



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal to C S JAYARAMAN & 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

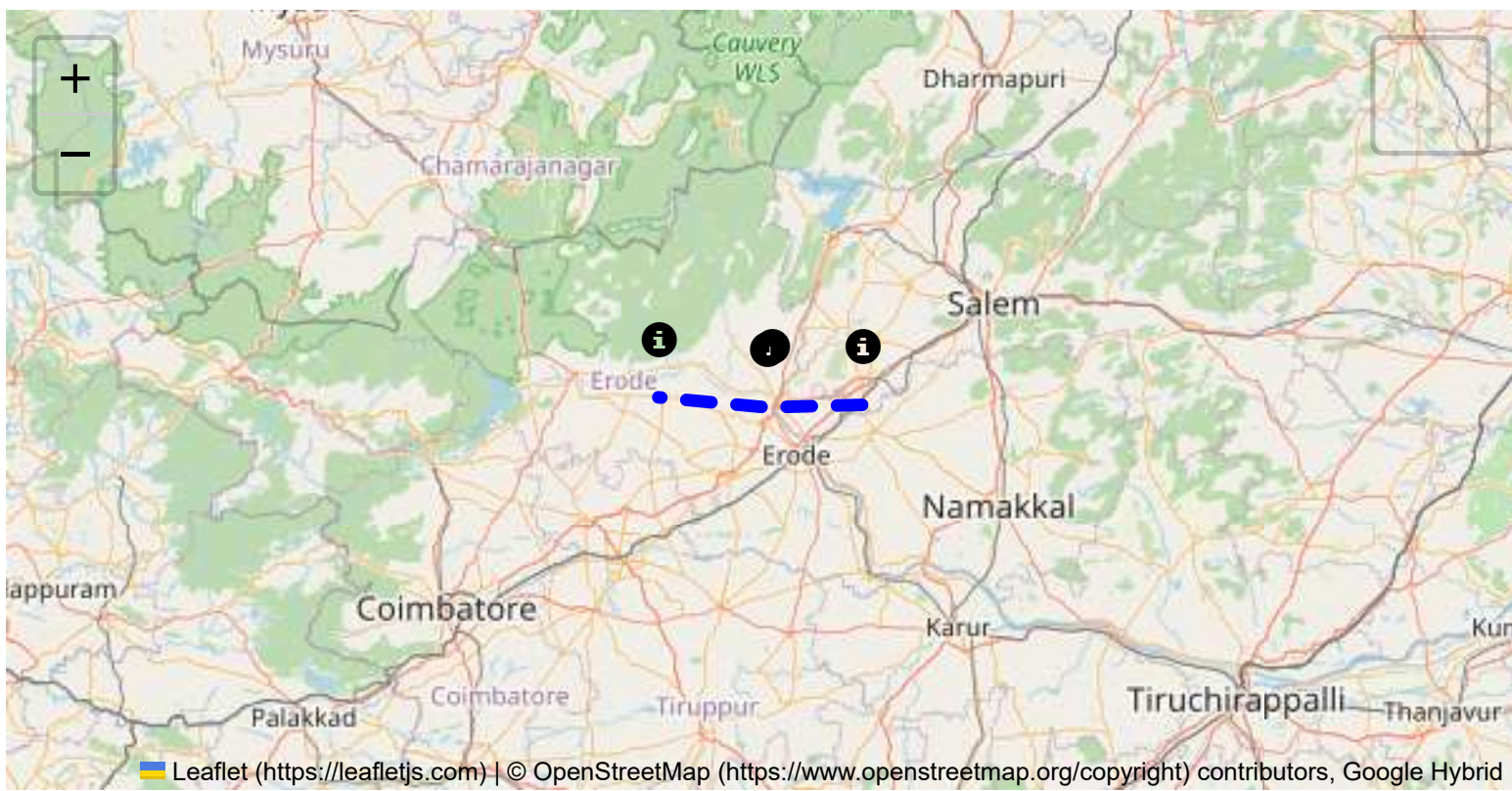
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental impacts during transport.

