



JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal To SRI ABIRAMI 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

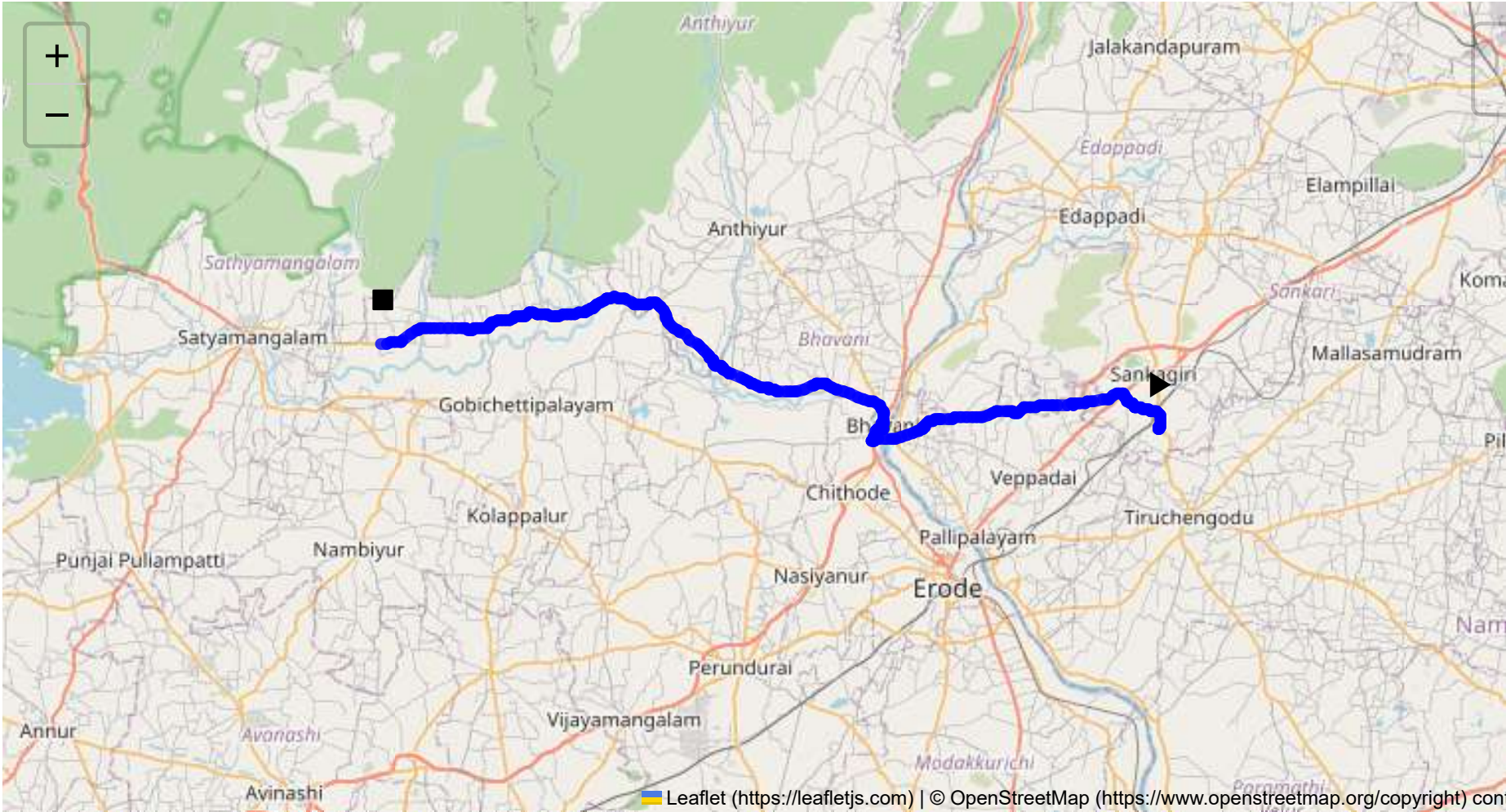
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 70.25 km
Estimated Duration: 1.6 hours
Adjusted Duration (Heavy Vehicle): 1.9 hours
Start: (11.4381, 77.8734)
End: (11.4964746, 77.3337799)



Welcome to the Journey Risk Management Study

Route Overview

The journey from CVQF+23W, Sangagiri, Tamil Nadu to F8WM+HG Thookkanaickenpalayam, Tamil Nadu, is approximately 70.25 kilometers, primarily following state highways and main roads. This route is used for transporting goods and involves several rural and urban segments.

