



# IndianOil

## **JOURNEY RISK MANAGEMENT (JRM) STUDY**

### **Salem Terminal to ADHOC SRI GANESH LATCHUMI TRADERS**

#### **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.

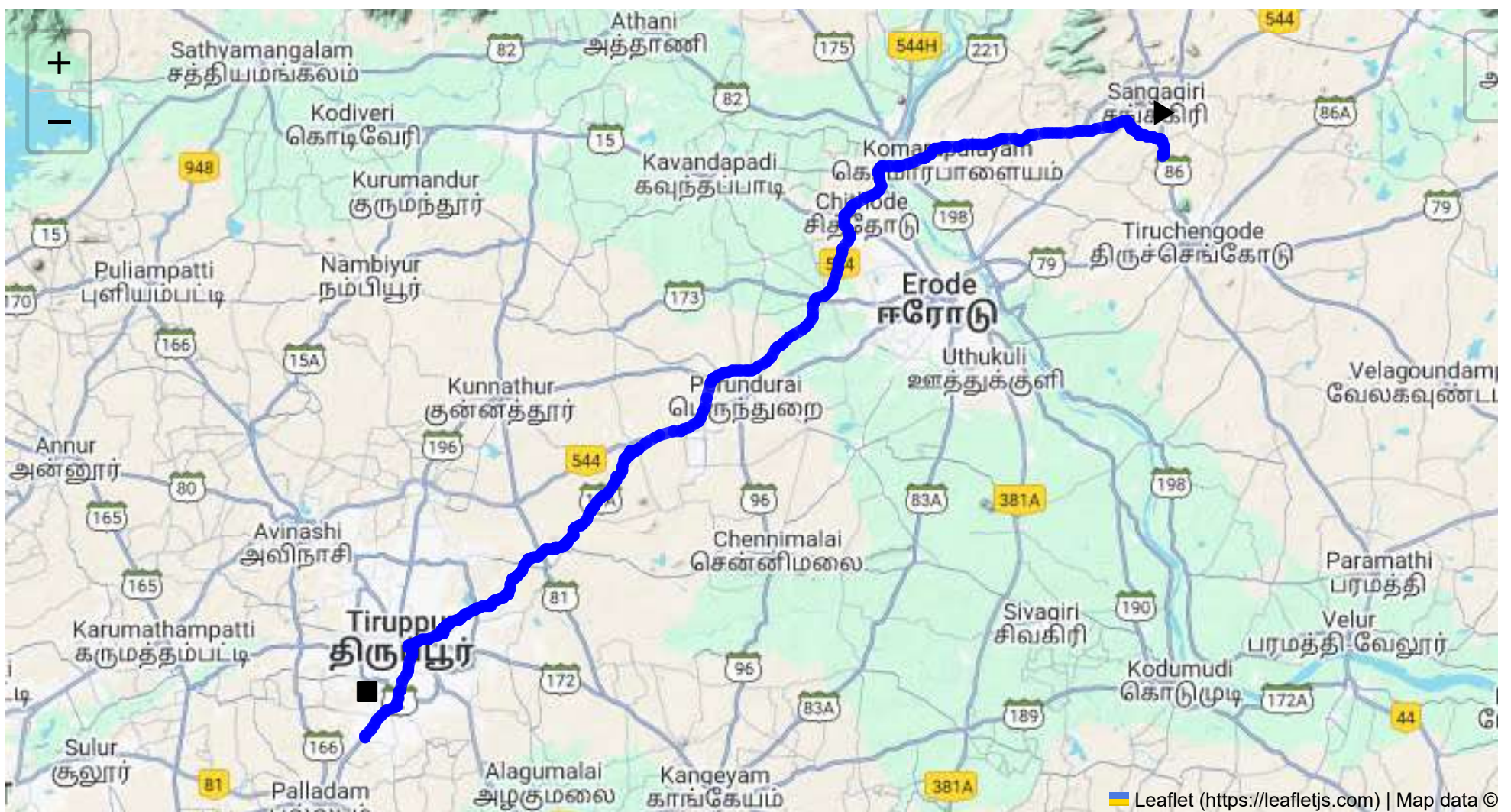
## **Compliance with Government Directives**

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: 90.72 km**  
**Estimated Duration: 2.0 hours**  
**Adjusted Duration (Heavy Vehicle): 2.6 hours**  
**Start: (11.4381, 77.8734)**  
**End: (11.040528, 77.316051)**



## Welcome to the Journey Risk Management Study

### Route Overview

The route spans approximately 90.72 kilometers and starts at Sangagiri in Tamil Nadu, traveling to MGR Nagar, Arulpuram in Tiruppur via Uthukuli Road and Karumarampalayam Road. The trip typically takes around 2.05 hours for heavy vehicles transporting hazardous materials.



