JOURNEY RISK MANAGEMENT (JRM) STUDY

IOCL Coimbatore Terminal to G S Agency

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

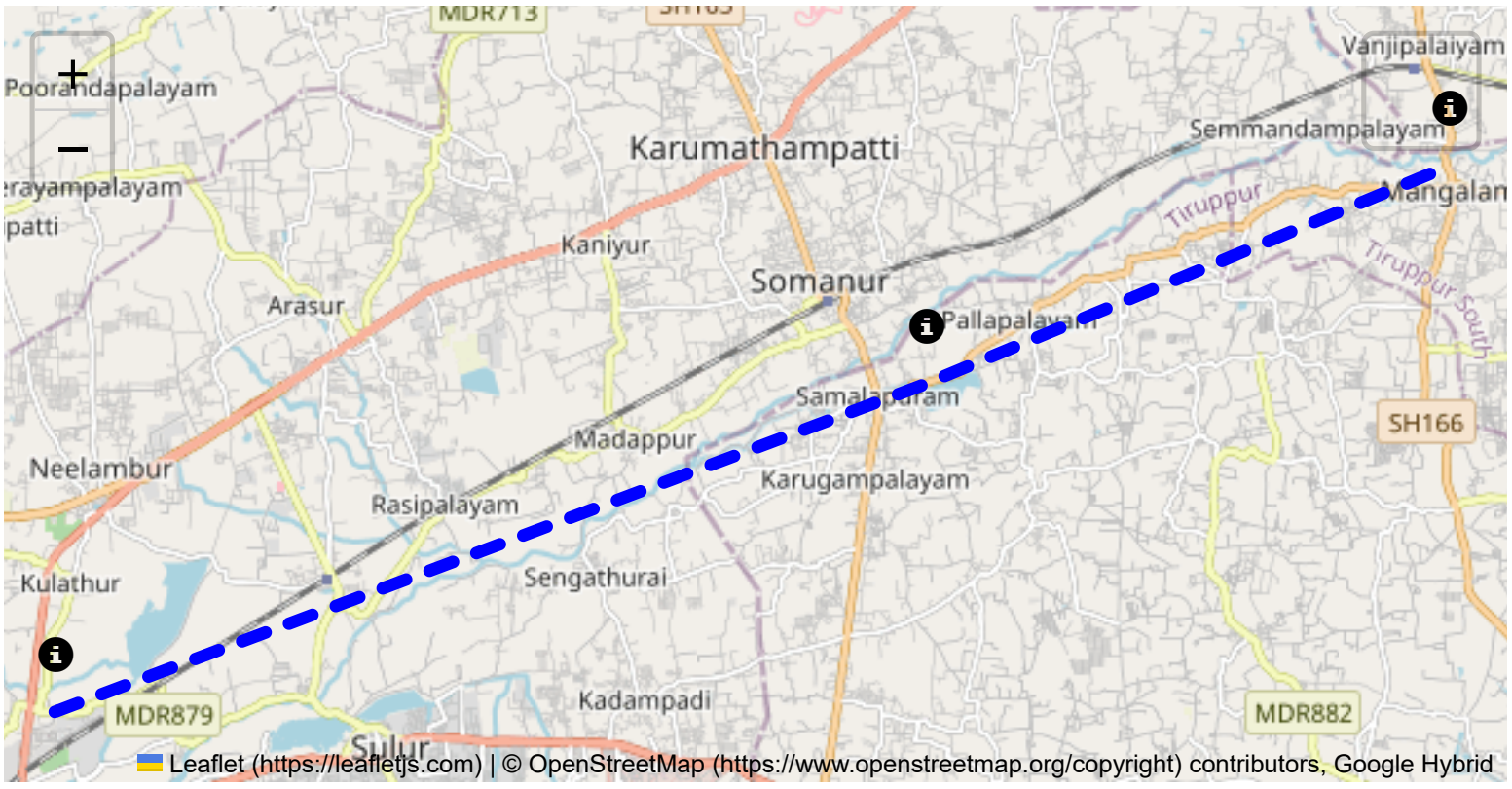
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

