



JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal TO KAVIN CORPORATION

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

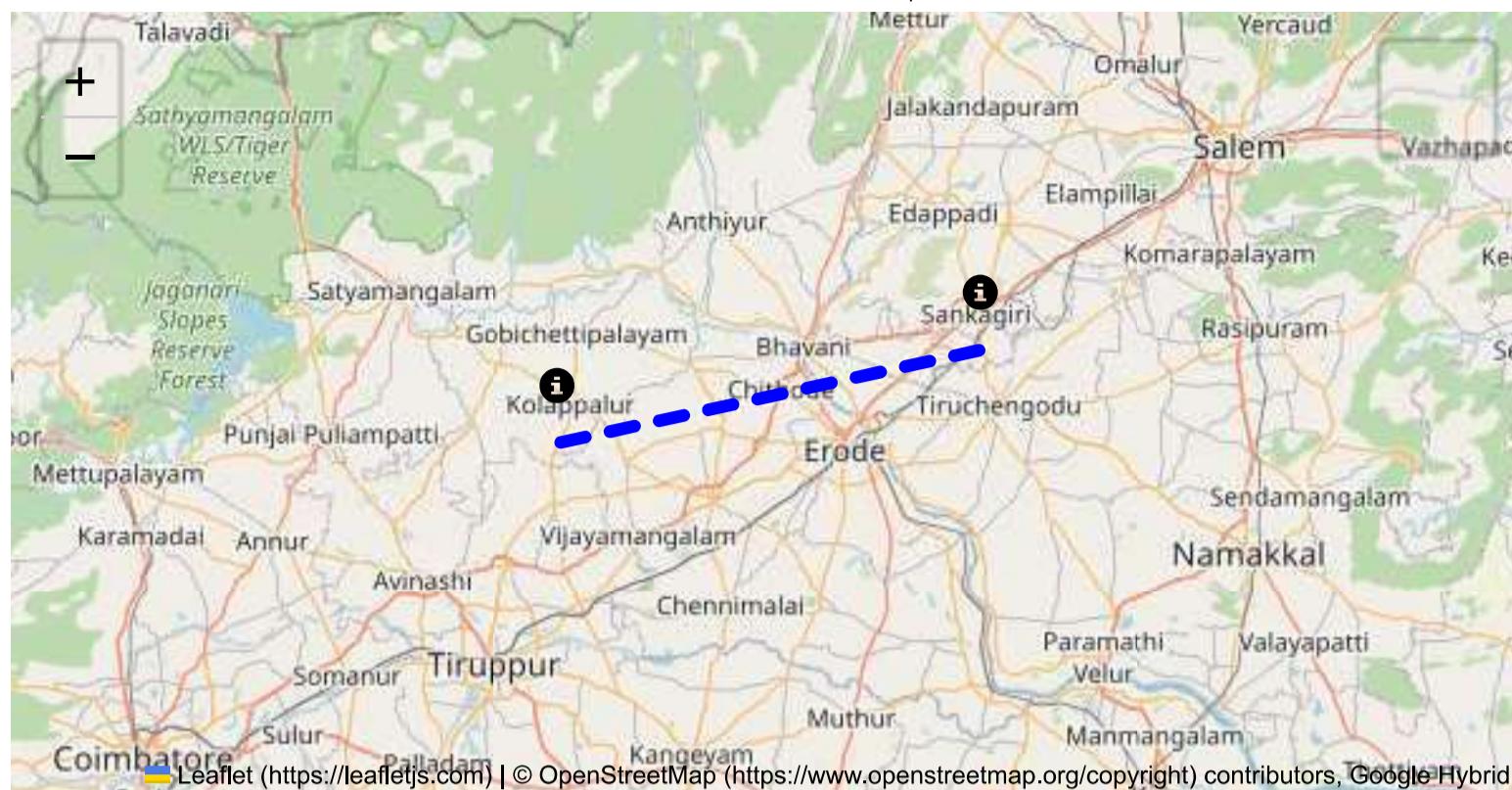
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

