JOURNEY RISK MANAGEMENT (JRM) STUDY

IOCL Coimbatore Terminal to Almighty 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

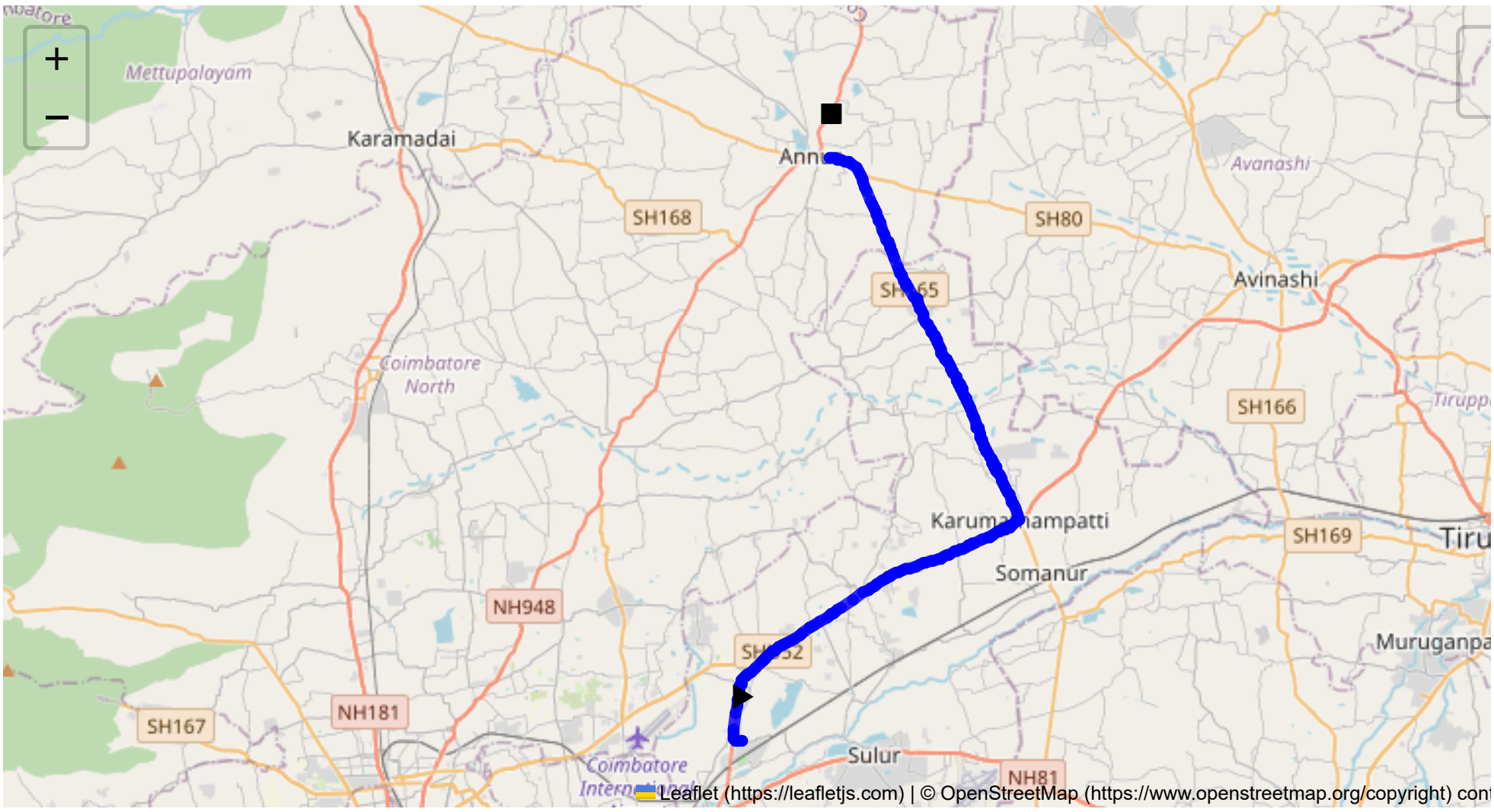
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 31.06 km
Estimated Duration: 0.7 hours
Adjusted Duration (Heavy Vehicle): 0.8 hours
Start: (11.0315, 77.0797)
End: (11.23248, 77.11046)



