



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal to SRI VADIVU ENTERPRISES

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

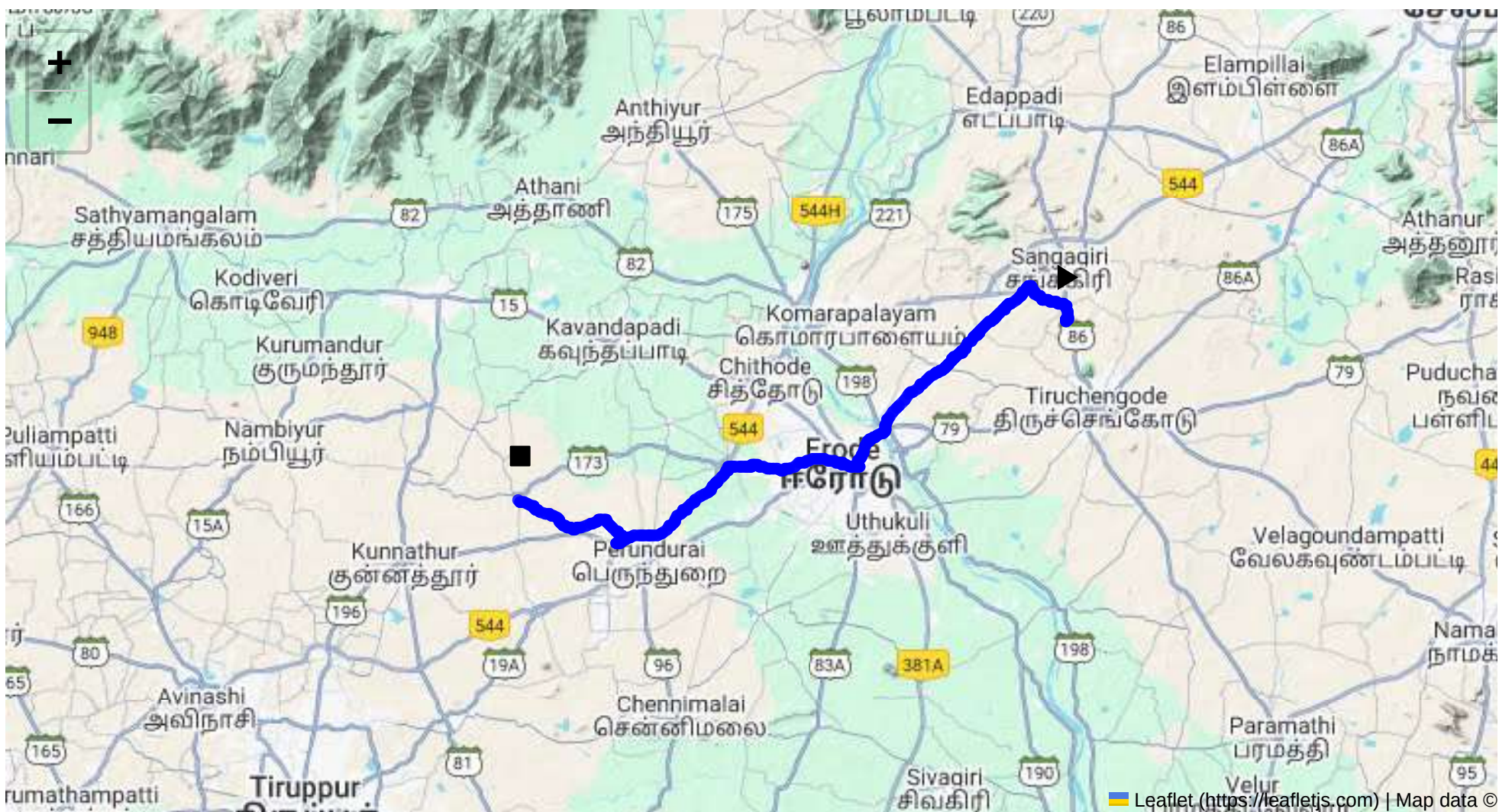
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 56.27 km
Estimated Duration: 1.5 hours
Adjusted Duration (Heavy Vehicle): 1.9 hours
Start: (11.4381, 77.8734)
End: (11.315455, 77.490616)



Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route from Sangagiri to Thingalur via various key points stretches approximately 56.27 kilometers. It includes diverse road types, ranging from regional highways to town roads. This route passes through several towns, providing access to essential facilities but also brings certain challenges due to varying road infrastructure.

2. Typical Weather Conditions and Potential Weather-Related Hazards

The region experiences a tropical climate, with hot summers, a pronounced monsoon season, and mild winters. The monsoon season (June to September) can bring heavy rains, causing potential flooding and slippery roads. Ensure heightened caution during these months, especially in low-lying areas prone to waterlogging.

