



JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal To SHRI AYYANAR 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: 72.54 km
Estimated Duration: 1.8 hours
Adjusted Duration (Heavy Vehicle): 2.3 hours
Start: (11.4381, 77.8734)
End: (11.130134, 77.402136)



Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route from Sangagiri to Tiruppur via specified towns and roadways such as SH 79A and SH 19A weaves through several regions of Tamil Nadu, covering a mix of urban, suburban, and rural landscapes. It spans approximately 72.54 kilometers, with major stops at Pallipalayam, Gobichettipalayam, Thiruvengadam Palayam Pudhur, and Vijayamangalam.

2. Weather Conditions and Potential Hazards

Tamil Nadu typically experiences a tropical climate with significant monsoon influence. During the monsoon season (June to September), the region can experience heavy rains, leading to potential road flooding and reduced visibility. Humidity can also be high, which might affect vehicle operation and driver comfort.

3. Traffic Patterns

- **Peak Hours:** Morning (7:30 AM - 9:30 AM) and evening (5:00 PM - 7:00 PM).
- **Congestion-Prone Areas:** Urban areas of Gobichettipalayam and Vijayamangalam can see significant traffic congestion, especially near market zones and during school timings.

4. Road Quality and Infrastructure

- **SH 79A** and **SH 19A** are generally well-maintained; however, some segments might have potholes due to monsoon effects.
- Rural roads between main towns may occasionally be narrow, which can be challenging for heavy vehicles, particularly those carrying hazardous materials.

5. Alternative Routes for Emergencies

In case of emergencies, taking detours through alternate state highways or service roads, such as leveraging routes parallel to the primary highways or smaller, more localized roads, can be advantageous. However, it is essential to assess the suitability of these for heavy vehicles.

6. Local Regulations on Hazardous Material Transport

Tamil Nadu mandates adherence to Central Motor Vehicle Rules, which necessitate clear labeling, proper containment, and specific transit times for hazardous materials. Adhering to permissible travel hours and avoiding highly populated areas during transit can mitigate regulatory issues.

7. Historical Incidents

While the specified route does not have a history of frequent incidents, there have been occasional accidents involving heavy vehicles due, in part, to overloading, brake failure, and driver fatigue. Ensuring regular vehicle maintenance and driver health checks is crucial.

8. Environmental Considerations and Sensitive Areas

Routes passing through rural areas may encounter farming zones, necessitating careful navigation to avoid harming crops or livestock. Gobichettipalayam and surrounding areas occasionally host environmental protests, which can temporarily disrupt traffic.

9. Communication Coverage

Mobile network coverage is relatively consistent along main highways and in towns. However, coverage may be spotty in rural stretches between larger towns, especially in low-lying or dense forest areas.

10. Estimated Emergency Response Times

- **Urban Areas:** 15-30 minutes due to proximity to emergency services.
- **Rural Stretches:** 45 minutes to 1 hour due to longer travel distances for emergency vehicles.