Typical Weather Conditions

The region experiences a tropical climate with hot summers and moderate monsoons. **Weather-related Hazards:**

- **Summer (March to June):** High temperatures can affect vehicle efficiency.
- **Monsoon (July to September):** Roads may be slippery; potential for flooding and reduced visibility.

Traffic Patterns

Traffic tends to peak during morning (7:00-9:00 AM) and evening (5:00-7:00 PM) hours, particularly in areas like Sangagiri and Bhavani. The SH 79A and Bhavani Main Road are prone to congestion, especially near markets and junctions.

Road Quality and Infrastructure

While the state highways (like SH 79A) are generally well-maintained, some interior roads may suffer from potholes or are narrower, which could affect larger vehicles. Regularly updated traffic apps can help avoid trouble spots.

Alternative Routes for Emergencies

In case of roadblocks or major delays, consider:

- Diverting through Erode when traveling north.
- Utilizing the NH 544 at Sangagiri for a different route alignment, though it might slightly increase the distance.

Local Regulations on Hazardous Material Transport

The state of Tamil Nadu mandates licenses for transporting hazardous materials, requiring adherence to specific safety protocols and routes. Vehicles must display appropriate placards and follow speed limits strictly, particularly in populated areas.

Historical Incidents

Historically, there have been several minor accidents possibly due to vehicular failure or road conditions. However, records of significant incidents involving hazardous materials are limited, though perpetual vigilance is essential.

Environmental Considerations

- The route passes through agricultural areas and minor forested zones. Ensure adherence to noise and emission norms to minimize impact.
- Proper disposal of waste and leaks from transport vehicles is crucial to protect land and water in these areas.

Communication Coverage

Telecom coverage is typically good in urban and semi-urban sections but can be spotty in rural depths, particularly around forested or hilly tracts. It is advisable to have updated offline maps and a vehicle communication system.

Emergency Response Times

Estimated emergency services response times vary between:

- **15-20 minutes** in urban centers.
- **30-45 minutes** in rural or less accessible areas. Availability of medical assistance and vehicle repair services decreases significantly as you move away from major towns like Bhavani.

Overall Summary of Risk Assessment

While the route is generally manageable for truck drivers, especially those transporting hazardous materials, several risk factors demand attention:

- 1. **Weather and Road Conditions:** Monitor forecasts and road advisories.
- 2. **Traffic and Infrastructure:** Plan to avoid peak congestion times.
- 3. **Regulatory Compliance:** Strict adherence to transportation laws and safety standards for hazardous materials is non-negotiable.
- 4. **Preparedness:** Maintain a backup communication plan and familiarize with alternative routes.

Ensuring that drivers are well-trained and vehicles are properly equipped will mitigate most risks encountered along this route.

Risk Assessment - Turns

| | Risk Type | Risk Level | Coordinates | Speed Limit |
|----|-----------|------------|--------------------|-------------|
| 0 | Turn | Medium | 11.43822, 77.87348 | 30 KM/Hr |
| 1 | Turn | High | 11.43961, 77.87341 | 15 KM/Hr |
| 2 | Turn | High | 11.44029, 77.87544 | 15 KM/Hr |
| 3 | Turn | High | 11.44893, 77.87413 | 15 KM/Hr |
| 4 | Turn | Medium | 11.45127, 77.86734 | 30 KM/Hr |
| 5 | Turn | Medium | 11.45354, 77.85798 | 30 KM/Hr |
| 6 | Turn | High | 11.45350, 77.85700 | 15 KM/Hr |
| 7 | Turn | Medium | 11.45845, 77.85141 | 30 KM/Hr |
| 8 | Turn | High | 11.46303, 77.84945 | 15 KM/Hr |
| 9 | Turn | Medium | 11.46317, 77.84906 | 30 KM/Hr |
| 10 | Turn | High | 11.43000, 77.67564 | 15 KM/Hr |
| 11 | Turn | Medium | 11.43009, 77.67540 | 30 KM/Hr |
| 12 | Turn | High | 11.43026, 77.67525 | 15 KM/Hr |
| 13 | Turn | High | 11.43776, 77.67816 | 15 KM/Hr |
| 14 | Turn | High | 11.43864, 77.68225 | 15 KM/Hr |
| 15 | Turn | Medium | 11.43965, 77.68224 | 30 KM/Hr |
| 16 | Turn | High | 11.44105, 77.68188 | 15 KM/Hr |
| 17 | Turn | High | 11.44120, 77.68218 | 15 KM/Hr |
| 18 | Turn | High | 11.44288, 77.68254 | 15 KM/Hr |
| 19 | Turn | High | 11.44298, 77.68273 | 15 KM/Hr |
| 20 | Turn | High | 11.44858, 77.68333 | 15 KM/Hr |
| 21 | Turn | Medium | 11.48131, 77.57024 | 30 KM/Hr |
| 22 | Turn | Medium | 11.48204, 77.56636 | 30 KM/Hr |
| 23 | Turn | Medium | 11.48529, 77.56464 | 30 KM/Hr |
| 24 | Turn | Medium | 11.52406, 77.52552 | 30 KM/Hr |

