



JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal To SRE KRISHNA 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

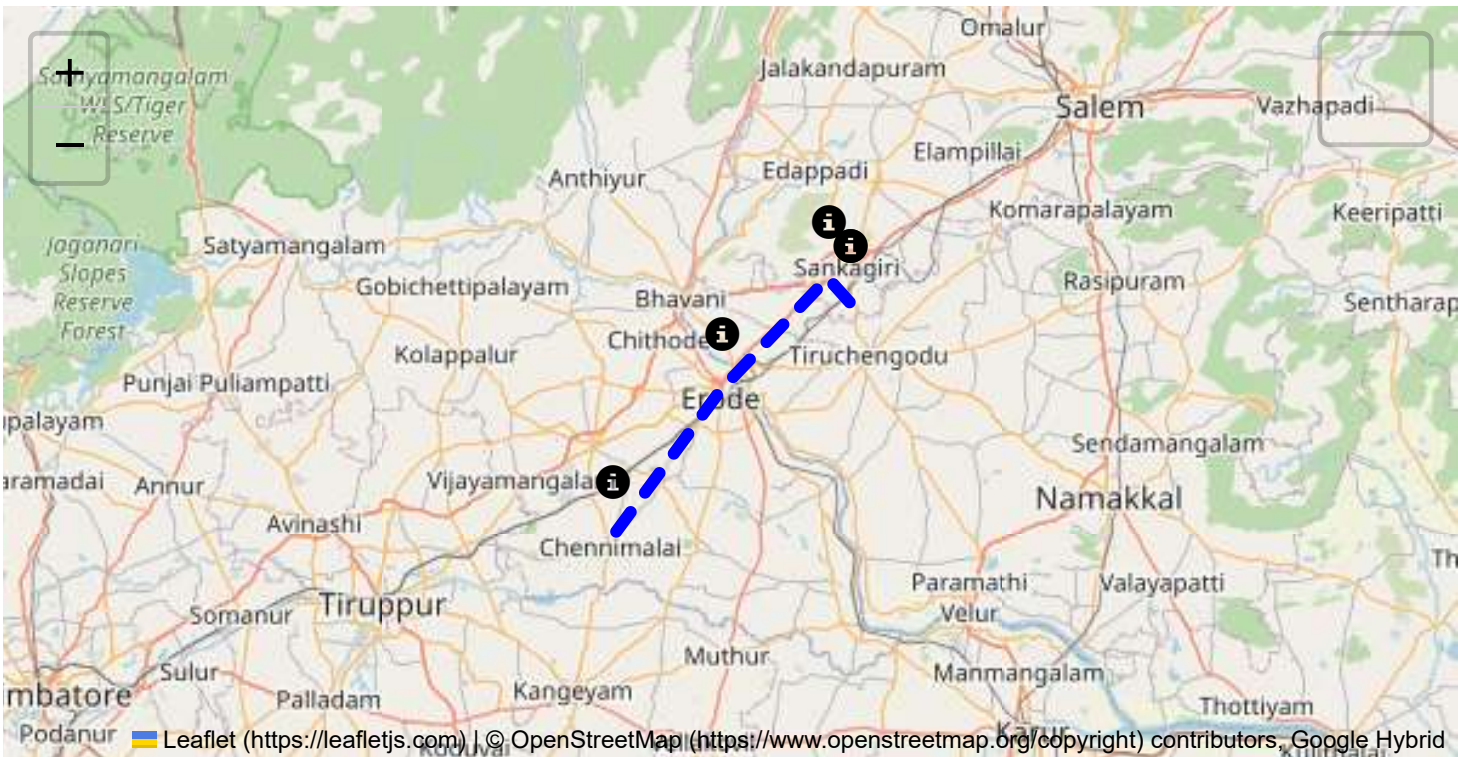
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

