



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

### IOCL Coimbatore Terminal to Sri Murugan Agencies

#### 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.

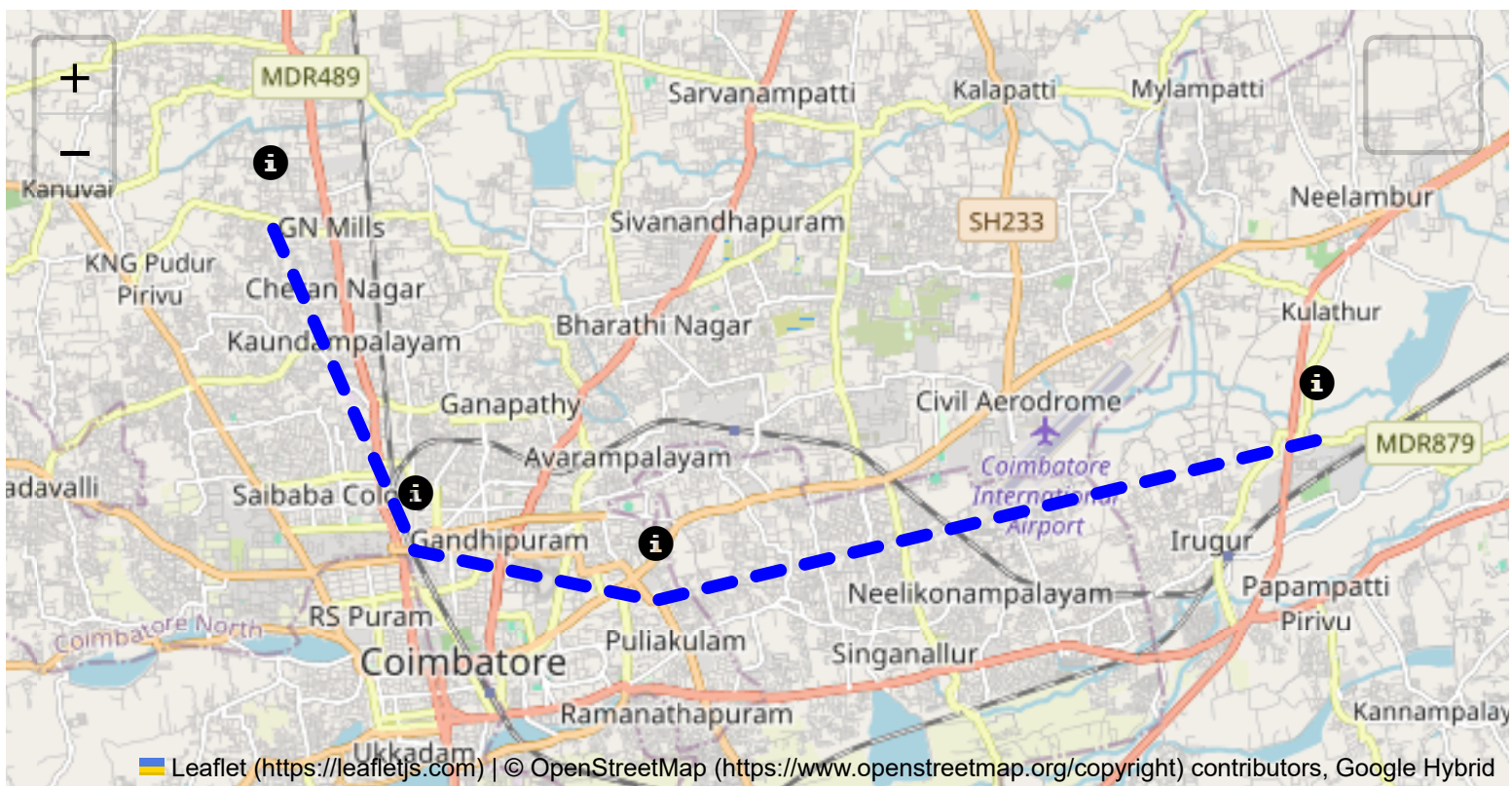
## **Journey Risk Mitigation**

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.