11. Overall Summary of Risk Assessment

The route is moderately risky due to the presence of monsoon-related weather conditions, narrow rural roadways, and potential congestion in urban areas. Driver vigilance is recommended during peak hours, and regular checks of communication devices are advisable to counteract any coverage gaps. With proper planning for these variables, the route can be navigated safely with hazardous materials. Regular communication with transport and local authorities will enhance safety and compliance.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.37086, 77.74828	15 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	High	11.45350, 77.85700	15 KM/Hr
6	Turn	Medium	11.45845, 77.85141	30 KM/Hr
7	Turn	Medium	11.45889, 77.85136	30 KM/Hr
8	Turn	High	11.46303, 77.84945	15 KM/Hr
9	Turn	High	11.46317, 77.84906	15 KM/Hr
10	Turn	High	11.36853, 77.74508	15 KM/Hr
11	Turn	Medium	11.36616, 77.74644	30 KM/Hr
12	Turn	Medium	11.36311, 77.74722	30 KM/Hr
13	Turn	Medium	11.36277, 77.74708	30 KM/Hr
14	Turn	Medium	11.34192, 77.72824	30 KM/Hr
15	Blind Spot	Blind Spot	11.33920, 77.72902	10 KM/Hr
16	Turn	High	11.34079, 77.71710	15 KM/Hr
17	Turn	High	11.34100, 77.71705	15 KM/Hr
18	Turn	Medium	11.34409, 77.69649	30 KM/Hr
19	Turn	Medium	11.33909, 77.64147	30 KM/Hr
20	Turn	Medium	11.33830, 77.64041	30 KM/Hr
21	Turn	High	11.33828, 77.63811	15 KM/Hr
22	Turn	High	11.32833, 77.62971	15 KM/Hr
23	Turn	High	11.32836, 77.62946	15 KM/Hr
24	Turn	Medium	11.29141, 77.58266	30 KM/Hr
25	Turn	Medium	11.23724, 77.50686	30 KM/Hr
26	Turn	High	11.23704, 77.50676	15 KM/Hr
27	Turn	High	11.23679, 77.50215	15 KM/Hr
28	Turn	Medium	11.23625, 77.50212	30 KM/Hr
29	Turn	Medium	11.23408, 77.50112	30 KM/Hr
30	Turn	Medium	11.23369, 77.50073	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
31	Turn	Medium	11.23031, 77.49763	30 KM/Hr
32	Turn	Medium	11.18350, 77.46265	30 KM/Hr
33	Turn	Medium	11.17869, 77.46175	30 KM/Hr
34	Turn	Medium	11.17505, 77.45967	30 KM/Hr
35	Turn	Medium	11.17135, 77.45594	30 KM/Hr
36	Turn	High	11.16953, 77.44382	15 KM/Hr
37	Turn	Medium	11.16369, 77.43670	30 KM/Hr
38	Turn	Medium	11.16262, 77.43107	30 KM/Hr
39	Turn	Medium	11.15170, 77.42331	30 KM/Hr
40	Turn	Medium	11.14991, 77.42223	30 KM/Hr
41	Turn	Medium	11.14904, 77.42031	30 KM/Hr
42	Turn	Medium	11.13909, 77.41658	30 KM/Hr
43	Turn	Medium	11.13744, 77.41422	30 KM/Hr
44	Turn	Medium	11.13109, 77.40375	30 KM/Hr
45	Turn	High	11.13104, 77.40238	15 KM/Hr

