JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal TO JAYAA JYOTHI ENTERPRISE

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

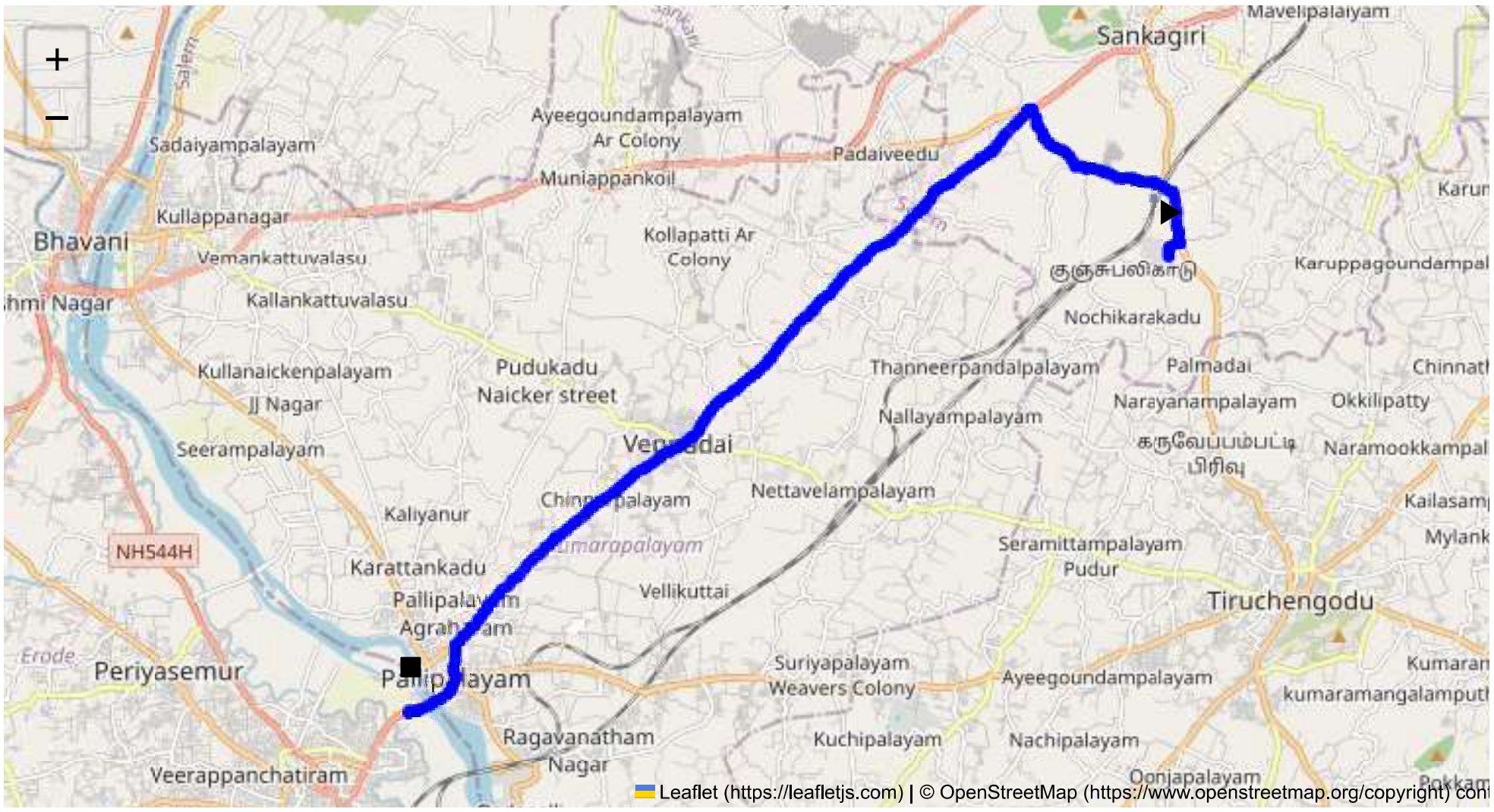
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 21.83 km
Estimated Duration: 0.5 hours
Adjusted Duration (Heavy Vehicle): 0.7 hours
Start: (11.4381, 77.8734)
End: (11.359559, 77.739842)



Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route from CVQF+23W, Sangagiri to 9P5Q+RW Erode in Tamil Nadu primarily follows the NH-47 (now part of NH-544) with a total distance of approximately 21.83 kilometers. Sangagiri and Erode are connected through a well-maintained national highway offering a direct route, predominantly flat terrain conducive for heavy vehicles.