Journey Risk Mitigation

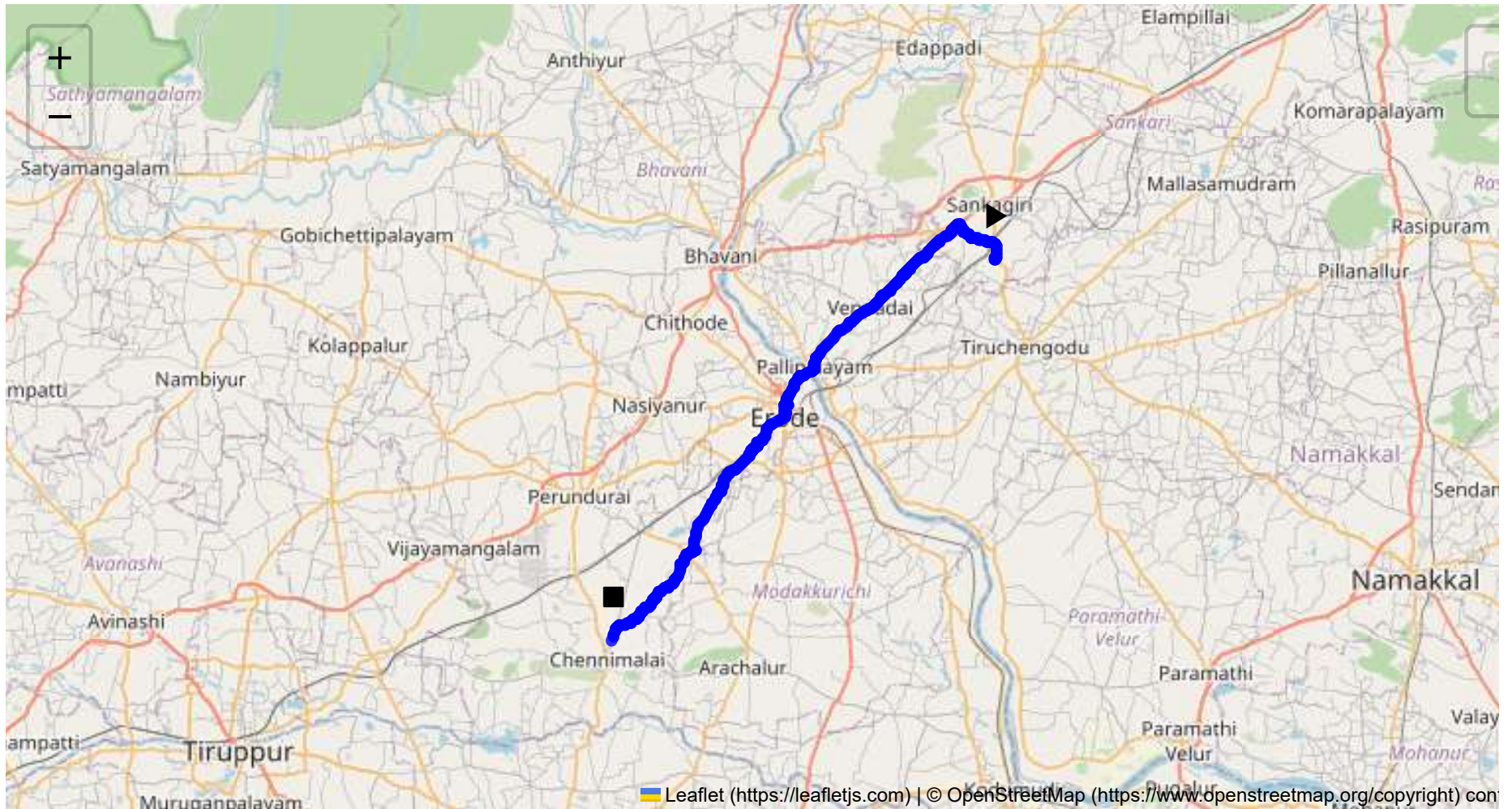
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 48.91 km
Estimated Duration: 1.3 hours
Adjusted Duration (Heavy Vehicle): 1.6 hours
Start: (11.4381, 77.8734)
End: (11.176815, 77.606026)



Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route from CVQF+23W (Sangagiri, Tamil Nadu) to 5JG4+PF3 (Perundurai R.S Chennimalai Road, Ottapparai, Tamil Nadu) covers approximately 48.91 kilometers. Key waypoints include SH 79A in Sangagiri and 373 Nethaji Rd in Erode. The journey typically takes around 1.28 hours for heavy vehicles under standard conditions.

