



# IndianOil

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

### **Salem Terminal to BAGIYALAKSHMI 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.

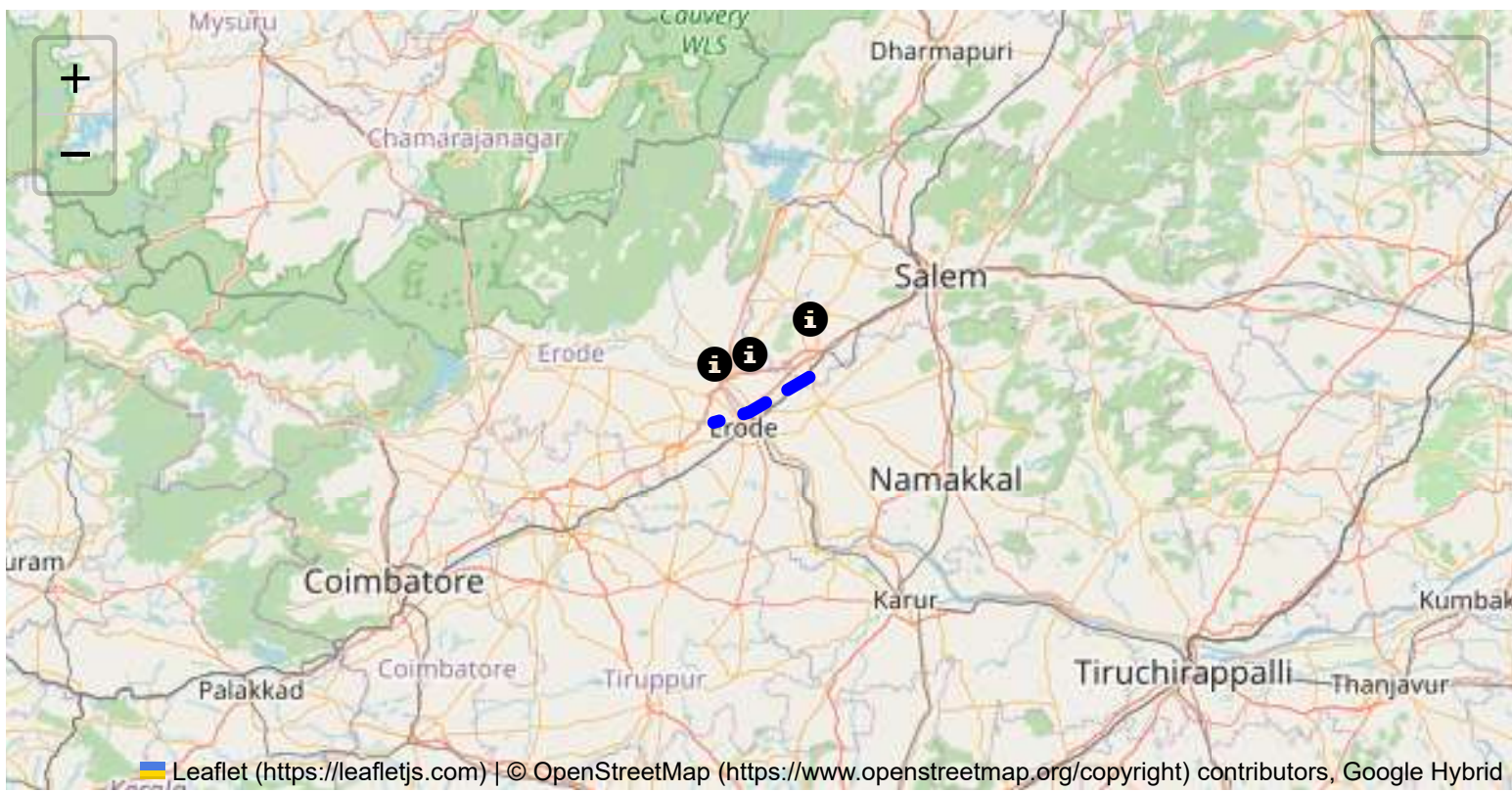
## **Journey Risk Mitigation**

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.