| | Risk Type | Risk Level | Coordinates | Speed Limit |
|----|-----------|------------|--------------------|-------------|
| 25 | Turn | Medium | 11.52745, 77.50262 | 30 KM/Hr |
| 26 | Turn | Medium | 11.51441, 77.45439 | 30 KM/Hr |
| 27 | Turn | Medium | 11.50784, 77.40840 | 30 KM/Hr |
| 28 | Turn | Medium | 11.50506, 77.39651 | 30 KM/Hr |

Emergency Locations

| | type | name | coordinates | speed_limit | risk_level |
|----|----------|--|---------------------------|-------------|------------|
| 3 | hospital | Government Hospital | 11.4525596, 77.7749426 | 30 km/h | Medium |
| 4 | hospital | Dhanvantri Multi Speciality Hospital | 11.451362, 77.766602 | 30 km/h | Medium |
| 5 | hospital | Dhanvanthri Hospital | 11.4496712, 77.7593772 | 30 km/h | Medium |
| 6 | hospital | J.K.K. Trust Hospital | 11.4445841, 77.7307962 | 30 km/h | Medium |
| 7 | hospital | Shri Sathyanarayana Hospital | 11.4291297, 77.6913408 | 30 km/h | Medium |
| 9 | hospital | Thanish Siddha Hospital | 11.430003, 77.674964 | 30 km/h | Medium |
| 10 | hospital | Sri Kaalangi Siddhar Mooligai Vaithiya Nilayam | 11.432369, 77.674894 | 30 km/h | Medium |
| 11 | clinic | G.K Clinic | 11.4297244, 77.6749715 | 30 km/h | Medium |
| 12 | clinic | Harshitha Clinic | 11.4313207, 77.674718 | 30 km/h | Medium |
| 13 | hospital | Sutha Hospital | 11.4365526, 77.6796472 | 30 km/h | Medium |
| 14 | hospital | Maha Hospital | 11.4372003, 77.6781345 | 30 km/h | Medium |
| 15 | hospital | Jothikumar Hospital | 11.43687, 77.678407 | 30 km/h | Medium |
| 16 | hospital | SKMH Hospital | 11.4379787, 77.6780268 | 30 km/h | Medium |
| 17 | clinic | Sri Dharshan Diabetes Care | 11.437649, 77.6778126 | 30 km/h | Medium |
| 18 | clinic | Velavan Homoeo Clinic | 11.4367087, 77.6761472 | 30 km/h | Medium |

| | type | name | coordinates | speed_limit | risk_level |
|----|----------|-------------------------------------|---------------------------|-------------|------------|
| 19 | hospital | Kavin Hospital | 11.4399114, 77.6838194 | 30 km/h | Medium |
| 20 | clinic | Thangam Acupuncture | 11.4418816, 77.6832318 | 30 km/h | Medium |
| 21 | hospital | Annusiya Hospital | 11.4432777, 77.6813562 | 30 km/h | Medium |
| 22 | hospital | Sumangali Hospital | 11.4427668, 77.6827131 | 30 km/h | Medium |
| 23 | hospital | Kandasamy Hospital | 11.4450062, 77.6832304 | 30 km/h | Medium |
| 24 | hospital | Senthil Hospital | 11.4475854, 77.6844482 | 30 km/h | Medium |
| 25 | hospital | S.N.A. Siddha Hospital | 11.44704, 77.682877 | 30 km/h | Medium |
| 26 | hospital | Ashok Krishna Hospital | 11.4483344, 77.6856579 | 30 km/h | Medium |
| 27 | hospital | Shri Mani Hospital | 11.44771, 77.6838471 | 30 km/h | Medium |
| 28 | clinic | Sri Hari Clinic | 11.4483503, 77.6850963 | 30 km/h | Medium |
| 29 | hospital | Immiaditya Hospital | 11.4501276, 77.6836088 | 30 km/h | Medium |
| 30 | hospital | Sri Saravana Hospital | 11.4506202, 77.6829676 | 30 km/h | Medium |
| 31 | hospital | Government Hospital | 11.45112, 77.682149 | 30 km/h | Medium |
| 32 | hospital | Vijay Hospital | 11.45091, 77.682019 | 30 km/h | Medium |
| 33 | hospital | Anbe Sivam Hospital | 11.4508139, 77.6854947 | 30 km/h | Medium |
| 34 | clinic | Kalyani Nursing Home | 11.452097, 77.6808974 | 30 km/h | Medium |
| 35 | hospital | Government Hospital | 11.4519113, 77.6819742 | 30 km/h | Medium |
| 36 | hospital | Sriram Child and Maternity Hospital | 11.4739074, 77.5783099 | 30 km/h | Medium |
| 37 | hospital | NM Hospital | 11.4765419, 77.5801178 | 30 km/h | Medium |
| 38 | hospital | Dr. Kandhasamy Hospital | 11.4750159, 77.5798168 | 30 km/h | Medium |
| 39 | hospital | SPK Hospital | 11.47498, 77.5798076 | 30 km/h | Medium |
| 40 | clinic | Krithik Clinic | 11.4756073, 77.5780846 | 30 km/h | Medium |