2. Typical Weather Conditions and Potential Weather-Related Hazards

- Weather Conditions:** This region experiences a tropical climate with hot summers, moderate winters, and a monsoon season from June to September.
- Weather-Related Hazards:** During monsoon season, heavy rainfall can lead to waterlogging and reduced visibility. Occasional thunderstorms might also disrupt travel.

3. Analysis of Traffic Patterns

- Peak Hours:** Morning (8-10 AM) and evening (5-8 PM) are typically peak traffic hours. Areas around Erode can be congested during these times.
- Congestion-Prone Areas:** Expect increased delays around major junctions, particularly in Erode town due to commercial activities.

4. Assessment of Road Quality and Infrastructure

- **Road Quality:** The roads are relatively well-maintained but may have occasional potholes or uneven surfaces, particularly after heavy rainfall.
- **Infrastructure:** Road markings and signages may be insufficient in rural stretches. Erode has better infrastructure due to its urban nature.

5. Suggestions for Alternative Routes for Emergencies

- An alternative route could involve using NH 544 from Sangagiri, bypassing some congested segments around Erode. However, this may increase travel distance.

6. Summary of Local Regulations Affecting Hazardous Material Transport

- **Regulations:** There are strict regulations governing the transport of hazardous materials, including permits and adherence to safety protocols. Certain areas may have restrictions during peak hours and nighttime.

7. Overview of Historical Incidents

- **Incidents:** While specific historical data on incidents involving hazardous materials in this region is limited, nearby highways have reported incidents related to road hazards and weather conditions impacting heavy vehicles.

8. Environmental Considerations and Sensitive Areas

- **Environmental Concerns:** Proximity to the Cauvery River means restriction areas to prevent contamination. Drivers should be cautious near water bodies and agricultural land.
- **Sensitive Areas:** Forest or reserved areas may demand reduced noise and light pollution from vehicles.

9. Analysis of Communication Coverage

- **Coverage:** Communication networks are generally robust in urban and semi-urban areas such as Erode. Rural stretches might experience occasional dead zones.

10. Estimated Emergency Response Times

- **Response Times:** In urban and semi-urban areas like Erode, response times can be around 15-30 minutes. Rural areas may experience longer wait times due to distance and road conditions.

12. Overall Summary of Risk Assessment

This route is generally safe for transporting hazardous materials with proper precautions. Key risks include monsoon-related hazards, peak-hour congestion near urban centers, and communication challenges in certain areas. Comprehensive adherence to regulations and planning for alternative routes during emergencies can mitigate potential issues. Drivers are advised to be particularly cautious during