Journey Risk Mitigation

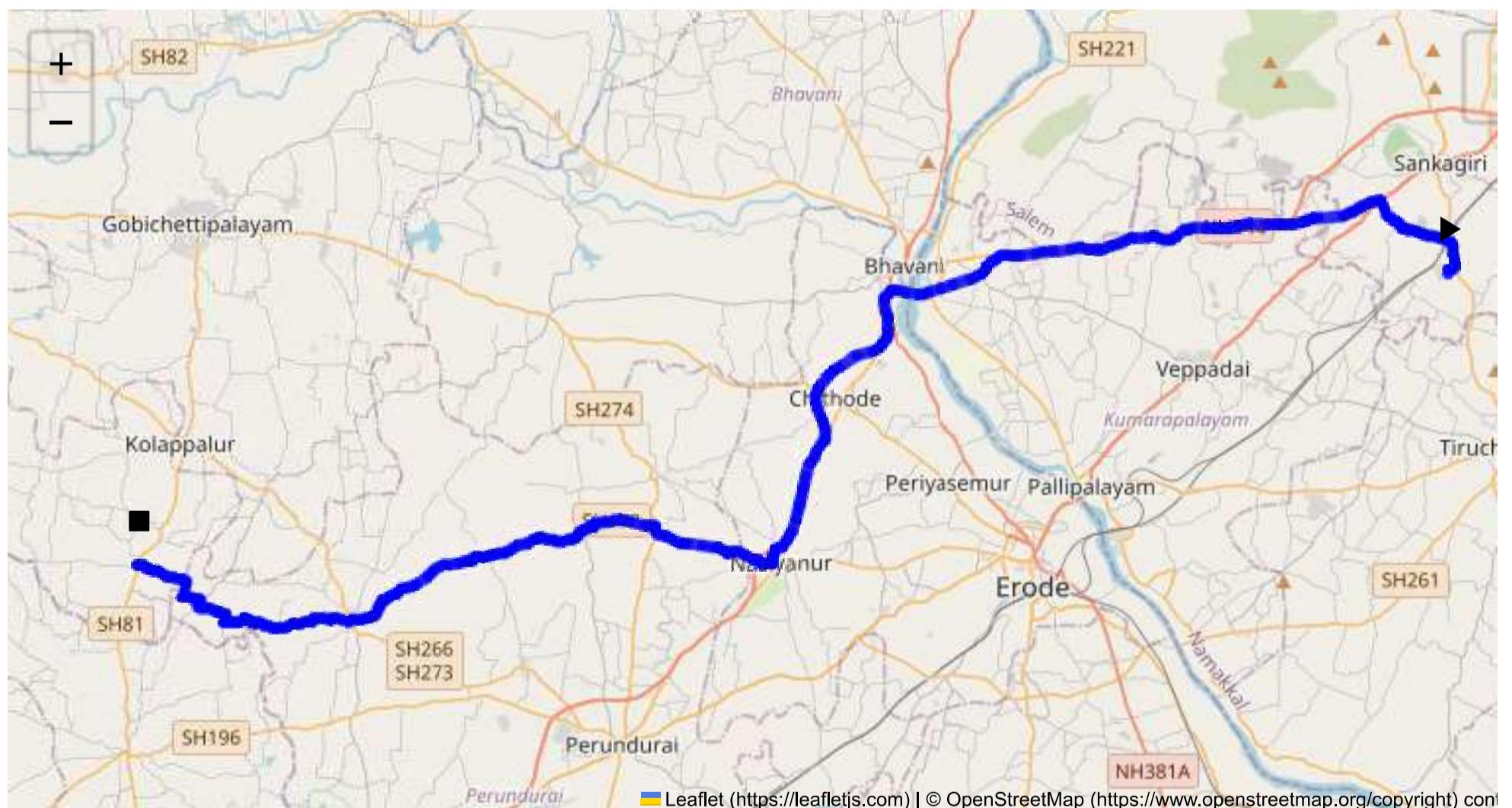
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 65.08 km
Estimated Duration: 1.4 hours
Adjusted Duration (Heavy Vehicle): 1.7 hours
Start: (11.4381, 77.8734)
End: (11.338071, 77.413704)



Welcome to the Journey Risk Management Study

Route Safety Analysis Report

1. Overview of the Route Map

The route from Sangagiri to Getticheviyur covers approximately 65 kilometers, primarily utilizing rural roads with segments passing through agricultural zones and small towns. Key landmarks along the route

include the towns of Edappadi and Konganapuram, which serve as important transit points.

2. Typical Weather Conditions and Potential Weather-Related Hazards

The region experiences a tropical climate, with the monsoon season, occurring between June and September, posing the most significant weather-related hazards due to heavy rainfall. These conditions can lead to waterlogging and poor visibility. During the summer months (April to June), temperatures can soar, causing road surface issues and potential overheating of vehicle engines.

