



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

### IOCL Coimbatore Terminal to Karpaga Shasthaa Fuels

#### 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.

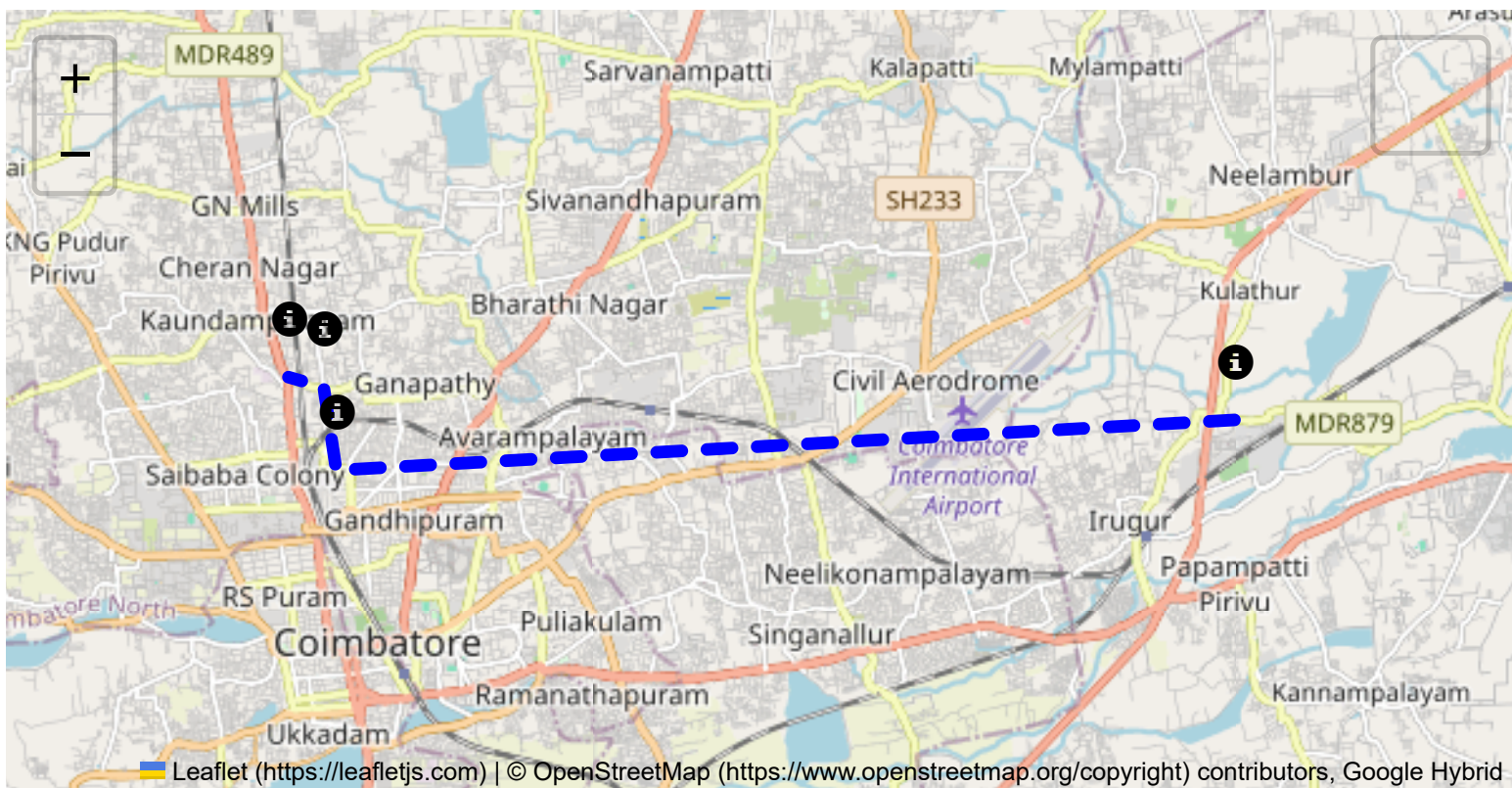
## **Journey Risk Mitigation**

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.

