



JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal To SIVA SAKTHI AGENCY

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

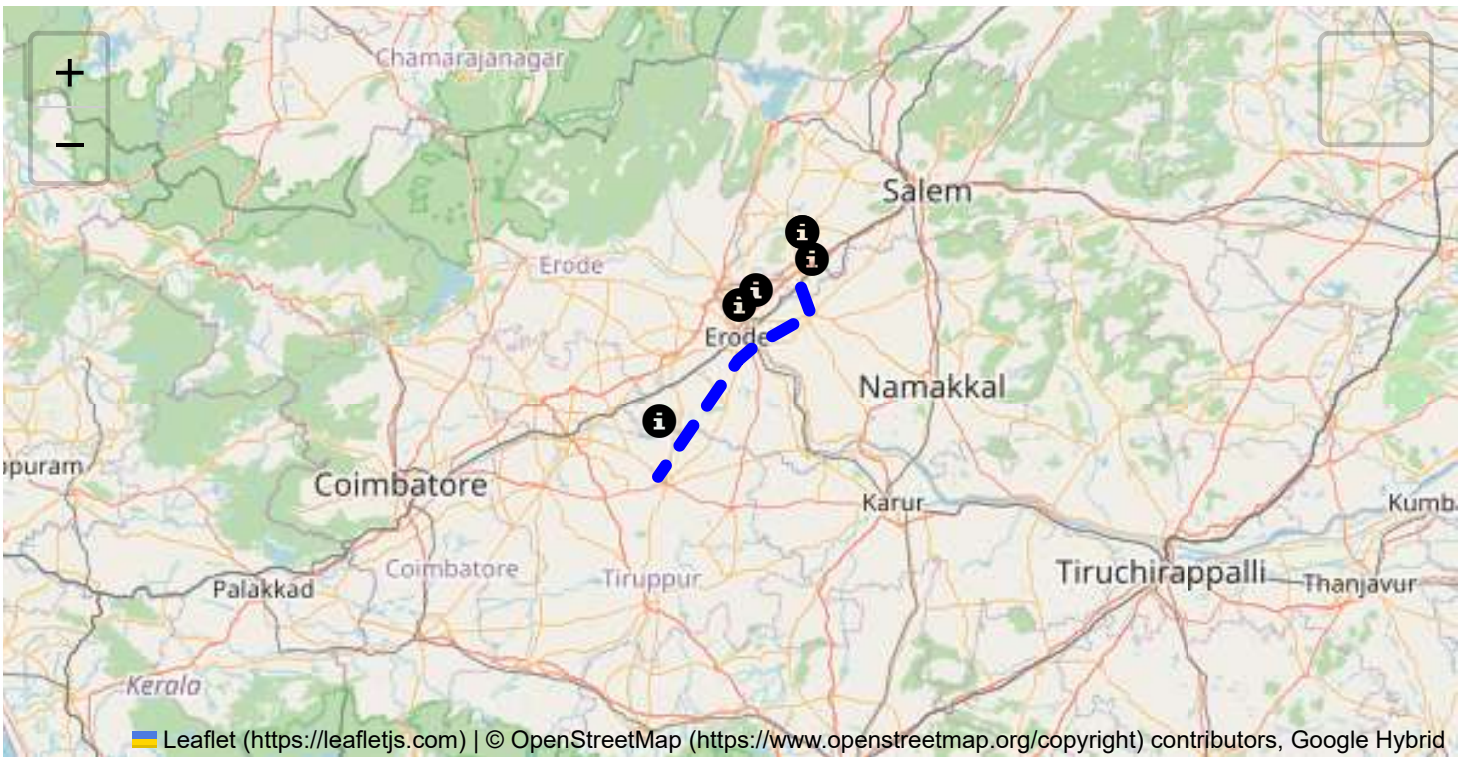
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