| | type | name | coordinates | speed_limit | risk_level |
|----|----------|--|---------------------------|-------------|------------|
| 41 | hospital | Vmk Hospital | 11.4791501, 77.5724052 | 30 km/h | Medium |
| 42 | hospital | Subi Hospital | 11.5070348, 77.5375885 | 30 km/h | Medium |
| 44 | hospital | Government Hospital | 11.5218505, 77.5285238 | 30 km/h | Medium |
| 45 | hospital | Kariyamanikam Hospital | 11.5229297, 77.5134812 | 30 km/h | Medium |
| 46 | hospital | Bala Hospital | 11.522996, 77.512794 | 30 km/h | Medium |
| 47 | hospital | Nalam General & Diabetes Care Hospital | 11.523399, 77.51107 | 30 km/h | Medium |
| 49 | hospital | KRP Hospital | 11.5142473, 77.4546226 | 30 km/h | Medium |
| 50 | pharmacy | Sumi Medicals | 11.5157965, 77.4506732 | 30 km/h | Medium |
| 51 | hospital | Government Hospital, T.N.Palayam | 11.50771, 77.383285 | 30 km/h | Medium |
| 52 | hospital | Hussainya Homeopathy Hospital | 11.507225, 77.386729 | 30 km/h | Medium |
| 53 | hospital | Karthikeyan Hospital | 11.5068171, 77.3844296 | 30 km/h | Medium |
| 54 | hospital | Dr. P Kathirvel Hospital | 11.5064531, 77.3836952 | 30 km/h | Medium |

Crowded Spots

| | type | name | coordinates | speed_limit | risk_level |
|----|-------------|---|---------------------------|-------------|------------|
| 0 | school | KRP Matric. Hr. Sec School | 11.4546193, 77.8142445 | 30 km/h | Medium |
| 1 | college | Vivekanandha Engineering College | 11.4589312, 77.7899284 | 30 km/h | Medium |
| 2 | marketplace | Monday market | 11.452863, 77.775989 | 30 km/h | Medium |
| 8 | school | SSM Matriculation Higher Secondary School | 11.4321653, 77.6880046 | 30 km/h | Medium |
| 43 | marketplace | Weekly Market | 11.5078119, 77.5364552 | 30 km/h | Medium |

| | type | name | coordinates | speed_limit | risk_level |
|----|--------|--------------------------------|---------------------------|-------------|------------|
| 48 | school | BEST Matriculation High School | 11.5173252, 77.4633376 | 30 km/h | Medium |

Route Photos of Risky Spots



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.44029, 77.87544



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.44893, 77.87413



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.45127, 77.86734



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.45354, 77.85798



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.45350, 77.85700



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.45845, 77.85141



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.46303, 77.84945



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.46317, 77.84906



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.43000, 77.67564



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.43009, 77.67540



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.43026, 77.67525



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.43776, 77.67816



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.43864, 77.68225



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.43965, 77.68224



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.44105, 77.68188



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.44120, 77.68218



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.44288, 77.68254



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.44298, 77.68273



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.44858, 77.68333



Risk Type: Turn
Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.48131, 77.57024



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.48204, 77.56636



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.48529, 77.56464



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.52406, 77.52552



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.52745, 77.50262



Risk Type: Turn
Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.51441, 77.45439



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.50784, 77.40840



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.50506, 77.39651
