



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

IOCL Coimbatore Terminal to Sree Mahavishnu 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

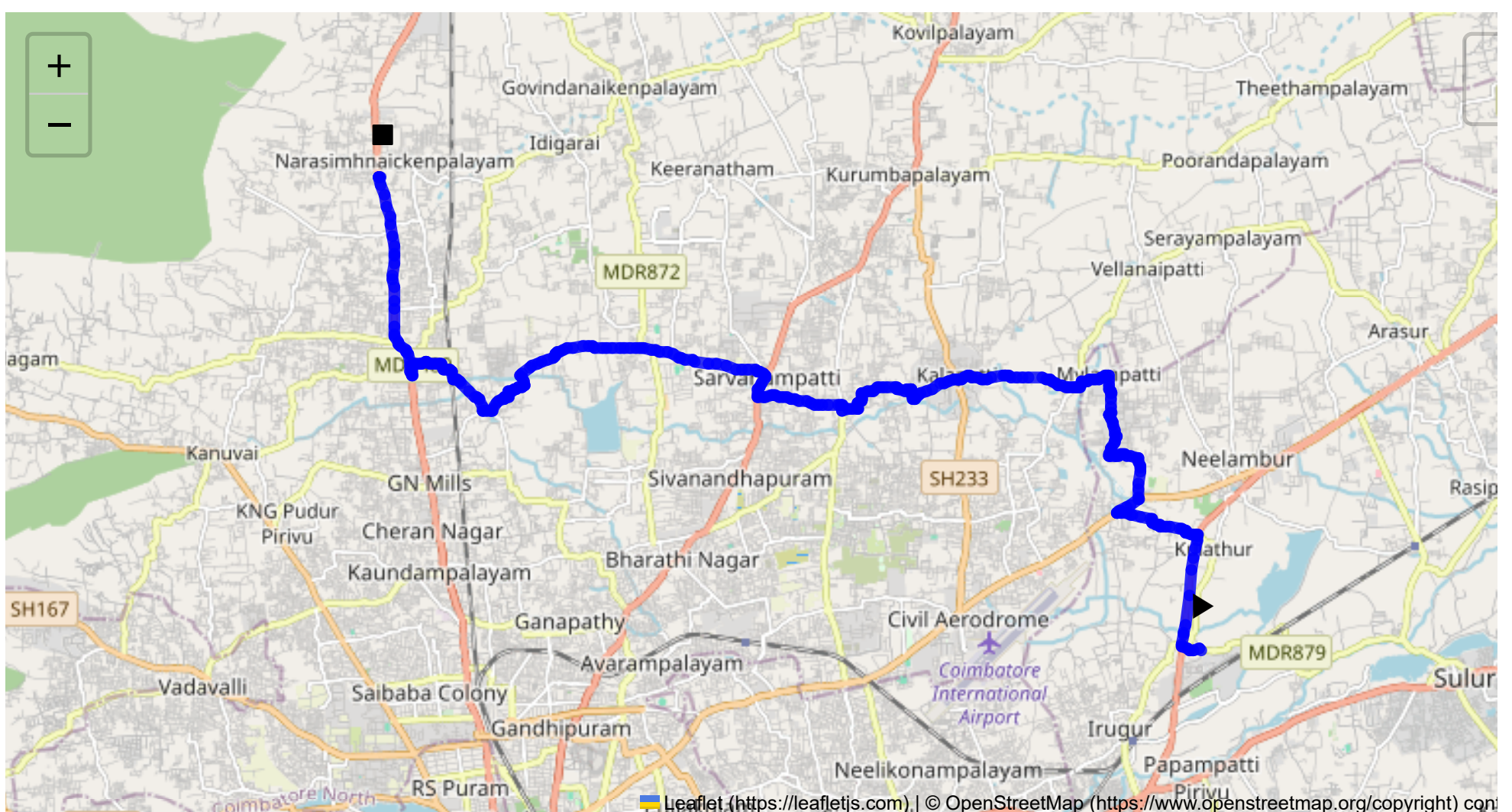
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 27.90 km
Estimated Duration: 1.0 hours
Adjusted Duration (Heavy Vehicle): 1.3 hours
Start: (11.0315, 77.0797)
End: (11.112419, 76.936261)



Welcome to the Journey Risk Management Study

1. Overview of the Route Map:

The route begins in Athappagoundenpudur, Coimbatore, and proceeds through Chinniyampalayam and GEM Nagar before reaching Narasimhanaickenpalayam. The distance of approximately 27.90 kilometers includes a mix of urban and semi-urban roads. The route generally follows major highways and local roads that can accommodate heavy vehicles.