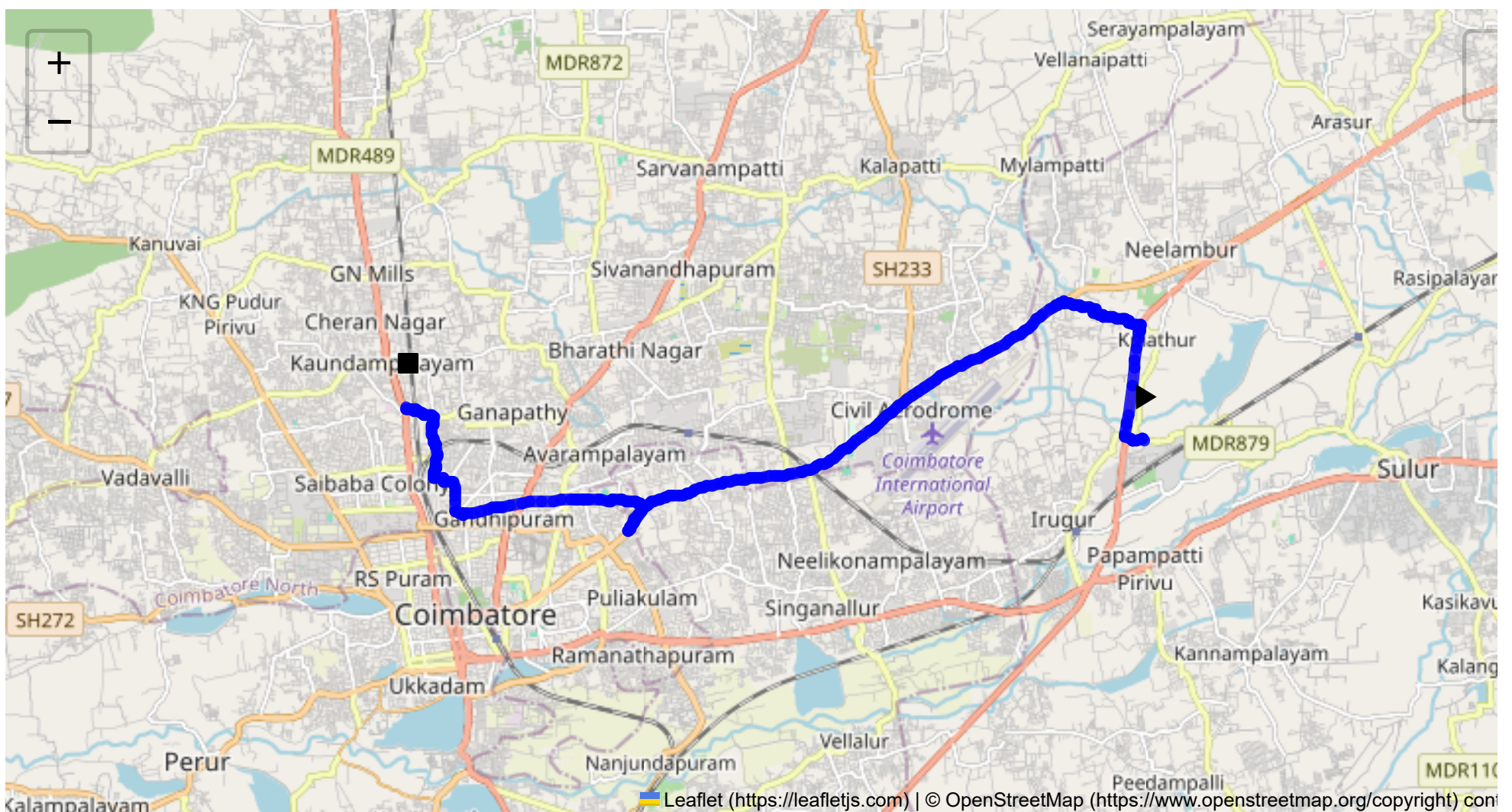
## **Compliance with Government Directives**

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: 20.87 km**  
**Estimated Duration: 0.8 hours**  
**Adjusted Duration (Heavy Vehicle): 0.9 hours**  
**Start: (11.0315, 77.0797)**  
**End: (11.03717384, 76.950723)**



## Welcome to the Journey Risk Management Study

### Route Overview

The route spans approximately 20.87 kilometers, beginning in Athappagundenpudur and ending in Venkateshwara Nagar, Coimbatore, with key transitions at Sivananda Colony and Kannappa Nagar. The suggested path traverses urban and semi-urban areas of Coimbatore, offering varied road conditions and traffic complexities.



## Weather Conditions and Hazards

Coimbatore typically experiences a tropical wet and dry climate. During the southwest monsoon (June to August) and the northeast monsoon (October to December), heavy rains may lead to slippery roads and reduced visibility. Additionally, high temperatures during the summer months might affect vehicle performance, requiring attention to vehicle maintenance.