Journey Risk Mitigation

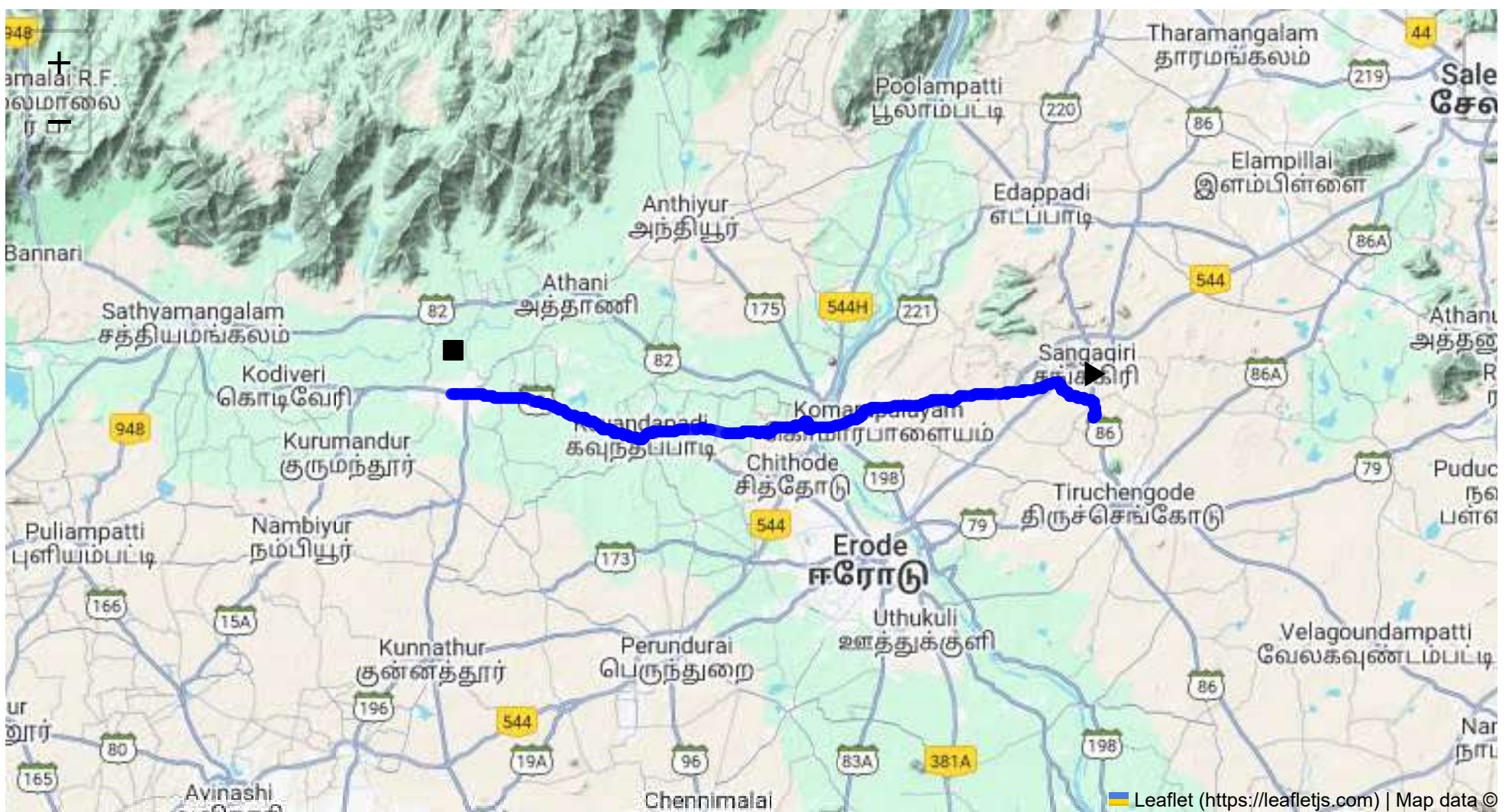
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 54.13 km
Estimated Duration: 1.2 hours
Adjusted Duration (Heavy Vehicle): 1.4 hours
Start: (11.4381, 77.8734)
End: (11.454642, 77.424155)



Welcome to the Journey Risk Management Study

Route Map Overview

The route from CVQF+23W, Sangagiri to FC3F+RJP, Gobichettipalayam via key points in Bhavani covers approximately 54.13 kilometers. It primarily follows regional roads traversing urban, semi-urban, and rural settings. The path generally heads northeast, with significant sections along highways and secondary roads that connect various townships with relatively dense population clusters.

