



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal to SVM 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

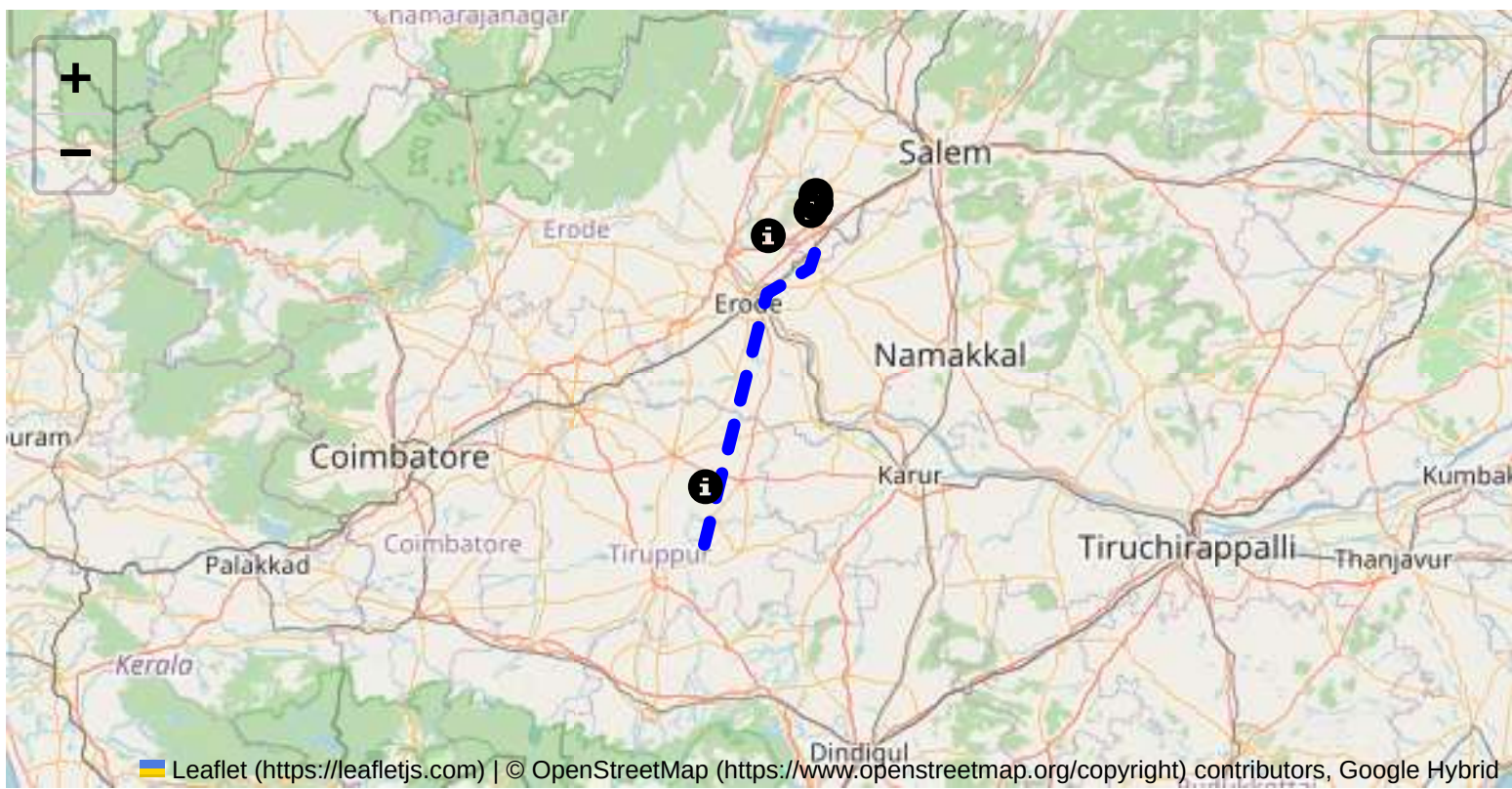
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