## Traffic Patterns and Congestion

Traffic congestion is common in Coimbatore, especially during peak hours (8:00-10:00 AM and 5:00-8:00 PM). Critical congestion points near city centers, especially in Tatabad and Kannappa Nagar, require strategic navigation to avoid delays. Planning travel outside peak times is advisable for heavy vehicles.

## Road Quality and Infrastructure

The route passes through well-developed urban sectors. Nevertheless, road quality can vary, with potential for bumps and potholes, especially in less maintained areas. Some intersections may have inadequate signage, so driver vigilance is crucial.

## Alternative Routes

In the event of an emergency or major obstruction, using Avinashi Road or Mettupalayam Road as alternates could offer quicker access across different parts of the city, though they can also suffer from heavy traffic.

## Local Regulations

Transport of hazardous materials in India requires adherence to the Central Motor Vehicles Rules. Coimbatore has specified routes and time restrictions for heavy vehicles to minimize disruptions and enhance safety. It's critical for drivers to stay informed about these regulations and any localized updates.

## Historical Incidents

Heavy vehicle incidents in Coimbatore often relate to mechanical failures and traffic mishaps. Specifically, urban zones with narrow streets have seen incidents stemming from difficult maneuverability. There is no significant historical record of hazardous material incidents, but caution remains essential.

## Environmental Considerations

The route passes near various residential areas, requiring heightened awareness of environmental impact and noise levels. Additionally, areas near schools and hospitals are sensitive zones necessitating extra caution.

## Communication Coverage

Coimbatore generally enjoys comprehensive communication networks, with minimal outages. However, occasional poor signal patches might exist in more densely built-up regions or peripheral areas.

# Emergency Response Times

Response times can vary based on location and traffic; urban segments closer to central Coimbatore will enjoy quicker emergency services relative to outskirts. Estimated response times can range from 15 to 30 minutes.

## Overall Risk Assessment

The route presents moderate risk primarily due to traffic congestion and the urban nature of much of the path. Regular maintenance checks, adherence to traffic regulations, and strategic planning for weather are recommended. Awareness of local traffic conditions and regulations governing hazardous material transport is critical to ensure safety.

This comprehensive assessment aims to bolster driver awareness and preparedness, ensuring the safe and efficient transport of hazardous materials along this specific route.

### Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	U-Turn	High	11.0161282, 76.9896128	10 KM/Hr
1	Turn	High	11.03211, 77.07640	15 KM/Hr
2	Turn	High	11.05129, 77.07919	15 KM/Hr
3	Turn	Medium	11.05181, 77.07696	30 KM/Hr
4	Turn	High	11.05222, 77.07690	15 KM/Hr
5	Turn	Medium	11.05343, 77.07106	30 KM/Hr
6	Turn	Medium	11.05351, 77.07099	30 KM/Hr
7	Turn	Medium	11.05411, 77.07097	30 KM/Hr
8	Turn	High	11.05529, 77.06566	15 KM/Hr
9	Turn	High	11.01613, 76.98961	15 KM/Hr
10	Blind Spot	Blind Spot	11.01618, 76.98951	10 KM/Hr
11	Turn	High	11.02014, 76.99212	15 KM/Hr
12	Turn	Medium	11.02051, 76.99177	30 KM/Hr
13	Turn	Medium	11.02137, 76.98673	30 KM/Hr
14	Turn	High	11.02097, 76.98650	15 KM/Hr
15	Turn	Medium	11.02095, 76.98644	30 KM/Hr
16	Turn	Medium	11.01886, 76.96047	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
17	Turn	High	11.01891, 76.96036	15 KM/Hr
18	Turn	High	11.01889, 76.96035	15 KM/Hr
19	Turn	Medium	11.01889, 76.96029	30 KM/Hr
20	Turn	High	11.01893, 76.96023	15 KM/Hr
21	Turn	High	11.01895, 76.96023	15 KM/Hr
22	Turn	High	11.01944, 76.95923	15 KM/Hr
23	Turn	High	11.02444, 76.95905	15 KM/Hr
24	Turn	High	11.02446, 76.95713	15 KM/Hr
25	Turn	High	11.02504, 76.95710	15 KM/Hr
26	Turn	Medium	11.02506, 76.95547	30 KM/Hr
27	Turn	Medium	11.02510, 76.95543	30 KM/Hr
28	Turn	High	11.02696, 76.95577	15 KM/Hr
29	Blind Spot	Blind Spot	11.02700, 76.95569	10 KM/Hr
30	Turn	High	11.02705, 76.95578	15 KM/Hr
31	Turn	High	11.03571, 76.95557	15 KM/Hr
32	Blind Spot	Blind Spot	11.03688, 76.95079	10 KM/Hr