Weather Conditions and Potential Weather-Related Hazards

Tamil Nadu, including the regions along this route, typically experiences a tropical climate. Monsoons (from June to September and October to December) can cause heavy rains, leading to flooding or waterlogging, especially in low-lying areas. During these months, driving conditions can become hazardous due to reduced visibility and slippery roads.

Traffic Patterns and Congestion

Traffic congestion is typically heavier during inbound and outbound working hours, roughly between 8-10 AM and 5-7 PM. Urban centers like Bhavani and towns like Gobichettipalayam can experience dense traffic due to local market activities and the crossing of major junctions. Additionally, festivals or local events might cause unpredictable delays.

Road Quality and Infrastructure

The road quality varies along the route. Highways are generally well-maintained but secondary roads might have potholes, uneven surfaces, or unpaved sections. Construction zones could occasionally appear, creating bottlenecks. Adequate street lighting may be absent in rural stretches, necessitating caution during nighttime driving.

Alternative Routes for Emergencies

In emergencies, such as roadblocks or accidents, alternative paths may include taking adjacent regional roads or bypasses, especially when approaching major towns like Bhavani. Utilizing local knowledge and navigation apps for real-time updates is advisable for the quickest diversions.

Local Regulations on Hazardous Material Transport

Transporting hazardous materials involves compliance with Tamil Nadu's specific regulations regarding vehicle certifications, load restrictions, and timing (often prohibiting movement during peak hours or at night). Adhering to state and national highway regulations is essential.

Historical Incidents Involving Heavy Vehicles

Based on available incident data, the region has experienced accidents involving heavy vehicles due to speed, driver fatigue, and road conditions. Notably, intersections and areas near urban settings pose higher risks of such incidents.

Environmental Considerations and Sensitive Areas

Parts of this route go through agricultural zones and near water bodies, which could be sensitive to spills or heavy vehicle emissions. Ensure that vehicles are equipped to mitigate any hazardous material leaks and comply with environmental protocols.

Communication Coverage

Overall, the route has good mobile coverage, but certain rural stretches might experience poor reception. This can impact GPS functionality and emergency communication. Drivers should prepare for these dead zones and inform dispatch of their expected journey times.

Emergency Response Times

Given the proximity to towns and smaller cities, emergency response times could range from 20 to 40 minutes. However, delays might occur in rural sections due to accessibility challenges.

Overall Summary of Risk Assessment

The route from Sangagiri to Gobichettipalayam presents moderate risks notably involving weather, road conditions, and traffic patterns. Special attention should be given to monsoon conditions, peak traffic hours, and ensuring adherence to hazardous material transport regulations. Preparation includes ensuring vehicle readiness for a range of conditions and having contingency plans for communication outages or route diversions. Regular updates and real-time tracking can enhance safety and response efficiency for this route.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Turn	Medium	11.43822, 77.87348	30 KM/Hr
1	Turn	High	11.43968, 77.87345	15 KM/Hr
2	Turn	High	11.44029, 77.87544	15 KM/Hr
3	Turn	Medium	11.44898, 77.87410	30 KM/Hr
4	Turn	Medium	11.45357, 77.85789	30 KM/Hr
5	Turn	Medium	11.45352, 77.85698	30 KM/Hr
6	Turn	Medium	11.46048, 77.85036	30 KM/Hr
7	Turn	Medium	11.46303, 77.84945	30 KM/Hr
8	Turn	Medium	11.46318, 77.84913	30 KM/Hr
9	Turn	Medium	11.45509, 77.81383	30 KM/Hr
10	Turn	High	11.43001, 77.67575	15 KM/Hr
11	Turn	Medium	11.43003, 77.67551	30 KM/Hr
12	Turn	High	11.43026, 77.67525	15 KM/Hr
13	Turn	High	11.43099, 77.67543	15 KM/Hr
14	Turn	Medium	11.43113, 77.67507	30 KM/Hr
15	Turn	High	11.43596, 77.67365	15 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
16	Turn	Medium	11.43600, 77.67354	30 KM/Hr
17	Turn	Medium	11.43441, 77.67066	30 KM/Hr
18	Turn	Medium	11.43430, 77.67060	30 KM/Hr
19	Turn	High	11.43273, 77.67018	15 KM/Hr
20	Turn	Medium	11.43342, 77.66685	30 KM/Hr
21	Turn	Medium	11.43223, 77.65342	30 KM/Hr
22	Turn	High	11.42329, 77.55798	15 KM/Hr