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

Coimbatore experiences a tropical wet and dry climate. The region can experience heavy rains during the monsoon season (June to September) which might lead to waterlogging and reduced visibility. In the summer months (March to May), temperatures can be high, potentially affecting vehicle maintenance and driver comfort. Frequent weather checks are advised.

3. Analysis of Traffic Patterns:

Traffic congestion is common during peak hours (8:00-11:00 AM and 5:00-8:00 PM), especially near urban areas like Chinniyampalayam. Local festivals and events can also cause sporadic traffic increases. Using real-time traffic apps can help in navigating congestion.

4. Assessment of Road Quality and Infrastructure:

The roads are generally well-maintained due to their connections to major highways. However, potholes and construction zones may be present, especially in semi-urban areas. Regular updates from local municipal sources can provide current conditions.

5. Suggestions for Alternative Routes for Emergencies:

In case of roadblocks or emergencies, alternative routes include the Coimbatore Ring Road and smaller arterial roads. Having a map with marked alternative routes is recommended for quick decision-making.

6. Summary of Local Regulations Affecting Hazardous Material Transport:

Local regulations require that vehicles carrying hazardous materials must adhere to specified operational hours, usually avoiding peak traffic periods. They must also be marked properly, drivers must have special licenses, and routes might require prior approval.

7. Overview of Historical Incidents:

There have been occasional incidents involving heavy vehicles, primarily due to mechanical failures or driver error. There are no recent major incidents specifically with hazardous materials reported along this route.

8. Environmental Considerations and Sensitive Areas:

Natural areas, including small water bodies and agricultural zones, should be taken into account, and drivers should minimize environmental impact by obeying laws related to vehicle emissions and noise.

9. Analysis of Communication Coverage:

Most of the route has good mobile network coverage. However, semi-urban stretches like GEM Nagar might experience occasional connectivity issues. It's advisable to have offline maps and emergency contact lists.

10. Estimated Emergency Response Times:

Emergency services are accessible, with an average response time of 15-30 minutes in urban areas. In rural stretches of the route, it may extend to 45 minutes or more due to traffic or road conditions.