3. Traffic Patterns and Congestion-Prone Areas

Traffic congestion is typically low to moderate on this route. However, peak hours coincide with local business operations and school timings, between 8:00-10:00 AM and 4:00-6:00 PM. Notable congestion areas include market zones within Edappadi and Konganapuram, where narrow roads and local traffic can slow progress significantly.

4. Road Quality and Infrastructure

The road quality varies along the route. While some stretches are well-maintained, poorly paved sections and narrow lanes are common, especially in rural segments and through towns. Temporary roadworks are frequent, requiring caution. Infrastructure such as signage and lighting is inconsistent, especially in remote areas.

5. Suggestions for Alternative Routes for Emergencies

In emergencies, an alternative route via the SH 20 and NH 44 can be used, although this will considerably increase travel distance and time. This alternative route offers better road conditions and access to emergency services.

6. Local Regulations Affecting Hazardous Material Transport

Transportation of hazardous materials requires adherence to Tamil Nadu's state regulations, including obtaining necessary permits and adhering to designated transport timings, typically restricting movement during peak traffic hours and at night.

7. Historical Incidents Involving Heavy Vehicles or Hazardous Materials

There have been isolated incidents of accidents involving heavy vehicles along this route, primarily due to poor road conditions and visibility issues during the monsoon. Reports indicate that most incidents occur closer to densely populated areas where infrastructure lags.

8. Environmental Considerations and Sensitive Areas

The route passes through agricultural land and near water bodies, necessitating careful handling of hazardous materials to prevent contamination. Drivers should adhere to no-idling policies in

environmentally sensitive areas to minimize emissions.

9. Analysis of Communication Coverage

Mobile network coverage is mostly reliable along the route, but potential dead zones exist in certain rural stretches, particularly near hilly or densely forested areas. Communication devices should be checked regularly, and offline navigation tools should be available.

10. Estimated Emergency Response Times for Different Route Segments

Emergency response times vary significantly:

- Within Sangagiri and Edappadi: 20-30 minutes
- Rural stretches: Can extend up to 60 minutes
- Near Getticheviyur: Approximately 30-40 minutes due to proximity to local emergency services

11. An Overall Summary of Risk Assessment

This route presents moderate risks primarily due to variable road quality, weather-related challenges during the monsoon, and occasional congestion. Proper planning, adherence to local regulations, and vigilant driving can mitigate these risks. Alternative routes should be considered for emergencies despite longer travel times. Operators should remain equipped with effective communication tools and be trained in environmental safeguard protocols.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.31893, 77.48854	15 KM/Hr
1	Turn	High	11.43968, 77.87345	15 KM/Hr
2	Turn	High	11.44029, 77.87544	15 KM/Hr
3	Turn	High	11.44898, 77.87410	15 KM/Hr
4	Turn	Medium	11.45357, 77.85789	30 KM/Hr
5	Turn	High	11.45352, 77.85698	15 KM/Hr
6	Turn	Medium	11.45847, 77.85140	30 KM/Hr
7	Turn	Medium	11.45898, 77.85135	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

