



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal to A.GEE.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

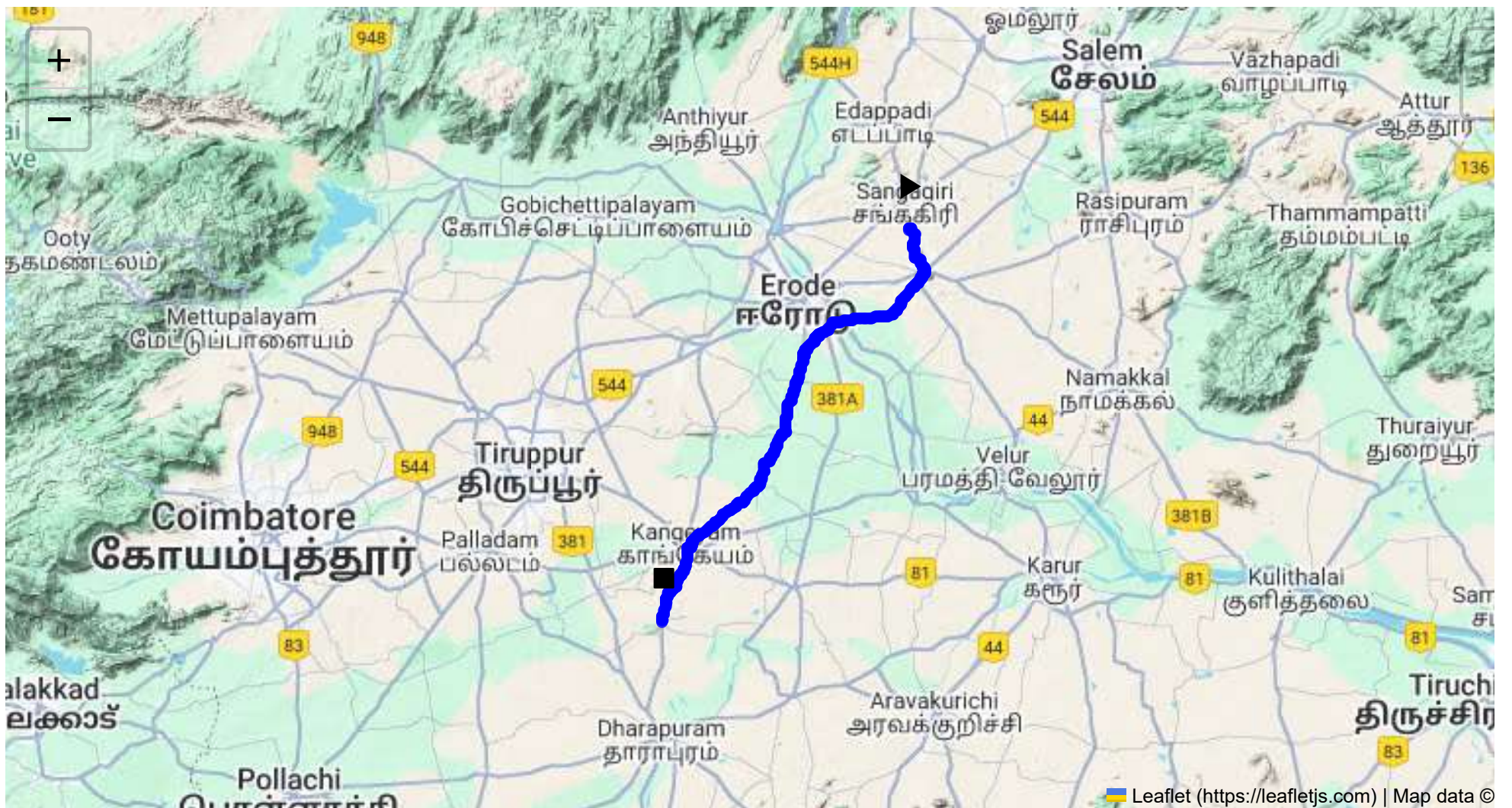
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 83.00 km
Estimated Duration: 2.0 hours
Adjusted Duration (Heavy Vehicle): 2.4 hours
Start: (11.4381, 77.8734)
End: (10.898971, 77.52756)



Welcome to the Journey Risk Management Study

Route Overview

The route from CVQF+23W, Sangagiri, Tamil Nadu to VGXH+H2X, Uthiyur, Tamil Nadu covers approximately 83 kilometers. The journey mainly follows National and State highways with a typical transit time of around 1.95 hours for heavy vehicles, assuming average traffic conditions.