## Weather Conditions

- **Typical Weather:** The region experiences a tropical climate with high humidity. The hottest months are April to June, and the monsoon season is from June to September, which can lead to slippery roads and reduced visibility.
- **Weather Hazards:** Heavy rains during the monsoon can cause flooding or waterlogging, especially on poorly maintained roads, which could affect travel time and vehicle safety.

## Traffic Patterns

- **Peak Hours:** Traffic congestion is common during school and business hours, typically between 8-10 AM and 5-8 PM.
- **Congestion-Prone Areas:** The urban center of Tiruppur, particularly around Uthukuli Road and Karumarampalayam Road, can experience heavy traffic congestion during peak hours.

## Road Quality and Infrastructure

- **Road Conditions:** Generally, the roads are moderately maintained, with some sections, especially rural stretches, having potholes or uneven surfaces. Urban areas may have better infrastructure but can be crowded.
- **Infrastructure:** Adequate signage is present, but some rural areas may lack street lighting, making night travel potentially hazardous.

## Alternative Routes for Emergencies

- **Possibility for Detours:** In case of an emergency or roadblock, consider using NH 544 as an alternate route to bypass heavily congested areas or those affected by weather conditions. However, road quality should be verified for heavy vehicles.

## Local Regulations

- **Hazardous Material Transport:** Permit requirements and restrictions on transporting hazardous materials through populated areas may be in place, and it's advised to plan routes considering any zonal regulations.

## Historical Incidents

- **Accidents:** Past incidents typically involved rollover accidents due to sharp turns and heavy traffic, especially in urban areas. Vigilance is required in these stretches.

## Environmental Considerations

- **Sensitive Areas:** The route passes through regions that may have sensitive ecosystems; spilling hazardous materials could severely impact these communities and should be prevented with adequate safety measures.

# Communication Coverage

- Signal Strength:** Mobile network coverage is generally strong in urban centers but may weaken in rural stretches, potentially creating dead zones.

# Emergency Response Times

- Urban Segments:** Emergency response times in Tiruppur, being a major city, are reasonably quick (approx. 15-30 minutes).
- Rural Areas:** In more remote areas, response times could be longer, possibly exceeding 30 minutes to an hour.

# Overall Summary of Risk Assessment

This route presents several potential hazards for transporting hazardous materials, including weather-related issues, traffic congestion, and roadway conditions. The urban sections of Tiruppur are particularly congested during peak hours, increasing the risk of accidents. Ensuring proper permits, driver training, and safety measures is crucial for minimizing risks. Continuous monitoring of weather forecasts and traffic conditions, along with planning for alternative routes, can mitigate many of these risks. Additionally, having a clear communication strategy in place for potential dead zones will help respond promptly to any incidents.

## Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	U-Turn	High	11.0398286, 77.3157457	10 KM/Hr
1	Turn	High	11.43968, 77.87345	15 KM/Hr
2	Turn	High	11.44024, 77.87528	15 KM/Hr
3	Turn	High	11.44898, 77.87410	15 KM/Hr
4	Turn	High	11.45352, 77.85698	15 KM/Hr
5	Turn	Medium	11.45847, 77.85140	30 KM/Hr
6	Turn	Medium	11.45898, 77.85135	30 KM/Hr
7	Turn	High	11.46303, 77.84945	15 KM/Hr
8	Turn	Medium	11.44965, 77.77565	30 KM/Hr
9	Turn	Medium	11.44953, 77.77344	30 KM/Hr
10	Turn	Medium	11.43165, 77.67734	30 KM/Hr
11	Turn	Medium	11.23724, 77.50686	30 KM/Hr
12	Turn	High	11.23704, 77.50676	15 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
13	Blind Spot	Blind Spot	11.23686, 77.50216	10 KM/Hr
14	Turn	Medium	11.23649, 77.50219	30 KM/Hr
15	Turn	High	11.23396, 77.50105	15 KM/Hr
16	Turn	Medium	11.23287, 77.49934	30 KM/Hr
17	Turn	Medium	11.18407, 77.46330	30 KM/Hr
18	Turn	Medium	11.18273, 77.46224	30 KM/Hr
19	Turn	Medium	11.17851, 77.46169	30 KM/Hr
20	Turn	Medium	11.17521, 77.45978	30 KM/Hr
21	Turn	Medium	11.17368, 77.45730	30 KM/Hr
22	Turn	Medium	11.17111, 77.45547	30 KM/Hr
23	Turn	High	11.16959, 77.44396	15 KM/Hr
24	Turn	Medium	11.16381, 77.43700	30 KM/Hr
25	Turn	Medium	11.16280, 77.43139	30 KM/Hr
26	Turn	Medium	11.15217, 77.42418	30 KM/Hr
27	Turn	Medium	11.15134, 77.42300	30 KM/Hr
28	Turn	Medium	11.15023, 77.42247	30 KM/Hr
29	Turn	Medium	11.14925, 77.42065	30 KM/Hr
30	Turn	Medium	11.13848, 77.41611	30 KM/Hr
31	Turn	Medium	11.13578, 77.41299	30 KM/Hr
32	Turn	Medium	11.12989, 77.40302	30 KM/Hr
33	Turn	Medium	11.12232, 77.38291	30 KM/Hr
34	Turn	Medium	11.12104, 77.38220	30 KM/Hr
35	Turn	High	11.11673, 77.37277	15 KM/Hr
36	Turn	High	11.11572, 77.37284	15 KM/Hr
37	Blind Spot	Blind Spot	11.11323, 77.36958	10 KM/Hr
38	Blind Spot	Blind Spot	11.11392, 77.37070	10 KM/Hr
39	Turn	High	11.11101, 77.37139	15 KM/Hr
40	Turn	High	11.10284, 77.34655	15 KM/Hr
41	Turn	Medium	11.10201, 77.34641	30 KM/Hr
42	Turn	High	11.10124, 77.34678	15 KM/Hr
43	Turn	High	11.10159, 77.34796	15 KM/Hr
44	Blind Spot	Blind Spot	11.03987, 77.31570	10 KM/Hr