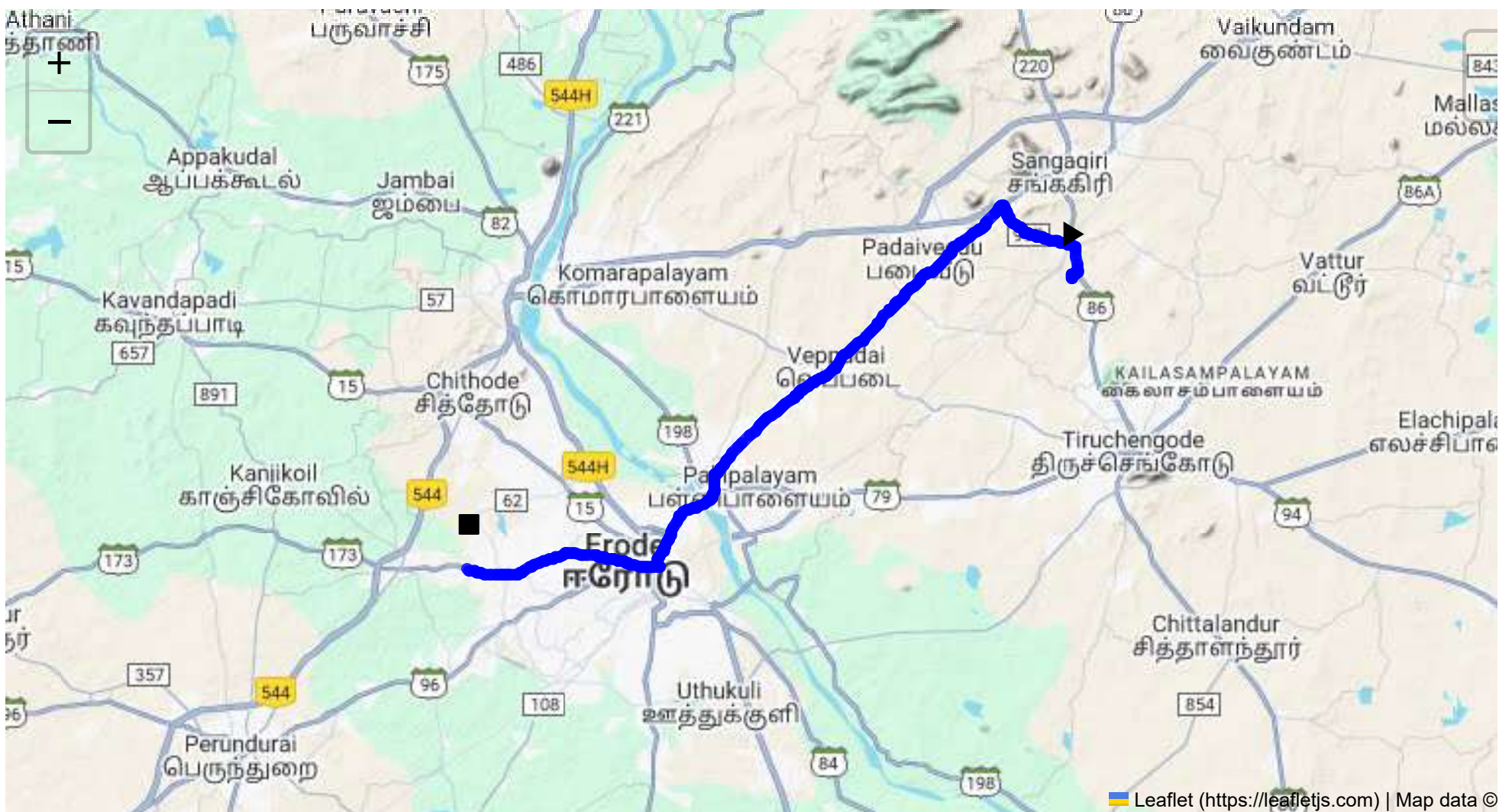
## **Compliance with Government Directives**

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: 32.17 km**  
**Estimated Duration: 0.9 hours**  
**Adjusted Duration (Heavy Vehicle): 1.1 hours**  
**Start: (11.4381, 77.8734)**  
**End: (11.338575, 77.66167)**



## Welcome to the Journey Risk Management Study

### Route Map Overview

The journey from Sangagiri, Tamil Nadu to Erode, Tamil Nadu via Attur - Rasipuram - Erode Road covers approximately 32.17 kilometers. This route is a mix of rural and semi-urban terrains. Generally, it involves state highways and local roads, which might be well-traveled but can also fluctuate in traffic conditions.