Journey Risk Mitigation

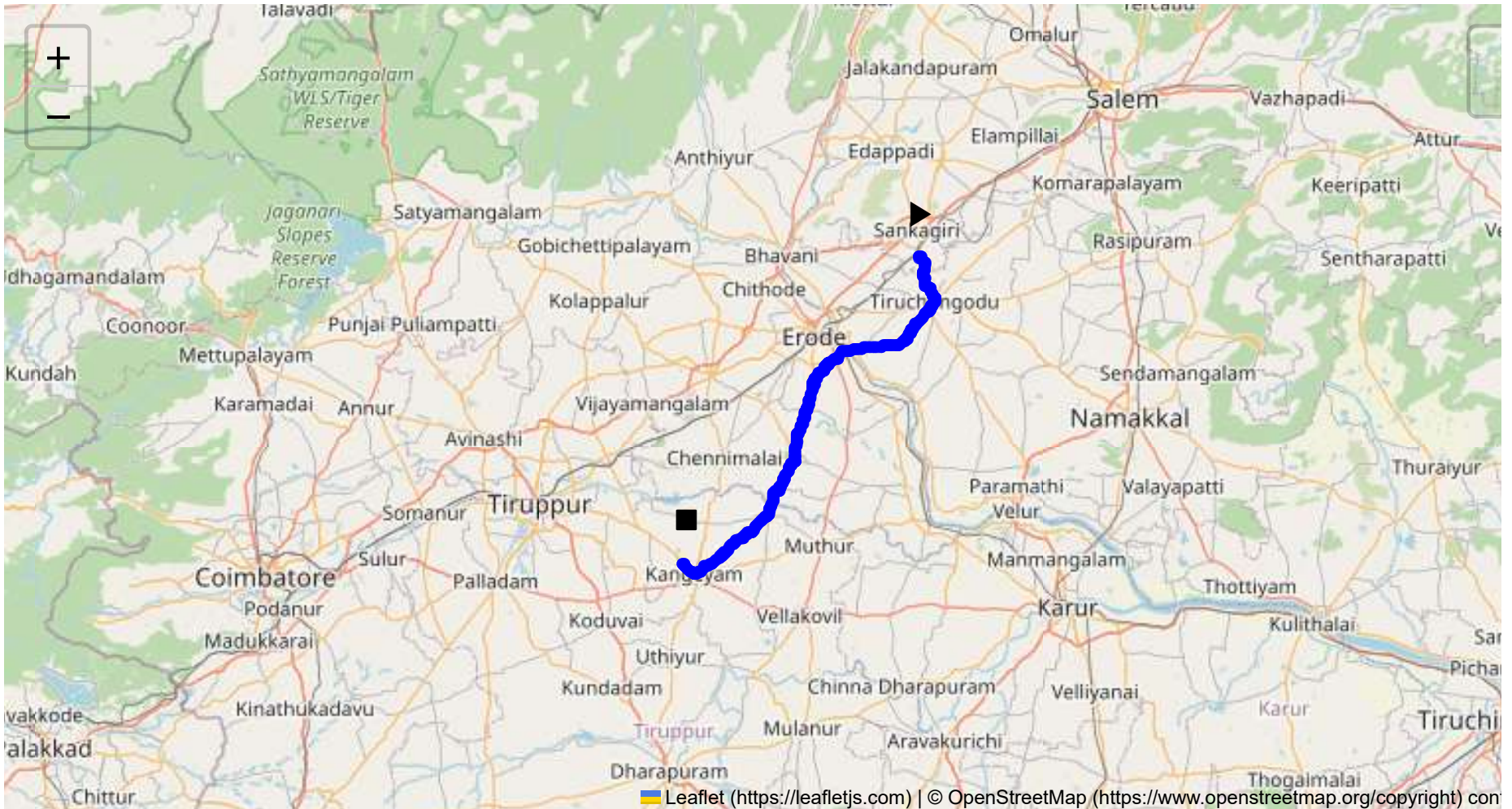
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 72.09 km
Estimated Duration: 1.8 hours
Adjusted Duration (Heavy Vehicle): 2.2 hours
Start: (11.4381, 77.8734)
End: (11.018604, 77.545683)



Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route begins in Sangagiri, Tamil Nadu, and heads southeast via the Tiruchengode - Paramathi - Velur Road, passing through Thondikaradu, Kasipalayam E, and Kaspapettai, before reaching Andimadakkadu. The total distance is approximately 72 kilometers, primarily on regional roads with some potentially narrow sections and local village roads.

2. Typical Weather Conditions and Potential Weather-related Hazards

Tamil Nadu generally experiences a tropical climate with distinct wet and dry seasons. From June to September, the southwest monsoon brings heavy rainfall, which can cause waterlogging and slippery road conditions, posing hazards for trucks. From October to December, the northeast monsoon may also contribute to similar issues.