Weather Conditions

The region generally experiences a tropical climate with hot summers, moderate monsoons, and mild winters. In summer, temperatures can soar, potentially affecting vehicle performance. Monsoon season, from June to September, can lead to waterlogged roads and reduced visibility, increasing the risk of accidents.

Traffic Patterns

Traffic congestion is usually higher during morning (8-10 AM) and evening (5-8 PM) peak hours. Key congestion areas include town centers and junctions near major markets or industrial areas. Planning journeys outside these hours could reduce transit delays.

Road Quality and Infrastructure

The highways in this region are mostly well-maintained, but smaller connecting roads might have uneven surfaces and potholes, especially after the rainy season. Signage and lighting are generally adequate, but vigilance is required on less-frequented byroads.

Alternative Routes

In the event of roadblocks or emergencies, consider taking alternative routes via nearby villages or secondary highways. It's important to have an offline navigation map due to potential signal loss in rural areas.

Local Regulations

Tamil Nadu has specific regulations concerning the transport of hazardous materials, including permissible routing and necessary permits. Drivers should be well-informed about permissible operating hours and safety procedures to avoid penalties.

Historical Incidents

There are limited documented incidents in this region involving heavy vehicles or hazardous materials. However, occasional reports of overturns or leaks advise maintaining vigilance and adhering to speed limits, particularly on curves and slopes.

Environmental Considerations

The route traverses areas with agricultural and sparse forest cover. It is essential to prevent accidental spills or contamination of these regions. Drivers should be educated on spill response techniques and equipped with necessary containment materials.

Communication Coverage

Generally, the route has good mobile network coverage with occasional short dead zones, particularly in rural or hilly areas. It is advisable to ensure that emergency communication devices are functional and

ready for use.

Emergency Response

Response times can vary, with urban areas potentially offering quicker emergency services compared to rural segments where access is slower. It is wise to identify nearby emergency facilities and have a list of their contact numbers.

Overall Summary of Risk Assessment

The route poses a moderate risk for transporting hazardous materials, primarily due to weather-related hazards, potential road quality issues, and occasional traffic congestion. Adhering to regulations, planning travel times wisely, and being prepared for environmental and communication challenges will mitigate most risks. Drivers should be trained in emergency response and informed about the local geography to enhance route safety.

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	High	11.37868, 77.89498	15 KM/Hr
5	Turn	Medium	11.37857, 77.89473	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	Medium	11.33854, 77.86216	30 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	11.30973, 77.76712	30 KM/Hr
12	Turn	High	11.29490, 77.74685	15 KM/Hr
13	Turn	High	11.29141, 77.74662	15 KM/Hr
14	Turn	Medium	11.28844, 77.74319	30 KM/Hr
15	Turn	Medium	11.28573, 77.74281	30 KM/Hr
16	Turn	High	11.27319, 77.72981	15 KM/Hr
17	Blind Spot	Blind Spot	11.27330, 77.72715	10 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
18	Turn	Medium	11.23054, 77.71796	30 KM/Hr
19	Turn	Medium	11.22387, 77.71385	30 KM/Hr
20	Turn	Medium	11.20776, 77.70916	30 KM/Hr
21	Turn	High	11.15942, 77.70068	15 KM/Hr
22	Turn	Medium	11.12102, 77.67919	30 KM/Hr
23	Turn	Medium	11.11932, 77.67786	30 KM/Hr
24	Turn	Medium	11.11710, 77.67175	30 KM/Hr
25	Turn	Medium	11.09491, 77.66603	30 KM/Hr
26	Turn	Medium	11.08296, 77.65857	30 KM/Hr
27	Turn	Medium	11.06183, 77.63924	30 KM/Hr
28	Turn	High	11.00826, 77.56962	15 KM/Hr
29	Blind Spot	Blind Spot	11.00058, 77.56882	10 KM/Hr
30	Turn	Medium	10.94722, 77.54709	30 KM/Hr
31	Turn	Medium	10.93895, 77.53976	30 KM/Hr
32	Turn	Medium	10.93054, 77.53265	30 KM/Hr
33	Turn	High	10.89940, 77.52804	15 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
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

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

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: High
Speed Limit: 15 KM/Hr
Coordinates: 11.37868, 77.89498



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.37857, 77.89473



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: Medium

Speed Limit: 30 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: 11.30973, 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: 11.29141, 77.74662



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: 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: 11.22387, 77.71385



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.20776, 77.70916



Risk Type: Turn

Risk Level: High

Speed Limit: 15 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: 11.08296, 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: Medium
Speed Limit: 30 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: High

Speed Limit: 15 KM/Hr

Coordinates: 10.89940, 77.52804
