



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

**Salem Terminal TO R R PETROLEUM & CO**

### 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.

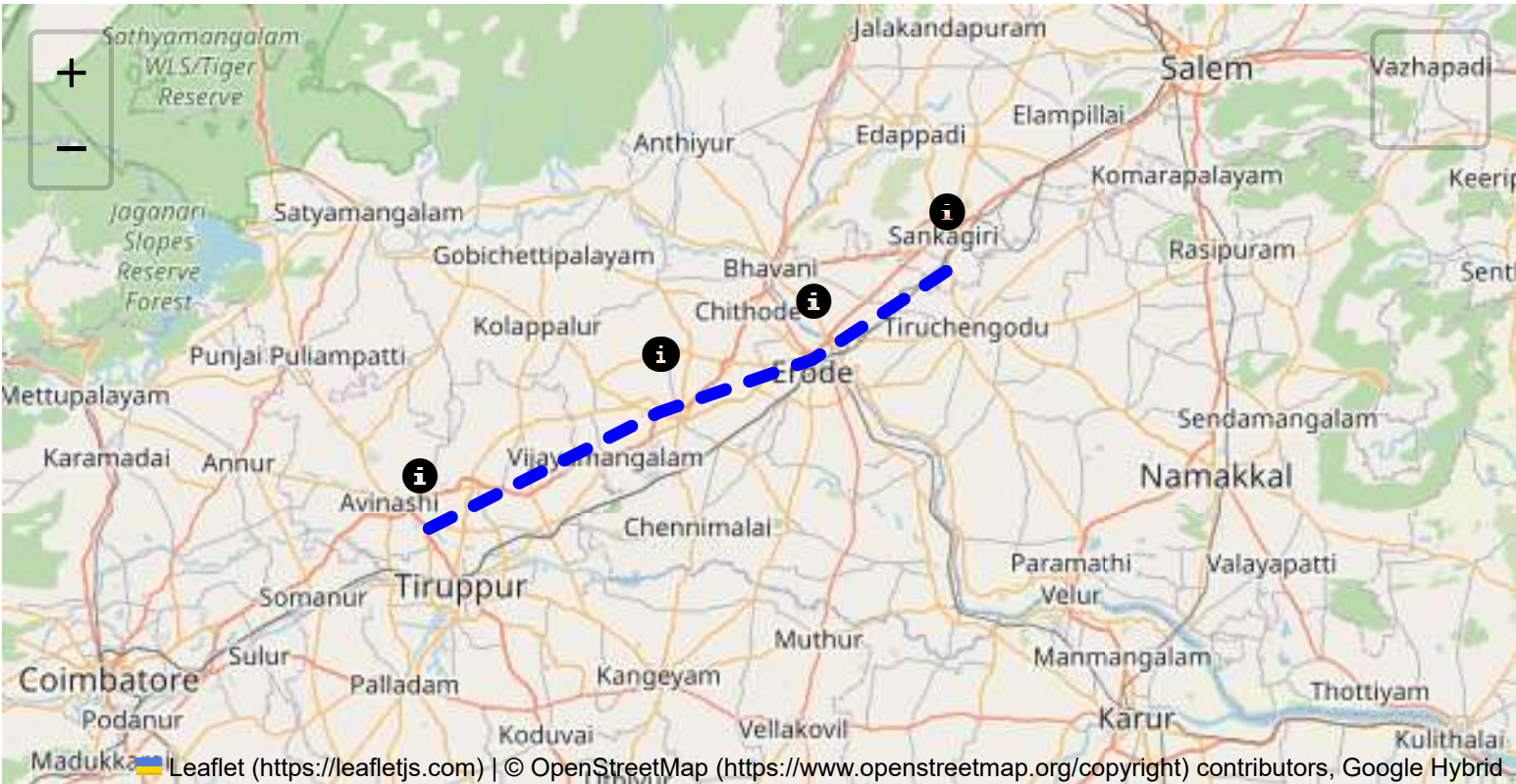
## **Journey Risk Mitigation**

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.