Journey Risk Mitigation

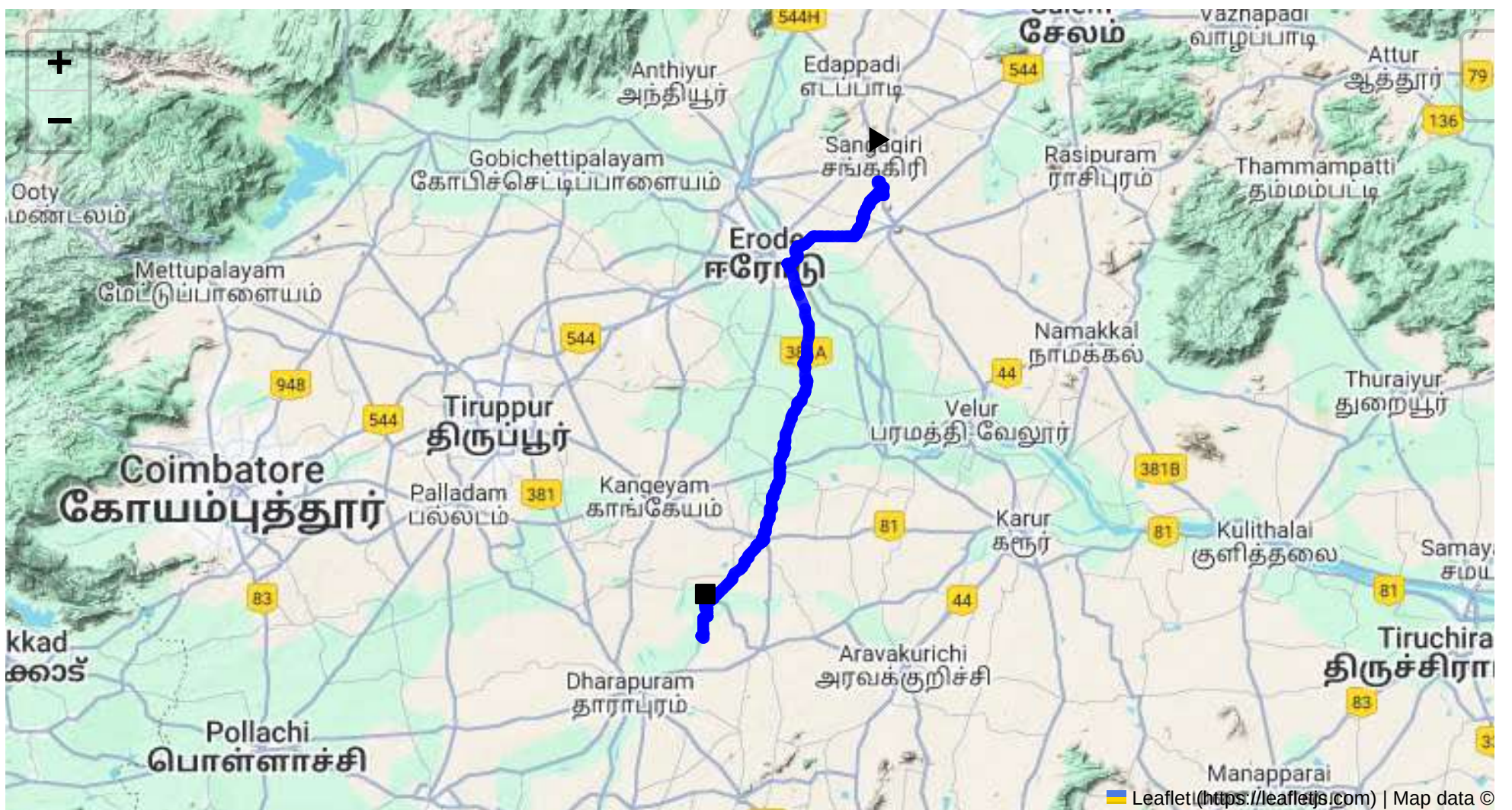
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 89.94 km
Estimated Duration: 2.2 hours
Adjusted Duration (Heavy Vehicle): 2.8 hours
Start: (11.4381, 77.8734)
End: (10.810706, 77.628365)



Welcome to the Journey Risk Management Study

Route Overview

The route from CVQF+23W, Sangagiri, Tamil Nadu to RJ6H+593, Peramiam, Tamil Nadu spans approximately 89.94 kilometers. It passes through various small towns and villages, including Morur, Atturam Palayam New, Seenevasampalayam, and Pallipalayam Agraharam. The road network is primarily composed of state highways and local roads.

Weather Conditions

Tamil Nadu typically experiences a tropical climate. The main weather-related hazards include:

- **Monsoon Season (June to September):** Heavy rainfall can result in poor visibility and slippery roads, increasing the risk of accidents.
- **Summer Heat (March to May):** High temperatures may lead to road surface deterioration and potential vehicle overheating.

Traffic Patterns

- **Peak Hours:** Morning (8:00 AM - 10:00 AM) and Evening (5:00 PM - 7:00 PM) are peak hours, especially near town centers and major junctions.
- **Congestion-Prone Areas:** Expect congestion around Morur and near school zones and local markets.

Road Quality and Infrastructure

- **Road Conditions:** Generally fair but expect potholes and uneven surfaces, particularly on local roads.
- **Infrastructure:** Limited street lighting in rural areas indicates reduced visibility during night driving.