adverse weather conditions and to familiarize themselves with local emergency services contacts before starting their journey.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.37086, 77.74828	15 KM/Hr
1	Roundabout	High	11.23678, 77.65868	15 KM/Hr
2	Turn	Medium	11.43822, 77.87348	30 KM/Hr
3	Turn	High	11.43961, 77.87341	15 KM/Hr
4	Turn	High	11.44029, 77.87544	15 KM/Hr
5	Turn	Medium	11.44893, 77.87413	30 KM/Hr
6	Turn	Medium	11.45127, 77.86734	30 KM/Hr
7	Turn	High	11.45350, 77.85700	15 KM/Hr
8	Turn	Medium	11.45845, 77.85141	30 KM/Hr
9	Turn	Medium	11.46303, 77.84945	30 KM/Hr
10	Turn	Medium	11.46317, 77.84906	30 KM/Hr
11	Turn	Medium	11.34172, 77.72823	30 KM/Hr
12	Blind Spot	Blind Spot	11.33920, 77.72902	10 KM/Hr
13	Turn	Medium	11.33909, 77.72653	30 KM/Hr
14	Turn	Medium	11.33896, 77.72642	30 KM/Hr
15	Turn	Medium	11.33092, 77.72748	30 KM/Hr
16	Turn	Medium	11.33085, 77.72744	30 KM/Hr
17	Turn	High	11.31172, 77.70715	15 KM/Hr
18	Turn	Medium	11.31043, 77.70784	30 KM/Hr
19	Turn	Medium	11.31028, 77.70782	30 KM/Hr
20	Blind Spot	Blind Spot	11.23904, 77.66459	10 KM/Hr
21	Turn	Medium	11.23843, 77.66240	30 KM/Hr
22	Turn	Medium	11.23750, 77.66185	30 KM/Hr
23	Turn	Medium	11.19569, 77.62600	30 KM/Hr
24	Turn	High	11.18700, 77.60980	15 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	Indrajith Yoga Nature Cure Hospital	11.3499973, 77.732974	30 km/h	Medium
15	hospital	Kumudha Hospital	11.3467172, 77.7306797	30 km/h	Medium
16	hospital	Dhanvantri Critical Care Centre	11.35099, 77.730508	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	Kaviraj Ayurveda Hospital	11.3400349, 77.7298199	30 km/h	Medium
21	hospital	Dr Kokilasekar Nursing Hospital	11.3395874, 77.7269838	30 km/h	Medium
22	clinic	M.R Nursing Home	11.3386746, 77.7294262	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
24	hospital	Government Maternity Hospital, Agathiar	11.33716, 77.727075	30 km/h	Medium
25	clinic	Naseer Nursing Home	11.3364485, 77.7271691	30 km/h	Medium
26	hospital	Vikram Hospital, Erode	11.3356411, 77.7280569	30 km/h	Medium
27	hospital	Kumarasamy Hospital	11.334273, 77.7259118	30 km/h	Medium
28	hospital	Shabeer Hospital	11.33529, 77.7285236	30 km/h	Medium
29	hospital	J.B. Clinic And Hospital	11.3351769, 77.7282031	30 km/h	Medium
30	hospital	Dr. R.M. Habibullah Hospital	11.335246, 77.7266028	30 km/h	Medium
31	hospital	Thangam Hospital, Erode	11.3340961, 77.7262437	30 km/h	Medium
32	hospital	Ck Hospital	11.3326562, 77.7282011	30 km/h	Medium
33	hospital	Jai Maaruthi Hospital	11.332, 77.727272	30 km/h	Medium
34	hospital	Immick Hospital	11.332617, 77.728073	30 km/h	Medium
35	fire_station	Erode District Fire Station	11.3326366, 77.7272532	30 km/h	Medium
36	hospital	JJ hospital	11.33168, 77.728823	30 km/h	Medium
37	hospital	Bethesda Hospital	11.3314183, 77.7266231	30 km/h	Medium
38	hospital	Shubiksha Hospital	11.3318174, 77.7299544	30 km/h	Medium
39	hospital	Aditi Ent Hospital	11.3300862, 77.7236924	30 km/h	Medium
40	hospital	Mercury Hospital	11.3328384, 77.7240531	30 km/h	Medium
41	hospital	Erode Ortho Centre	11.3294487, 77.7230172	30 km/h	Medium
42	hospital	KRN Hospital	11.330054, 77.723136	30 km/h	Medium
43	hospital	Dr. Snm Siddha Hospital	11.3306597, 77.7196144	30 km/h	Medium
44	hospital	Divisional Railway Hospital	11.3237354, 77.7204487	30 km/h	Medium
45	hospital	Joseph Hospital	11.30801, 77.704584	30 km/h	Medium
48	hospital	Kavitha Hospital	11.238653, 77.663961	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
49	clinic	Chrisdella Clinic	11.1874064, 77.6118627	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
14	school	Municipality Girls Higher secondary school	11.3495618, 77.7325011	30 km/h	Medium
23	school	E.V.R. Govt Girls Hr. Sec School	11.3371265, 77.7266283	30 km/h	Medium
46	college	Erode Arts and Science College	11.3002956, 77.6984443	30 km/h	Medium
47	school	The Indian Public School	11.2908927, 77.6934601	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: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.23678, 77.65868