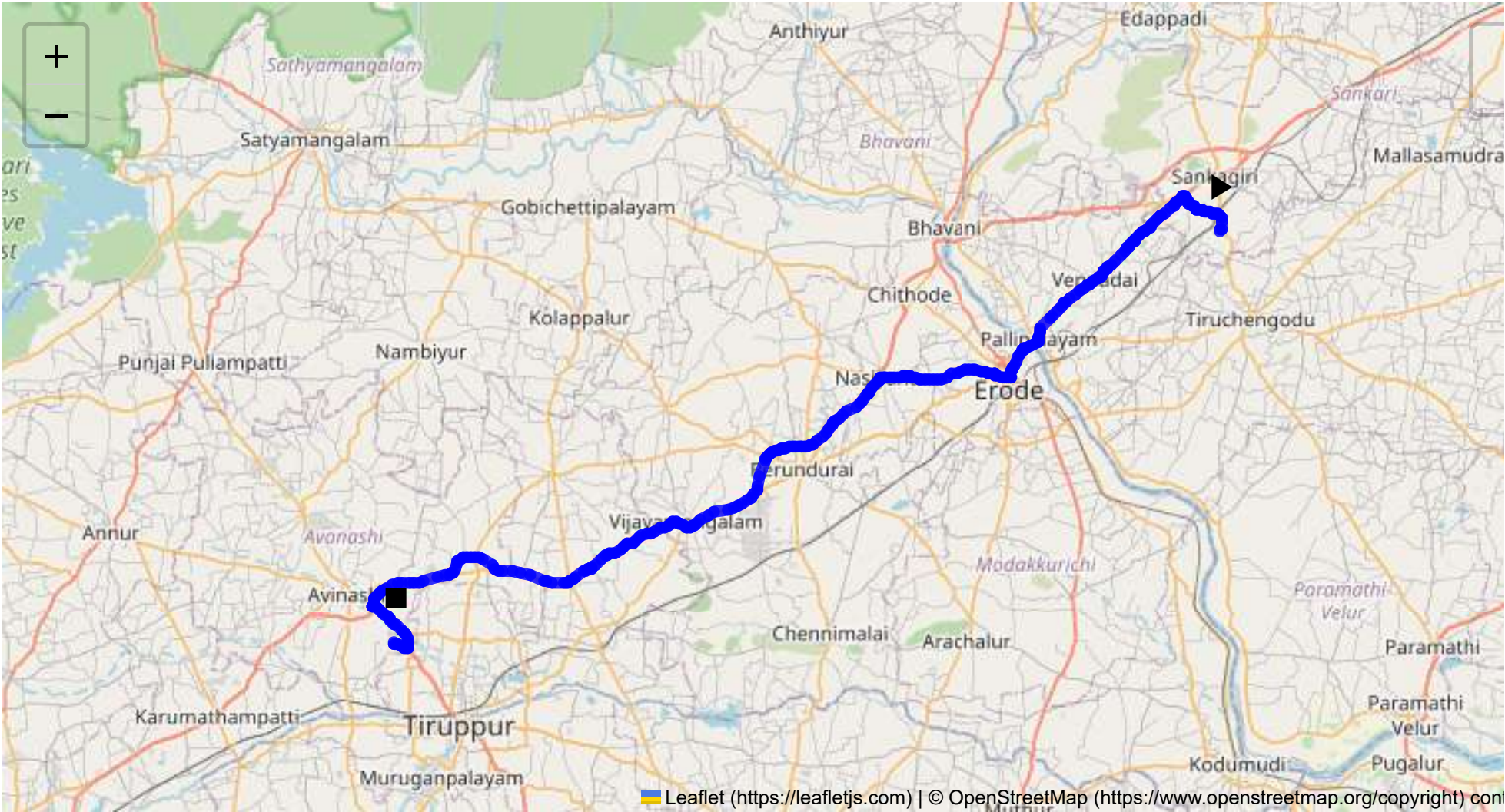
## **Compliance with Government Directives**

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: 87.72 km**  
**Estimated Duration: 1.9 hours**  
**Adjusted Duration (Heavy Vehicle): 2.4 hours**  
**Start: (11.4381, 77.8734)**  
**End: (11.157775, 77.299449)**



