



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal to AMMAN 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

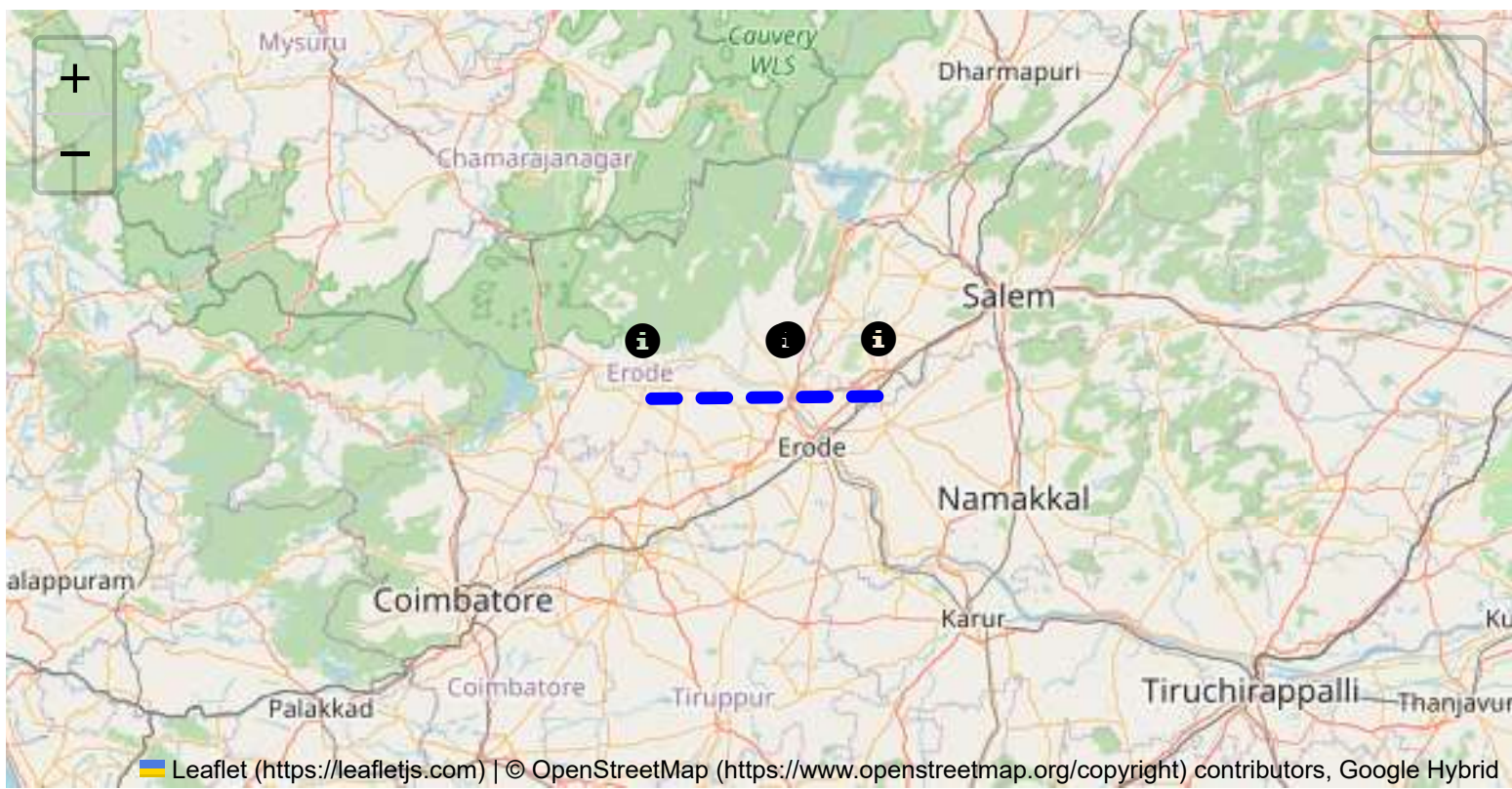
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

