JOURNEY RISK MANAGEMENT (JRM) STUDY

IOCL Coimbatore Terminal to Myilvelu Agencies

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

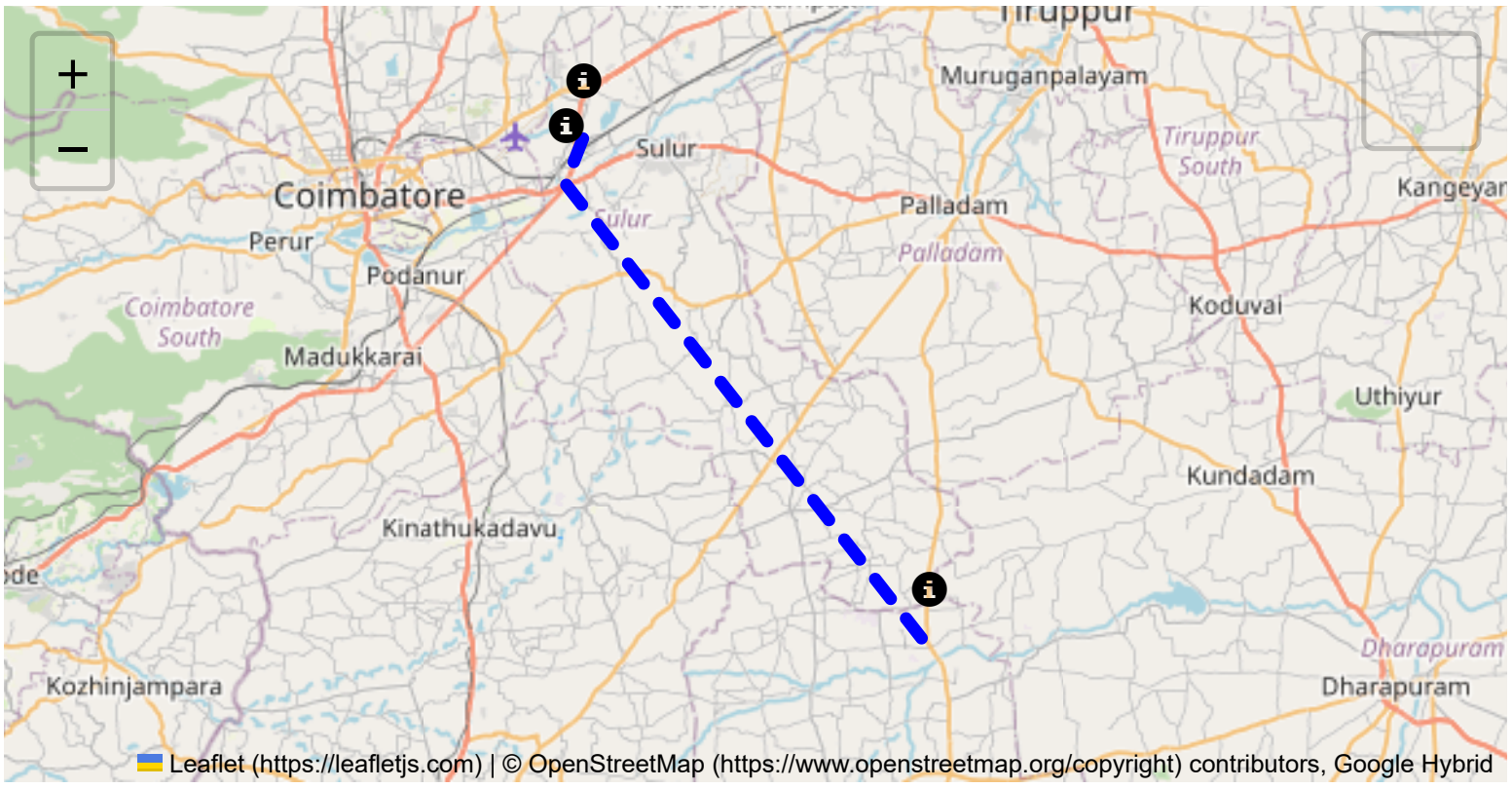
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