## Weather Conditions and Hazards

Tamil Nadu has a tropical climate, with the monsoon season typically bringing heavy rains between October and December. During this time, flooding and waterlogging can be common, affecting driving conditions and visibility. Additionally, high temperatures in summer can impact vehicles, requiring careful maintenance checks, especially in April and May.

## Traffic Patterns

Traffic congestion is usually higher during weekday mornings (7:30 AM - 9:30 AM) and evenings (4:30 PM - 7:00 PM), especially near market areas and urban junctions. Areas around Erode can also experience traffic buildups. Sundays may see less congestion unless local events or markets create surges.

## Road Quality and Infrastructure

The route includes stretches of relatively good infrastructure along national and state highways, but sections through smaller towns might vary. Potholes and uneven surfaces can occasionally be encountered, especially post-monsoon. Road signage might not be optimal, requiring drivers to be cautious and attentive.

## Alternative Routes for Emergencies

In case of route disruption, one potential alternative is using the NH544 route towards Erode, although longer, it can provide a faster route during emergencies. Immediate local routes depend on current traffic and road conditions and should be verified via local authorities or real-time navigation tools.

## Local Regulations on Hazardous Materials

Transport of hazardous materials is subject to regulations that require all necessary permits and adherence to specified cargo safety standards. This includes proper labeling and documentation. Night and weekend restrictions may apply in specific areas; checking with local authorities is advised.

## Historical Incidents

Historically, there have been limited major incidents on this route specific to heavy vehicles or hazardous cargo. However, standard caution is advised since narrow roads and unexpected pedestrian activity can pose risks.

## Environmental Considerations and Sensitive Areas

Erode and surrounding areas have agricultural zones sensitive to environmental impacts. Strict compliance with environmental protection norms is crucial to prevent contamination or spillage, especially near water bodies and agricultural zones.

## Communication Coverage

Mobile network coverage is generally good along this route, but there may be occasional dead zones in rural stretches. It is advisable to have emergency contact numbers pre-stored and offline maps for navigation.

## Estimated Emergency Response Times

Emergency response times can vary; areas closer to Erode typically have quicker access to first responders, with response times around 15-20 minutes. More rural segments may experience longer delays, potentially up to 30-45 minutes depending on distance from facilities.

## Overall Risk Assessment Summary

This route is fairly standard for heavy vehicles but requires increased vigilance due to traffic congestion, especially during peak hours, variable road conditions, and weather impacts during the monsoon. Ensure that drivers are well-trained in emergency procedures, have access to communication devices, and possess up-to-date information on local traffic and road conditions. Properly secured and documented cargo and compliance with legal regulations are essential to minimize risks associated with the transport of hazardous materials.

### Risk Assessment - Turns

|    | Risk Type  | Risk Level | Coordinates        | Speed Limit |
|----|------------|------------|--------------------|-------------|
| 0  | Roundabout | High       | 11.37086, 77.74828 | 15 KM/Hr    |
| 1  | Turn       | High       | 11.43811, 77.87348 | 15 KM/Hr    |
| 2  | Turn       | Medium     | 11.43956, 77.87340 | 30 KM/Hr    |
| 3  | Turn       | High       | 11.43968, 77.87345 | 15 KM/Hr    |
| 4  | Turn       | High       | 11.44029, 77.87544 | 15 KM/Hr    |
| 5  | Turn       | Medium     | 11.44898, 77.87410 | 30 KM/Hr    |
| 6  | Turn       | Medium     | 11.45357, 77.85789 | 30 KM/Hr    |
| 7  | Turn       | Medium     | 11.45352, 77.85698 | 30 KM/Hr    |
| 8  | Turn       | Medium     | 11.46303, 77.84945 | 30 KM/Hr    |
| 9  | Turn       | Medium     | 11.46318, 77.84913 | 30 KM/Hr    |
| 10 | Turn       | Medium     | 11.46312, 77.84886 | 30 KM/Hr    |
| 11 | Turn       | Medium     | 11.36622, 77.74789 | 30 KM/Hr    |
| 12 | Turn       | Medium     | 11.34493, 77.73032 | 30 KM/Hr    |
| 13 | Turn       | Medium     | 11.34487, 77.73024 | 30 KM/Hr    |
| 14 | Turn       | Medium     | 11.34470, 77.73018 | 30 KM/Hr    |
| 15 | Blind Spot | Blind Spot | 11.33920, 77.72902 | 10 KM/Hr    |