**Risk Spots**

	RiskSpotType	Coordinates	Speed Limit	Distance from Start
1	Turn	11.43961, 77.87341	15 KM/Hr	0.08 km
2	Turn	11.44029, 77.87544	15 KM/Hr	0.28 km
3	Turn	11.44893, 77.87413	15 KM/Hr	1.29 km



	RiskSpotType	Coordinates	Speed Limit	Distance from Start
4	Turn	11.45127, 77.86734	15 KM/Hr	2.15 km
5	Turn	11.45350, 77.85700	15 KM/Hr	3.29 km
6	Turn	11.45845, 77.85141	15 KM/Hr	4.11 km
7	Turn	11.46303, 77.84945	15 KM/Hr	4.65 km
0	Roundabout	11.37086, 77.74828	15 KM/Hr	19.84 km
8	Turn	11.36517, 77.74811	15 KM/Hr	20.52 km
9	Turn	11.34172, 77.72823	15 KM/Hr	24.09 km
10	Turn	11.33937, 77.72895	15 KM/Hr	24.29 km
11	Blind Spot	11.34068, 77.71709	10 KM/Hr	25.74 km
12	Turn	11.34409, 77.69647	15 KM/Hr	27.91 km
13	Turn	11.33812, 77.64960	15 KM/Hr	33.26 km
14	Turn	11.33907, 77.64135	15 KM/Hr	34.14 km
15	Turn	11.33823, 77.63832	15 KM/Hr	34.66 km
16	Turn	11.32831, 77.62967	15 KM/Hr	35.92 km
17	Turn	11.20716, 77.37209	15 KM/Hr	70.26 km
18	Turn	11.18254, 77.28529	15 KM/Hr	81.90 km
19	Turn	11.16074, 77.30963	15 KM/Hr	85.40 km
20	Turn	11.15412, 77.30889	15 KM/Hr	86.29 km
21	Turn	11.15666, 77.29990	15 KM/Hr	87.28 km

### Emergency Services

	type	name	coordinates	side_of_road
1	hospital	Cheran Hospital	11.3680302, 77.7481976	Driver's Side
2	pharmacy	Pharmacy	11.3652161, 77.7486375	Driver's Side
3	hospital	Visaalam Hospitals	11.3651528, 77.747808	Opposite Side
4	hospital	Sri Kumaran E N T Hospital	11.3657814, 77.7477763	Opposite Side
5	hospital	Sri Krishna Hospital	11.3656648, 77.7477783	Opposite Side
7	police	Police Station	11.3630177, 77.7476505	Driver's Side
8	hospital	Government Hospital	11.3608508, 77.747453	Driver's Side
9	hospital	Sri Hari Sakthivel Hospital	11.3526901, 77.7323055	Opposite Side
10	hospital	Senthil Prakash Hospital	11.352639, 77.732267	Opposite Side
11	hospital	V K Hospital	11.3513792, 77.7313976	Opposite Side
12	hospital	Dhanvantri Critical Care Center	11.3504266, 77.7311274	Opposite Side