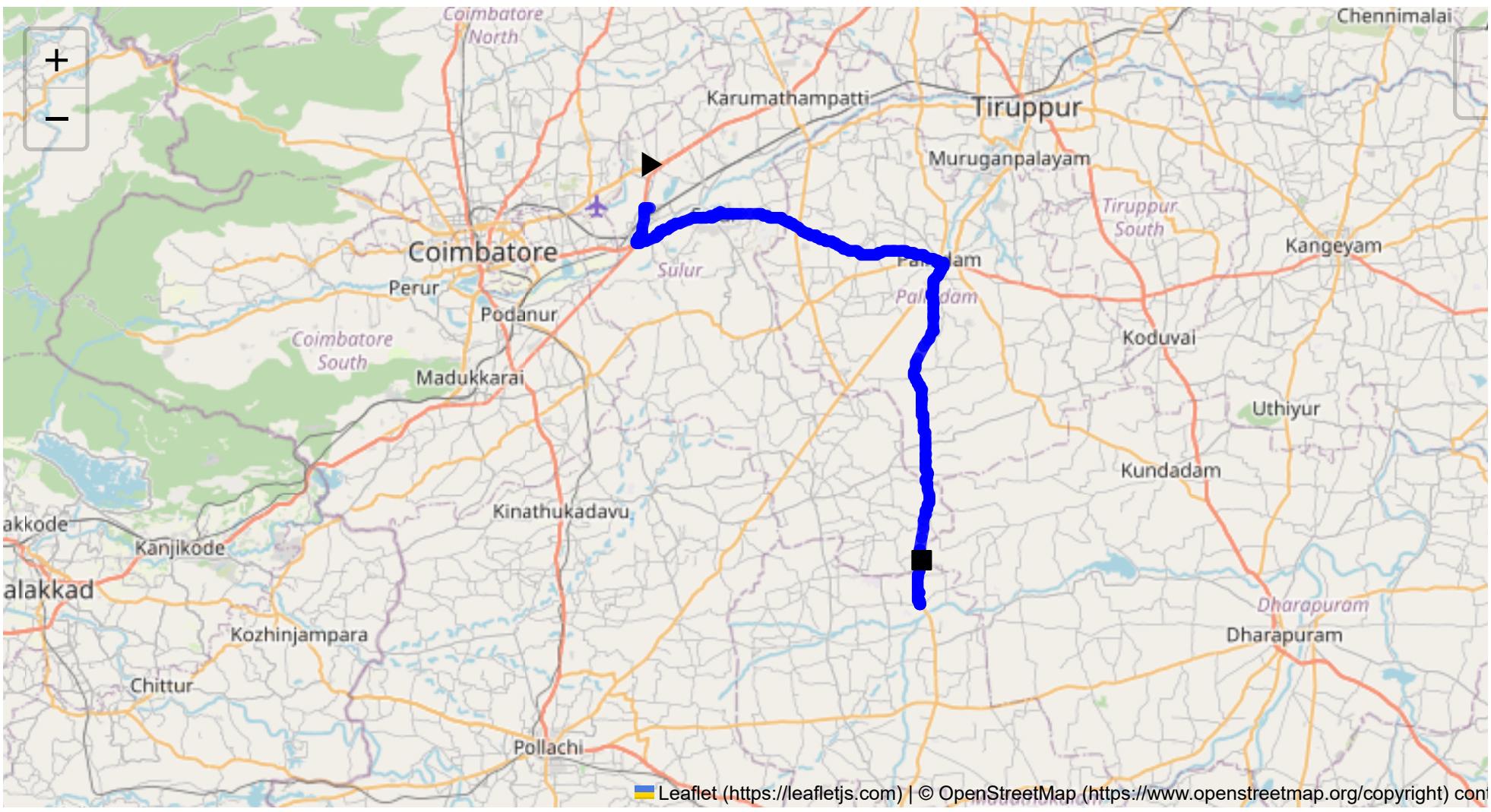
Compliance with Government Directives

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: 55.54 km
Estimated Duration: 1.2 hours
Adjusted Duration (Heavy Vehicle): 1.5 hours
Start: (11.0315, 77.0797)
End: (10.757524, 77.269861)



Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route from Athappagoundenpudur in Coimbatore to Peryapatti via Chinthamanipudur follows mainly state highways and well-traveled roads, covering approximately 55.54 kilometers. This route takes an estimated 1.18 hours to drive, which accounts for the navigation of heavy vehicles carrying hazardous materials and possible traffic conditions.

2. Typical Weather Conditions and Potential Weather-Related Hazards

- **Weather**: The region generally exhibits a tropical climate, with specific conditions varying throughout the year. Summers can be hot, with temperatures reaching up to 35-40°C, increasing the risk of vehicle overheating.
- **Monsoon**: From June to September, monsoon rains can cause slippery roads, reduced visibility, and a higher likelihood of waterlogging in low-lying areas.
- **Winter**: Minimal precipitation with mildly cooler temperatures, presenting fewer weather-related road hazards.

3. Analysis of Traffic Patterns

- **Morning and Evening Rush Hours**: Peak congestion typically occurs between 8:00 to 10:00 AM and 5:00 to 8:00 PM, especially in urban areas such as Coimbatore and Trichy Road.
- **Congestion-Prone Areas**: Traffic can be dense around Chinthamanipudur due to proximity to commercial zones and industrial areas.