Emergency Locations

	type	name	coordinates	speed_limit	risk_level
1	hospital	Sri Kumaran E N T Hospital	11.3657814, 77.7477763	30 km/h	Medium
2	hospital	Sri Krishna Hospital	11.3656648, 77.7477783	30 km/h	Medium
3	hospital	Visaalam Hospitals	11.3651528, 77.747808	30 km/h	Medium
4	hospital	Cheran Hospital	11.3680302, 77.7481976	30 km/h	Medium
5	pharmacy	Pharmacy	11.3652161, 77.7486375	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
9	hospital	Sri Hari Sakthivel Hospital	11.3526901, 77.7323055	30 km/h	Medium
10	hospital	Senthil Prakash Hospital	11.352639, 77.732267	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
11	hospital	Dhanvantri Critical Care Center	11.3504266, 77.7311274	30 km/h	Medium
12	hospital	V K Hospital	11.3513792, 77.7313976	30 km/h	Medium
13	hospital	Dhanvantri Critical Care Centre	11.35099, 77.730508	30 km/h	Medium
14	hospital	Indrajith Yoga Nature Cure Hospital	11.3499973, 77.732974	30 km/h	Medium
16	hospital	City Hospital	11.3451151, 77.7300887	30 km/h	Medium
17	clinic	K.B.N. Nursing Home	11.344835, 77.7310771	30 km/h	Medium
18	hospital	Kumudha Hospital	11.3467172, 77.7306797	30 km/h	Medium
19	clinic	Kpn Nursing Home	11.3437022, 77.7304525	30 km/h	Medium
20	hospital	Milan Hospital	11.343591, 77.733182	30 km/h	Medium
21	hospital	Dr Kokilasekar Nursing Hospital	11.3395874, 77.7269838	30 km/h	Medium
22	hospital	Kaviraj Ayurveda Hospital	11.3400349, 77.7298199	30 km/h	Medium
23	clinic	M.R Nursing Home	11.3386746, 77.7294262	30 km/h	Medium
25	hospital	Government Maternity Hospital, Agathiar	11.33716, 77.727075	30 km/h	Medium
26	clinic	Naseer Nursing Home	11.3364485, 77.7271691	30 km/h	Medium
27	clinic	Dr. R Kumaraswamy Sexologist Clinic	11.3396057, 77.7221701	30 km/h	Medium
28	clinic	Janet Nursing Home	11.3396455, 77.7203698	30 km/h	Medium
29	hospital	Dr. Pondiperumal Hospital	11.3390924, 77.7205408	30 km/h	Medium
30	clinic	Newlife Fertility Centre	11.3389396, 77.7213358	30 km/h	Medium
31	hospital	Guhan ENT Hospital	11.339489, 77.721001	30 km/h	Medium
32	hospital	Dr. Agarwal's Eye Hospital Ltd. - Erode	11.3421842, 77.7173066	30 km/h	Medium
33	hospital	Universal Hospital	11.3411046, 77.7185217	30 km/h	Medium
34	hospital	Duraisamy Hospital	11.3391625, 77.7187054	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
35	hospital	Srimathi Murugeshan Hospital	11.3389205, 77.7187791	30 km/h	Medium
36	hospital	Devi Hospital	11.34116, 77.718307	30 km/h	Medium
37	hospital	Abisek Medical Centre	11.3415975, 77.7191789	30 km/h	Medium
38	hospital	SCS Hospital And Urology Clinic	11.3410253, 77.718043	30 km/h	Medium
39	hospital	Anusha Hospital	11.3397168, 77.7166805	30 km/h	Medium
40	clinic	Vanalika Homoeo Centre	11.341349, 77.717987	30 km/h	Medium
41	hospital	Sri Vijaya Hitech Hospital	11.3400011, 77.7192251	30 km/h	Medium
42	hospital	Suriya Hospital	11.340248, 77.7186452	30 km/h	Medium
43	clinic	Skin Care Clinic	11.3409042, 77.7178413	30 km/h	Medium
44	hospital	Abitha Eye Hospital	11.34021, 77.7187589	30 km/h	Medium
45	hospital	Ortho Life Hospital	11.3395729, 77.7167329	30 km/h	Medium
46	hospital	Shri Vijaiah Trauma Care Hospital	11.3418935, 77.7193036	30 km/h	Medium
47	clinic	Sathyavathi Ramalingam Clinic	11.3380366, 77.7166875	30 km/h	Medium
48	hospital	SRC Hospital	11.3413999, 77.7177834	30 km/h	Medium
49	hospital	Nalan Hospital	11.3399703, 77.716773	30 km/h	Medium
50	hospital	Surya Hospital	11.3400026, 77.7190977	30 km/h	Medium
51	clinic	Dr. Chandran Skin Laser Centre	11.3413527, 77.7174891	30 km/h	Medium
52	hospital	District Hospital, Eroda	11.3393048, 77.717926	30 km/h	Medium
54	hospital	L.V.S. Eye Hospital	11.3385839, 77.7156597	30 km/h	Medium
55	hospital	Erode Kidney's Centre	11.3383801, 77.7164201	30 km/h	Medium
56	hospital	Annai Ent and Head and Neck Care Center	11.3387785, 77.7149034	30 km/h	Medium
57	hospital	Shri Preethe Hospital	11.3385944, 77.7157979	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
58	hospital	Dr Nsk Hospital	11.3381737, 77.7153821	30 km/h	Medium
59	hospital	KMCH Speciality Hospital	11.33911, 77.716284	30 km/h	Medium
60	hospital	Care Hospital	11.338443, 77.716511	30 km/h	Medium
61	hospital	Keran Hospital	11.3400456, 77.7154808	30 km/h	Medium
62	hospital	Gem Hospital	11.338106, 77.7155077	30 km/h	Medium
63	hospital	Sri Hari Hospital	11.338357, 77.7164204	30 km/h	Medium
64	clinic	Madhu Surgical Clinic	11.3386602, 77.7143441	30 km/h	Medium
65	pharmacy	Tava Drug Mart	11.3436578, 77.7182673	30 km/h	Medium
66	hospital	Senthil Multispeciality Hospital	11.338983, 77.7138529	30 km/h	Medium
67	hospital	Erode Trust Hospital	11.3399422, 77.7134188	30 km/h	Medium
68	hospital	Sri Athi Sathya Hospital	11.3392651, 77.7126583	30 km/h	Medium
69	hospital	Arc Fertility Hospital	11.3397231, 77.7130655	30 km/h	Medium
