



## **JOURNEY RISK MANAGEMENT (JRM) STUDY**

### **Salem Terminal To SREE AMMA FUIELS**

#### **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.

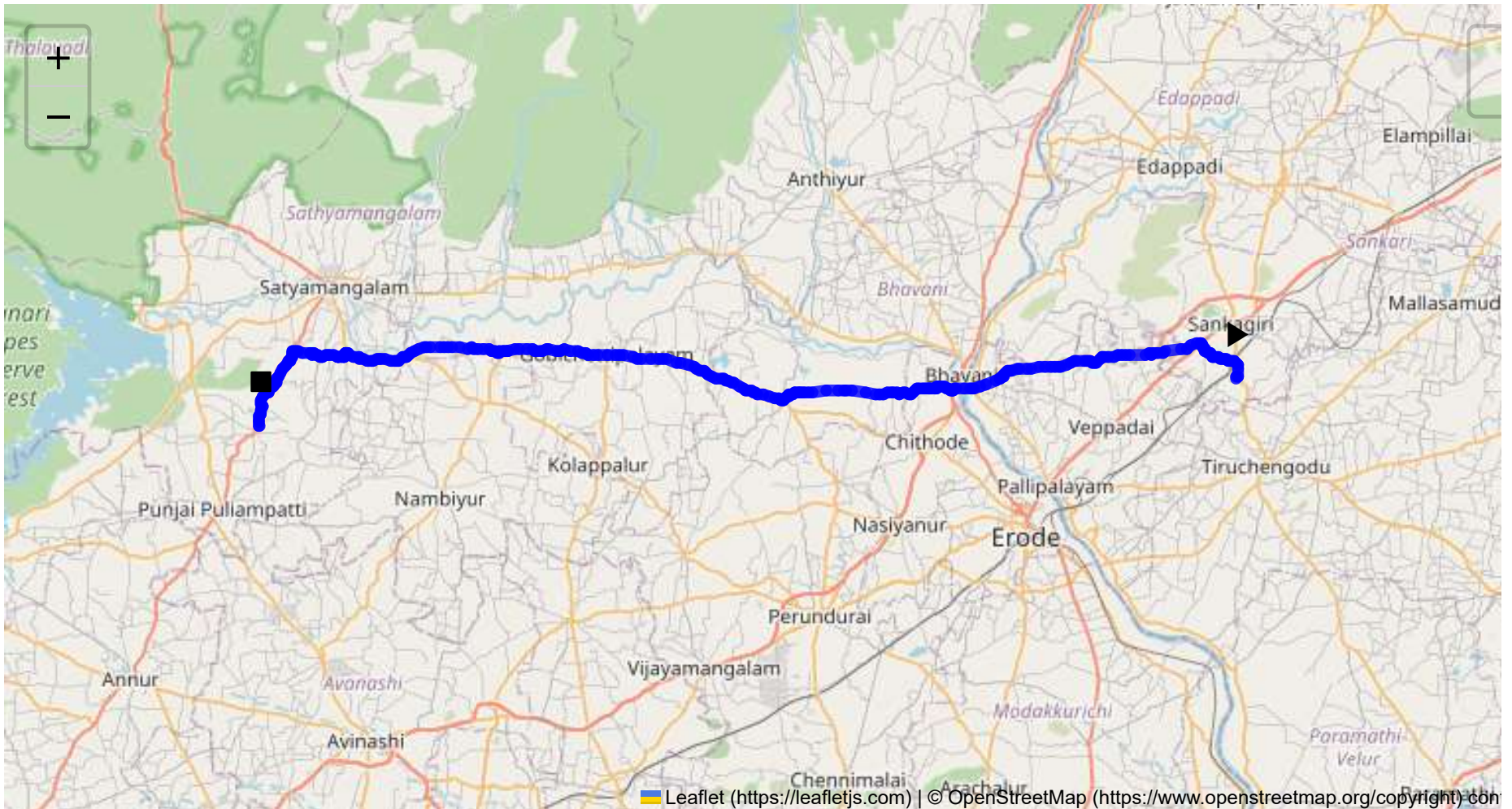
## Compliance with Government Directives