12. An Overall Summary of Risk Assessment:

The route from Athappagoundenpudur to Narasimhanaickenpalayam is generally safe for heavy vehicles carrying hazardous materials, with some risks associated with weather conditions, traffic congestion, and potential connectivity issues. Consistent checks on road conditions and traffic, along with communication of local regulatory updates, will further mitigate risks. Preparedness for any environmental or infrastructural changes is advisable to ensure a smooth transportation process. Regular driver training and updates on driving protocols specific to the handling of hazardous materials should be maintained.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	U-Turn	High	11.0549503, 77.0650284	10 KM/Hr
1	U-Turn	High	11.0788315, 76.94166009999999	10 KM/Hr
2	U-Turn	High	11.1126351, 76.9359036	10 KM/Hr
3	Turn	High	11.03211, 77.07640	15 KM/Hr
4	Turn	High	11.05129, 77.07919	15 KM/Hr
5	Turn	High	11.05181, 77.07696	15 KM/Hr
6	Turn	High	11.05222, 77.07690	15 KM/Hr
7	Turn	Medium	11.05343, 77.07106	30 KM/Hr
8	Turn	High	11.05351, 77.07099	15 KM/Hr
9	Turn	High	11.05411, 77.07097	15 KM/Hr
10	Turn	High	11.05529, 77.06566	15 KM/Hr
11	Turn	High	11.05495, 77.06503	15 KM/Hr
12	Blind Spot	Blind Spot	11.05507, 77.06496	10 KM/Hr
13	Turn	High	11.05751, 77.06875	15 KM/Hr
14	Turn	High	11.06437, 77.06865	15 KM/Hr
15	Turn	High	11.06490, 77.06371	15 KM/Hr
16	Turn	Medium	11.06501, 77.06366	30 KM/Hr
17	Turn	Medium	11.07201, 77.06366	30 KM/Hr
18	Turn	Medium	11.07209, 77.06370	30 KM/Hr
19	Turn	Medium	11.07220, 77.06393	30 KM/Hr
20	Turn	Medium	11.07232, 77.06400	30 KM/Hr
21	Blind Spot	Blind Spot	11.07865, 77.06377	10 KM/Hr
22	Turn	High	11.07773, 77.05884	15 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
23	Turn	Medium	11.07854, 77.03872	30 KM/Hr
24	Turn	High	11.07800, 77.03706	15 KM/Hr
25	Turn	High	11.07798, 77.03706	15 KM/Hr
26	Turn	High	11.07795, 77.03702	15 KM/Hr
27	Turn	Medium	11.07475, 77.02954	30 KM/Hr
28	Turn	Medium	11.07476, 77.02943	30 KM/Hr
29	Turn	Medium	11.07489, 77.02931	30 KM/Hr
30	Turn	Medium	11.07621, 77.02892	30 KM/Hr
31	Turn	Medium	11.07629, 77.02884	30 KM/Hr
32	Turn	Medium	11.07626, 77.02677	30 KM/Hr
33	Turn	Medium	11.07680, 77.02632	30 KM/Hr
34	Turn	High	11.07573, 77.02044	15 KM/Hr
35	Turn	Medium	11.07299, 77.01959	30 KM/Hr
36	Turn	High	11.07291, 77.01953	15 KM/Hr
37	Turn	High	11.07278, 77.01700	15 KM/Hr
38	Turn	Medium	11.07368, 77.01680	30 KM/Hr
39	Turn	Medium	11.07376, 77.01665	30 KM/Hr
40	Blind Spot	Blind Spot	11.07496, 77.00208	10 KM/Hr
41	Turn	High	11.07859, 77.00367	15 KM/Hr
42	Turn	Medium	11.08256, 76.96684	30 KM/Hr
43	Turn	Medium	11.08194, 76.96664	30 KM/Hr
44	Turn	Medium	11.07903, 76.96085	30 KM/Hr
45	Turn	Medium	11.07878, 76.96076	30 KM/Hr
46	Turn	Medium	11.07704, 76.96129	30 KM/Hr
47	Turn	Medium	11.07685, 76.96118	30 KM/Hr
48	Turn	Medium	11.07588, 76.95866	30 KM/Hr