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: 11.44893, 77.87413



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.45127, 77.86734



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

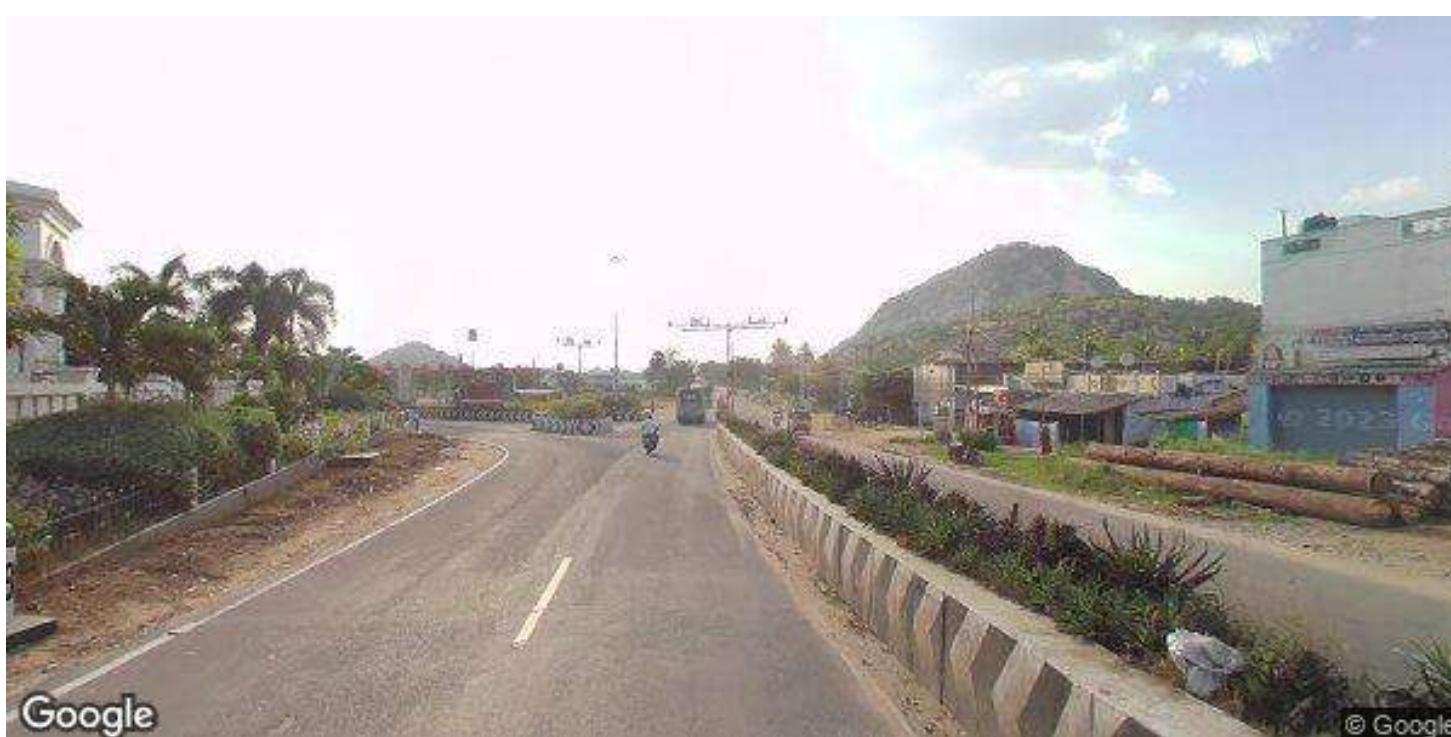
Coordinates: 11.45350, 77.85700



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.45845, 77.85141



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: 11.46317, 77.84906



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.34172, 77.72823



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.33920, 77.72902



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.33909, 77.72653



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.33896, 77.72642



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.33092, 77.72748



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.33085, 77.72744



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.31172, 77.70715



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.31043, 77.70784



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.31028, 77.70782



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.23904, 77.66459



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.23843, 77.66240



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.23750, 77.66185



Coordinates: 11.19569, 77.62600



Coordinates: 11.18700, 77.60980