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: 84.12 km**  
**Estimated Duration: 1.8 hours**  
**Adjusted Duration (Heavy Vehicle): 2.2 hours**  
**Start: (11.4381, 77.8734)**  
**End: (11.406173, 77.19329)**



## Welcome to the Journey Risk Management Study

### Route Overview

The route from Sangagiri, Tamil Nadu, to Pungampalli, Tamil Nadu spans approximately 84.12 kilometers, primarily involving major state highways. Starting at Sangagiri, the route travels along SH 79A, passing through Erode, and continues via Thoppur-Mettur Dam-Bhavani-Erode Road before reaching Kavandapadi and finally Pungampalli. This route is mostly rural with sections passing through smaller towns.

### Weather Conditions and Hazards

Tamil Nadu has a tropical climate with hot summers, moderate monsoons, and mild winters. The area is prone to heavy rains during the monsoon season (June to September), which can result in flooding and road closures. Dry and hot conditions during summer can also reduce visibility due to dust.

### Traffic Patterns

- Peak Hours:** In urban sections (e.g., near Erode), traffic congestion is common during morning (8 AM - 10 AM) and evening (5 PM - 7 PM) due to commuter traffic.
- Congestion-Prone Areas:** Main towns such as Erode may experience significant congestion, particularly near intersections and market areas.

# Road Quality and Infrastructure

Overall road quality is mixed:

- **SH 79A** is generally well-maintained but can suffer from potholes during monsoon.
- Access roads near rural sections may have narrower lanes and require careful navigation for larger vehicles.
- Some sections may lack proper lighting, making night driving risky.

## Alternative Routes for Emergencies

In case of road blockages or severe weather conditions:

- Consider taking state highways intersecting SH 79A and connecting to NH 544, if detours through other local thoroughfares are viable without extending too far from your destination.
- Secure local maps and updated traffic apps for real-time alternatives.

## Local Regulations on Hazardous Material Transport

Tamil Nadu requires:

- Clear labeling and documentation of hazardous materials.
- Adherence to designated routes for dangerous goods.
- Restrictions on transporting certain materials during public holidays or local events.

## Historical Incidents

- **Heavy Vehicles:** Past incidents have mostly involved mechanical failures and collisions in urban areas.
- **Hazardous Materials:** Minor leakage incidents have occurred, typically due to inadequate containment or poor vehicle maintenance.

## Environmental Considerations

- **Sensitive Areas:** Proximity to agricultural fields and small water bodies necessitates caution to prevent contamination by hazardous spills.
- **Waste Disposal:** Truckers should follow strict protocols for waste disposal and minimize pollution risk.

## Communication Coverage

- **Coverage:** Generally good in urban and semi-urban areas.
- **Dead Zones:** Possibility of signal loss in rural stretches; drivers should carry alternative communication devices such as satellite phones if possible.

## Emergency Response Times

- **Urban Areas (Erode):** 15-30 minutes.

- **Rural Areas:** Up to 1 hour, depending on road conditions and distance from emergency services.

## Overall Summary of Risk Assessment

The route presents moderate risks primarily due to varying road conditions, weather-related challenges, and traffic congestion near towns. Adequate preparation, such as checking weather and traffic updates, securing communications, and strict adherence to safety regulations, will mitigate these risks. Drivers should be particularly vigilant during monsoons for road damage and flooding, ensure vehicle readiness, and be prepared with knowledge of alternative routes for unforeseen incidents.

### Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Turn	High	11.43961, 77.87341	15 KM/Hr
1	Turn	High	11.44029, 77.87544	15 KM/Hr
2	Turn	High	11.44893, 77.87413	15 KM/Hr
3	Turn	Medium	11.45127, 77.86734	30 KM/Hr
4	Turn	High	11.45350, 77.85700	15 KM/Hr
5	Turn	Medium	11.45845, 77.85141	30 KM/Hr
6	Turn	Medium	11.45889, 77.85136	30 KM/Hr
7	Turn	High	11.46303, 77.84945	15 KM/Hr
8	Turn	Medium	11.46317, 77.84906	30 KM/Hr
9	Turn	Medium	11.43175, 77.67757	30 KM/Hr
10	Turn	High	11.43000, 77.67564	15 KM/Hr
11	Turn	High	11.43009, 77.67540	15 KM/Hr
12	Turn	High	11.43073, 77.67536	15 KM/Hr
13	Turn	High	11.43346, 77.66705	15 KM/Hr
14	Turn	Medium	11.43234, 77.66572	30 KM/Hr
15	Turn	Medium	11.43169, 77.66379	30 KM/Hr
16	Turn	Medium	11.43223, 77.65335	30 KM/Hr
17	Turn	Medium	11.42779, 77.64589	30 KM/Hr
18	Turn	Medium	11.42707, 77.56407	30 KM/Hr
19	Turn	High	11.42337, 77.55804	15 KM/Hr
20	Turn	High	11.45744, 77.36602	15 KM/Hr
21	Turn	Medium	11.45764, 77.36319	30 KM/Hr
22	Turn	Medium	11.45648, 77.35763	30 KM/Hr
23	Turn	Medium	11.45335, 77.29409	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
24	Turn	Medium	11.45037, 77.28935	30 KM/Hr
25	Turn	Medium	11.45522, 77.25438	30 KM/Hr
26	Turn	Medium	11.45615, 77.25365	30 KM/Hr
27	Turn	High	11.45630, 77.25276	15 KM/Hr
28	Turn	High	11.45400, 77.25224	15 KM/Hr
29	Turn	High	11.45360, 77.25146	15 KM/Hr
30	Blind Spot	Blind Spot	11.45280, 77.25178	10 KM/Hr
31	Turn	High	11.45322, 77.24737	15 KM/Hr
32	Turn	High	11.45367, 77.24731	15 KM/Hr
33	Turn	High	11.45308, 77.23644	15 KM/Hr
34	Turn	Medium	11.45543, 77.23025	30 KM/Hr
35	Turn	High	11.45509, 77.22976	15 KM/Hr
36	Turn	High	11.45581, 77.22898	15 KM/Hr
37	Turn	Medium	11.45546, 77.22816	30 KM/Hr
38	Turn	High	11.45708, 77.21660	15 KM/Hr
39	Turn	Medium	11.45121, 77.21531	30 KM/Hr
40	Turn	Medium	11.44173, 77.20790	30 KM/Hr
41	Turn	Medium	11.42208, 77.19389	30 KM/Hr
42	Turn	Medium	11.42108, 77.19389	30 KM/Hr
43	Turn	High	11.41984, 77.19492	15 KM/Hr
44	Blind Spot	Blind Spot	11.40624, 77.19288	10 KM/Hr

## Emergency Locations

	type	name	coordinates	speed_limit	risk_level
3	hospital	Dhanvantri Multi Speciality Hospital	11.451362, 77.766602	30 km/h	Medium
4	hospital	Dhanvanthri Hospital	11.4496712, 77.7593772	30 km/h	Medium
5	hospital	J.K.K. Trust Hospital	11.4445841, 77.7307962	30 km/h	Medium
6	hospital	Shri Sathyanarayana Hospital	11.4291297, 77.6913408	30 km/h	Medium
8	hospital	Thanish Siddha Hospital	11.430003, 77.674964	30 km/h	Medium