3. Traffic Patterns

- **Peak Hours:** Traffic tends to peak between 8 AM - 10 AM and 5 PM - 7 PM, primarily caused by local commute traffic.
- **Congestion-Prone Areas:** Traffic congestion is common near Tiruchengode due to market areas and schools, and around major intersections in urban parts such as Kasipalayam E.

4. Assessment of Road Quality and Infrastructure

Road quality varies:

- **Tiruchengode - Paramathi - Velur Road:** Generally well-maintained but can have potholes after monsoon seasons.
- **Local roads in Kaspapettai and Kasipalayam E:** Narrow and may not be ideal for heavy vehicles, requiring cautious driving.

5. Suggestions for Alternative Routes

In emergencies, consider detouring to major highways like SH-15 or SH-79, which are generally better maintained and quicker for emergency response access.

6. Summary of Local Regulations Affecting Hazardous Material Transport

Tamil Nadu requires permits for transporting hazardous materials, with specific routes often mandated to minimize risk to populated areas. Compliance with local timings and vehicle safety checks is crucial.

7. Overview of Historical Incidents Involving Heavy Vehicles or Hazardous Materials

There have been occasional reports of accidents involving heavy vehicles, often due to road conditions and poor visibility during monsoon seasons. Specific incidents with hazardous materials are rare but are typically associated with spillage and environmental contamination risks.

8. Environmental Considerations and Sensitive Areas

- **Sensitive Areas:** Agricultural lands along Tiruchengode - Paramathi - Velur Road and near Kaspapettai.
- Ensure measures are taken to not pollute water sources or farmland in the event of a spill.

9. Analysis of Communication Coverage

Most of the route has good mobile network coverage, however, some rural stretches might occasionally encounter weak signals. It's advised to have communication plans in place for these sections.

10. Estimated Emergency Response Times

- **Urban Areas (e.g., Tiruchengode, Kasipalayam E):** Approximately 15-30 minutes due to nearby facilities.
- **Rural Sections:** Response times may extend to 45-60 minutes due to distance and road accessibility.

12. Overall Summary of Risk Assessment

Overall, the route presents typical risks associated with rural and semi-urban transportation routes, including weather impact, variable road conditions, and traffic congestion in populated segments.

Preparation and adherence to regulatory requirements, coupled with regular communication and emergency planning, will mitigate these risks. Consideration of alternative routes and collaboration with local agencies can further enhance safety.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.38395, 77.89480	15 KM/Hr
1	Roundabout	High	11.00535, 77.56114	15 KM/Hr
2	U-Turn	High	11.0185643, 77.5453777	10 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	11.39671, 77.88878	30 KM/Hr
6	Turn	Medium	11.37862, 77.89488	30 KM/Hr
7	Turn	Medium	11.37831, 77.89450	30 KM/Hr
8	Turn	Medium	11.36616, 77.88885	30 KM/Hr
9	Turn	Medium	11.36602, 77.88875	30 KM/Hr
10	Turn	Medium	11.33882, 77.86218	30 KM/Hr
11	Turn	Medium	11.31747, 77.84240	30 KM/Hr
12	Turn	Medium	11.30951, 77.77608	30 KM/Hr
13	Turn	Medium	11.31118, 77.77139	30 KM/Hr
14	Turn	High	11.29473, 77.74685	15 KM/Hr
15	Turn	High	11.29133, 77.74660	15 KM/Hr
16	Turn	Medium	11.28844, 77.74319	30 KM/Hr
17	Turn	Medium	11.28558, 77.74271	30 KM/Hr
18	Turn	Medium	11.27326, 77.72991	30 KM/Hr
19	Blind Spot	Blind Spot	11.27330, 77.72711	10 KM/Hr
20	Turn	Medium	11.23054, 77.71796	30 KM/Hr
21	Turn	Medium	11.22387, 77.71385	30 KM/Hr
22	Turn	Medium	11.16078, 77.70122	30 KM/Hr
23	Turn	Medium	11.15953, 77.70067	30 KM/Hr
24	Turn	High	11.15944, 77.70068	15 KM/Hr
25	Turn	Medium	11.11918, 77.67766	30 KM/Hr
26	Turn	Medium	11.11740, 77.67198	30 KM/Hr
27	Turn	Medium	11.10481, 77.67060	30 KM/Hr
28	Turn	Medium	11.09509, 77.66612	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
29	Turn	Medium	11.08730, 77.66436	30 KM/Hr
30	Turn	Medium	11.08282, 77.65837	30 KM/Hr
31	Turn	High	11.06189, 77.63943	15 KM/Hr
32	Blind Spot	Blind Spot	11.01864, 77.54544	10 KM/Hr