2. Typical Weather Conditions and Potential Weather-Related Hazards

- **Climate**: The area experiences a tropical climate with hot summers, moderate rainfall, and mild winters.
- **Potential Hazards**: During the monsoon season (June to September), heavy rainfall can cause temporary waterlogging and decreased visibility. October to December might also see sporadic cyclonic storms, requiring caution.

3. Analysis of Traffic Patterns

- **Peak Hours**: Traffic congestion is notable during morning (8:00 AM to 10:30 AM) and evening hours (5:00 PM to 8:00 PM).
- **Congestion-Prone Areas**: Towns like Erode and key intersections near Sangagiri are prone to congestion, especially around market areas and during local festivals.

4. Assessment of Road Quality and Infrastructure

The NH-544 is generally in good condition with well-paved roads. However, periodic maintenance work can disrupt traffic. Road signage is adequate, but vigilance is required at intersections and during construction activity.

5. Suggestions for Alternative Routes for Emergencies

In case of roadblocks or emergencies on NH-544, consider the following:

- **State Highway 96**: This runs parallel to NH-544 and is a viable option for rerouting.
- **Local Roads**: Use local connecting roads that bypass major towns, although attention to road conditions and signage is necessary.

6. Summary of Local Regulations Affecting Hazardous Material Transport

Transport of hazardous materials in Tamil Nadu requires adherence to national safety standards, including proper documentation, visible placards on vehicles, and adherence to designated truck lanes and specific time regulations.

7. Overview of Historical Incidents

There have been occasional reports of accidents involving heavy vehicles on this route, often due to road congestion or poor weather conditions during the monsoon. However, incidents involving hazardous materials are infrequent.

8. Environmental Considerations and Sensitive Areas

- **Sensitive Areas**: Care should be taken near water bodies and agricultural zones to prevent contamination from potential spills.
- **Environmental Protocols**: All efforts should be made not to discharge materials near sensitive zones to protect local biodiversity.

9. Analysis of Communication Coverage

Mobile coverage along NH-544 is generally reliable. Potential dead zones exist in more rural stretches, so ensuring communication devices are charged and functional is critical.

10. Estimated Emergency Response Times

- **Urban Segments (Erode)**: Emergency services can typically reach within 20-30 minutes.
- **Rural Segments**: Response time might extend to 45 minutes or more due to less accessibility.

11. An Overall Summary of Risk Assessment

Overall, the route from Sangagiri to Erode is relatively safe for the transport of hazardous materials, given adherence to safety protocols and awareness of potential weather and traffic conditions. Preparation for occasional delays due to construction, weather-related challenges, and planning for alternative routes can mitigate most risks encountered on this route. Regular communication with local authorities can also assist in maintaining a smooth logistic operation.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.37086, 77.74828	15 KM/Hr
1	Turn	High	11.43811, 77.87348	15 KM/Hr
2	Turn	Medium	11.43956, 77.87340	30 KM/Hr
3	Turn	Medium	11.43971, 77.87348	30 KM/Hr
4	Turn	High	11.44029, 77.87544	15 KM/Hr
5	Turn	Medium	11.44898, 77.87410	30 KM/Hr
6	Turn	Medium	11.45348, 77.85706	30 KM/Hr
7	Turn	Medium	11.46318, 77.84913	30 KM/Hr
8	Turn	Medium	11.46312, 77.84886	30 KM/Hr
9	Turn	High	11.35929, 77.73996	15 KM/Hr