	type	name	coordinates	speed_limit	risk_level
9	hospital	Sri Kaalangi Siddhar Mooligai Vaithiya Nilayam	11.432369, 77.674894	30 km/h	Medium
10	clinic	G.K Clinic	11.4297244, 77.6749715	30 km/h	Medium
11	clinic	Harshitha Clinic	11.4313207, 77.674718	30 km/h	Medium
12	hospital	PST Mahaa Hospital	11.4312903, 77.6585751	30 km/h	Medium
13	hospital	Dharun Hospital	11.4223638, 77.5597735	30 km/h	Medium
14	hospital	Dr. Ramaswamy Hospital	11.4249065, 77.5535658	30 km/h	Medium
15	hospital	Dakshin Trauma Centre	11.454593, 77.4461819	30 km/h	Medium
16	hospital	Dakshin Hospital	11.4546301, 77.445905	30 km/h	Medium
17	hospital	Sri Varahi Herbal Research Centre and Hospital	11.4539333, 77.4427438	30 km/h	Medium
18	clinic	Germen Homeopathy Clinic	11.4536305, 77.4394692	30 km/h	Medium
19	hospital	KKS Hospital	11.4551792, 77.4392927	30 km/h	Medium
20	hospital	Siranjeeve Hospitals	11.453132, 77.4344382	30 km/h	Medium
21	clinic	Anandhan Clinic	11.4548037, 77.4349074	30 km/h	Medium
22	hospital	Ramachandran Hospital	11.452242, 77.434641	30 km/h	Medium
23	hospital	Kumaran Hospital	11.4533971, 77.4349621	30 km/h	Medium
24	hospital	Dr. Rathinasamy Hospital	11.457562, 77.4327752	30 km/h	Medium
25	hospital	Gobi Neuro Mind Care	11.4548344, 77.434649	30 km/h	Medium
26	hospital	Hariharan Hospital	11.4523578, 77.4299287	30 km/h	Medium
27	hospital	Vasanth Hospital	11.4526864, 77.4292173	30 km/h	Medium
28	hospital	KKRS Hospital	11.45417, 77.430584	30 km/h	Medium
29	clinic	Jeeva Nursing Home	11.4533031, 77.4294145	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
30	hospital	Sathya Hospital	11.4561856, 77.4298694	30 km/h	Medium
31	hospital	S K Hospital	11.4540106, 77.430108	30 km/h	Medium
32	hospital	Sivakami Hospital	11.4531846, 77.4299288	30 km/h	Medium
33	clinic	Sri Sudha Physiotherapy Clinic	11.4559915, 77.4300217	30 km/h	Medium
34	hospital	Arun Hospital	11.4538121, 77.4305743	30 km/h	Medium
35	clinic	Sairam Clinic	11.4560122, 77.4306716	30 km/h	Medium
36	hospital	Best Hospital	11.4543558, 77.4263617	30 km/h	Medium
37	clinic	Anand Nursing Home	11.4553169, 77.4296248	30 km/h	Medium
38	clinic	Kanmani Child Care Clinic	11.4545273, 77.428668	30 km/h	Medium
39	hospital	Rajasekaran Hospital	11.454463, 77.4262	30 km/h	Medium
40	hospital	Samuel Hospital	11.4542555, 77.4271194	30 km/h	Medium
41	hospital	Sivasakthi Hospital	11.4544711, 77.4297229	30 km/h	Medium
42	clinic	NMS Cardio Care Clinic	11.4550147, 77.430786	30 km/h	Medium
43	hospital	SS Children's Hospital	11.4555386, 77.4296357	30 km/h	Medium
44	hospital	Poorani Ravichandran Hospital	11.4550863, 77.4307802	30 km/h	Medium
45	hospital	Kavitha Children's Hospital	11.4565402, 77.4310815	30 km/h	Medium
46	hospital	SP Dhanapal Hospital	11.4559935, 77.4304406	30 km/h	Medium
47	clinic	Gobi Siddha Health Centre	11.455616, 77.4307062	30 km/h	Medium
48	clinic	Sri Dhanvantari Siddha Clinic	11.4561216, 77.4295797	30 km/h	Medium
49	hospital	Neha Hospital	11.4560138, 77.4270219	30 km/h	Medium
50	hospital	M.S Children's Hospital	11.4556012, 77.4301006	30 km/h	Medium