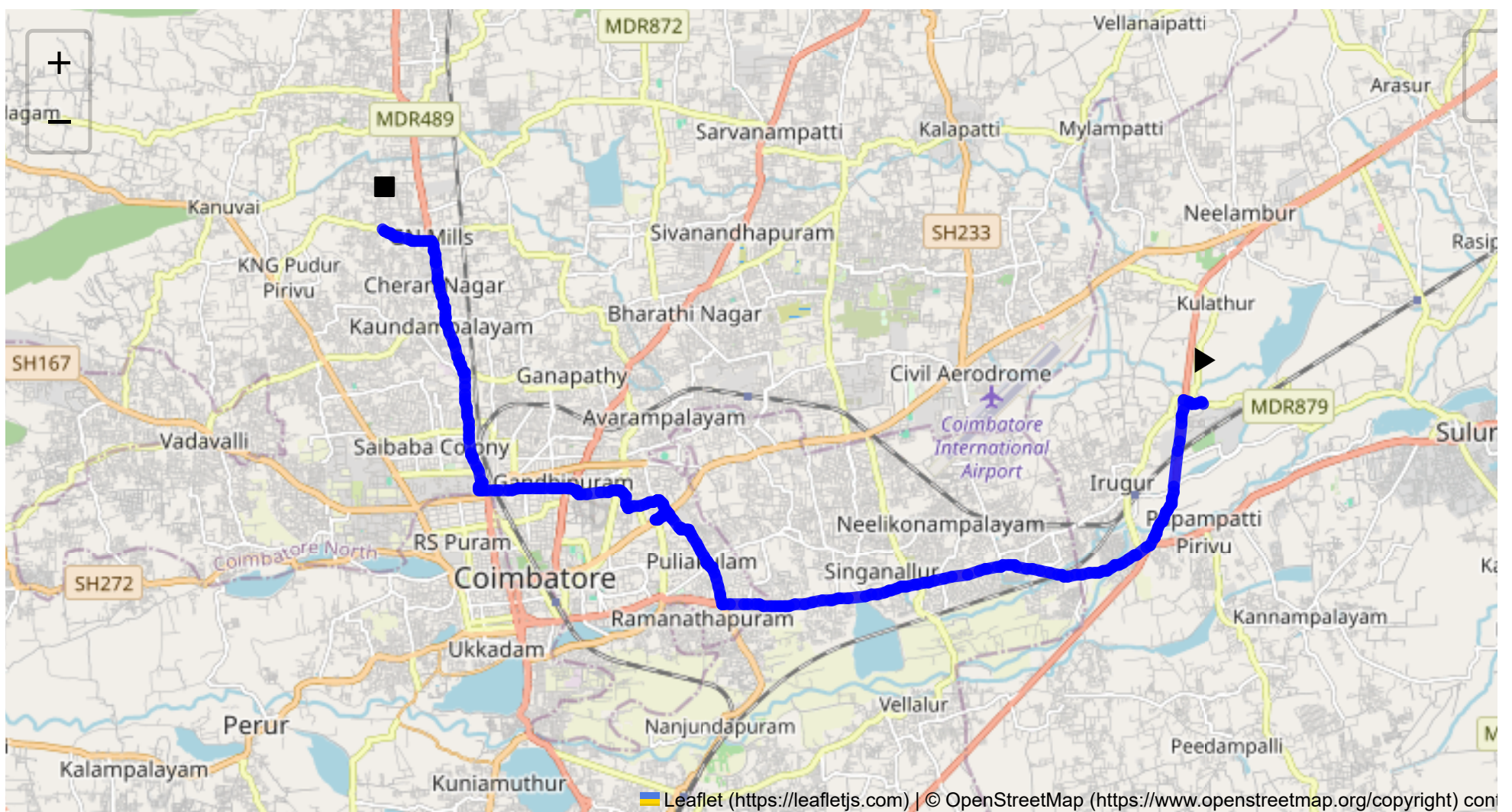
## **Compliance with Government Directives**