Emergency Locations

	type	name	coordinates	speed_limit	risk_level
0	hospital	Tiruchengode, Goverment Hospital	11.3903328, 77.8920627	30 km/h	Medium
1	hospital	SPM Medical Centre,Tiruchengode	11.3881331, 77.8931963	30 km/h	Medium
5	clinic	Kongu Nursing Home	11.3783065, 77.8961134	30 km/h	Medium
6	hospital	T.C.A Hospital Tiruchengode	11.3791885, 77.8965774	30 km/h	Medium
7	hospital	Soorya Multispecialty Hospital	11.3786429, 77.8931912	30 km/h	Medium
8	hospital	Tiruchengode Government Hospital	11.37645, 77.89426	30 km/h	Medium
9	hospital	Krishna Hospital, Namakkal	11.3754811, 77.8931817	30 km/h	Medium
10	hospital	Tirukumaran Hospitals	11.3782118, 77.8914933	30 km/h	Medium
13	hospital	Government Hospital	11.2343326, 77.719226	30 km/h	Medium
15	hospital	ARC Hospital	11.0056814, 77.562434	30 km/h	Medium
16	clinic	Priya Nursing Home	11.00622, 77.563094	30 km/h	Medium
17	clinic	Senthil Dental Clinic	11.0054794, 77.5638863	30 km/h	Medium
18	hospital	Raja Children's Hospital	11.0060531, 77.5639063	30 km/h	Medium
22	fire_station	Kangeyam Fire Station	11.0080494, 77.5613364	30 km/h	Medium
23	pharmacy	Bharani medicals	11.0073077, 77.5592308	30 km/h	Medium
24	hospital	Government Hospital	11.005636, 77.5601252	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
26	hospital	J K Hospital	11.0042298, 77.5603345	30 km/h	Medium
27	hospital	Arvind hospital - Kangayam	11.0092458, 77.5569869	30 km/h	Medium

Crowded Spots

	type	name	coordinates	speed_limit	risk_level
2	school	அரசு ஆண்கள் மேல்நிலைப் பள்ளி	11.3850439, 77.8948279	30 km/h	Medium
3	school	அரசு பெண்கள் மேல்நிலைப் பள்ளி	11.3844247, 77.8949053	30 km/h	Medium
4	marketplace	திருச்செங்கோடு தினசரி காய்கறி சந்தை	11.3833608, 77.8970145	30 km/h	Medium
11	school	KSR Educational institution	11.3772013, 77.8908807	30 km/h	Medium
12	school	MDV School	11.3719843, 77.8915244	30 km/h	Medium
14	college	Government Arts and Science College, Kangayam	11.0626738, 77.636227	30 km/h	Medium
19	school	Panchayat Union Middle School, Kangayam	11.006326, 77.5634525	30 km/h	Medium
20	marketplace	Daily market	11.0071223, 77.560606	30 km/h	Medium
21	marketplace	Weekly Vegetable Market	11.0075738, 77.5605157	30 km/h	Medium
25	marketplace	Daily market	11.0069287, 77.5604531	30 km/h	Medium
28	school	Sri Rajarajeshwari Primary School	11.0079341, 77.5567815	30 km/h	Medium
29	school	Mother Deborah Nursery & Primary School	11.0081324, 77.554243	30 km/h	Medium
30	school	Jaycees Nursery and Primary School	11.0137659, 77.5486157	30 km/h	Medium

Route Photos of Risky Spots



Risk Type: Roundabout
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.38395, 77.89480



Risk Type: Roundabout
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.00535, 77.56114