Emergency Locations

	type	name	coordinates	speed_limit	risk_level
3	hospital	Government Hospital	11.4525596, 77.7749426	30 km/h	Medium
4	hospital	Dhanvantri Multi Speciality Hospital	11.451362, 77.766602	30 km/h	Medium
5	hospital	Dhanvanthri Hospital	11.4496712, 77.7593772	30 km/h	Medium
6	hospital	J.K.K. Trust Hospital	11.4445841, 77.7307962	30 km/h	Medium
8	hospital	Shri Sathyanarayana Hospital	11.4291297, 77.6913408	30 km/h	Medium
9	hospital	Thanish Siddha Hospital	11.430003, 77.674964	30 km/h	Medium
10	clinic	Harshitha Clinic	11.4313207, 77.674718	30 km/h	Medium
11	hospital	Sri Kaalangi Siddhar Mooligai Vaithiya Nilayam	11.432369, 77.674894	30 km/h	Medium
12	clinic	G.K Clinic	11.4297244, 77.6749715	30 km/h	Medium
13	clinic	Velavan Homoeo Clinic	11.4367087, 77.6761472	30 km/h	Medium
14	hospital	PST Mahaa Hospital	11.4312903, 77.6585751	30 km/h	Medium
15	hospital	Dharun Hospital	11.4223638, 77.5597735	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
16	hospital	Dr. Ramaswamy Hospital	11.4249065, 77.5535658	30 km/h	Medium
17	hospital	Dakshin Trauma Centre	11.454593, 77.4461819	30 km/h	Medium
18	hospital	Dakshin Hospital	11.4546301, 77.445905	30 km/h	Medium
19	hospital	Sri Varahi Herbal Research Centre and Hospital	11.4539333, 77.4427438	30 km/h	Medium
20	clinic	Germen Homeopathy Clinic	11.4536305, 77.4394692	30 km/h	Medium
21	hospital	KKS Hospital	11.4551792, 77.4392927	30 km/h	Medium
22	hospital	JP Hospital	11.454765, 77.438257	30 km/h	Medium
23	hospital	ESI Hospital	11.457705, 77.440475	30 km/h	Medium
25	hospital	Siranjeeve Hospitals	11.453132, 77.4344382	30 km/h	Medium
26	clinic	Anandhan Clinic	11.4548037, 77.4349074	30 km/h	Medium
27	hospital	Ramachandran Hospital	11.452242, 77.434641	30 km/h	Medium
28	hospital	Kumaran Hospital	11.4533971, 77.4349621	30 km/h	Medium
29	hospital	Dr. Rathinasamy Hospital	11.457562, 77.4327752	30 km/h	Medium
30	hospital	Gobi Neuro Mind Care	11.4548344, 77.434649	30 km/h	Medium
31	hospital	Hariharan Hospital	11.4523578, 77.4299287	30 km/h	Medium
32	hospital	KKRS Hospital	11.45417, 77.430584	30 km/h	Medium
33	hospital	Sathya Hospital	11.4561856, 77.4298694	30 km/h	Medium
34	hospital	S K Hospital	11.4540106, 77.430108	30 km/h	Medium
35	hospital	Sivakami Hospital	11.4531846, 77.4299288	30 km/h	Medium
36	clinic	Sri Sudha Physiotherapy Clinic	11.4559915, 77.4300217	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
37	hospital	Arun Hospital	11.4538121, 77.4305743	30 km/h	Medium
38	clinic	Sairam Clinic	11.4560122, 77.4306716	30 km/h	Medium
39	clinic	Anand Nursing Home	11.4553169, 77.4296248	30 km/h	Medium
40	hospital	Sivasakthi Hospital	11.4544711, 77.4297229	30 km/h	Medium
41	clinic	NMS Cardio Care Clinic	11.4550147, 77.430786	30 km/h	Medium
42	hospital	SS Children's Hospital	11.4555386, 77.4296357	30 km/h	Medium
43	hospital	Poorani Ravichandran Hospital	11.4550863, 77.4307802	30 km/h	Medium
44	hospital	Kavitha Children's Hospital	11.4565402, 77.4310815	30 km/h	Medium
45	hospital	SP Dhanapal Hospital	11.4559935, 77.4304406	30 km/h	Medium
46	clinic	Gobi Siddha Health Centre	11.455616, 77.4307062	30 km/h	Medium
47	hospital	M.S Children's Hospital	11.4556012, 77.4301006	30 km/h	Medium
48	hospital	Gobi Diabetic Hospital	11.455394, 77.4301181	30 km/h	Medium