## Emergency Locations

	type	name	coordinates	speed_limit	risk_level
3	hospital	Dhanvanthri Hospital	11.4496712, 77.7593772	30 km/h	Medium
4	hospital	J.K.K. Trust Hospital	11.4445841, 77.7307962	30 km/h	Medium
6	hospital	Shri Sathyanarayana Hospital	11.4291297, 77.6913408	30 km/h	Medium
7	hospital	Thanish Siddha Hospital	11.430003, 77.674964	30 km/h	Medium
8	clinic	Harshitha Clinic	11.4313207, 77.674718	30 km/h	Medium
9	hospital	Sri Kaalangi Siddhar Mooligai Vaithiya Nilayam	11.432369, 77.674894	30 km/h	Medium
10	clinic	G.K Clinic	11.4297244, 77.6749715	30 km/h	Medium
11	clinic	Erode Cancer Centre	11.3732, 77.649152	30 km/h	Medium
13	hospital	Irt Hospital	11.2803603, 77.5644118	30 km/h	Medium
15	hospital	Gen Siddha Hospital	11.2375033, 77.5059797	30 km/h	Medium
16	hospital	Vijayamangalm Government Hospital	11.2382827, 77.501687	30 km/h	Medium
18	hospital	Aravind Eye Care Hospital	11.1729469, 77.4574467	30 km/h	Medium
19	clinic	Sri Maha Annai Clinic	11.1707162, 77.4536498	30 km/h	Medium
20	hospital	Ram Doctor Hospital	11.1709391, 77.4532808	30 km/h	Medium
21	clinic	Kumaran Clinic	11.1697553, 77.451543	30 km/h	Medium
22	hospital	Sri Aravindhar Hospital	11.1697756, 77.4448276	30 km/h	Medium
23	clinic	Dr. Raja Clinic	11.1278464, 77.3927768	30 km/h	Medium
24	clinic	V.S.A Saran Clinic	11.1047087, 77.356983	30 km/h	Medium
25	hospital	AG Hospital, Tiruppur	11.1090267, 77.3528045	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
26	hospital	Nallini Hospital	11.1091685, 77.353517	30 km/h	Medium
27	clinic	Ramasamy Skin Clinic	11.104714, 77.348272	30 km/h	Medium
28	hospital	Lotus Eye Hospital	11.1031666, 77.3474352	30 km/h	Medium
29	hospital	Sankara Hospital , Tiruppur	11.0996262, 77.3440224	30 km/h	Medium
31	clinic	Eswaran Poly Clinic	11.097679, 77.3470729	30 km/h	Medium
32	hospital	K N Children Hospital	11.0964068, 77.3495315	30 km/h	Medium
33	hospital	Vimal Hospital - Tiruppur	11.09742, 77.349707	30 km/h	Medium
34	hospital	NSK Hospital, Tiruppur	11.0961562, 77.3494699	30 km/h	Medium
35	hospital	RJR Herbal Hospitals	11.096753, 77.346988	30 km/h	Medium
36	clinic	Miracle Healing Zone	11.0972324, 77.3470134	30 km/h	Medium
37	hospital	AMC Super Speciality Hospital	11.0963178, 77.3490793	30 km/h	Medium
38	hospital	Ideal Homeo care	11.0966359, 77.3498083	30 km/h	Medium
39	clinic	Sree Shanthoshi gastro clinic	11.0954216, 77.3511899	30 km/h	Medium
40	hospital	Ars Hospitals - Tirupur	11.0880071, 77.3469948	30 km/h	Medium
41	hospital	PN Hospital - Tiruppur	11.09041, 77.348581	30 km/h	Medium
42	hospital	Divya Hospital, Tiruppur	11.0874791, 77.3471518	30 km/h	Medium
43	hospital	Life Guard, Tiruppur	11.07895, 77.34231	30 km/h	Medium
44	police	Maavatta Kaaval Aluvalagam - Tiruppur	11.0811826, 77.3409296	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
5	school	SSM Matriculation Higher Secondary School	11.4321653, 77.6880046	30 km/h	Medium
12	college	Government polytechnic college	11.2907053, 77.5698726	30 km/h	Medium
14	school	Bharathi Matriculation School	11.2494613, 77.5307028	30 km/h	Medium
17	college	Sasurie Engineering College	11.2171482, 77.4898552	30 km/h	Medium
30	school	KSC Boys High School	11.0995669, 77.3505782	30 km/h	Medium

## Route Photos of Risky Spots



**Risk Type:** U-Turn

**Risk Level:** High

**Speed Limit:** 10 KM/Hr

**Coordinates:** 11.0398286, 77.3157457





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.44024, 77.87528



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.44898, 77.87410





**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:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.46303, 77.84945



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.44965, 77.77565





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.44953, 77.77344



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.43165, 77.67734



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.23724, 77.50686





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.23704, 77.50676



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Coordinates:** 11.23686, 77.50216