Journey Risk Mitigation

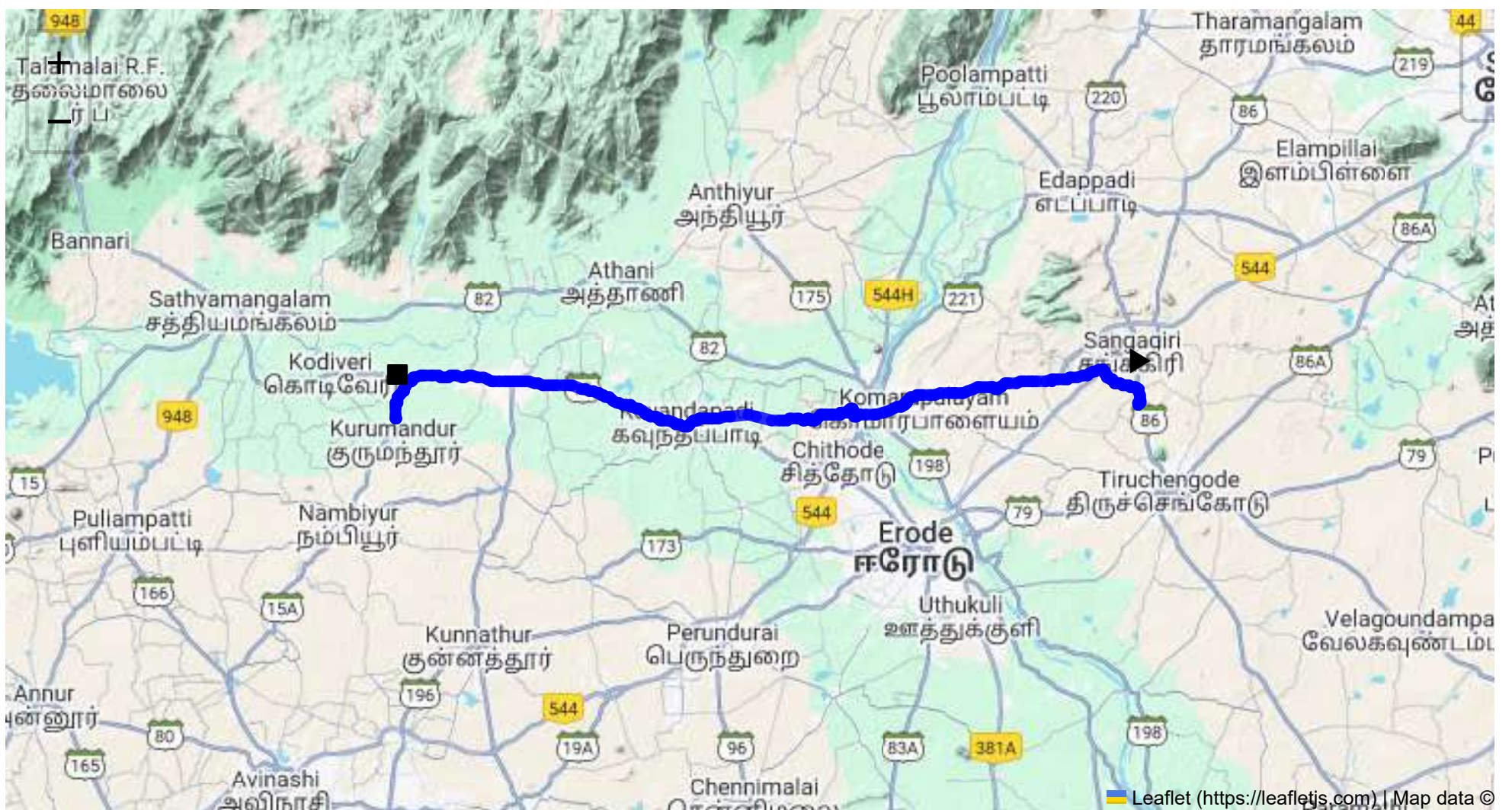
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 64.30 km
Estimated Duration: 1.4 hours
Adjusted Duration (Heavy Vehicle): 1.7 hours
Start: (11.4381, 77.8734)
End: (11.429138, 77.353123)



Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route spans approximately 64.3 kilometers, starting from CVQF+23W in Sangagiri, Tamil Nadu, and ending at C9H3+Q8F, Tamil Nadu. The journey passes through key waypoints such as the 220 near Water Tank, K K Nagar in Kalingarayanpalayam, and CMJ6+VCW in Movender Nagar, Bhavani. The route primarily uses the State Highway networks, indicating a mix of rural and semi-urban terrains.

2. Typical Weather Conditions and Potential Weather-Related Hazards

Tamil Nadu typically experiences tropical weather with three main seasons: summer, monsoon, and winter. During monsoon months (June to September), heavy rains may lead to slippery roads and occasional flooding, particularly in low-lying areas. Drivers should exercise caution during these periods and be prepared for sudden downpours.