## Emergency Locations

	type	name	coordinates	speed_limit	risk_level
0	hospital	KGM, Chinnampalayam	11.0570076, 77.067239	30 km/h	Medium
1	hospital	Chinnampalayam Venkateshwara Hospital	11.0545152, 77.0652106	30 km/h	Medium
3	hospital	R V Hospital, Coimbatore	11.0546916, 77.0639178	30 km/h	Medium
5	hospital	Kovai Medical Centre,Coimbatore	11.0426077, 77.0406074	30 km/h	Medium
6	hospital	Lotus Eye Care Hospital Ltd, Coimbatore	11.0406116, 77.0401856	30 km/h	Medium
9	hospital	Park Hospital, Coimbatore	11.0419411, 77.0379131	30 km/h	Medium
13	hospital	St Lukes Hospital, Coimbatore	11.0335424, 77.0376261	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
15	hospital	Coimbatore Medical College Hospital	11.0289285, 77.0237553	30 km/h	Medium
17	hospital	Rajah Hospital, Coimbatore	11.0270299, 77.0187333	30 km/h	Medium
18	hospital	Sumith Hospital	11.0261493, 77.0176752	30 km/h	Medium
19	police	Peelamedu E2 Police Station	11.0253639, 77.0101634	30 km/h	Medium
25	hospital	Hindusthan Hospital, Coimbatore	11.019682, 76.9947731	30 km/h	Medium
26	hospital	Sri Ramakrishna Dental Hospital	11.0212988, 76.9883526	30 km/h	Medium
32	hospital	Sri Ramakrishna Hospital, Coimbatore	11.0231203, 76.9776419	30 km/h	Medium
33	hospital	Sri Ramakrishna Hospital	11.0236015, 76.976512	30 km/h	Medium
35	clinic	Shark Clinic	11.0188961, 76.9744842	30 km/h	Medium
36	hospital	Ramakrishna Hospital	11.0207084, 76.972413	30 km/h	Medium
37	hospital	Ellen Multispeciality Hospital	11.0213634, 76.9708723	30 km/h	Medium
38	hospital	GP Hospital	11.0201233, 76.9710726	30 km/h	Medium
39	pharmacy	Chinnaiah Medicals	11.0207714, 76.9688485	30 km/h	Medium
40	hospital	Becker Manual Hospital	11.020659, 76.968611	30 km/h	Medium
41	pharmacy	Pasumai Pharmacy	11.0203554, 76.966338	30 km/h	Medium
42	clinic	C.S.R. Nursing Home, Coimbatore	11.0209812, 76.9661131	30 km/h	Medium
43	hospital	Jeevan Clinic and Hospital, Coimbatore	11.019947, 76.9670891	30 km/h	Medium
44	hospital	Nithya Hospital	11.0210366, 76.9665217	30 km/h	Medium
48	hospital	Preethi Medical Centre	11.0208486, 76.9649585	30 km/h	Medium
49	clinic	Aiswarya Clinic	11.0228593, 76.9656034	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
50	hospital	City Hospital	11.0193391, 76.9635166	30 km/h	Medium
52	hospital	The Balakrishnan Hospital	11.0190567, 76.9625585	30 km/h	Medium
53	hospital	Bethel Hospital	11.0190021, 76.962084	30 km/h	Medium
54	hospital	Bethel Hospital Pvt. Ltd. - Coimbatore	11.0187223, 76.9612328	30 km/h	Medium
55	hospital	Lalitha Hospital	11.0174139, 76.9617565	30 km/h	Medium
56	hospital	Roselet Medical ObgandSurgical Centre	11.0177943, 76.9612482	30 km/h	Medium
57	pharmacy	Apollo	11.0187962, 76.9603231	30 km/h	Medium
58	hospital	Kongunad Hospital, Coimbatore	11.018058, 76.9604883	30 km/h	Medium
59	hospital	Sheela Clinic	11.01843, 76.9604642	30 km/h	Medium
60	pharmacy	arya vaidhya salai	11.0193537, 76.9603411	30 km/h	Medium
61	hospital	Sengottaiah Hospital, Coimbatore	11.0225148, 76.9601579	30 km/h	Medium
62	hospital	Eye Trust Hospital	11.0242987, 76.9582327	30 km/h	Medium
63	hospital	Sathya Medical Centre & Hospital	11.0238937, 76.9582121	30 km/h	Medium
64	hospital	Ganga Hospital	11.026129, 76.9524873	30 km/h	Medium
65	hospital	Womens Medical Centre, Coimbatore	11.0337824, 76.9517175	30 km/h	Medium
66	hospital	Dr. BRJ Ortho Centre	11.0340354, 76.9512209	30 km/h	Medium