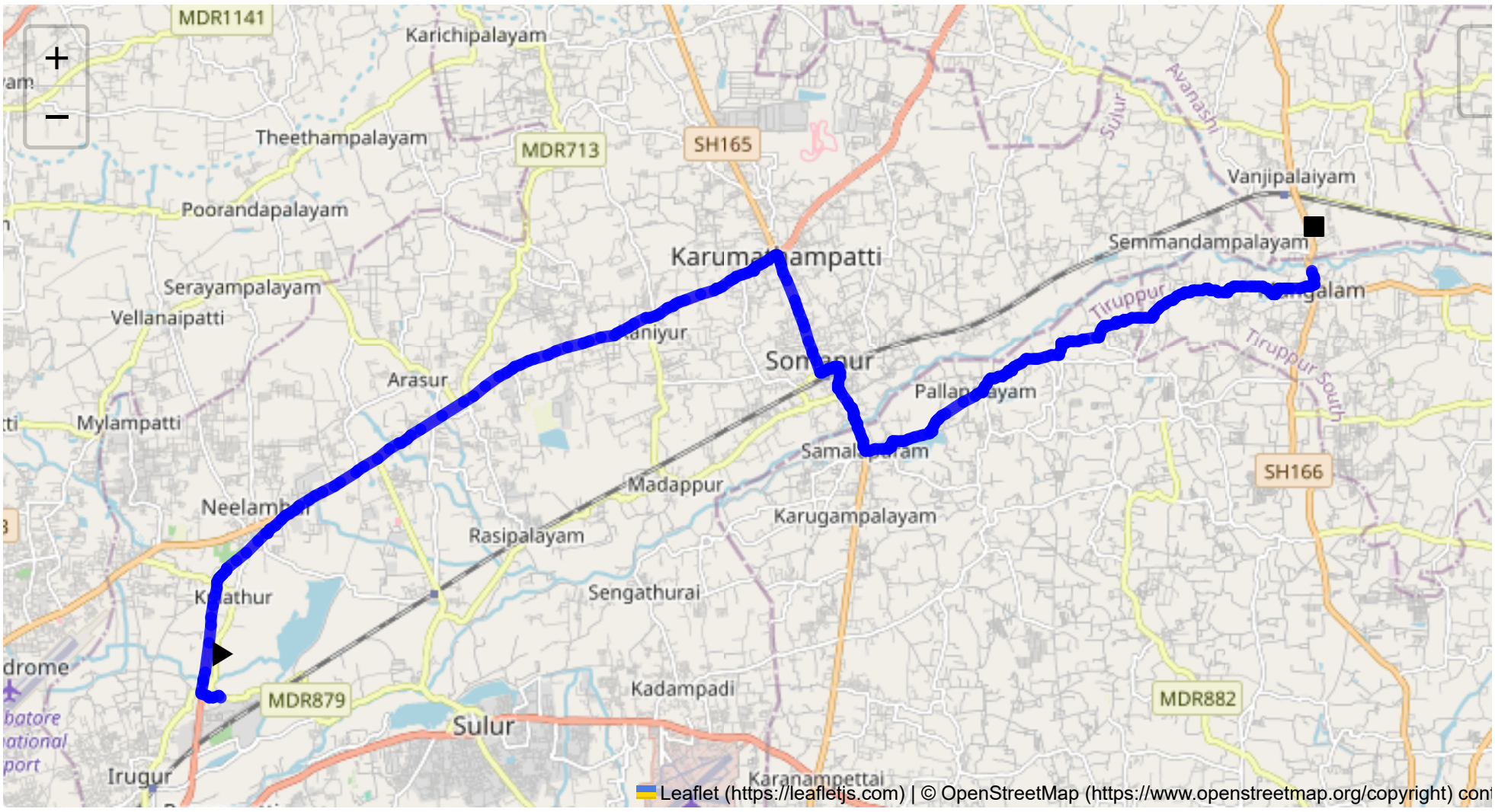
Compliance with Government Directives

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: 29.87 km
Estimated Duration: 0.7 hours
Adjusted Duration (Heavy Vehicle): 0.9 hours
Start: (11.0315, 77.0797)
End: (11.104979, 77.270953)



Welcome to the Journey Risk Management Study

Route Map Overview

The route travels from Athappagoundenpudur, Coimbatore to Mangalam, Pudupalayam in Tamil Nadu via Tirupur - Vijayamangalam Rd, passing through Samalapuram. This route spans approximately 29.87 kilometers, mostly involving state highways and district roads. It generally takes about 43 minutes for heavy vehicles.

Weather Conditions and Hazards

The region experiences a tropical climate. During the summer months (March to June), high temperatures can reach above 40°C (104°F), which might affect vehicle performance. The monsoon period (June to October) brings heavy rainfall, which can result in slippery roads and flooding, especially in low-lying areas. Visibility may also be compromised due to fog in early mornings or late evenings during the winter.

Traffic Patterns

Traffic tends to peak during morning (8 AM - 10 AM) and evening (5 PM - 7 PM) hours due to commuter traffic. The Tirupur area sees heavier congestion, especially near intersections and marketplaces. Samalapuram may also experience local traffic slowdowns.

Road Quality and Infrastructure

Roads generally consist of two lanes in each direction, with some sections narrowing near villages. The quality varies, with some parts well-maintained while others have potholes and uneven surfaces, particularly after monsoon rains. Inadequate lighting on rural stretches may pose a hazard at night.