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: 24.23 km**  
**Estimated Duration: 0.9 hours**  
**Adjusted Duration (Heavy Vehicle): 1.1 hours**  
**Start: (11.0315, 77.0797)**  
**End: (11.061083, 76.936081)**



## Welcome to the Journey Risk Management Study

### 1. Overview of the Route Map

The route from Athappagoundenpudur to Balaji Gardens in Coimbatore via Ramasamy Nagar and Tatabad is an urban route spanning approximately 24.23 kilometers. The drive takes the truck through several residential and commercial areas of Coimbatore, navigating through major urban roads and intersections. Key route segments include arterial roads that connect various neighborhoods in the city.



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

Coimbatore typically experiences a tropical wet and dry climate. Summers (March to May) can be hot, leading to increased tire pressure and potential for overheating. The monsoon season (June to September) brings heavy rain, which can lead to waterlogging and reduced visibility. These conditions can increase braking distances and risk of hydroplaning. Winters are mild and pose relatively less weather-related danger.

## 3. Analysis of Traffic Patterns

Traffic in Coimbatore is generally dense, especially during peak hours (8 AM - 10 AM and 5 PM - 8 PM). The areas near Ramasamy Nagar and Tatabad can experience significant congestion, particularly at major junctions and marketplace areas. Weekends can see increased traffic due to shopping and leisure activities.

## 4. Assessment of Road Quality and Infrastructure

The primary roads along this route are generally well-maintained, with proper signage and road markings. However, secondary routes and internal roads may have potholes, uneven surfaces, or be under construction. Some roads lack adequate lighting, which is a concern for night driving.

## 5. Suggestions for Alternative Routes for Emergencies

In case of an emergency, alternative routes include:

- Taking the NH544 as a bypass to avoid central city congestion.
- Using Avinashi Road and then shifting towards Trichy Road to reach Puliakulam if certain areas are heavily blocked.

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

In Coimbatore, the transport of hazardous materials is subject to specific restrictions, particularly during daytime hours in crowded areas. Trucks must adhere to the National Highways Authority of India (NHAI) regulations on timing and road usage. Transporting highly volatile substances may require special permits and route planning to avoid dense areas during peak traffic times.

## 7. Overview of Historical Incidents

Historically, Coimbatore's routes have seen incidents involving heavy vehicles, primarily due to braking failures and poor road conditions during the monsoon. There have been reports of chemical spills caused by accidents, emphasizing the need for rigorous adherence to safety protocols.

## 8. Environmental Considerations and Sensitive Areas

The route passes near residential areas, schools, and hospitals, which necessitates careful navigation to prevent environmental hazards. Products prone to leakage can pose a risk to these sensitive areas if mishandled.

## 9. Analysis of Communication Coverage

Communication networks within Coimbatore are generally reliable with excellent coverage, but some internal roads might experience brief dead zones, especially in underground parking areas or narrow alleys. It is crucial to maintain full mobile battery charge and have two-way communication devices available.

## 10. Estimated Emergency Response Times

Emergency response within urban Coimbatore is relatively quick due to the proximity of hospitals and fire services. Response times can range from 10 to 20 minutes depending on traffic conditions and specific location. Areas further from the center may experience slightly longer response times.

## 12. Overall Summary of Risk Assessment

This route has moderate risk for transporting hazardous materials due to urban traffic congestion, potential infrastructure issues, and climatic variations. Key considerations include special handling during peak hours, adherence to local regulations, and ensuring that vehicles are in optimal condition. Preparedness for sudden weather changes and knowledge of alternative routes are vital for minimizing risks. Emergency preparedness and stringent adherence to traffic regulations will mitigate potential hazards effectively.

### Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.00410, 76.99311	15 KM/Hr
1	Roundabout	High	11.01617, 76.97043	15 KM/Hr
2	U-Turn	High	11.011602, 76.9841897	10 KM/Hr
3	Blind Spot	Blind Spot	11.03211, 77.07640	10 KM/Hr
4	Turn	Medium	11.00873, 77.07114	30 KM/Hr
5	Turn	Medium	11.00737, 77.07049	30 KM/Hr
6	Turn	Medium	10.99678, 77.00653	30 KM/Hr
7	Turn	High	10.99699, 76.99565	15 KM/Hr
8	Blind Spot	Blind Spot	11.01285, 76.98611	10 KM/Hr
9	Turn	High	11.01160, 76.98419	15 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
10	Blind Spot	Blind Spot	11.01176, 76.98410	10 KM/Hr
11	Turn	High	11.01298, 76.98601	15 KM/Hr
12	Turn	Medium	11.01367, 76.97915	30 KM/Hr
13	Turn	Medium	11.01374, 76.97905	30 KM/Hr
14	Turn	Medium	11.01688, 76.95998	30 KM/Hr
15	Turn	Medium	11.01692, 76.95991	30 KM/Hr
16	Turn	Medium	11.01666, 76.95341	30 KM/Hr
17	Turn	High	11.01801, 76.95367	15 KM/Hr
18	Blind Spot	Blind Spot	11.05584, 76.94560	10 KM/Hr
19	Blind Spot	Blind Spot	11.05583, 76.94553	10 KM/Hr
20	Turn	High	11.05958, 76.94473	15 KM/Hr

## Emergency Locations

	type	name	coordinates	speed_limit	risk_level
0	hospital	Saraswathi Hospital	11.0069868, 77.071368	30 km/h	Medium
2	hospital	Dr. Muthu's Ortho Centre-Coimbatore	11.0026291, 77.0406497	30 km/h	Medium
3	hospital	Singanallur Government Hospital	11.0011, 77.033733	30 km/h	Medium
4	hospital	Dr. Felix Hospital	11.0044086, 77.0348661	30 km/h	Medium
5	hospital	Ortho One	11.0018351, 77.0328061	30 km/h	Medium
6	hospital	Vela Hospital, Singanallur, Coimbatore	11.0017873, 77.0300545	30 km/h	Medium
7	clinic	Nalam Child Care	11.0006287, 77.0306011	30 km/h	Medium
8	police	E1 Singanallur Police Station	11.0003996, 77.0296891	30 km/h	Medium
9	police	Out Post Police Station - Singanallur	11.0025957, 77.0288423	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
10	hospital	AB Child Care Hospital	11.0006913, 77.028744	30 km/h	Medium
11	hospital	Coimbatore Child Trust Hospital	10.9978875, 77.0170667	30 km/h	Medium
12	hospital	VGM Hospital	10.9986666, 77.0143291	30 km/h	Medium
13	hospital	VGM Hospital, Coimbatore	10.99819, 77.014447	30 km/h	Medium
14	hospital	Ortho One Orthopaedic Speciality Center(A Unit Of Spine Arthroscopic and Joint Replacement Center Pvt Ltd)	10.9962048, 77.0082217	30 km/h	Medium
15	hospital	Narmada Hospital	10.9967758, 77.0071075	30 km/h	Medium
16	hospital	Medwin Hospital, Coimbatore	10.9972946, 77.0051728	30 km/h	Medium