|    | Risk Type  | Risk Level | Coordinates        | Speed Limit |
|----|------------|------------|--------------------|-------------|
| 16 | Blind Spot | Blind Spot | 11.34068, 77.71709 | 10 KM/Hr    |
| 17 | Blind Spot | Blind Spot | 11.34097, 77.71715 | 10 KM/Hr    |
| 18 | Turn       | Medium     | 11.34166, 77.71442 | 30 KM/Hr    |

## Emergency Locations

|    | type     | name                                | coordinates               | speed_limit | risk_level |
|----|----------|-------------------------------------|---------------------------|-------------|------------|
| 1  | hospital | Cheran Hospital                     | 11.3680302,<br>77.7481976 | 30 km/h     | Medium     |
| 2  | pharmacy | Pharmacy                            | 11.3652161,<br>77.7486375 | 30 km/h     | Medium     |
| 3  | hospital | Sri Kumaran E N T Hospital          | 11.3657814,<br>77.7477763 | 30 km/h     | Medium     |
| 4  | hospital | Sri Krishna Hospital                | 11.3656648,<br>77.7477783 | 30 km/h     | Medium     |
| 5  | hospital | Visaalam Hospitals                  | 11.3651528,<br>77.747808  | 30 km/h     | Medium     |
| 6  | police   | Police Station                      | 11.3630177,<br>77.7476505 | 30 km/h     | Medium     |
| 7  | hospital | Government Hospital                 | 11.3608508,<br>77.747453  | 30 km/h     | Medium     |
| 9  | hospital | Sri Hari Sakthivel Hospital         | 11.3526901,<br>77.7323055 | 30 km/h     | Medium     |
| 10 | hospital | Senthil Prakash Hospital            | 11.352639, 77.732267      | 30 km/h     | Medium     |
| 11 | hospital | V K Hospital                        | 11.3513792,<br>77.7313976 | 30 km/h     | Medium     |
| 12 | hospital | Dhanvantri Critical Care Center     | 11.3504266,<br>77.7311274 | 30 km/h     | Medium     |
| 13 | hospital | Indrajith Yoga Nature Cure Hospital | 11.3499973,<br>77.732974  | 30 km/h     | Medium     |
| 15 | hospital | Dhanvantri Critical Care Centre     | 11.35099, 77.730508       | 30 km/h     | Medium     |
| 16 | hospital | Kumudha Hospital                    | 11.3467172,<br>77.7306797 | 30 km/h     | Medium     |
| 17 | hospital | City Hospital                       | 11.3451151,<br>77.7300887 | 30 km/h     | Medium     |