3. Analysis of Traffic Patterns

Traffic congestion is common during morning (7-9 AM) and evening (5-7 PM) peak hours, especially near towns and junctions such as Sangagiri, Pallipalayam, and Perundurai. The roads are generally busy with commuter traffic, and slow-moving heavy vehicles might experience delays.

4. Assessment of Road Quality and Infrastructure

The road quality varies significantly:

- **Sangagiri to Sowdapuram:** Generally well-maintained but can experience wear and tear, especially after monsoon.
- **Sowdapuram to Perundurai:** Expect some rough patches with potential potholes.
- **Perundurai to Thingalur:** Road conditions improve, with wider lanes and better markings.

Overall, variable road lighting and narrow stretches can pose additional risks during night travel.

5. Suggestions for Alternative Routes for Emergencies

In case of roadblocks or emergencies:

- Use the connecting road via Erode, which is a bit longer but has better-maintained highways and facilities.
- Local bypasses and smaller roads can also route around traffic but may affect travel time.

6. Summary of Local Regulations Affecting Hazardous Material Transport

Tamil Nadu has strict laws regarding the timing and adherence to designated routes for hazardous material transport. Night travel for such vehicles is often restricted, and specific permits are required. Compliance with state and central safety guidelines is crucial.

7. Overview of Historical Incidents

There have been occasional incidents involving heavy vehicles, primarily due to overloading and poor road conditions during monsoon. Fortunately, significant incidents involving hazardous materials remain rare, though precautionary measures are always advised.

8. Environmental Considerations and Sensitive Areas

The route passes through areas close to agricultural lands and smaller water bodies. Care should be taken to avoid spillage of materials, as these could affect local ecosystems and water quality. Efforts should be made to minimize noise pollution in populated areas.

9. Analysis of Communication Coverage

Communication generally remains stable throughout the route. However, certain stretches between towns might experience weaker signal strength. Ensuring communication devices are fully charged and backups are available is recommended.

10. Estimated Emergency Response Times

Response times vary:

- Near towns (e.g., Sangagiri, Perundurai):** Approximately 15-30 minutes due to proximity to emergency services.
- Between towns or in remote stretches:** 30-60 minutes due to distance and potential traffic obstacles.

12. Overall Summary of Risk Assessment

This route presents moderate risk for transporting hazardous materials, mainly due to variable road conditions, potential for intense weather, and traffic congestion. Monitoring weather forecasts and conducting regular vehicle checks can mitigate risk. Compliance with regulatory guidelines and planning travel outside peak hours further reduces potential hazards. Emergency preparedness and adherence to environmental protocols are essential elements of safe transport strategy.

This assessment serves as a guide for ensuring safety and compliance along the route, aiming to inform and enable better decision-making for truck drivers.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.37086, 77.74828	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

	Risk Type	Risk Level	Coordinates	Speed Limit
7	Turn	Medium	11.45847, 77.85140	30 KM/Hr
8	Turn	Medium	11.46303, 77.84945	30 KM/Hr
9	Turn	Medium	11.46318, 77.84913	30 KM/Hr
10	Turn	Medium	11.46302, 77.84874	30 KM/Hr
11	Blind Spot	Blind Spot	11.41740, 77.80062	10 KM/Hr
12	Blind Spot	Blind Spot	11.41734, 77.80078	10 KM/Hr
13	Turn	Medium	11.34192, 77.72824	30 KM/Hr
14	Blind Spot	Blind Spot	11.33920, 77.72902	10 KM/Hr
15	Blind Spot	Blind Spot	11.34068, 77.71709	10 KM/Hr
16	Turn	High	11.34097, 77.71715	15 KM/Hr
17	Turn	Medium	11.34409, 77.69649	30 KM/Hr
18	Turn	Medium	11.33909, 77.64147	30 KM/Hr
19	Turn	Medium	11.33830, 77.64041	30 KM/Hr
20	Turn	High	11.33828, 77.63811	15 KM/Hr
21	Turn	Medium	11.32836, 77.62976	30 KM/Hr
22	Turn	Medium	11.32832, 77.62958	30 KM/Hr
23	Turn	High	11.32838, 77.62939	15 KM/Hr
24	Turn	Medium	11.32828, 77.62925	30 KM/Hr
25	Turn	Medium	11.29140, 77.58253	30 KM/Hr
26	Turn	Medium	11.29154, 77.58236	30 KM/Hr
27	Turn	Medium	11.28558, 77.55999	30 KM/Hr
28	Blind Spot	Blind Spot	11.28575, 77.55948	10 KM/Hr
29	Blind Spot	Blind Spot	11.28920, 77.56522	10 KM/Hr
30	Turn	Medium	11.30230, 77.54896	30 KM/Hr
31	Turn	Medium	11.30287, 77.54838	30 KM/Hr
32	Turn	Medium	11.30032, 77.54497	30 KM/Hr
33	Turn	Medium	11.29671, 77.53216	30 KM/Hr
34	Turn	Medium	11.29603, 77.53031	30 KM/Hr
35	Turn	Medium	11.29696, 77.52483	30 KM/Hr