3. Analysis of Traffic Patterns

Traffic congestion is less likely in rural stretches but increases as you approach Bhavani. Rush hours typically range from 8 to 10 AM and 5 to 8 PM. Bhavani and surrounding regions can experience traffic slowdowns particularly near market areas. Roads may see an influx of local vehicles, including two-wheelers and tractors, which could affect driving speed and safety.

4. Assessment of Road Quality and Infrastructure

Generally, State Highways are maintained adequately, but expect some sections with uneven pavements, particularly in rural areas. Occasional potholes or poorly marked signage may present challenges. Bhavani town roads have a mix of recently paved sections and older, worn surfaces, requiring attentive driving.

5. Suggestions for Alternative Routes for Emergencies

In case of roadblocks or severe traffic, an alternative route via State Highway 20 can bypass congested or unfriendly areas, though it may increase travel time slightly. Another option is taking the Erode-Chithode road, which is broader and may offer faster detours.

6. Summary of Local Regulations Affecting Hazardous Material Transport

Tamil Nadu regulations require specific permits for transporting hazardous materials. Checkpoints are usually enforced around major towns like Bhavani. Strict adherence to safety standards such as proper labeling and containment is crucial.

7. Overview of Historical Incidents

Historically, heavy vehicles in this region have faced incidents mainly due to overloading and brake failures on poorly maintained roads. Accidents involving hazardous materials are less frequent but have occurred near major highways where speeding is routine.

8. Environmental Considerations and Sensitive Areas

The route passes through agricultural zones and small habitats, requiring drivers to minimize noise and emissions. Bhavani has sensitive areas near water bodies like the Bhavani River, necessitating care in case of spills.

9. Analysis of Communication Coverage

The area generally has good mobile network coverage, though some rural stretches may have occasional signal dropouts, especially near heavy vegetation or underpasses.

10. Estimated Emergency Response Times

Response time is expected to be 20-30 minutes in urban areas like Bhavani due to nearby medical facilities and police stations. However, in more rural sections, response times can extend to 45 minutes or longer.

11. Overall Summary of Risk Assessment

The overall risk level of this route is moderate, with key concerns being variable road quality, seasonal weather challenges, and traffic in town centers. Drivers should stay informed of weather forecasts, adhere to speed limits, and keep emergency contacts handy. Regular vehicle maintenance is essential to prevent mechanical failures, and drivers must be aware of and respect all hazardous material transport regulations.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.45748, 77.36608	15 KM/Hr
1	Turn	Medium	11.43822, 77.87348	30 KM/Hr
2	Turn	High	11.43968, 77.87345	15 KM/Hr
3	Turn	High	11.44029, 77.87544	15 KM/Hr
4	Turn	Medium	11.44898, 77.87410	30 KM/Hr
5	Turn	Medium	11.45357, 77.85789	30 KM/Hr
6	Turn	Medium	11.45352, 77.85698	30 KM/Hr
7	Turn	Medium	11.45847, 77.85140	30 KM/Hr
8	Turn	Medium	11.46303, 77.84945	30 KM/Hr
9	Turn	Medium	11.46314, 77.84928	30 KM/Hr
10	Turn	Medium	11.45509, 77.81383	30 KM/Hr
11	Turn	High	11.43001, 77.67575	15 KM/Hr
12	Turn	Medium	11.43003, 77.67551	30 KM/Hr
13	Turn	High	11.43026, 77.67525	15 KM/Hr
14	Turn	High	11.43099, 77.67543	15 KM/Hr
15	Turn	Medium	11.43113, 77.67507	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
16	Turn	High	11.43596, 77.67365	15 KM/Hr
17	Turn	Medium	11.43600, 77.67354	30 KM/Hr
18	Turn	Medium	11.43441, 77.67066	30 KM/Hr
19	Turn	Medium	11.43327, 77.67052	30 KM/Hr
20	Turn	High	11.43273, 77.67018	15 KM/Hr
21	Turn	Medium	11.43342, 77.66685	30 KM/Hr
22	Turn	Medium	11.43223, 77.65342	30 KM/Hr
23	Turn	Medium	11.42686, 77.56206	30 KM/Hr
24	Turn	High	11.42337, 77.55804	15 KM/Hr
25	Turn	Medium	11.42335, 77.55788	30 KM/Hr
26	Blind Spot	Blind Spot	11.42900, 77.35350	10 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