Alternative Routes

- **In Case of Emergencies:** Consider bypass roads around Morur and Atturam Palayam New to avoid congestion. The Salem-Erode road provides a more reliable alternative for detouring in a serious emergency.

Local Regulations on Hazardous Material Transport

- **Permits Required:** Ensure all necessary permits for hazardous material transportation are obtained.
- **Restricted Hours:** Transport is often restricted during peak hours and school times in urban areas to minimize risk.

Historical Incidents

- **Accident Reports:** Some incidents of heavy vehicle rollovers due to sharp curves and speeding have been recorded in these areas, particularly during the monsoon season.
- **Material Spills:** Limited data; suggest increased precaution, especially near agricultural lands.

Environmental Considerations

- **Sensitive Areas:** Avoid pollution in agricultural zones and water bodies. Be cautious in wildlife crossing areas.
- **Noise and Emission Regulations:** Follow local guidelines to minimize environmental impact.

Communication Coverage

- **Network Coverage:** Generally good near towns; potential dead zones in remote rural stretches.
- **Emergency Connectivity:** Ensure availability of communication devices and local helpline numbers.

Emergency Response Times

- **Urban Areas:** Approximately 20-30 minutes.
- **Rural Areas:** Could take 30-60 minutes due to lesser accessibility and infrastructure.

Overall Summary

This route presents moderate risks due to varying road conditions and potential weather-related challenges. Strict adherence to local regulations concerning hazardous material transportation is crucial. Regular updates on current traffic and weather conditions, maintaining close communication ties, and remaining vigilant in sensitive environmental areas can enhance safety for drivers. Alternative routes and clear emergency plans should be well communicated to manage unexpected scenarios efficiently.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.32363, 77.74925	15 KM/Hr
1	Roundabout	High	11.32077, 77.75128	15 KM/Hr
2	Roundabout	High	11.04637, 77.73761	15 KM/Hr
3	Turn	High	11.43968, 77.87345	15 KM/Hr
4	Turn	High	11.44022, 77.87546	15 KM/Hr
5	Turn	High	11.41989, 77.88061	15 KM/Hr
6	Turn	Medium	11.42037, 77.87767	30 KM/Hr
7	Turn	Medium	11.42087, 77.87695	30 KM/Hr
8	Turn	High	11.42231, 77.87666	15 KM/Hr
9	Blind Spot	Blind Spot	11.42333, 77.87394	10 KM/Hr
10	Turn	High	11.42115, 77.87345	15 KM/Hr
11	Turn	Medium	11.41913, 77.87098	30 KM/Hr
12	Turn	High	11.41917, 77.87022	15 KM/Hr
13	Turn	Medium	11.41609, 77.86667	30 KM/Hr
14	Turn	High	11.39370, 77.85502	15 KM/Hr
15	Turn	Medium	11.39323, 77.85539	30 KM/Hr
16	Turn	High	11.39049, 77.85504	15 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
17	Turn	High	11.39076, 77.85379	15 KM/Hr
18	Turn	Medium	11.38652, 77.85255	30 KM/Hr
19	Turn	Medium	11.38591, 77.85279	30 KM/Hr
20	Turn	High	11.38243, 77.85180	15 KM/Hr
21	Turn	High	11.38195, 77.85225	15 KM/Hr
22	Turn	Medium	11.37389, 77.84760	30 KM/Hr
23	Turn	High	11.37017, 77.84376	15 KM/Hr
24	Turn	High	11.36564, 77.84272	15 KM/Hr
25	Turn	High	11.35069, 77.76238	15 KM/Hr
26	Turn	Medium	11.34827, 77.76253	30 KM/Hr
27	Turn	Medium	11.34777, 77.76225	30 KM/Hr
28	Turn	Medium	11.34703, 77.76108	30 KM/Hr
29	Turn	High	11.34628, 77.75866	15 KM/Hr
30	Turn	Medium	11.34585, 77.75859	30 KM/Hr
31	Turn	High	11.33530, 77.76238	15 KM/Hr
32	Turn	High	11.32601, 77.75056	15 KM/Hr
33	Turn	Medium	11.32673, 77.74848	30 KM/Hr
34	Turn	High	11.32653, 77.74744	15 KM/Hr
35	Turn	High	11.32613, 77.74728	15 KM/Hr
36	Turn	Medium	11.32526, 77.74832	30 KM/Hr
37	Turn	High	11.18947, 77.77076	15 KM/Hr
38	Turn	High	11.16419, 77.77365	15 KM/Hr
39	Turn	High	11.16367, 77.77430	15 KM/Hr
40	Turn	Medium	11.13664, 77.76524	30 KM/Hr
41	Turn	Medium	11.04718, 77.73742	30 KM/Hr
42	Turn	Medium	11.04606, 77.73692	30 KM/Hr
43	Turn	Medium	11.04551, 77.73643	30 KM/Hr
44	Turn	Medium	10.99047, 77.72519	30 KM/Hr
45	Turn	High	10.98954, 77.72377	15 KM/Hr
46	Turn	Medium	10.96629, 77.71688	30 KM/Hr
47	Turn	High	10.94590, 77.71319	15 KM/Hr
48	Turn	High	10.94593, 77.71259	15 KM/Hr
49	Turn	Medium	10.94275, 77.71189	30 KM/Hr
50	Turn	High	10.93838, 77.70350	15 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
51	Turn	Medium	10.87251, 77.64976	30 KM/Hr
52	Turn	Medium	10.87213, 77.64486	30 KM/Hr
53	Turn	Medium	10.87156, 77.64429	30 KM/Hr
54	Turn	High	10.86454, 77.64346	15 KM/Hr
55	Turn	Medium	10.86350, 77.63490	30 KM/Hr
56	Turn	Medium	10.86207, 77.63350	30 KM/Hr
57	Turn	High	10.85753, 77.63345	15 KM/Hr
58	Turn	High	10.85682, 77.63239	15 KM/Hr
59	Turn	Medium	10.85312, 77.63342	30 KM/Hr
60	Turn	Medium	10.85276, 77.63393	30 KM/Hr
61	Turn	Medium	10.84088, 77.63398	30 KM/Hr
62	Turn	High	10.84001, 77.62967	15 KM/Hr
63	Turn	Medium	10.83816, 77.62927	30 KM/Hr
64	Turn	High	10.83773, 77.62869	15 KM/Hr
65	Turn	Medium	10.81746, 77.62881	30 KM/Hr