Emergency Locations

	type	name	coordinates	speed_limit	risk_level
1	hospital	Cheran Hospital	11.3680302, 77.7481976	30 km/h	Medium
2	pharmacy	Pharmacy	11.3652161, 77.7486375	30 km/h	Medium
3	hospital	Visaalam Hospitals	11.3651528, 77.747808	30 km/h	Medium
4	hospital	Sri Kumaran E N T Hospital	11.3657814, 77.7477763	30 km/h	Medium
5	hospital	Sri Krishna Hospital	11.3656648, 77.7477783	30 km/h	Medium
6	police	Police Station	11.3630177, 77.7476505	30 km/h	Medium
7	hospital	Government Hospital	11.3608508, 77.747453	30 km/h	Medium
9	hospital	Sri Hari Sakthivel Hospital	11.3526901, 77.7323055	30 km/h	Medium
10	hospital	Senthil Prakash Hospital	11.352639, 77.732267	30 km/h	Medium
11	hospital	Dhanvantri Critical Care Center	11.3504266, 77.7311274	30 km/h	Medium
12	hospital	V K Hospital	11.3513792, 77.7313976	30 km/h	Medium
13	hospital	Dhanvantri Critical Care Centre	11.35099, 77.730508	30 km/h	Medium
14	hospital	Indrajith Yoga Nature Cure Hospital	11.3499973, 77.732974	30 km/h	Medium
16	hospital	Kumudha Hospital	11.3467172, 77.7306797	30 km/h	Medium
17	hospital	City Hospital	11.3451151, 77.7300887	30 km/h	Medium
18	clinic	K.B.N. Nursing Home	11.344835, 77.7310771	30 km/h	Medium
19	clinic	Kpn Nursing Home	11.3437022, 77.7304525	30 km/h	Medium
20	hospital	Milan Hospital	11.343591, 77.733182	30 km/h	Medium
21	hospital	Dr Kokilasekar Nursing Hospital	11.3395874, 77.7269838	30 km/h	Medium
22	hospital	Kaviraj Ayurveda Hospital	11.3400349, 77.7298199	30 km/h	Medium
23	clinic	M.R Nursing Home	11.3386746, 77.7294262	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
25	hospital	Government Maternity Hospital, Agathiar	11.33716, 77.727075	30 km/h	Medium
26	clinic	Naseer Nursing Home	11.3364485, 77.7271691	30 km/h	Medium
27	clinic	Dr. R Kumaraswamy Sexologist Clinic	11.3396057, 77.7221701	30 km/h	Medium
28	clinic	Newlife Fertility Centre	11.3389396, 77.7213358	30 km/h	Medium
29	hospital	Guhan ENT Hospital	11.339489, 77.721001	30 km/h	Medium
30	clinic	Janet Nursing Home	11.3396455, 77.7203698	30 km/h	Medium
31	hospital	Dr. Pondiperumal Hospital	11.3390924, 77.7205408	30 km/h	Medium
32	hospital	Dr. Agarwal's Eye Hospital Ltd. - Erode	11.3421842, 77.7173066	30 km/h	Medium
33	hospital	Universal Hospital	11.3411046, 77.7185217	30 km/h	Medium
34	hospital	Duraisamy Hospital	11.3391625, 77.7187054	30 km/h	Medium
35	hospital	Srimathi Murugeshan Hospital	11.3389205, 77.7187791	30 km/h	Medium
36	hospital	Devi Hospital	11.34116, 77.718307	30 km/h	Medium
37	hospital	Abisek Medical Centre	11.3415975, 77.7191789	30 km/h	Medium
38	hospital	SCS Hospital And Urology Clinic	11.3410253, 77.718043	30 km/h	Medium
39	hospital	Anusha Hospital	11.3397168, 77.7166805	30 km/h	Medium
40	clinic	Vanalikka Homoeo Centre	11.341349, 77.717987	30 km/h	Medium
41	hospital	Sri Vijaya Hitech Hospital	11.3400011, 77.7192251	30 km/h	Medium
42	hospital	Suriya Hospital	11.340248, 77.7186452	30 km/h	Medium
43	clinic	Skin Care Clinic	11.3409042, 77.7178413	30 km/h	Medium
44	hospital	Abitha Eye Hospital	11.34021, 77.7187589	30 km/h	Medium
45	hospital	Ortho Life Hospital	11.3395729, 77.7167329	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
46	hospital	Shri Vijaiah Trauma Care Hospital	11.3418935, 77.7193036	30 km/h	Medium
47	clinic	Sathyavathi Ramalingam Clinic	11.3380366, 77.7166875	30 km/h	Medium
48	hospital	SRC Hospital	11.3413999, 77.7177834	30 km/h	Medium
49	hospital	Nalan Hospital	11.3399703, 77.716773	30 km/h	Medium
50	hospital	Surya Hospital	11.3400026, 77.7190977	30 km/h	Medium
51	clinic	Dr. Chandran Skin Laser Centre	11.3413527, 77.7174891	30 km/h	Medium
52	hospital	District Hospital, Eroda	11.3393048, 77.717926	30 km/h	Medium
54	hospital	L.V.S. Eye Hospital	11.3385839, 77.7156597	30 km/h	Medium
55	hospital	Erode Kidney's Centre	11.3383801, 77.7164201	30 km/h	Medium
56	hospital	Annai Ent and Head and Neck Care Center	11.3387785, 77.7149034	30 km/h	Medium
57	hospital	Shri Preethe Hospital	11.3385944, 77.7157979	30 km/h	Medium
58	hospital	Dr Nsk Hospital	11.3381737, 77.7153821	30 km/h	Medium
59	hospital	KMCH Speciality Hospital	11.33911, 77.716284	30 km/h	Medium
60	hospital	Care Hospital	11.338443, 77.716511	30 km/h	Medium
61	hospital	Keran Hospital	11.3400456, 77.7154808	30 km/h	Medium
62	hospital	Gem Hospital	11.338106, 77.7155077	30 km/h	Medium
63	hospital	Sri Hari Hospital	11.338357, 77.7164204	30 km/h	Medium
64	clinic	Madhu Surgical Clinic	11.3386602, 77.7143441	30 km/h	Medium
65	pharmacy	Tava Drug Mart	11.3436578, 77.7182673	30 km/h	Medium
66	hospital	Senthil Multispeciality Hospital	11.338983, 77.7138529	30 km/h	Medium
67	clinic	RB Kids Clinic	11.339221, 77.713915	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
68	hospital	Erode Trust Hospital	11.3399422, 77.7134188	30 km/h	Medium
69	hospital	Sri Athi Sathya Hospital	11.3392651, 77.7126583	30 km/h	Medium
70	hospital	Arc Fertility Hospital	11.3397231, 77.7130655	30 km/h	Medium
71	hospital	Vanjee Multispeciality Dental Centre	11.3418385, 77.7132218	30 km/h	Medium
72	clinic	Erode Women and Children Clinic	11.3420279, 77.7116815	30 km/h	Medium
73	hospital	Ranm Malathy Vijayakumar Hospital	11.3413334, 77.708922	30 km/h	Medium
74	hospital	Arun Hospital	11.3447248, 77.7138215	30 km/h	Medium
76	hospital	K.G. Baby Hospital	11.343848, 77.699081	30 km/h	Medium
77	hospital	Veena Hospital	11.3367614, 77.6366566	30 km/h	Medium
79	hospital	Irt Hospital	11.2803603, 77.5644118	30 km/h	Medium
80	clinic	S.V. Clinic	11.3021167, 77.5492797	30 km/h	Medium