17	hospital	Deepam Hospital, Ramanathapuram	10.9965453, 77.0039274	30 km/h	Medium
19	pharmacy	Prakash medicals	10.9969248, 77.0008135	30 km/h	Medium
20	pharmacy	Revathi medicals	10.9972171, 77.0003871	30 km/h	Medium
21	clinic	Sri Durga Poly Clinic	10.9980729, 77.0001926	30 km/h	Medium
22	hospital	Sathyan Eye Care Hospital & Coimbatore Glaucoma Foundation	10.9980405, 77.0009615	30 km/h	Medium
23	hospital	N.M. Hospital	10.9981558, 76.9994865	30 km/h	Medium
24	clinic	Dr. Karthikeyan Clinic	10.9969119, 76.9995376	30 km/h	Medium
25	hospital	Leo Ortho care Hospital	10.9969428, 76.9993022	30 km/h	Medium
26	police	Ramanathapuram police station	10.9975827, 76.997871	30 km/h	Medium
28	hospital	Bala Hospital	10.9969296, 76.995705	30 km/h	Medium
29	pharmacy	Dheepmeena pharmacy	10.9969617, 76.9956179	30 km/h	Medium
30	hospital	Sri Bala Medical Centre Hospital	10.9967187, 76.9954568	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
31	hospital	Ramvel Hospital	10.9958212, 76.9963939	30 km/h	Medium
32	clinic	Lakshmi ENT Clinic	10.9973118, 76.9963622	30 km/h	Medium
33	hospital	Gem Hospital, Coimbatore	10.9996629, 76.9953933	30 km/h	Medium
35	clinic	Marutham Health Clinic	11.0040562, 76.9934204	30 km/h	Medium
36	police	Ramanathapuram Police Station	11.0028259, 76.9916717	30 km/h	Medium
37	hospital	Shree Hospital, Puliakulam, Coimbatore	11.0064832, 76.9914482	30 km/h	Medium
38	hospital	Rafa Hospital	11.007011, 76.992439	30 km/h	Medium
39	clinic	Anbu Child Care Clinic	11.0075989, 76.9911858	30 km/h	Medium
41	hospital	Dr. G. Thiagarajan's Memorial Hospital	11.00534, 76.989401	30 km/h	Medium
44	hospital	Coimbatore Kidney Centre	11.009415, 76.9893791	30 km/h	Medium
46	hospital	Vasan Eye Care Hospital	11.0124743, 76.9862396	30 km/h	Medium
47	clinic	NSR Cancer Centre	11.0121496, 76.9862308	30 km/h	Medium
48	hospital	Arc Fertility Hospital	11.012539, 76.986166	30 km/h	Medium
50	clinic	Sayee Kids Care	11.015436, 76.984214	30 km/h	Medium
52	hospital	K.B.S. Hospital	11.0157437, 76.9842202	30 km/h	Medium
53	clinic	Shakthi Clinic	11.015452, 76.981739	30 km/h	Medium
54	clinic	Kids Clinic	11.0163842, 76.9812846	30 km/h	Medium
55	clinic	Dr. B. Nirmala Womens Clinic	11.0163044, 76.9799078	30 km/h	Medium
56	hospital	Ishaiah Hospital, Coimbatore	11.0154329, 76.9779193	30 km/h	Medium
59	clinic	Iswarya Fertility Test Tube Baby and Research Centre	11.0173902, 76.9769123	30 km/h	Medium