49	Turn	Medium	11.07393, 76.95649	30 KM/Hr
50	Turn	Medium	11.07276, 76.95580	30 KM/Hr
51	Turn	High	11.07262, 76.95420	15 KM/Hr
52	Turn	Medium	11.07459, 76.95355	30 KM/Hr
53	Turn	High	11.07798, 76.94880	15 KM/Hr
54	Turn	Medium	11.07804, 76.94876	30 KM/Hr
55	Turn	High	11.07937, 76.94864	15 KM/Hr
56	Turn	Medium	11.07938, 76.94850	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
57	Turn	Medium	11.07943, 76.94843	30 KM/Hr
58	Turn	High	11.07975, 76.94832	15 KM/Hr
59	Turn	High	11.07983, 76.94705	15 KM/Hr
60	Turn	High	11.08070, 76.94668	15 KM/Hr
61	Turn	Medium	11.08081, 76.94472	30 KM/Hr
62	Turn	Medium	11.08111, 76.94427	30 KM/Hr
63	Turn	High	11.08027, 76.94161	15 KM/Hr
64	Blind Spot	Blind Spot	11.07883, 76.94166	10 KM/Hr
65	Turn	High	11.07884, 76.94157	15 KM/Hr
66	Blind Spot	Blind Spot	11.11264, 76.93590	10 KM/Hr
67	Blind Spot	Blind Spot	11.11266, 76.93601	10 KM/Hr
68	Blind Spot	Blind Spot	11.11257, 76.93602	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
4	hospital	Kamalaprakasam, Kalapatti	11.0778, 77.035681	30 km/h	Medium
5	police	Saravanampatti Police Station	11.0747296, 77.0027116	30 km/h	Medium
6	police	B9 Saravanampatty Police Station	11.0747167, 77.0027098	30 km/h	Medium
8	clinic	Sri Loga Clinic	11.072535, 77.0017429	30 km/h	Medium
11	hospital	KG Eye Hospital	11.0825506, 76.997422	30 km/h	Medium
18	hospital	Government Urban Primary Health Center	11.0827084, 76.9427442	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
19	pharmacy	thulasi pharmacy	11.0803127, 76.9427166	30 km/h	Medium
23	police	Thudiyalur Police Station	11.0820675, 76.9412411	30 km/h	Medium
24	hospital	Sri Lakshmi Hospital, Coimbatore	11.0782349, 76.9409348	30 km/h	Medium
25	hospital	bhagirathi hospital	11.0794799, 76.9409445	30 km/h	Medium
26	police	Thudiyalur Police Station	11.0819434, 76.9412392	30 km/h	Medium
27	hospital	Sri Maruthi Medical Center and Hospital	11.0891666, 76.9384105	30 km/h	Medium
28	hospital	Sai Hospital	11.0904781, 76.9383967	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
7	school	Saravanampatty Elementary School	11.0763477, 77.0017133	30 km/h	Medium
9	school	Ruby Matriculation School	11.0824185, 77.0017383	30 km/h	Medium
10	school	Vivekam CBSE School	11.0791972, 76.9954015	30 km/h	Medium
12	college	KGISL IIM	11.0834337, 76.99715	30 km/h	Medium
13	school	KGISL Institute of Information Management	11.0834393, 76.997046	30 km/h	Medium
14	college	Sankara Institute of Technology	11.085373, 76.9854093	30 km/h	Medium
15	school	Maharishi Vidhya Mandir	11.0814298, 76.9813641	30 km/h	Medium
17	school	coimbatore corporation thudiyalur middle school (east)	11.082246, 76.946288	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
20	marketplace	Thudiyalur weekly market	11.081423, 76.9421998	30 km/h	Medium
21	marketplace	tudiyalur cattle market	11.081311, 76.9426497	30 km/h	Medium
22	marketplace	tudiyalur daily market	11.0811865, 76.9416802	30 km/h	Medium