4. Assessment of Road Quality and Infrastructure

- **Road Quality**: Generally well-maintained state highways with regular signage. Potholes and uneven surfaces may be found in rural stretches.
- **Infrastructure**: Adequate infrastructure with roadside assistance facilities, albeit limited in very rural sections.

5. Suggestions for Alternative Routes for Emergencies

- In case of emergencies, a common alternative would be through the NH544 followed by transitioning onto connecting state roads. This may be slower due to distance but can bypass highly congested areas.

6. Summary of Local Regulations Affecting Hazardous Material Transport

- **Regulations**: Transportation of hazardous materials is subject to strict guidelines, including route permits, vehicle placarding, and driver certifications.
- **Curfews**: Movement might be restricted in urban areas during night hours; therefore, check specific regional regulations.

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

- **Historical Data**: While precise incident numbers are unavailable, common issues along this route tend to involve overloading and inadequate vehicle maintenance leading to breakdowns.

8. Environmental Considerations and Sensitive Areas

- **Sensitive Ecosystems**: Drivers should be cautious near agricultural areas to avoid contaminating soil and water bodies.
- **Wildlife Crossings**: There are few designated wildlife areas; however, drivers must stay vigilant for stray animals, especially when traveling through rural communities.

9. Analysis of Communication Coverage

- **Coverage**: Most of the route enjoys decent cellular network coverage. However, certain remote stretches between towns may experience temporary coverage gaps.

10. Estimated Emergency Response Times for Different Route Segments

- **Urban Areas**: Emergency response within city limits (e.g., Coimbatore) should be swift, with approximate times of 15-30 minutes.
- **Rural Sections**: Responses in rural areas may take between 45-60 minutes due to the distance from major towns and emergency facilities.

12. Overall Summary of Risk Assessment

In summary, this route is commonly used and supports heavy vehicle operations due to its infrastructure and connectivity. Key risks involve weather conditions during monsoon, specific congestion during peak hours, and regional variations in communication coverage. The adherence to local hazardous materials transport regulations is critical, necessitating driver awareness and preparedness for flexible logistics planning during emergencies. It's advisable to continually monitor weather forecasts and traffic updates when planning journeys along this route.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Blind Spot	Blind Spot	11.03211, 77.07640	10 KM/Hr
1	Turn	High	11.00778, 77.07085	15 KM/Hr
2	Turn	Medium	10.99557, 77.28171	30 KM/Hr
3	Turn	Medium	10.99436, 77.28183	30 KM/Hr
4	Turn	High	10.99400, 77.28557	15 KM/Hr
5	Turn	Medium	10.98906, 77.28494	30 KM/Hr
6	Turn	Medium	10.98116, 77.27933	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
7	Turn	High	10.75856, 77.26996	15 KM/Hr
8	Blind Spot	Blind Spot	10.75842, 77.26966	10 KM/Hr

Emergency Locations

	type	name	coordinates	speed_limit	risk_level
0	hospital	Saraswathi Hospital	11.0069868, 77.071368	30 km/h	Medium
1	clinic	Dr. V. Ramakrishnan Clinic	11.0086635, 77.081108	30 km/h	Medium
2	police	Sulur Police Station	11.0248612, 77.1204842	30 km/h	Medium
3	hospital	Government Hospital, Sulur	11.0247544, 77.1228621	30 km/h	Medium
4	hospital	Balaji Hospital, Sulur	11.0277947, 77.1298133	30 km/h	Medium
7	hospital	Ponni Hospital - Palladam	10.9965327, 77.2758865	30 km/h	Medium
8	police	Palladam Police Station	10.9966966, 77.279193	30 km/h	Medium
9	hospital	Palladam Government Hospital	10.9962561, 77.2803585	30 km/h	Medium
10	hospital	Sanjeevi Hospital, Palladam	10.9963103, 77.2800924	30 km/h	Medium
11	clinic	Rajeshwari Nursing Home	10.9953069, 77.2841138	30 km/h	Medium
12	hospital	Balaji Hospital	10.9936939, 77.2849449	30 km/h	Medium

Crowded Spots

	type	name	coordinates	speed_limit	risk_level
5	school	Kendriya Vidhyalaya School	11.0254394, 77.1609298	30 km/h	Medium
6	school	Infant Jesus Matriculation Higher Secondary School	10.9986758, 77.2493732	30 km/h	Medium

Route Photos of Risky Spots

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.03211, 77.07640

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.00778, 77.07085

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.99557, 77.28171

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.99436, 77.28183

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.99400, 77.28557

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.98906, 77.28494

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.98116, 77.27933

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.75856, 77.26996