|    | type     | name                                       | coordinates               | speed_limit | risk_level |
|----|----------|--|---------------------------|-------------|------------|
| 18 | clinic   | K.B.N. Nursing Home                        | 11.344835,<br>77.7310771  | 30 km/h     | Medium     |
| 19 | clinic   | Kpn Nursing Home                           | 11.3437022,<br>77.7304525 | 30 km/h     | Medium     |
| 20 | hospital | Milan Hospital                             | 11.343591, 77.733182      | 30 km/h     | Medium     |
| 21 | hospital | Kaviraj Ayurveda Hospital                  | 11.3400349,<br>77.7298199 | 30 km/h     | Medium     |
| 22 | hospital | Dr Kokilasekar Nursing Hospital            | 11.3395874,<br>77.7269838 | 30 km/h     | Medium     |
| 23 | clinic   | M.R Nursing Home                           | 11.3386746,<br>77.7294262 | 30 km/h     | Medium     |
| 25 | hospital | Government Maternity Hospital,<br>Agathiar | 11.33716, 77.727075       | 30 km/h     | Medium     |
| 26 | clinic   | Naseer Nursing Home                        | 11.3364485,<br>77.7271691 | 30 km/h     | Medium     |
| 27 | clinic   | Dr. R Kumaraswamy Sexologist Clinic        | 11.3396057,<br>77.7221701 | 30 km/h     | Medium     |
| 28 | clinic   | Newlife Fertility Centre                   | 11.3389396,<br>77.7213358 | 30 km/h     | Medium     |
| 29 | hospital | Dr. Pondiperumal Hospital                  | 11.3390924,<br>77.7205408 | 30 km/h     | Medium     |
| 30 | hospital | Guhan ENT Hospital                         | 11.339489, 77.721001      | 30 km/h     | Medium     |
| 31 | clinic   | Janet Nursing Home                         | 11.3396455,<br>77.7203698 | 30 km/h     | Medium     |
| 32 | hospital | Abisek Medical Centre                      | 11.3415975,<br>77.7191789 | 30 km/h     | Medium     |
| 33 | hospital | Sri Vijaya Hitech Hospital                 | 11.3400011,<br>77.7192251 | 30 km/h     | Medium     |
| 34 | hospital | Shri Vijaiah Trauma Care Hospital          | 11.3418935,<br>77.7193036 | 30 km/h     | Medium     |
| 36 | hospital | Universal Hospital                         | 11.3411046,<br>77.7185217 | 30 km/h     | Medium     |
| 37 | hospital | Duraisamy Hospital                         | 11.3391625,<br>77.7187054 | 30 km/h     | Medium     |
| 38 | hospital | Srimathi Murugesan Hospital                | 11.3389205,<br>77.7187791 | 30 km/h     | Medium     |
| 39 | hospital | Devi Hospital                              | 11.34116, 77.718307       | 30 km/h     | Medium     |
| 40 | hospital | SCS Hospital And Urology Clinic            | 11.3410253,<br>77.718043  | 30 km/h     | Medium     |

|    | type     | name                                    | coordinates               | speed_limit | risk_level |
|----|----------|---|---------------------------|-------------|------------|
| 41 | clinic   | Vanalikaa Homoeo Centre                 | 11.341349, 77.717987      | 30 km/h     | Medium     |
| 42 | clinic   | Dr. Padmanaban Heart Clinic             | 11.337426,<br>77.7184453  | 30 km/h     | Medium     |
| 43 | hospital | Suriya Hospital                         | 11.340248,<br>77.7186452  | 30 km/h     | Medium     |
| 44 | clinic   | Skin Care Clinic                        | 11.3409042,<br>77.7178413 | 30 km/h     | Medium     |
| 45 | hospital | Abitha Eye Hospital                     | 11.34021, 77.7187589      | 30 km/h     | Medium     |
| 46 | hospital | SRC Hospital                            | 11.3413999,<br>77.7177834 | 30 km/h     | Medium     |
| 47 | hospital | Surya Hospital                          | 11.3400026,<br>77.7190977 | 30 km/h     | Medium     |
| 48 | clinic   | Dr. Chandran Skin Laser Centre          | 11.3413527,<br>77.7174891 | 30 km/h     | Medium     |
| 49 | hospital | District Hospital, Eroda                | 11.3393048,<br>77.717926  | 30 km/h     | Medium     |
| 50 | hospital | Dr. Agarwal's Eye Hospital Ltd. - Erode | 11.3421842,<br>77.7173066 | 30 km/h     | Medium     |
| 51 | hospital | Erode Kidney's Centre                   | 11.3383801,<br>77.7164201 | 30 km/h     | Medium     |
| 52 | hospital | KMCH Speciality Hospital                | 11.33911, 77.716284       | 30 km/h     | Medium     |
| 53 | hospital | Anusha Hospital                         | 11.3397168,<br>77.7166805 | 30 km/h     | Medium     |
| 54 | hospital | Care Hospital                           | 11.338443, 77.716511      | 30 km/h     | Medium     |
| 55 | hospital | Ortho Life Hospital                     | 11.3395729,<br>77.7167329 | 30 km/h     | Medium     |
| 56 | clinic   | Sathyavathi Ramalingam Clinic           | 11.3380366,<br>77.7166875 | 30 km/h     | Medium     |
| 57 | hospital | Nalan Hospital                          | 11.3399703,<br>77.716773  | 30 km/h     | Medium     |
| 58 | hospital | Sri Hari Hospital                       | 11.338357,<br>77.7164204  | 30 km/h     | Medium     |
| 59 | hospital | L.V.S. Eye Hospital                     | 11.3385839,<br>77.7156597 | 30 km/h     | Medium     |
| 60 | hospital | Shri Preethe Hospital                   | 11.3385944,<br>77.7157979 | 30 km/h     | Medium     |
| 61 | hospital | Dr Nsk Hospital                         | 11.3381737,<br>77.7153821 | 30 km/h     | Medium     |