	type	name	coordinates	side_of_road
13	hospital	Kumudha Hospital	11.3467172, 77.7306797	Opposite Side
14	hospital	Dhanvantri Critical Care Centre	11.35099, 77.730508	Opposite Side
15	hospital	Indrajith Yoga Nature Cure Hospital	11.3499973, 77.732974	Driver's Side
16	hospital	City Hospital	11.3451151, 77.7300887	Opposite Side
17	clinic	K.B.N. Nursing Home	11.344835, 77.7310771	Driver's Side
18	clinic	Kpn Nursing Home	11.3437022, 77.7304525	Driver's Side
19	hospital	Kaviraj Ayurveda Hospital	11.3400349, 77.7298199	Driver's Side
20	hospital	Dr Kokilasekar Nursing Hospital	11.3395874, 77.7269838	Opposite Side
21	clinic	M.R Nursing Home	11.3386746, 77.7294262	Driver's Side
22	hospital	Government Maternity Hospital, Agathiar	11.33716, 77.727075	Driver's Side
23	clinic	Naseer Nursing Home	11.3364485, 77.7271691	Driver's Side
24	clinic	Dr. R Kumaraswamy Sexologist Clinic	11.3396057, 77.7221701	Opposite Side
25	clinic	Janet Nursing Home	11.3396455, 77.7203698	Driver's Side
26	hospital	Dr. Pondiperumal Hospital	11.3390924, 77.7205408	Driver's Side
27	clinic	Newlife Fertility Centre	11.3389396, 77.7213358	Driver's Side
28	hospital	Guhan ENT Hospital	11.339489, 77.721001	Driver's Side
29	hospital	Dr. Agarwal's Eye Hospital Ltd. - Erode	11.3421842, 77.7173066	Opposite Side
30	hospital	Universal Hospital	11.3411046, 77.7185217	Opposite Side
31	hospital	Erode Kidney's Centre	11.3383801, 77.7164201	Driver's Side
32	hospital	Duraisamy Hospital	11.3391625, 77.7187054	Driver's Side
33	hospital	Srimathi Murugeshan Hospital	11.3389205, 77.7187791	Driver's Side
34	hospital	Devi Hospital	11.34116, 77.718307	Opposite Side
35	hospital	Abisek Medical Centre	11.3415975, 77.7191789	Opposite Side
36	hospital	KMCH Speciality Hospital	11.33911, 77.716284	Driver's Side
37	hospital	SCS Hospital And Urology Clinic	11.3410253, 77.718043	Opposite Side
38	hospital	Anusha Hospital	11.3397168, 77.7166805	Driver's Side
39	clinic	Vanalika Homoeo Centre	11.341349, 77.717987	Opposite Side
40	hospital	Sri Vijaya Hitech Hospital	11.3400011, 77.7192251	Driver's Side
41	hospital	Suriya Hospital	11.340248, 77.7186452	Driver's Side
42	clinic	Skin Care Clinic	11.3409042, 77.7178413	Opposite Side
43	hospital	Care Hospital	11.338443, 77.716511	Driver's Side
44	hospital	Abitha Eye Hospital	11.34021, 77.7187589	Driver's Side
45	hospital	Ortho Life Hospital	11.3395729, 77.7167329	Driver's Side
46	hospital	Shri Vijaiah Trauma Care Hospital	11.3418935, 77.7193036	Opposite Side

	type	name	coordinates	side_of_road
47	clinic	Sathyavathi Ramalingam Clinic	11.3380366, 77.7166875	Opposite Side
48	hospital	SRC Hospital	11.3413999, 77.7177834	Opposite Side
49	hospital	Nalan Hospital	11.3399703, 77.716773	Driver's Side
50	hospital	Surya Hospital	11.3400026, 77.7190977	Driver's Side
51	clinic	Dr. Chandran Skin Laser Centre	11.3413527, 77.7174891	Opposite Side
52	hospital	Sri Hari Hospital	11.338357, 77.7164204	Driver's Side
53	hospital	District Hospital, Eroda	11.3393048, 77.717926	Driver's Side
54	hospital	L.V.S. Eye Hospital	11.3385839, 77.7156597	Driver's Side
55	hospital	Annai Ent and Head and Neck Care Center	11.3387785, 77.7149034	Driver's Side
56	hospital	Shri Preethe Hospital	11.3385944, 77.7157979	Driver's Side
57	hospital	Dr Nsk Hospital	11.3381737, 77.7153821	Driver's Side
58	hospital	Keran Hospital	11.3400456, 77.7154808	Driver's Side
59	hospital	Gem Hospital	11.338106, 77.7155077	Driver's Side
60	clinic	Madhu Surgical Clinic	11.3386602, 77.7143441	Driver's Side
61	pharmacy	Tava Drug Mart	11.3436578, 77.7182673	Opposite Side
62	hospital	Senthil Multispeciality Hospital	11.338983, 77.7138529	Driver's Side
63	hospital	Erode Trust Hospital	11.3399422, 77.7134188	Driver's Side
64	hospital	Sri Athi Sathya Hospital	11.3392651, 77.7126583	Driver's Side
65	hospital	Arc Fertility Hospital	11.3397231, 77.7130655	Driver's Side
66	clinic	RB Kids Clinic	11.339221, 77.713915	Driver's Side
67	clinic	Erode Women and Children Clinic	11.3420279, 77.7116815	Driver's Side
68	hospital	Vanjee Multispeciality Dental Centre	11.3418385, 77.7132218	Driver's Side
70	hospital	Ranm Malathy Vijayakumar Hospital	11.3413334, 77.708922	Driver's Side
71	hospital	K.G. Baby Hospital	11.343848, 77.699081	Opposite Side
72	hospital	Veena Hospital	11.3367614, 77.6366566	Opposite Side
81	hospital	Irt Hospital	11.2803603, 77.5644118	Driver's Side
85	hospital	Gen Siddha Hospital	11.2375033, 77.5059797	Opposite Side
86	hospital	Vijayamangalm Government Hospital	11.2382827, 77.501687	Opposite Side
87	hospital	Dr. N Viswanathan Hospital	11.2412783, 77.5005502	Opposite Side
89	clinic	P.M. Clinic	11.2281078, 77.4647296	Opposite Side
93	hospital	Sri Renu Hospital	11.1990225, 77.4219937	Driver's Side