	Risk Type	Risk Level	Coordinates	Speed Limit
11	Turn	High	11.34315, 77.63670	15 KM/Hr
12	Turn	High	11.33890, 77.63610	15 KM/Hr
13	Turn	Medium	11.33874, 77.63214	30 KM/Hr
14	Turn	Medium	11.34241, 77.61957	30 KM/Hr
15	Turn	Medium	11.34409, 77.61674	30 KM/Hr
16	Turn	Medium	11.34510, 77.60528	30 KM/Hr
17	Turn	High	11.34865, 77.59559	15 KM/Hr
18	Turn	High	11.35165, 77.59474	15 KM/Hr
19	Turn	Medium	11.35209, 77.57382	30 KM/Hr
20	Turn	Medium	11.35106, 77.57318	30 KM/Hr
21	Turn	Medium	11.35049, 77.57222	30 KM/Hr
22	Turn	Medium	11.34731, 77.56702	30 KM/Hr
23	Turn	Medium	11.34047, 77.53170	30 KM/Hr
24	Turn	Medium	11.33919, 77.53053	30 KM/Hr
25	Turn	Medium	11.33912, 77.53010	30 KM/Hr
26	Turn	Medium	11.33939, 77.52929	30 KM/Hr
27	Turn	Medium	11.32962, 77.50626	30 KM/Hr
28	Turn	Medium	11.32565, 77.49958	30 KM/Hr
29	Turn	Medium	11.31924, 77.48932	30 KM/Hr
30	Turn	Medium	11.31860, 77.48783	30 KM/Hr
31	Turn	Medium	11.31929, 77.48096	30 KM/Hr
32	Turn	High	11.31959, 77.47548	15 KM/Hr
33	Turn	High	11.31849, 77.47488	15 KM/Hr
34	Turn	Medium	11.31879, 77.47376	30 KM/Hr
35	Turn	Medium	11.31681, 77.45906	30 KM/Hr
36	Turn	Medium	11.31834, 77.45613	30 KM/Hr
37	Turn	High	11.31800, 77.45495	15 KM/Hr
38	Turn	High	11.31874, 77.45454	15 KM/Hr
39	Turn	High	11.31874, 77.45342	15 KM/Hr
40	Turn	High	11.31930, 77.45318	15 KM/Hr
41	Turn	Medium	11.31961, 77.45103	30 KM/Hr
42	Turn	High	11.31855, 77.44428	15 KM/Hr
43	Turn	High	11.32088, 77.44435	15 KM/Hr
44	Turn	Medium	11.32166, 77.44250	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
45	Turn	Medium	11.32218, 77.44206	30 KM/Hr
46	Turn	Medium	11.32246, 77.44085	30 KM/Hr
47	Turn	Medium	11.32273, 77.44052	30 KM/Hr
48	Turn	Medium	11.32319, 77.43808	30 KM/Hr
49	Turn	High	11.32306, 77.43572	15 KM/Hr
50	Turn	Medium	11.32377, 77.43528	30 KM/Hr
51	Turn	High	11.32612, 77.43562	15 KM/Hr
52	Turn	Medium	11.32717, 77.43145	30 KM/Hr
53	Turn	Medium	11.32690, 77.43000	30 KM/Hr
54	Turn	High	11.32706, 77.42982	15 KM/Hr
55	Turn	High	11.33251, 77.43095	15 KM/Hr
56	Turn	Medium	11.33677, 77.41695	30 KM/Hr
57	Turn	High	11.33754, 77.41659	15 KM/Hr
58	Blind Spot	Blind Spot	11.33829, 77.41357	10 KM/Hr