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.23649, 77.50219



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.23396, 77.50105



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.23287, 77.49934





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.18407, 77.46330



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.18273, 77.46224





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.17851, 77.46169



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.17521, 77.45978



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.17368, 77.45730





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.17111, 77.45547



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.16959, 77.44396





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.16381, 77.43700



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.16280, 77.43139



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.15217, 77.42418





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.15134, 77.42300



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.15023, 77.42247





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.14925, 77.42065



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.13848, 77.41611



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.13578, 77.41299





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.12989, 77.40302



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.12232, 77.38291





**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.12104, 77.38220**



**Risk Type: Turn**

**Risk Level: High**

**Speed Limit: 15 KM/Hr**

**Coordinates: 11.11673, 77.37277**



**Risk Type: Turn**

**Risk Level: High**

**Speed Limit: 15 KM/Hr**

**Coordinates: 11.11572, 77.37284**





**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 11.11323, 77.36958



**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 11.11392, 77.37070





**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.11101, 77.37139

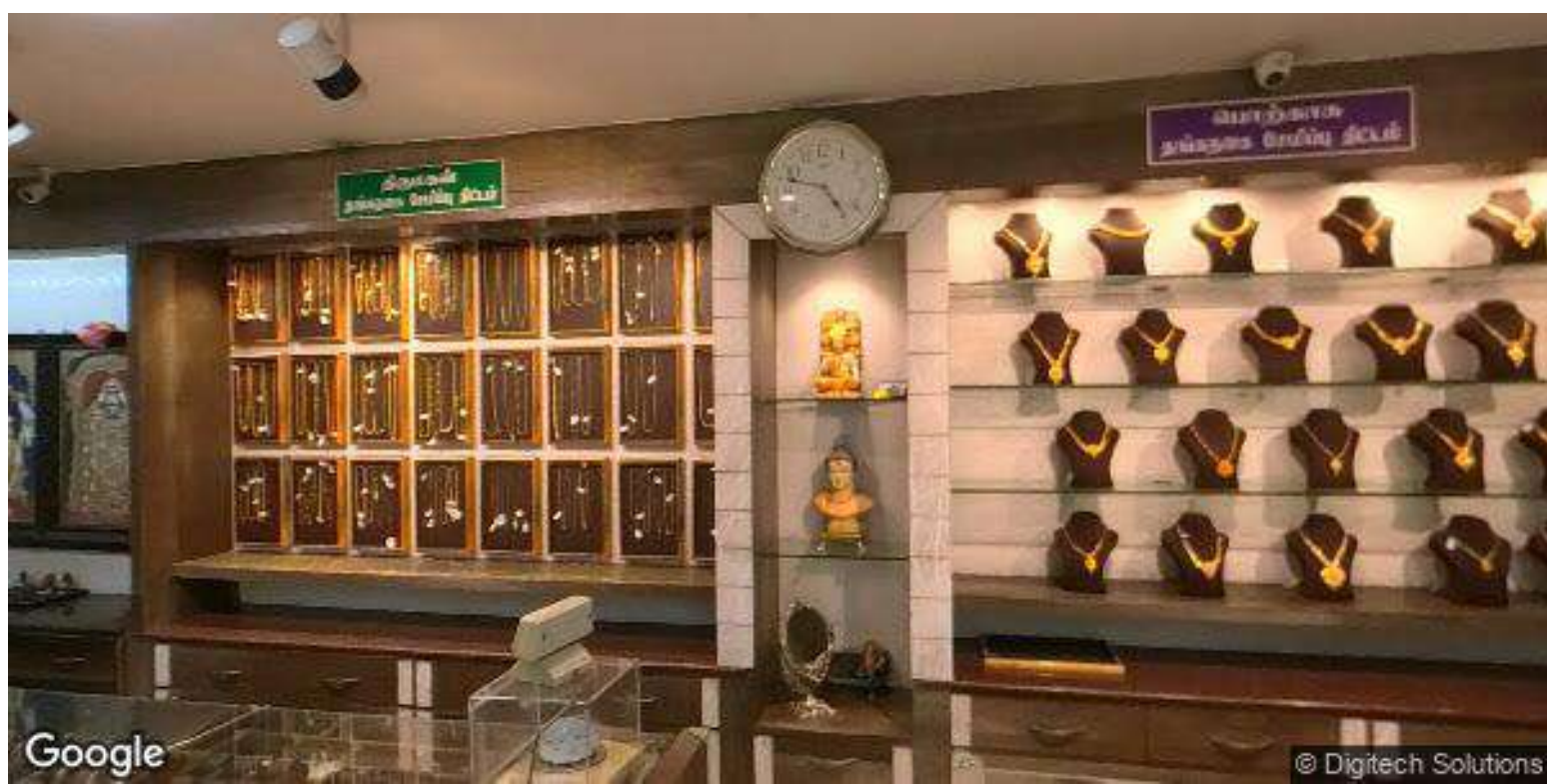


**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.10284, 77.34655



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.10201, 77.34641





Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.10124, 77.34678



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.10159, 77.34796





**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 11.03987, 77.31570

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