Emergency Locations

	type	name	coordinates	speed_limit	risk_level
1	hospital	Government Hospital Kadachanallur	11.36702, 77.804315	30 km/h	Medium
2	hospital	Keerthana Hospital	11.2365339, 77.7772287	30 km/h	Medium
3	hospital	Nataraj Nursing Home	11.2351682, 77.7785956	30 km/h	Medium
4	hospital	Government Hospital, Elumathur	11.18533, 77.772496	30 km/h	Medium
5	hospital	Malar Hospital, Muthur	11.0438049, 77.7361156	30 km/h	Medium
6	hospital	SIBI Hospital, Vellakoil	10.9569141, 77.7160216	30 km/h	Medium
7	hospital	KG Hospital, Vellakoil	10.9511, 77.714116	30 km/h	Medium
8	hospital	Vellakoil Government Hospital	10.9410661, 77.7110372	30 km/h	Medium

Crowded Spots

	type	name	coordinates	speed_limit	risk_level
0	college	K. S. Rangasamy College of Technology	11.3587246, 77.8278764	30 km/h	Medium

Route Photos of Risky Spots



Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.32363, 77.74925



Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.32077, 77.75128



Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.04637, 77.73761



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.44022, 77.87546



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.41989, 77.88061



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Coordinates: 11.42333, 77.87394



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.41917, 77.87022



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.41609, 77.86667



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.39370, 77.85502



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.39323, 77.85539



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.39049, 77.85504



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.39076, 77.85379



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.38652, 77.85255



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.38591, 77.85279



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.38243, 77.85180



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.38195, 77.85225



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.37389, 77.84760



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.37017, 77.84376



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.36564, 77.84272



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.35069, 77.76238



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.34827, 77.76253



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.34777, 77.76225



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.34703, 77.76108



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.34628, 77.75866



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.34585, 77.75859



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.33530, 77.76238



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.32601, 77.75056



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.32673, 77.74848



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.32653, 77.74744



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.32613, 77.74728



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.32526, 77.74832



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.18947, 77.77076



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.16419, 77.77365



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.16367, 77.77430



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.13664, 77.76524



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.04718, 77.73742



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.04606, 77.73692



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.04551, 77.73643



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.99047, 77.72519



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.98954, 77.72377



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.96629, 77.71688



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.94590, 77.71319



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.94593, 77.71259



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.94275, 77.71189



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.93838, 77.70350



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.87251, 77.64976



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.87213, 77.64486



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.87156, 77.64429



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.86454, 77.64346



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.86350, 77.63490



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.86207, 77.63350



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.85753, 77.63345



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.85682, 77.63239



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.85312, 77.63342



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.85276, 77.63393



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.84088, 77.63398



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.84001, 77.62967



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.83816, 77.62927



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.83773, 77.62869



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.81746, 77.62881