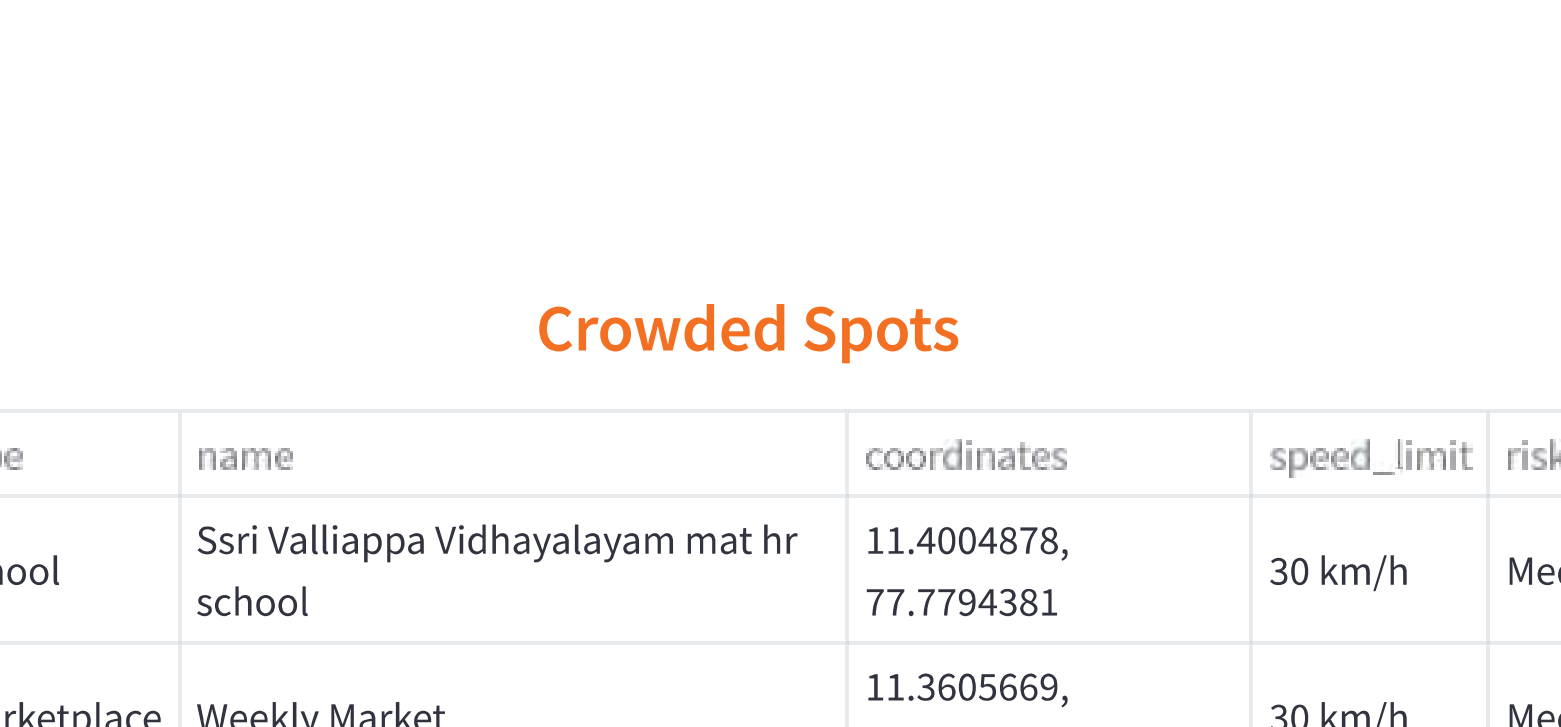
Emergency Locations

	type	name	coordinates	speed_limit	risk_level
1	hospital	Cheran Hospital	11.3680302, 77.7481976	30 km/h	Medium
2	hospital	Sri Kumaran E N T Hospital	11.3657814, 77.7477763	30 km/h	Medium
3	pharmacy	Pharmacy	11.3652161, 77.7486375	30 km/h	Medium
4	hospital	Sri Krishna Hospital	11.3656648, 77.7477783	30 km/h	Medium
5	hospital	Visaalam Hospitals	11.3651528, 77.747808	30 km/h	Medium
6	police	Police Station	11.3630177, 77.7476505	30 km/h	Medium
7	hospital	Government Hospital	11.3608508, 77.747453	30 km/h	Medium

Crowded Spots

	type	name	coordinates	speed_limit	risk_level
0	school	Ssri Valliappa Vidhayalayam mat hr school	11.4004878, 77.7794381	30 km/h	Medium
8	marketplace	Weekly Market	11.3605669, 77.7488199	30 km/h	Medium

Route Photos of Risky Spots



Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.37086, 77.74828

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.44029, 77.87544

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.44898, 77.87410

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.45348, 77.85706

Risk Type: Turn

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Coordinates: 11.46318, 77.84913

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