## Rest Stops

	type	name	coordinates	side_of_road
0	cafe	Cafe	11.370475, 77.7481115	Opposite Side
6	cafe	Cafe	11.3644585, 77.7477736	Opposite Side
69	hotel	Surabhi hotels and catering	11.3400317, 77.7129918	Driver's Side
73	restaurant	Paradise Biriyani	11.3291744, 77.6297833	Opposite Side
74	hotel	Hotel Annachi	11.3020259, 77.600017	Opposite Side
75	parking	NHAI parking	11.3030168, 77.6009269	Opposite Side
76	hotel	Adayar Ananda Bhavan(a2b)	11.3018451, 77.599909	Opposite Side
77	restaurant	Ambur Star Biriyani	11.3017372, 77.5999546	Opposite Side
78	restaurant	Arukkaniyammal Mess	11.2982771, 77.5967424	Opposite Side
79	fuel	HP	11.2909675, 77.5815262	Driver's Side
80	cafe	Backery and Cafe	11.2893987, 77.565338	Opposite Side
82	fuel	Reliance	11.2575595, 77.5511245	Driver's Side
83	fuel	Bharat Petroleum	11.255444, 77.5457729	Opposite Side
84	fuel	Auto LPG	11.2523222, 77.5400243	Opposite Side
88	fuel	HP Gas Station	11.239607, 77.4949754	Driver's Side
90	fuel	Indian Oil	11.2126458, 77.4417156	Opposite Side
91	restaurant	MDS restaurant	11.2058137, 77.4295619	Opposite Side
92	restaurant	Hotel Sree Anandha Bhavan	11.2058482, 77.4297017	Opposite Side
94	restaurant	Shri Sai Krishna	11.1993912, 77.3207179	Driver's Side
95	fuel	HP bunk	11.1946674, 77.2943298	Driver's Side

## Welcome to the Journey Risk Management Study

### 1. Overview of the Route Map

The route from Sangagiri (CVQF+23W) to Avinashi (575X+6RR GP Complex) via Puthur (CVQF+VG), Erode (15, RKV Rd), Perundurai Bypass, and NH544 is approximately 87.72 kilometers long. It primarily covers a stretch of significant highways and smaller connecting roads, moving through Sangagiri, Erode, and Perundurai before reaching Avinashi.

### 2. Typical Weather Conditions and Potential Weather-Related Hazards

The region experiences a tropical climate with distinct wet and dry seasons. Peak rainfall occurs between October and November during the Northeast monsoon, which can lead to waterlogging and reduced

visibility. Summer months from March to June can result in high temperatures that might affect road conditions and tire integrity.