	type	name	coordinates	speed_limit	risk_level
61	hospital	Nandha Hospital	11.0168636, 76.9756664	30 km/h	Medium
62	hospital	Sudha Hospital	11.0168278, 76.9758131	30 km/h	Medium
63	clinic	Shark Clinic	11.0188961, 76.9744842	30 km/h	Medium
64	police	Womens Police Station	11.0155688, 76.9683463	30 km/h	Medium
65	police	Kattor Police Station	11.0153033, 76.968307	30 km/h	Medium
66	police	C1 Katoor Police Station	11.0145917, 76.968262	30 km/h	Medium
68	clinic	Clarity Imaging Centre	11.0149765, 76.9642774	30 km/h	Medium
69	hospital	City Hospital	11.0193391, 76.9635166	30 km/h	Medium
70	hospital	Bethel Hospital	11.0190021, 76.962084	30 km/h	Medium
71	hospital	The Balakrishnan Hospital	11.0190567, 76.9625585	30 km/h	Medium
72	hospital	Lalitha Hospital	11.0174139, 76.9617565	30 km/h	Medium
73	hospital	Bethel Hospital Pvt. Ltd. - Coimbatore	11.0187223, 76.9612328	30 km/h	Medium
74	hospital	Kovai Diabetes Speciality Centre and Hospital	11.0159329, 76.9613153	30 km/h	Medium
75	hospital	Roselet Medical ObgandSurgical Centre	11.0177943, 76.9612482	30 km/h	Medium
76	hospital	Kongunad Hospital, Coimbatore	11.018058, 76.9604883	30 km/h	Medium
77	hospital	Sheela Clinic	11.01843, 76.9604642	30 km/h	Medium
78	hospital	Spt Hospitals	11.0143493, 76.9614293	30 km/h	Medium
79	hospital	Ganga Medical Centre and Hospitals Pvt. Ltd ,Ramnagar	11.0158724, 76.9594235	30 km/h	Medium
80	hospital	Krishna Nursing Home	11.0152327, 76.9593766	30 km/h	Medium
81	pharmacy	Apollo	11.0187962, 76.9603231	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
82	pharmacy	arya vaidhya salai	11.0193537, 76.9603411	30 km/h	Medium
83	hospital	Seesha Karunya Community Hospital	11.0160619, 76.9593814	30 km/h	Medium
85	hospital	Sengaliappan Nursing Home	11.0165542, 76.955239	30 km/h	Medium
86	hospital	Coimbatore Bone and Joint Foundation (P) Ltd.	11.0149404, 76.9543844	30 km/h	Medium
87	hospital	Aravind Eye Hospital (City Centre)	11.0153158, 76.9539881	30 km/h	Medium
90	clinic	Kumaran Clinic	11.0152582, 76.9519379	30 km/h	Medium
91	hospital	Veeku Hospital	11.0150799, 76.9517022	30 km/h	Medium
92	hospital	Parvathy Hospitals	11.01472, 76.952299	30 km/h	Medium
93	hospital	PGS Hospital	11.0153485, 76.9524368	30 km/h	Medium
95	hospital	Lotus Eye Care Hospital, Coimbatore	11.0140006, 76.9543624	30 km/h	Medium
96	hospital	Kumaran Hospital, Coimbatore	11.0150812, 76.95132	30 km/h	Medium
97	hospital	Vedanayagam Hospital (P) Limited	11.0144375, 76.9504979	30 km/h	Medium
101	hospital	Aswin Hospital	11.0255271, 76.9515108	30 km/h	Medium
102	hospital	Ganga Hospital	11.026129, 76.9524873	30 km/h	Medium
106	hospital	K T V R Group Hospital	11.026167, 76.9499384	30 km/h	Medium
107	police	C-3 Saibaba Colony Police Station	11.0266348, 76.9515967	30 km/h	Medium
108	hospital	Onecare Ortho Hospital	11.026568, 76.948798	30 km/h	Medium
109	clinic	Shree Kanna Clinic	11.026359, 76.948803	30 km/h	Medium
110	clinic	Akshaya Clinic	11.0271033, 76.9496102	30 km/h	Medium
111	hospital	Dr.Sengaliappan Nursing Home, Coimbatore	11.0272375, 76.9501348	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
115	hospital	Womens Medical Centre, Coimbatore	11.0337824, 76.9517175	30 km/h	Medium
116	hospital	Dr. BRJ Ortho Centre	11.0340354, 76.9512209	30 km/h	Medium
117	hospital	H. S. Hospital	11.0418035, 76.9477855	30 km/h	Medium
118	hospital	Krithika Hospital , Tiruppur	11.0424742, 76.9476856	30 km/h	Medium
119	hospital	Padmavathy Hospital	11.0427427, 76.9477212	30 km/h	Medium
120	hospital	Malar Hpl Goundanpalayam	11.0437293, 76.9475494	30 km/h	Medium
121	fire_station	Tamilnadu fire and rescue services	11.0440949, 76.9485156	30 km/h	Medium
122	hospital	Kalpana Medical Centre	11.0469835, 76.9476787	30 km/h	Medium
127	clinic	Parthiban Nursing Home	11.0597504, 76.9441089	30 km/h	Medium

