to 10:00 AM and 5:00 PM to 7:00 PM. Congestion is common near Sangagiri and Erode due to local commuter traffic. Traffic near industrial zones and market areas can also cause delays.

4. Assessment of Road Quality and Infrastructure:

- NH 544 is a major highway and generally well-maintained, but occasional potholes and uneven surfaces are reported. Secondary roads may have poorer conditions, particularly during and after the monsoon season. Roadworks or construction zones might be encountered near urban centers or industrial developments.

5. Suggestions for Alternative Routes:

- In emergencies, detouring via SH 20 or SH 21 can provide alternative paths. These state highways might be less congested but are generally narrower and possibly in poorer condition.

6. Local Regulations Affecting Hazardous Material Transport:

- Transport of hazardous materials is regulated and typically restricted during crowded times and events. Check local regulations for any restrictions specific to flammable or toxic materials, especially near residential zones or crowded towns like Erode.

7. Historical Incidents Involving Heavy Vehicles or Hazardous Materials:

- Historical data indicates occasional incidents of truck overturns due to driver fatigue or speeding. There have been isolated spill incidents around industrial areas, highlighting the importance of careful transport and adherence to load limits.

8. Environmental Considerations and Sensitive Areas:

- The route passes near agricultural zones where chemical spills could have severe ecological impacts. Particular attention should be paid to the preservation of water bodies and ensuring no spillage near river crossings.

9. Analysis of Communication Coverage:

- Mobile coverage is generally reliable along major highways and urban areas. Rural segments might experience intermittent connectivity, particularly in hilly or forested zones without extensive network towers.

10. Estimated Emergency Response Times:

- Urban areas like Erode can expect rapid emergency response, often within 30 minutes. In rural sections, response times might extend beyond 1 hour due to distance and road access limitations.

11. Overall Summary of Risk Assessment:

- The route poses standard risks common to Indian highways, such as varying weather effects, road conditions fluctuation, and high local traffic, especially near towns. Nevertheless, adherence to speed limits, careful route planning considering weather forecasts, and alternative route identification can mitigate many of these risks. Drivers should remain vigilant about communicating transport specifics and preparedness for emergencies. Regularly liaising with local transport and emergency services can help improve situational readiness, especially when transporting hazardous materials.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.38395, 77.89480	15 KM/Hr
1	Roundabout	High	11.00172, 77.56268	15 KM/Hr
2	Turn	High	11.43968, 77.87345	15 KM/Hr
3	Turn	High	11.44022, 77.87546	15 KM/Hr
4	Turn	Medium	11.39976, 77.88382	30 KM/Hr
5	Turn	Medium	11.39690, 77.88852	30 KM/Hr
6	Turn	High	11.36616, 77.88885	15 KM/Hr
7	Turn	Medium	11.34067, 77.86347	30 KM/Hr
8	Turn	High	11.33854, 77.86216	15 KM/Hr
9	Turn	Medium	11.33778, 77.86236	30 KM/Hr
10	Turn	Medium	11.30952, 77.77587	30 KM/Hr
11	Turn	Medium	11.31111, 77.77178	30 KM/Hr
12	Turn	Medium	11.30973, 77.76712	30 KM/Hr
13	Turn	High	11.29490, 77.74685	15 KM/Hr
14	Turn	High	11.29125, 77.74646	15 KM/Hr
15	Turn	Medium	11.29076, 77.74528	30 KM/Hr
16	Turn	Medium	11.28844, 77.74319	30 KM/Hr
17	Turn	Medium	11.28518, 77.74231	30 KM/Hr
18	Turn	High	11.27319, 77.72981	15 KM/Hr
19	Blind Spot	Blind Spot	11.27330, 77.72715	10 KM/Hr
20	Turn	Medium	11.23054, 77.71796	30 KM/Hr
21	Turn	Medium	11.20776, 77.70916	30 KM/Hr
22	Turn	Medium	11.15942, 77.70068	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
23	Turn	Medium	11.12102, 77.67919	30 KM/Hr
24	Turn	Medium	11.11932, 77.67786	30 KM/Hr
25	Turn	Medium	11.11710, 77.67175	30 KM/Hr
26	Turn	Medium	11.09491, 77.66603	30 KM/Hr
27	Turn	Medium	11.08696, 77.66407	30 KM/Hr
28	Turn	Medium	11.08296, 77.65857	30 KM/Hr
29	Turn	Medium	11.06183, 77.63924	30 KM/Hr
30	Turn	High	11.00826, 77.56962	15 KM/Hr
31	Blind Spot	Blind Spot	11.00058, 77.56882	10 KM/Hr
32	Turn	High	10.94722, 77.54709	15 KM/Hr
33	Turn	Medium	10.93895, 77.53976	30 KM/Hr
34	Turn	Medium	10.93054, 77.53265	30 KM/Hr
35	Turn	Medium	10.89213, 77.52646	30 KM/Hr
36	Turn	Medium	10.83409, 77.52932	30 KM/Hr
37	Turn	Medium	10.77642, 77.50712	30 KM/Hr
38	Turn	Medium	10.77580, 77.50724	30 KM/Hr
39	Turn	Medium	10.75864, 77.51918	30 KM/Hr
40	Turn	Medium	10.75722, 77.51935	30 KM/Hr
41	Turn	High	10.73533, 77.51739	15 KM/Hr
42	Blind Spot	Blind Spot	10.70947, 77.43031	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

	type	name	coordinates	speed_limit	risk_level
13	hospital	Government Hospital	11.2343326, 77.719226	30 km/h	Medium
16	police	Kangeyam Police Station	11.0011411, 77.562688	30 km/h	Medium
17	hospital	J K Hospital	11.0042298, 77.5603345	30 km/h	Medium
20	hospital	Sri Balaji Surya Hospital	10.735518, 77.5185388	30 km/h	Medium
21	hospital	Ramana Hospital, Dharapuram	10.7351092, 77.517107	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
14	college	Government Arts and Science College, Kangeyam	11.0626738, 77.636227	30 km/h	Medium
15	school	Carmel Girls Higher Secondary School	11.0009019, 77.5710182	30 km/h	Medium
18	school	Global Matriculation Higher Secondary School	10.965994, 77.5591898	30 km/h	Medium
19	college	Maharani College	10.7625655, 77.5157126	30 km/h	Medium
22	school	Vishnu Lakshmi Matriculation Higher Secondary School	10.7340392, 77.5164506	30 km/h	Medium
23	school	Thenmalar Higher Secondary School	10.7333748, 77.5166481	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: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.00172, 77.56268



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.44022, 77.87546



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.39976, 77.88382



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.39690, 77.88852



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.36616, 77.88885



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.34067, 77.86347



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.33854, 77.86216



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



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.30952, 77.77587



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.31111, 77.77178



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.30973, 77.76712



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: 11.29125, 77.74646



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.29076, 77.74528



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: 11.28518, 77.74231



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.27319, 77.72981



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Coordinates: 11.27330, 77.72715



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: 11.20776, 77.70916



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.15942, 77.70068



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.12102, 77.67919



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.11932, 77.67786



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.11710, 77.67175



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.09491, 77.66603



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.08696, 77.66407



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.08296, 77.65857



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.06183, 77.63924



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.00826, 77.56962



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.00058, 77.56882



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.94722, 77.54709



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.93895, 77.53976



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.93054, 77.53265



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.89213, 77.52646



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.83409, 77.52932



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.77642, 77.50712



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.77580, 77.50724



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.75864, 77.51918



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.75722, 77.51935



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.73533, 77.51739



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 10.70947, 77.43031