### 3. Traffic Patterns

- **Peak Hours:** Morning hours (8 AM - 10 AM) and evening hours (5 PM - 7 PM) often exhibit increased traffic, especially around Erode and Avinashi due to commuter and commercial activity.
- **Congestion-Prone Areas:** Erode is a major urban area that might experience significant congestion, particularly near commercial zones and intersections. The bypass at Perundurai helps alleviate traffic but may also see delays if there is an accident or construction.

### 4. Assessment of Road Quality and Infrastructure

The route mostly includes NH544, a well-maintained national highway with good quality roads suitable for heavy vehicles. However, inner roads near towns like Erode might have variable quality, with potential potholes or narrow passages.

### 5. Suggestions for Alternative Routes

- **Emergency Alternative:** From Erode, one could bypass congested areas by taking the Erode Ring Road to reconnect with NH544, especially during severe weather or roadblocks.

### 6. Summary of Local Regulations Affecting Hazardous Material Transport

Tamil Nadu's traffic regulations require permits for the transport of hazardous materials. Vehicles must clearly display hazard placards, and transport during nighttime might be restricted due to safety concerns.

### 7. Historical Incidents Involving Heavy Vehicles or Hazardous Materials

There have been occasional incidents involving overturned tankers or chemical spills, typically related to driver fatigue, vehicle speed, or adverse weather conditions.

### 8. Environmental Considerations and Sensitive Areas

The route crosses agricultural zones where any spill or incident could affect local ecosystems. Environmental protocols must be strictly followed to minimize risks.

### 9. Communication Coverage

The entire route generally has good mobile coverage, with potential dead zones around dense forested areas or between major towns. Emergency services should be informed about these zones for readiness.

### 10. Estimated Emergency Response Times



- Sangagiri to Puthur: 20-30 minutes
- Puthur to Erode: 15-25 minutes
- Erode to Perundurai: 10-20 minutes
- Perundurai to Avinashi: 15-25 minutes

## 11. Environmental Considerations and Sensitive Areas

## 12. Overall Summary of Risk Assessment

The route from Sangagiri to Avinashi, through major highways and smaller roads, presents typical risks associated with heavy vehicle and hazardous material transport, including weather impacts, traffic congestion, and regulatory compliance requirements. Proactive management, adherence to safety protocols, and real-time monitoring are essential to minimize risks.

Trained drivers should remain vigilant, especially through urban areas like Erode, and be prepared for sudden weather changes. Emergency services should be pre-notified about potential transport, ensuring readiness in case of any incidents. With meticulous planning and adherence to safety norms, the route can be navigated effectively, ensuring safe and efficient transport of hazardous materials.