Emergency Locations

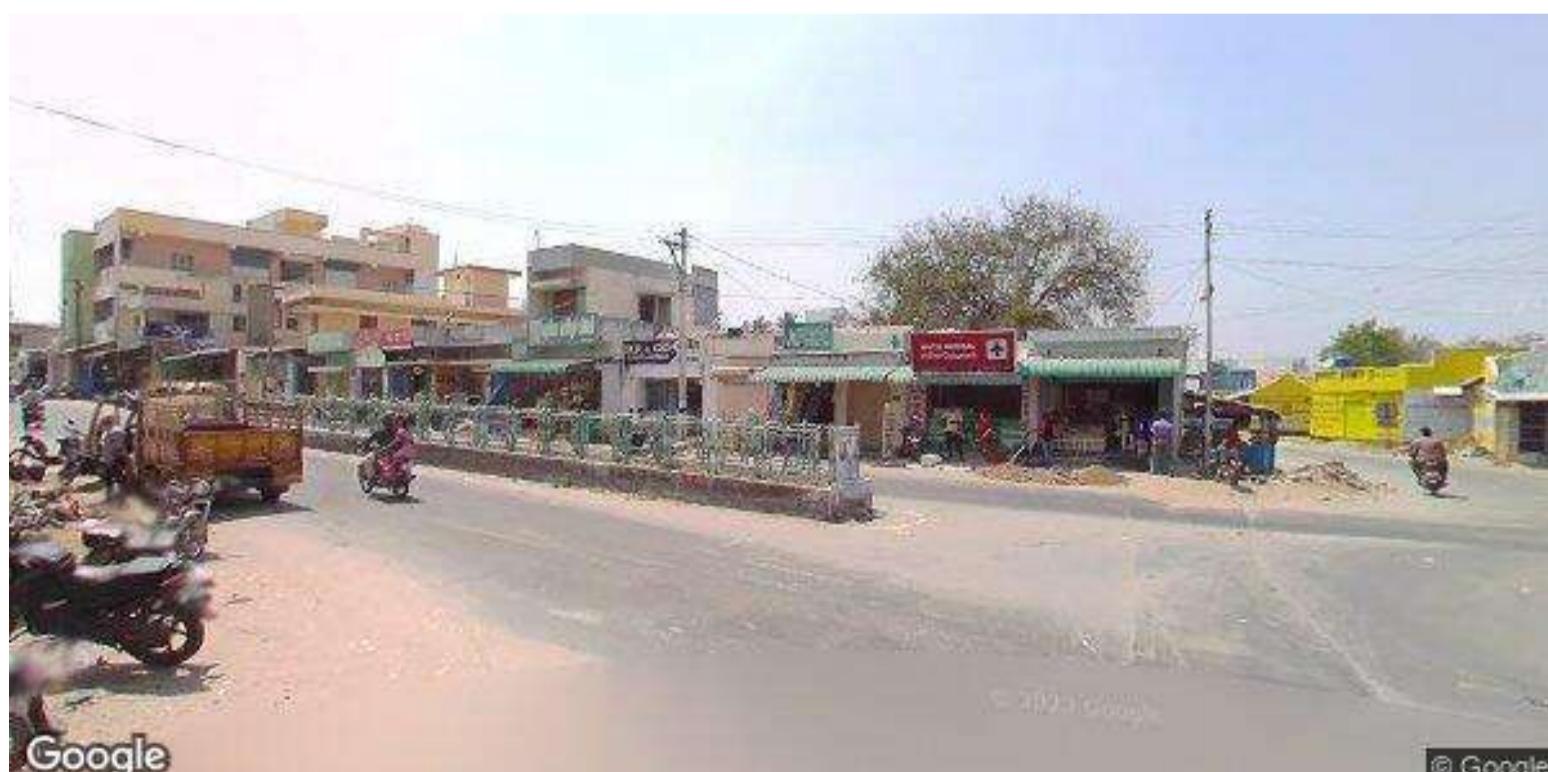
	type	name	coordinates	speed_limit	risk_level
3	hospital	Government Hospital	11.4525596, 77.7749426	30 km/h	Medium
4	hospital	Dhanvantri Multi Speciality Hospital	11.451362, 77.766602	30 km/h	Medium
5	hospital	Dhanvanthri Hospital	11.4496712, 77.7593772	30 km/h	Medium
6	hospital	J.K.K. Trust Hospital	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	Erode Cancer Centre	11.3732, 77.649152	30 km/h	Medium
14	hospital	Veena Hospital	11.3367614, 77.6366566	30 km/h	Medium
15	clinic	Kamalam Clinic	11.3189333, 77.4893492	30 km/h	Medium
16	hospital	Senthil Sengodan Hospital	11.3190519, 77.4893797	30 km/h	Medium
17	hospital	Kaliappan Hospital	11.318578, 77.486926	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

Route Photos of Risky Spots



Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr
Coordinates: 11.31893, 77.48854



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.44029, 77.87544



Risk Type: Turn
Risk Level: High
Speed Limit: 15 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: High
Speed Limit: 15 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: 11.45898, 77.85135



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: 11.34315, 77.63670



Google

© Google

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.33890, 77.63610



Google

© 2024 Google

© Google

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.33874, 77.63214



Google

© Google

Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Coordinates:** 11.34241, 77.61957

Google

© Google

Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Coordinates:** 11.34409, 77.61674