49	clinic	Dr. Ramesh Babu Clinic	11.4560871, 77.4296353	30 km/h	Medium
50	hospital	Dr. Moorthy Hospital	11.4546045, 77.4308533	30 km/h	Medium
51	hospital	SP Hospital	11.456607, 77.430302	30 km/h	Medium
52	pharmacy	Abirami Medicals	11.4550894, 77.4309286	30 km/h	Medium
53	hospital	Vasanth Hospital	11.4526864, 77.4292173	30 km/h	Medium
54	clinic	Jeeva Nursing Home	11.4533031, 77.4294145	30 km/h	Medium
55	clinic	Kanmani Child Care Clinic	11.4545273, 77.428668	30 km/h	Medium
56	hospital	Samuel Hospital	11.4542555, 77.4271194	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
57	clinic	Sri Dhanvantari Siddha Clinic	11.4561216, 77.4295797	30 km/h	Medium
58	hospital	Neha Hospital	11.4560138, 77.4270219	30 km/h	Medium
59	hospital	Sankareswari Eye Hospital	11.4572997, 77.428765	30 km/h	Medium
62	hospital	Government Hospital	11.4565126, 77.4288768	30 km/h	Medium
63	hospital	Best Hospital	11.4543558, 77.4263617	30 km/h	Medium
64	hospital	Rajasekaran Hospital	11.454463, 77.4262	30 km/h	Medium
65	hospital	Arun Hospital	11.4548852, 77.4250314	30 km/h	Medium
66	hospital	Sri Chakra Hospital	11.4544464, 77.4228363	30 km/h	Medium
67	hospital	U M Hospital	11.4544151, 77.4240386	30 km/h	Medium
68	hospital	Dr. Gopal Hospital	11.455258, 77.422901	30 km/h	Medium
69	clinic	VG Ortho Centre	11.4550504, 77.4225102	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
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
24	school	Shree Vidyalaya Matric Higher Secondary School	11.4536114, 77.4383163	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
60	school	Diamond Jubilee Higher Secondary School	11.4529541, 77.4280306	30 km/h	Medium
61	school	CKK Palaniammal School	11.4569211, 77.4276828	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: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.44898, 77.87410



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.45357, 77.85789



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.45352, 77.85698



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.46048, 77.85036



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.46303, 77.84945



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.46318, 77.84913



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.45509, 77.81383



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.43001, 77.67575



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.43003, 77.67551



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.43026, 77.67525



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.43099, 77.67543



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.43113, 77.67507



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.43596, 77.67365



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.43600, 77.67354



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.43441, 77.67066



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.43430, 77.67060



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.43273, 77.67018



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.43342, 77.66685



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.43223, 77.65342



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.42329, 77.55798