### Route Photos of Risky Spots



**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 0.28 km

**Coordinates:** 11.44029, 77.87544





**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 1.29 km

**Coordinates:** 11.44893, 77.87413



**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 2.15 km

**Coordinates:** 11.45127, 77.86734





**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 3.29 km**

**Coordinates: 11.45350, 77.85700**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 4.11 km**

**Coordinates: 11.45845, 77.85141**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 4.65 km**

**Coordinates: 11.46303, 77.84945**





**Risk Type:** Roundabout

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 19.84 km

**Coordinates:** 11.37086, 77.74828



**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 20.52 km

**Coordinates:** 11.36517, 77.74811





**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 24.09 km**

**Coordinates: 11.34172, 77.72823**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 24.29 km**

**Coordinates: 11.33937, 77.72895**



**Risk Type: Blind Spot**

**Speed Limit: 10 KM/Hr**

**Distance from Start: 25.74 km**

**Coordinates: 11.34068, 77.71709**





**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 27.91 km**

**Coordinates: 11.34409, 77.69647**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 33.26 km**

**Coordinates: 11.33812, 77.64960**





**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 34.14 km**

**Coordinates: 11.33907, 77.64135**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 34.66 km**

**Coordinates: 11.33823, 77.63832**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 35.92 km**

**Coordinates: 11.32831, 77.62967**





**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 70.26 km**

**Coordinates: 11.20716, 77.37209**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 81.90 km**

**Coordinates: 11.18254, 77.28529**





**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 85.40 km**

**Coordinates: 11.16074, 77.30963**

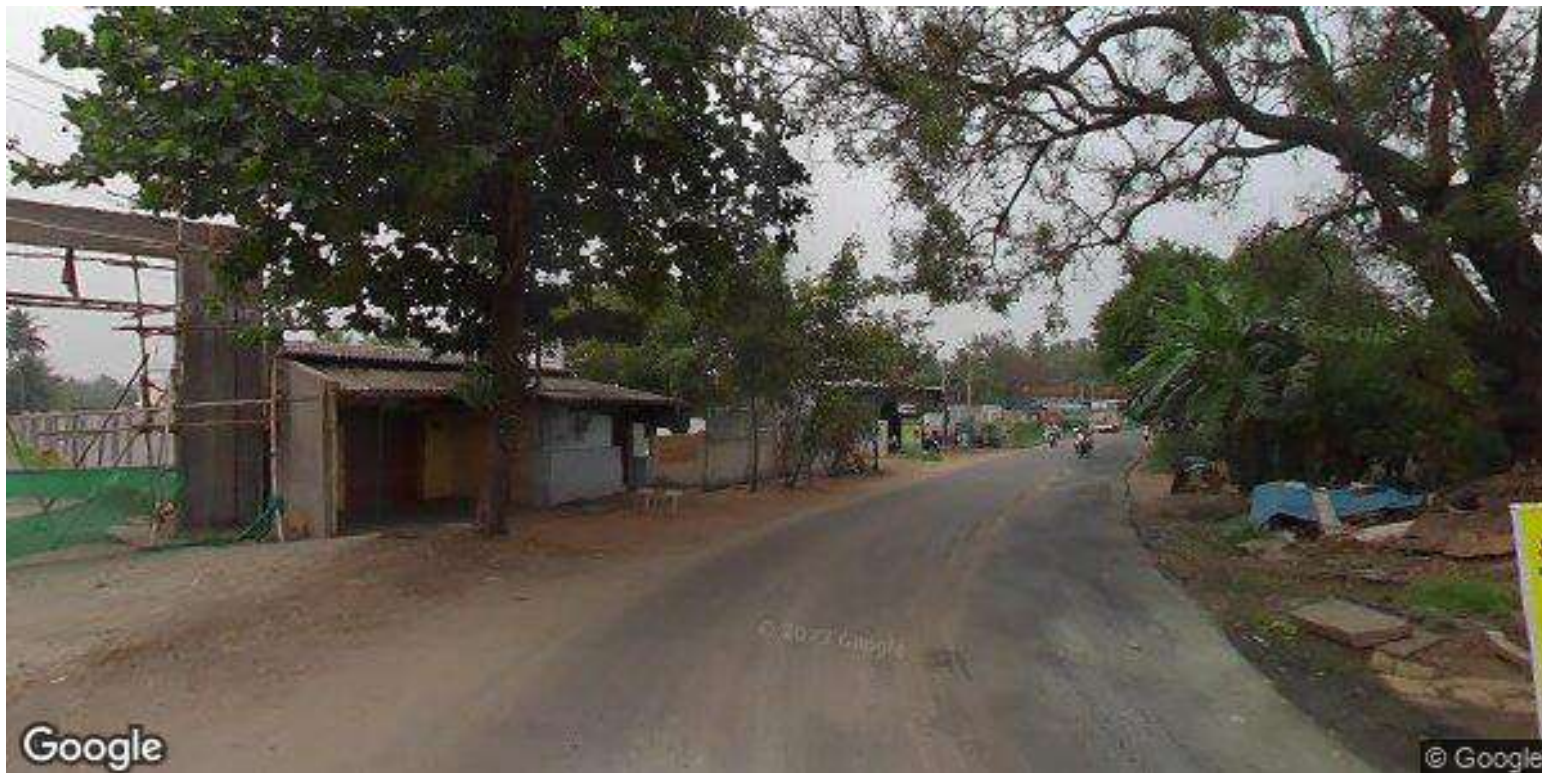


**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 86.29 km**

**Coordinates: 11.15412, 77.30889**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 87.28 km**

**Coordinates: 11.15666, 77.29990**



[Download Interactive Map](#)