Route Photos of Risky Spots



Risk Type: U-Turn

Risk Level: High

Speed Limit: 10 KM/Hr

Coordinates: 11.0549503, 77.0650284



Risk Type: U-Turn

Risk Level: High

Speed Limit: 10 KM/Hr

Coordinates: 11.0788315, 76.94166009999999



Risk Type: U-Turn

Risk Level: High

Speed Limit: 10 KM/Hr

Coordinates: 11.1126351, 76.9359036



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: High

Speed Limit: 15 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: High

Speed Limit: 15 KM/Hr

Coordinates: 11.05351, 77.07099



Risk Type: Turn

Risk Level: High

Speed Limit: 15 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: 11.05495, 77.06503



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.05507, 77.06496



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.05751, 77.06875



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.06437, 77.06865



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.06490, 77.06371



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.06501, 77.06366



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07201, 77.06366



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07209, 77.06370



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07220, 77.06393



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07232, 77.06400



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.07865, 77.06377



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.07773, 77.05884



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07854, 77.03872



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.07798, 77.03706



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.07795, 77.03702



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07475, 77.02954



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07476, 77.02943



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07489, 77.02931



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07621, 77.02892



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07629, 77.02884



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07626, 77.02677



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07680, 77.02632



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.07573, 77.02044



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.07299, 77.01959



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.07291, 77.01953



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.07368, 77.01680



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07376, 77.01665



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.07496, 77.00208



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.07859, 77.00367



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.08256, 76.96684



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.08194, 76.96664



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07903, 76.96085



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07878, 76.96076



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07588, 76.95866



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07393, 76.95649



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07276, 76.95580

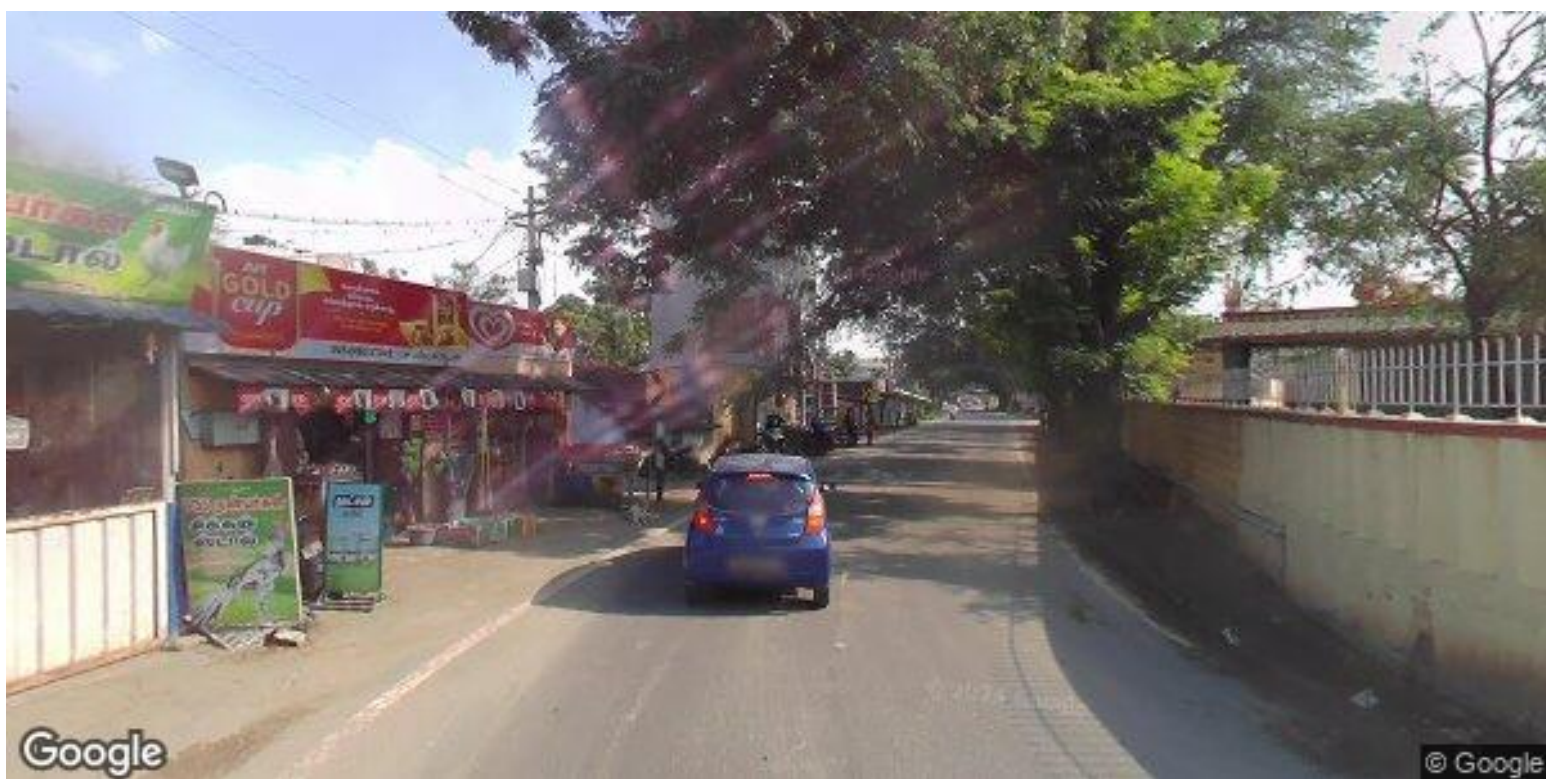


Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.07262, 76.95420



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07459, 76.95355



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.07798, 76.94880



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.07804, 76.94876



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.07937, 76.94864



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07938, 76.94850



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07943, 76.94843



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.07975, 76.94832



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.07983, 76.94705



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.08070, 76.94668



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.08081, 76.94472



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.08111, 76.94427



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.08027, 76.94161



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Coordinates: 11.07883, 76.94166



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.07884, 76.94157



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.11264, 76.93590



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.11266, 76.93601



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Coordinates: 11.11257, 76.93602