Risk Type: U-Turn
Risk Level: High

Speed Limit: 10 KM/Hr

Coordinates: 11.0185643, 77.5453777



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: 11.39671, 77.88878



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.37862, 77.89488



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.37831, 77.89450



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.36616, 77.88885



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.36602, 77.88875



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.33882, 77.86218



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.31747, 77.84240



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.30951, 77.77608



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.31118, 77.77139



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.29473, 77.74685



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.29133, 77.74660



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.28844, 77.74319



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.28558, 77.74271



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.27326, 77.72991



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.27330, 77.72711



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.23054, 77.71796



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.22387, 77.71385



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.16078, 77.70122



Risk Type: Turn
Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.15953, 77.70067

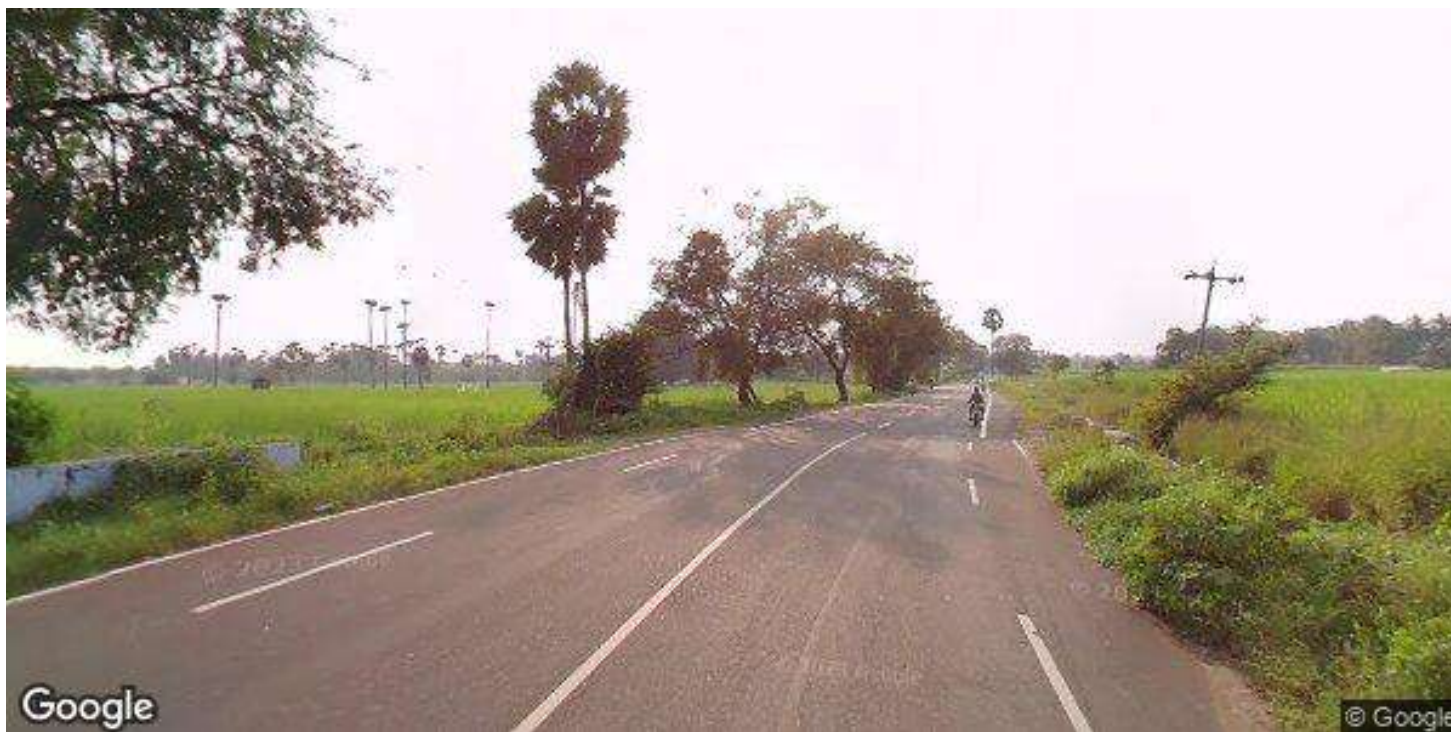


Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.15944, 77.70068



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.11918, 77.67766



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.11740, 77.67198



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.10481, 77.67060



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.09509, 77.66612



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.08730, 77.66436



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.08282, 77.65837



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.06189, 77.63943



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.01864, 77.54544