	type	name	coordinates	speed_limit	risk_level
51	hospital	Gobi Diabetic Hospital	11.455394, 77.4301181	30 km/h	Medium
52	clinic	Dr. Ramesh Babu Clinic	11.4560871, 77.4296353	30 km/h	Medium
53	hospital	Sankareswari Eye Hospital	11.4572997, 77.428765	30 km/h	Medium
54	hospital	Dr. Moorthy Hospital	11.4546045, 77.4308533	30 km/h	Medium
55	hospital	SP Hospital	11.456607, 77.430302	30 km/h	Medium
58	hospital	Government Hospital	11.4565126, 77.4288768	30 km/h	Medium
59	pharmacy	Abirami Medicals	11.4550894, 77.4309286	30 km/h	Medium
60	hospital	Sri Chakra Hospital	11.4544464, 77.4228363	30 km/h	Medium
61	hospital	U M Hospital	11.4544151, 77.4240386	30 km/h	Medium
62	hospital	Dr. Gopal Hospital	11.455258, 77.422901	30 km/h	Medium
63	hospital	Arun Hospital	11.4548852, 77.4250314	30 km/h	Medium
64	clinic	VG Ortho Centre	11.4550504, 77.4225102	30 km/h	Medium
65	clinic	Palaniappa Clinic	11.4555925, 77.4202828	30 km/h	Medium
66	hospital	Abi SK Hospital	11.457163, 77.412487	30 km/h	Medium
67	clinic	Nalam Vazh S.K Siddha and Varma Clinic	11.457576, 77.412164	30 km/h	Medium
69	clinic	Singiripalayam Natarajan Siddha Ortho Care	11.4603252, 77.3183801	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

	type	name	coordinates	speed_limit	risk_level
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
7	school	SSM Matriculation Higher Secondary School	11.4321653, 77.6880046	30 km/h	Medium
56	school	Diamond Jubilee Higher Secondary School	11.4529541, 77.4280306	30 km/h	Medium
57	school	CKK Palaniammal School	11.4569211, 77.4276828	30 km/h	Medium
68	school	Saratha Techno School	11.4544819, 77.379986	30 km/h	Medium
70	school	Saratha International School	11.4541471, 77.3032962	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:** 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**