Welcome to the Journey Risk Management Study

Route Overview

The route extends approximately 31.06 kilometers from Athappagoundenpudur to Annur, both in Tamil Nadu, India. It likely follows regional roads with a mix of rural and inter-city traffic dynamics, passing through semi-urban and agricultural areas common in the state.

Weather Conditions

- **Typical Weather**: The region experiences a tropical climate. Summers (March to May) are typically hot, while the monsoon season (June to September) can bring heavy rains, leading to potential flooding on poorly drained roads.
- **Weather-Related Hazards**: Heavy rainfall during monsoons could cause slippery roads and impede visibility. Occasionally, there might be localized flooding impacting some parts of the route.

Traffic Patterns

- **Peak Hours**: Traffic congestion commonly occurs during morning (7 AM - 9 AM) and evening (5 PM - 8 PM) commute times.
- **Congestion-Prone Areas**: Approaching urban centers like Annur and sections near major intersections or market areas might experience slow-moving traffic.

Road Quality and Infrastructure

- **Assessment**: The road quality varies, with potential sections of narrow lanes common in rural stretches and better-maintained roads closer to urban settings. Potholes or uneven road surfaces might be present, especially post-monsoon.
- **Infrastructure**: Adequate signage and basic infrastructure might be lacking in certain rural sections, necessitating cautious driving.

Alternative Routes

- **Suggestions**: In emergencies, consider regional detours through adjoining villages or secondary roads connecting to major highways like NH948 or NH181, offering access to towns with better amenities.

Local Regulations on Hazardous Material Transport

- **Regulations**: Transporting hazardous materials requires adherence to local regulations such as possessing correct permits and ensuring appropriate vehicle signage. Restrictions may apply within city limits or near sensitive areas.

Historical Incidents

- **Incident Overview**: There's limited public data available on historical incidents specific to this route, but typical occurrences might involve overturned vehicles or spills, often related to driver error or poor road conditions.

Environmental Considerations

- **Sensitive Areas**: The route might pass through agricultural zones, which require careful mitigation of spill risks to prevent environmental contamination. Additionally, respect to populated areas, water bodies, and local ecosystems is crucial.

Communication Coverage

- **Analysis**: Mobile network coverage is generally good but might have weak spots in rural areas. Drivers should prepare for potential dead zones by informing route progress through checkpoints or scheduled calls.

Emergency Response Times

- **Response Times**: Proximity to Annur would likely yield quicker response times (around 30-45 minutes). Rural stretches may experience delays, depending on the incident's location and severity (up to 1-2 hours).

Overall Summary of Risk Assessment

- **Overall Risk**: The route presents a moderate level of risk primarily due to variable road conditions and potential weather-related challenges. Adequate preparation, adherence to transport regulations, and maintaining communication are key to mitigating risks.
- **Recommendations**: Drivers should remain updated on weather forecasts, plan for communication check-ins, and be familiar with emergency protocols. Vehicle maintenance, specifically with brakes and tires, is vital to handling road conditions safely.

This analysis highlights critical considerations for safe transport along the route, with emphasis on preparedness and compliance with local regulations.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Turn	High	11.03211, 77.07640	15 KM/Hr
1	Turn	Medium	11.10499, 77.17299	30 KM/Hr
2	Turn	Medium	11.10527, 77.17318	30 KM/Hr
3	Turn	High	11.10777, 77.17700	15 KM/Hr
4	Turn	Medium	11.22872, 77.12009	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

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: 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: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.10777, 77.17700

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.22872, 77.12009