### Crowded Spots

	type	name	coordinates	speed_limit	risk_level
1	school	Kadri Mills Higher Secondary School	11.0058181, 77.0664118	30 km/h	Medium
18	school	Alvernia Higher Secondary Matriculation School	10.9981807, 77.0027548	30 km/h	Medium
27	school	Trinity Boys High school	10.9976249, 76.9971414	30 km/h	Medium
34	school	Corporation Boys High School	10.9964338, 76.9941036	30 km/h	Medium
40	school	ALG Matriculation School	11.0057772, 76.9894238	30 km/h	Medium
42	school	Corporation girls high school	11.0091964, 76.9905727	30 km/h	Medium
43	school	Vidhya nikethan school	11.0096519, 76.9902482	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
49	traffic_signals	Lakshmi Mills Junction	11.0129587, 76.9860251	30 km/h	Medium
51	school	Mani Higher Secondary School	11.0138918, 76.9820619	30 km/h	Medium
57	college	Government Women's Polytechnic College	11.0155228, 76.9751633	30 km/h	Medium
58	motorway_junction	Government Polytechnic	11.0167491, 76.977343	30 km/h	Medium
60	college	Government Women's Polytechnic College	11.0159476, 76.975865	30 km/h	Medium
67	school	Kovai Linux Centre	11.0156272, 76.9655	30 km/h	Medium
84	school	North Coimbatore Corporation Higher Secondary School	11.0154056, 76.958268	30 km/h	Medium
88	college	Tamilnadu Forest Academy	11.0167662, 76.946606	30 km/h	Medium
89	university	Avinasilingam Deemed University for Home Sciences	11.0191444, 76.9515442	30 km/h	Medium
94	college	Institute of Forest Genetics & Tree Breeding (IFGTB)	11.0176359, 76.9514724	30 km/h	Medium
98	school	Avinashilingam Vocational Training Institute	11.0225375, 76.9515029	30 km/h	Medium
99	school	Ramalinga Chettiar hr sec school	11.0239711, 76.9485703	30 km/h	Medium
100	school	Ramalingam Primary School	11.0256049, 76.9510321	30 km/h	Medium
103	marketplace	Saibaba Colony Vegetable Market	11.0261428, 76.951784	30 km/h	Medium
104	traffic_signals	Saibaba Temple Signal	11.0269678, 76.9512074	30 km/h	Medium
105	traffic_signals	Saibaba Temple Signal	11.0269695, 76.9513556	30 km/h	Medium
112	marketplace	M.G.R.Wholesale Market	11.0304613, 76.9497095	30 km/h	Medium
113	school	Amrit Special needs school	11.0298208, 76.9503161	30 km/h	Medium
123	school	Ramasamy Matriculation School	11.048063, 76.9463258	30 km/h	Medium
126	college	Industrial Technical Institute (ITI)	11.0539711, 76.9438762	30 km/h	Medium



## Route Photos of Risky Spots



**Risk Type:** Roundabout

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.00410, 76.99311



**Risk Type:** Roundabout

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.01617, 76.97043





**Risk Type:** U-Turn

**Risk Level:** High

**Speed Limit:** 10 KM/Hr

**Coordinates:** 11.011602, 76.9841897



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Coordinates:** 11.03211, 77.07640





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.00873, 77.07114



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.00737, 77.07049



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 10.99678, 77.00653





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 10.99699, 76.99565



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Coordinates:** 11.01285, 76.98611





**Risk Type: Turn**

**Risk Level: High**

**Speed Limit: 15 KM/Hr**

**Coordinates: 11.01160, 76.98419**



**Risk Type: Blind Spot**

**Risk Level: Blind Spot**

**Speed Limit: 10 KM/Hr**

**Coordinates: 11.01176, 76.98410**



**Risk Type: Turn**

**Risk Level: High**

**Speed Limit: 15 KM/Hr**

**Coordinates: 11.01298, 76.98601**





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.01367, 76.97915



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.01374, 76.97905





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.01688, 76.95998



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.01692, 76.95991



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.01666, 76.95341





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.01801, 76.95367



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Coordinates:** 11.05584, 76.94560





**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Coordinates:** 11.05583, 76.94553



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.05958, 76.94473

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