70	clinic	RB Kids Clinic	11.339221, 77.713915	30 km/h	Medium
71	hospital	Vanjee Multispeciality Dental Centre	11.3418385, 77.7132218	30 km/h	Medium
72	clinic	Erode Women and Children Clinic	11.3420279, 77.7116815	30 km/h	Medium
73	hospital	Ranm Malathy Vijayakumar Hospital	11.3413334, 77.708922	30 km/h	Medium
74	hospital	Arun Hospital	11.3447248, 77.7138215	30 km/h	Medium
76	hospital	K.G. Baby Hospital	11.343848, 77.699081	30 km/h	Medium
77	hospital	Veena Hospital	11.3367614, 77.6366566	30 km/h	Medium
79	hospital	Irt Hospital	11.2803603, 77.5644118	30 km/h	Medium
81	hospital	Gen Siddha Hospital	11.2375033, 77.5059797	30 km/h	Medium
82	hospital	Vijayamangalm Government Hospital	11.2382827, 77.501687	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
84	hospital	Aravind Eye Care Hospital	11.1729469, 77.4574467	30 km/h	Medium
85	clinic	Sri Maha Annai Clinic	11.1707162, 77.4536498	30 km/h	Medium
86	hospital	Ram Doctor Hospital	11.1709391, 77.4532808	30 km/h	Medium
87	clinic	Kumaran Clinic	11.1697553, 77.451543	30 km/h	Medium
88	hospital	Sri Aravindhar Hospital	11.1697756, 77.4448276	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
15	school	Municipality Girls Higher secondary school	11.3495618, 77.7325011	30 km/h	Medium
24	school	E.V.R. Govt Girls Hr. Sec School	11.3371265, 77.7266283	30 km/h	Medium
53	school	Sengunthar matriculation School	11.3407075, 77.7195086	30 km/h	Medium
75	school	Nandha Central City School (City Campus)	11.3409392, 77.7047156	30 km/h	Medium
78	college	Government polytechnic college	11.2907053, 77.5698726	30 km/h	Medium
80	school	Bharathi Matriculation School	11.2494613, 77.5307028	30 km/h	Medium
83	college	Sasurie Engineering College	11.2171482, 77.4898552	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: 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: 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: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.45889, 77.85136



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.46303, 77.84945



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.46317, 77.84906



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.36853, 77.74508



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.36616, 77.74644



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.36311, 77.74722



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.36277, 77.74708



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.34192, 77.72824



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.33920, 77.72902



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.34079, 77.71710



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.34100, 77.71705



Risk Type: Turn
Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.34409, 77.69649



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.33909, 77.64147



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.33830, 77.64041



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.33828, 77.63811



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.32833, 77.62971



Risk Type: Turn
Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.32836, 77.62946



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.29141, 77.58266



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.23724, 77.50686



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.23704, 77.50676



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.23679, 77.50215



Risk Type: Turn
Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.23625, 77.50212



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.23408, 77.50112



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.23369, 77.50073



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.23031, 77.49763



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.18350, 77.46265



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.17869, 77.46175



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.17505, 77.45967



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.17135, 77.45594



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.16953, 77.44382



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.16369, 77.43670



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.16262, 77.43107



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.15170, 77.42331



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.14991, 77.42223



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.14904, 77.42031



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.13909, 77.41658



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.13744, 77.41422



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.13109, 77.40375