Alternative Route Suggestions

In emergencies, consider bypassing congested areas by taking local roads or state highway routes that parallel the primary route. Utilizing the Tirupur Ring Road can be effective in avoiding city center congestion.

Local Regulations on Hazardous Material Transport

Transporting hazardous materials requires adhering to regulations such as carrying necessary permits and following designated routes. Frequent checks are in place, particularly near state borders and major municipal areas, to ensure compliance with safety standards.

Historical Incidents

While specific data on past incidents involving heavy vehicles and hazardous materials on this route is limited, nearby industrial areas have reported accidental spills and vehicle breakdowns due to overloading. Ensure proper weight distribution and adherence to safety protocols to mitigate risks.

Environmental Considerations

The route passes through agricultural zones, necessitating careful monitoring of leaks or spills to prevent soil and water contamination. Farmers and local communities should be informed of hazardous material transport schedules to mitigate exposure risk.

Communication Coverage

Mobile coverage is generally reliable along the major stretches. However, expect potential coverage gaps in rural areas or between small villages. Ensure communication devices are charged and have alternative

contact methods.

Emergency Response Times

Emergency services are typically available within 15-30 minutes in urban areas, but response times may extend to 45 minutes in rural stretches. Ensure access to local emergency contact numbers.

Overall Risk Assessment

- **High-Risk Points:** Monsoon season flooding, urban congestion, and regulatory check points.
- **Moderate Risks:** Rural road quality, summer heat impact on vehicle systems.
- **Low Risk:** General communication coverage, provided contingency measures are in place.

Conclusion

The route is mostly safe for transporting hazardous materials but requires attention to weather and local traffic patterns. Monitoring vehicle condition and compliance with pollution and safety norms are crucial to minimizing risks. Advanced planning for alternative routes and robust emergency protocols will enhance safety.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.10246, 77.27138	15 KM/Hr
1	Turn	High	11.03211, 77.07640	15 KM/Hr
2	Turn	Medium	11.10499, 77.17299	30 KM/Hr
3	Turn	Medium	11.10527, 77.17318	30 KM/Hr
4	Blind Spot	Blind Spot	11.10783, 77.17709	10 KM/Hr
5	Turn	Medium	11.08752, 77.18466	30 KM/Hr
6	Turn	High	11.08745, 77.18473	15 KM/Hr
7	Turn	Medium	11.08840, 77.18760	30 KM/Hr
8	Blind Spot	Blind Spot	11.07394, 77.19267	10 KM/Hr
9	Turn	Medium	11.07557, 77.19746	30 KM/Hr
10	Turn	Medium	11.09065, 77.22676	30 KM/Hr
11	Turn	Medium	11.09259, 77.22725	30 KM/Hr
12	Turn	Medium	11.09348, 77.23361	30 KM/Hr
13	Turn	Medium	11.09574, 77.23660	30 KM/Hr
14	Turn	Medium	11.09611, 77.23678	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
15	Turn	Medium	11.09686, 77.24282	30 KM/Hr
16	Turn	Medium	11.10142, 77.24908	30 KM/Hr
17	Turn	Medium	11.10133, 77.24948	30 KM/Hr
18	Turn	Medium	11.10084, 77.26441	30 KM/Hr
19	Turn	Medium	11.10182, 77.26510	30 KM/Hr

Emergency Locations

	type	name	coordinates	speed_limit	risk_level
0	hospital	Royal Care Hospital, Coimbatore	11.059106, 77.0893479	30 km/h	Medium
4	police	Karumathampatti Police Station	11.1093464, 77.1802095	30 km/h	Medium
5	hospital	Governmemt Hospital, Somanur	11.0839439, 77.189266	30 km/h	Medium

Crowded Spots

	type	name	coordinates	speed_limit	risk_level
1	college	PSG Institute of Technology and Applied Research	11.0677118, 77.0945744	30 km/h	Medium
2	school	GRD-CPF Matriculation Higher Secondary School	11.0610217, 77.0933504	30 km/h	Medium
3	school	M. Nanjappa Chettiar Matriculation Hr. Sec. School	11.0715394, 77.1039133	30 km/h	Medium

Route Photos of Risky Spots

Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.10246, 77.27138

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.03211, 77.07640

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.10499, 77.17299

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.10527, 77.17318

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.10783, 77.17709

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.08752, 77.18466

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.08745, 77.18473

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.08840, 77.18760

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.07394, 77.19267

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07557, 77.19746

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.09065, 77.22676

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.09259, 77.22725

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.09348, 77.23361

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.09574, 77.23660

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.09611, 77.23678

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.09686, 77.24282

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.10142, 77.24908

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.10133, 77.24948

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.10084, 77.26441

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.10182, 77.26510