**Crowded Spots**



	type	name	coordinates	speed_limit	risk_level
2	school	Government school	11.0554435, 77.0653927	30 km/h	Medium
4	school	Sri Vivekananda Matriculation Higher Secondary School	11.054695, 77.0572126	30 km/h	Medium
7	school	Park Global School	11.0424178, 77.038601	30 km/h	Medium
8	traffic_signals	SITRA Junction	11.0380037, 77.0374143	30 km/h	Medium
10	college	South India Textile Research Association - SITRA	11.0396478, 77.0355493	30 km/h	Medium
11	college	PSG College of Arts and Science	11.0328471, 77.034909	30 km/h	Medium
12	school	RAK's Pallikoodam	11.0381253, 77.0329064	30 km/h	Medium
14	college	Government Polytechnic	11.0300874, 77.0308517	30 km/h	Medium
16	traffic_signals	Hope College Signal	11.0263851, 77.0208783	30 km/h	Medium
20	school	Sardar Vallabhbhai Patel International School of Textiles & Management	11.0253598, 77.0082319	30 km/h	Medium
21	college	PSG College of Technology	11.024807, 77.0029194	30 km/h	Medium
22	school	PSG Sarva Jana Higher Secondary School	11.0227214, 77.0040432	30 km/h	Medium
23	college	PSG Institute of Management	11.0228112, 77.0030943	30 km/h	Medium
24	college	PSG Grounds	11.0203887, 77.0047109	30 km/h	Medium
27	college	Sri Ramakrishna Dental College	11.0213038, 76.9883559	30 km/h	Medium
28	college	SNR College of Arts and Science	11.0219743, 76.9877109	30 km/h	Medium
29	college	Sri Ramakrishna College of Arts & Science	11.022171, 76.98703	30 km/h	Medium
30	school	Sri Ramakrishna Matric Higher Secondary School	11.023175, 76.9847233	30 km/h	Medium
31	college	Sri Ramakrishna Arts and Science College for Womens	11.0223964, 76.9780502	30 km/h	Medium
34	school	P.R.Sidha Naidu Memorial Matriculation School	11.0221084, 76.9765552	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
45	school	St. Mary's Primary School	11.0218649, 76.9672728	30 km/h	Medium
46	school	St. Mar's High School	11.0221987, 76.9674321	30 km/h	Medium
47	school	Brindisi Matric. Ir. Sec. School	11.0226114, 76.9672831	30 km/h	Medium
51	crossing	Six Corner	11.0222184, 76.9626743	30 km/h	Medium

Route Photos of Risky Spots



Risk Type: U-Turn

Risk Level: High

Speed Limit: 10 KM/Hr

Coordinates: 11.0161282, 76.9896128



Risk Type: Turn

Risk Level: High



**Speed Limit: 15 KM/Hr**  
**Coordinates: 11.03211, 77.07640**



**Risk Type: Turn**  
**Risk Level: High**  
**Speed Limit: 15 KM/Hr**  
**Coordinates: 11.05129, 77.07919**



**Risk Type: Turn**  
**Risk Level: Medium**  
**Speed Limit: 30 KM/Hr**  
**Coordinates: 11.05181, 77.07696**





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.05222, 77.07690



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.05343, 77.07106





**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.05351, 77.07099**



**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.05411, 77.07097**



**Risk Type: Turn**

**Risk Level: High**

**Speed Limit: 15 KM/Hr**

**Coordinates: 11.05529, 77.06566**





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.01613, 76.98961



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Coordinates:** 11.01618, 76.98951





**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.02014, 76.99212



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.02051, 76.99177



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.02137, 76.98673





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.02097, 76.98650



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.02095, 76.98644





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.01886, 76.96047



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.01891, 76.96036



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.01889, 76.96035





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.01889, 76.96029



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.01893, 76.96023





**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.01895, 76.96023



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.01944, 76.95923



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.02444, 76.95905





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.02504, 76.95710



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.02506, 76.95547





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.02510, 76.95543



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.02696, 76.95577



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Coordinates:** 11.02700, 76.95569





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.02705, 76.95578



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.03571, 76.95557



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Coordinates:** 11.03688, 76.95079

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