Crowded Spots

	type	name	coordinates	speed_limit	risk_level
0	school	Ssri Valliappa Vidhayalayam mat hr school	11.4004878, 77.7794381	30 km/h	Medium
8	marketplace	Weekly Market	11.3605669, 77.7488199	30 km/h	Medium
15	school	Municipality Girls Higher secondary school	11.3495618, 77.7325011	30 km/h	Medium
24	school	E.V.R. Govt Girls Hr. Sec School	11.3371265, 77.7266283	30 km/h	Medium
53	school	Sengunthar matriculation School	11.3407075, 77.7195086	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
75	school	Nandha Central City School (City Campus)	11.3409392, 77.7047156	30 km/h	Medium
78	college	Government polytechnic college	11.2907053, 77.5698726	30 km/h	Medium

Route Photos of Risky Spots



Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.37086, 77.74828



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: 11.46318, 77.84913



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.46302, 77.84874



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Coordinates: 11.41740, 77.80062



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Coordinates: 11.41734, 77.80078



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.34192, 77.72824



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.33920, 77.72902



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.34068, 77.71709



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.34097, 77.71715



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.34409, 77.69649



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.33909, 77.64147



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.33830, 77.64041



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.33828, 77.63811



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.32836, 77.62976



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.32832, 77.62958



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.32838, 77.62939



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.32828, 77.62925



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.29140, 77.58253



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.29154, 77.58236



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.28558, 77.55999



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.28575, 77.55948



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Coordinates: 11.28920, 77.56522



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.30230, 77.54896



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.30287, 77.54838



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.30032, 77.54497



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.29671, 77.53216



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.29603, 77.53031



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.29696, 77.52483