	type	name	coordinates	speed_limit	risk_level
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
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	Gobi Neuro Mind Care	11.4548344, 77.434649	30 km/h	Medium
30	hospital	KKRS Hospital	11.45417, 77.430584	30 km/h	Medium
31	hospital	S K Hospital	11.4540106, 77.430108	30 km/h	Medium
32	hospital	Arun Hospital	11.4538121, 77.4305743	30 km/h	Medium
33	clinic	Sairam Clinic	11.4560122, 77.4306716	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
34	clinic	NMS Cardio Care Clinic	11.4550147, 77.430786	30 km/h	Medium
35	hospital	Poorani Ravichandran Hospital	11.4550863, 77.4307802	30 km/h	Medium
36	hospital	Kavitha Children's Hospital	11.4565402, 77.4310815	30 km/h	Medium
37	hospital	SP Dhanapal Hospital	11.4559935, 77.4304406	30 km/h	Medium
38	clinic	Gobi Siddha Health Centre	11.455616, 77.4307062	30 km/h	Medium
39	hospital	M.S Children's Hospital	11.4556012, 77.4301006	30 km/h	Medium
40	hospital	Gobi Diabetic Hospital	11.455394, 77.4301181	30 km/h	Medium
41	hospital	Dr. Rathinasamy Hospital	11.457562, 77.4327752	30 km/h	Medium
42	hospital	Dr. Moorthy Hospital	11.4546045, 77.4308533	30 km/h	Medium
43	hospital	SP Hospital	11.456607, 77.430302	30 km/h	Medium
44	pharmacy	Abirami Medicals	11.4550894, 77.4309286	30 km/h	Medium
45	hospital	Hariharan Hospital	11.4523578, 77.4299287	30 km/h	Medium
46	hospital	Vasanth Hospital	11.4526864, 77.4292173	30 km/h	Medium
47	clinic	Jeeva Nursing Home	11.4533031, 77.4294145	30 km/h	Medium
48	hospital	Sathya Hospital	11.4561856, 77.4298694	30 km/h	Medium
49	hospital	Sivakami Hospital	11.4531846, 77.4299288	30 km/h	Medium
50	clinic	Sri Sudha Physiotherapy Clinic	11.4559915, 77.4300217	30 km/h	Medium
51	clinic	Anand Nursing Home	11.4553169, 77.4296248	30 km/h	Medium
52	clinic	Kanmani Child Care Clinic	11.4545273, 77.428668	30 km/h	Medium
53	hospital	Sivasakthi Hospital	11.4544711, 77.4297229	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
54	hospital	SS Children's Hospital	11.4555386, 77.4296357	30 km/h	Medium
55	clinic	Sri Dhanvantari Siddha Clinic	11.4561216, 77.4295797	30 km/h	Medium
56	clinic	Dr. Ramesh Babu Clinic	11.4560871, 77.4296353	30 km/h	Medium
57	hospital	Sankareswari Eye Hospital	11.4572997, 77.428765	30 km/h	Medium
60	hospital	Government Hospital	11.4565126, 77.4288768	30 km/h	Medium
61	hospital	U M Hospital	11.4544151, 77.4240386	30 km/h	Medium
62	hospital	Best Hospital	11.4543558, 77.4263617	30 km/h	Medium
63	hospital	Dr. Gopal Hospital	11.455258, 77.422901	30 km/h	Medium
64	hospital	Rajasekaran Hospital	11.454463, 77.4262	30 km/h	Medium
65	hospital	Samuel Hospital	11.4542555, 77.4271194	30 km/h	Medium
66	hospital	Neha Hospital	11.4560138, 77.4270219	30 km/h	Medium
67	hospital	Arun Hospital	11.4548852, 77.4250314	30 km/h	Medium
68	hospital	Sri Chakra Hospital	11.4544464, 77.4228363	30 km/h	Medium
69	clinic	VG Ortho Centre	11.4550504, 77.4225102	30 km/h	Medium
70	clinic	Palaniappa Clinic	11.4555925, 77.4202828	30 km/h	Medium
71	hospital	Abi SK Hospital	11.457163, 77.412487	30 km/h	Medium
72	clinic	Nalam Vazh S.K Siddha and Varma Clinic	11.457576, 77.412164	30 km/h	Medium
74	clinic	Sai Sri Kumaran Clinic	11.4474062, 77.3585448	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
58	school	Diamond Jubilee Higher Secondary School	11.4529541, 77.4280306	30 km/h	Medium
59	school	CKK Palaniammal School	11.4569211, 77.4276828	30 km/h	Medium
73	school	Saratha Techno School	11.4544819, 77.379986	30 km/h	Medium

Route Photos of Risky Spots



Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.45748, 77.36608



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: 11.45847, 77.85140



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: 11.46314, 77.84928



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: 11.43327, 77.67052



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: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.42686, 77.56206



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.42337, 77.55804



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.42335, 77.55788



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.42900, 77.35350