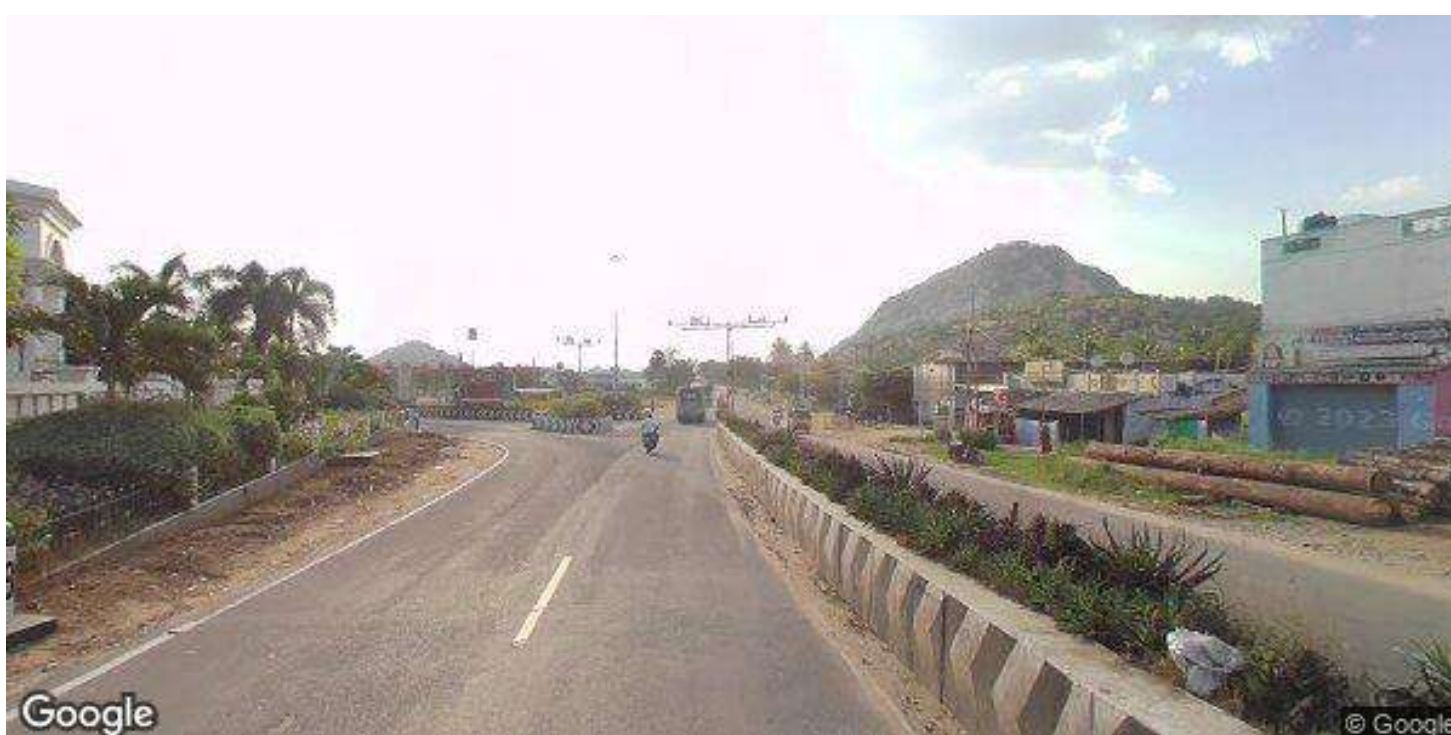


**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.46303, 77.84945



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.46317, 77.84906



**Risk Type:** Turn

**Risk Level:** Medium



**Speed Limit: 30 KM/Hr**

**Coordinates: 11.43175, 77.67757**



**Risk Type: Turn**

**Risk Level: High**

**Speed Limit: 15 KM/Hr**

**Coordinates: 11.43000, 77.67564**



**Risk Type: Turn**

**Risk Level: High**

**Speed Limit: 15 KM/Hr**

**Coordinates: 11.43009, 77.67540**





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.43073, 77.67536



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.43346, 77.66705



**Risk Type:** Turn

**Risk Level:** Medium



**Speed Limit: 30 KM/Hr**

**Coordinates: 11.43234, 77.66572**



**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.43169, 77.66379**



**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.43223, 77.65335**





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.42779, 77.64589



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.42707, 77.56407



**Risk Type:** Turn

**Risk Level:** High



Speed Limit: 15 KM/Hr

Coordinates: 11.42337, 77.55804



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.45744, 77.36602



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.45764, 77.36319





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.45648, 77.35763



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.45335, 77.29409



**Risk Type:** Turn

**Risk Level:** Medium



**Speed Limit: 30 KM/Hr**

**Coordinates: 11.45037, 77.28935**



**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.45522, 77.25438**



**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.45615, 77.25365**





**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.45630, 77.25276



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.45400, 77.25224



**Risk Type:** Turn  
**Risk Level:** High



**Speed Limit: 15 KM/Hr**

**Coordinates: 11.45360, 77.25146**



**Risk Type: Blind Spot**

**Risk Level: Blind Spot**

**Speed Limit: 10 KM/Hr**

**Coordinates: 11.45280, 77.25178**



**Risk Type: Turn**

**Risk Level: High**

**Speed Limit: 15 KM/Hr**

**Coordinates: 11.45322, 77.24737**





**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.45367, 77.24731



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.45308, 77.23644



**Risk Type:** Turn  
**Risk Level:** Medium



**Speed Limit: 30 KM/Hr**

**Coordinates: 11.45543, 77.23025**



**Risk Type: Turn**

**Risk Level: High**

**Speed Limit: 15 KM/Hr**

**Coordinates: 11.45509, 77.22976**



**Risk Type: Turn**

**Risk Level: High**

**Speed Limit: 15 KM/Hr**

**Coordinates: 11.45581, 77.22898**





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.45546, 77.22816



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.45708, 77.21660



**Risk Type:** Turn

**Risk Level:** Medium



**Speed Limit: 30 KM/Hr**

**Coordinates: 11.45121, 77.21531**



**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.44173, 77.20790**



**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.42208, 77.19389**





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.42108, 77.19389



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.41984, 77.19492



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot



**Speed Limit: 10 KM/Hr**  
**Coordinates: 11.40624, 77.19288**

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