Google

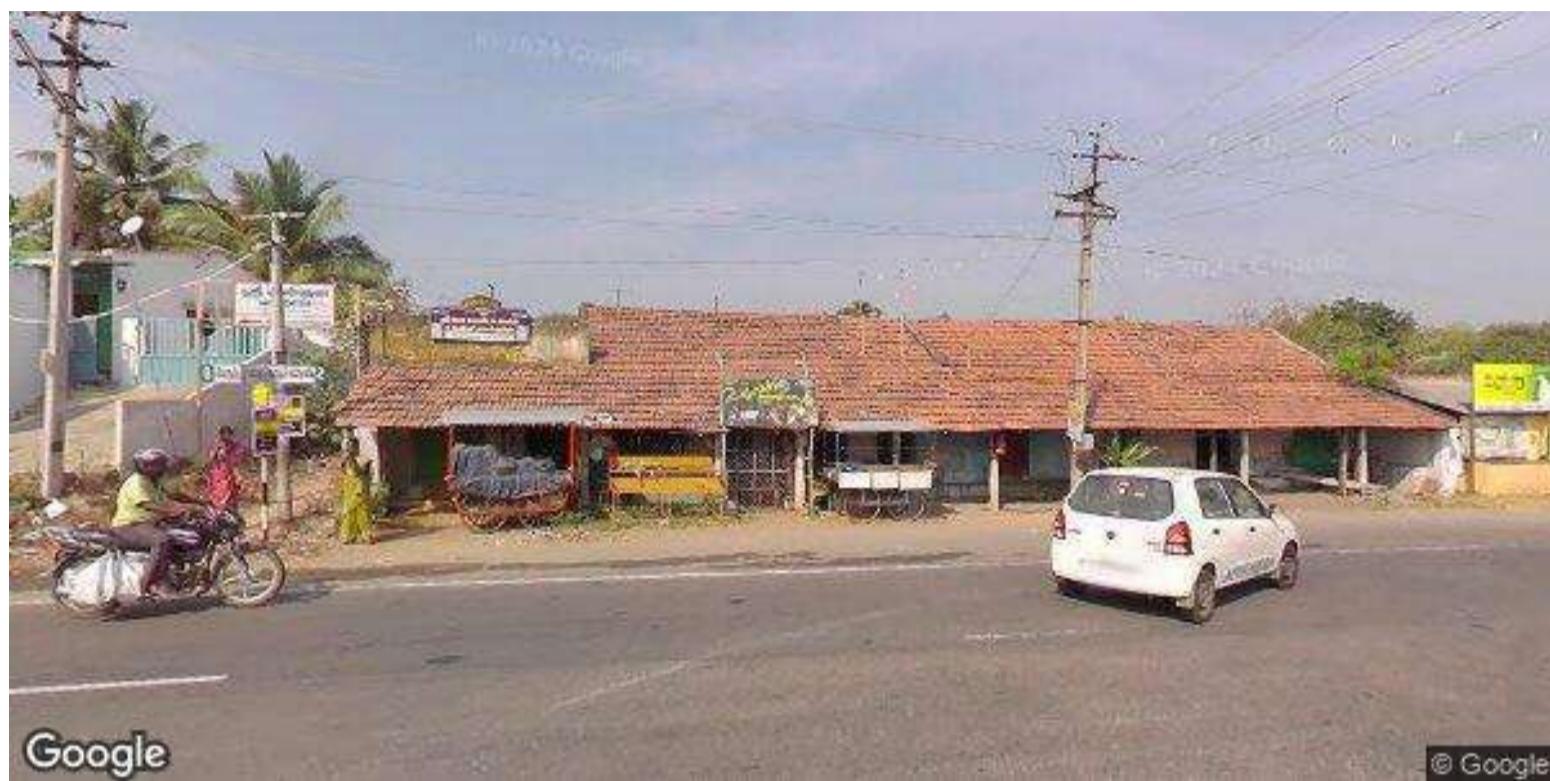
© Google

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.34510, 77.60528



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.34865, 77.59559



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.35165, 77.59474



Google

© Google

Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Coordinates:** 11.35209, 77.57382

Google

© Google

Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Coordinates:** 11.35106, 77.57318

Google

© Google

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.35049, 77.57222



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.34731, 77.56702



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.34047, 77.53170



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.33919, 77.53053



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.33912, 77.53010



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.33939, 77.52929



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.32962, 77.50626



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.32565, 77.49958



© Google

© Google

Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Coordinates:** 11.31924, 77.48932

© Google

© Google

Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Coordinates:** 11.31860, 77.48783

© Google

© Google

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.31929, 77.48096



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.31959, 77.47548



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.31849, 77.47488



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.31879, 77.47376



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.31681, 77.45906



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.31834, 77.45613



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.31800, 77.45495



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.31874, 77.45454



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.31874, 77.45342



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.31930, 77.45318



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.31961, 77.45103



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.31855, 77.44428



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.32088, 77.44435



Google

© Google

Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Coordinates:** 11.32166, 77.44250

Google

© Google

Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Coordinates:** 11.32218, 77.44206

Google

© Google

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.32246, 77.44085



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.32273, 77.44052



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.32319, 77.43808



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.32306, 77.43572



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.32377, 77.43528



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.32612, 77.43562



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.32717, 77.43145



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.32690, 77.43000



© Google

© Google

Risk Type: Turn**Risk Level: High****Speed Limit: 15 KM/Hr****Coordinates: 11.32706, 77.42982**

© Google

© Google

Risk Type: Turn**Risk Level: High****Speed Limit: 15 KM/Hr****Coordinates: 11.33251, 77.43095**

© Google

© Google

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.33677, 77.41695



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.33754, 77.41659



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.33829, 77.41357