|    | type     | name                                    | coordinates               | speed_limit | risk_level |
|----|----------|---|---------------------------|-------------|------------|
| 62 | hospital | Keran Hospital                          | 11.3400456,<br>77.7154808 | 30 km/h     | Medium     |
| 63 | hospital | Gem Hospital                            | 11.338106,<br>77.7155077  | 30 km/h     | Medium     |
| 64 | hospital | Annai Ent and Head and Neck Care Center | 11.3387785,<br>77.7149034 | 30 km/h     | Medium     |
| 65 | clinic   | Madhu Surgical Clinic                   | 11.3386602,<br>77.7143441 | 30 km/h     | Medium     |
| 66 | pharmacy | Tava Drug Mart                          | 11.3436578,<br>77.7182673 | 30 km/h     | Medium     |
| 67 | clinic   | RB Kids Clinic                          | 11.339221, 77.713915      | 30 km/h     | Medium     |
| 68 | hospital | Senthil Multispeciality Hospital        | 11.338983,<br>77.7138529  | 30 km/h     | Medium     |
| 69 | hospital | Erode Trust Hospital                    | 11.3399422,<br>77.7134188 | 30 km/h     | Medium     |
| 70 | hospital | Arc Fertility Hospital                  | 11.3397231,<br>77.7130655 | 30 km/h     | Medium     |
| 71 | hospital | Vanjee Multispeciality Dental Centre    | 11.3418385,<br>77.7132218 | 30 km/h     | Medium     |
| 72 | hospital | Sri Athi Sathya Hospital                | 11.3392651,<br>77.7126583 | 30 km/h     | Medium     |
| 73 | clinic   | Erode Women and Children Clinic         | 11.3420279,<br>77.7116815 | 30 km/h     | Medium     |
| 74 | hospital | Arun Hospital                           | 11.3447248,<br>77.7138215 | 30 km/h     | Medium     |
| 75 | hospital | Ranm Malathy Vijayakumar Hospital       | 11.3413334,<br>77.708922  | 30 km/h     | Medium     |
| 77 | hospital | K.G. Baby Hospital                      | 11.343848, 77.699081      | 30 km/h     | Medium     |

### Crowded Spots

|   | type        | name                                      | coordinates               | speed_limit | risk_level |
|---|-------------|---|---------------------------|-------------|------------|
| 0 | school      | Ssri Valliappa Vidhayalayam mat hr school | 11.4004878,<br>77.7794381 | 30 km/h     | Medium     |
| 8 | marketplace | Weekly Market                             | 11.3605669,<br>77.7488199 | 30 km/h     | Medium     |

|    | type   | name                                       | coordinates               | speed_limit | risk_level |
|----|--------|--|---------------------------|-------------|------------|
| 14 | school | Municipality Girls Higher secondary school | 11.3495618,<br>77.7325011 | 30 km/h     | Medium     |
| 24 | school | E.V.R. Govt Girls Hr. Sec School           | 11.3371265,<br>77.7266283 | 30 km/h     | Medium     |
| 35 | school | Sengunthar matriculation School            | 11.3407075,<br>77.7195086 | 30 km/h     | Medium     |
| 76 | school | Nandha Central City School (City Campus)   | 11.3409392,<br>77.7047156 | 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:** 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: 11.44898, 77.87410**



**Risk Type: Turn**  
**Risk Level: Medium**  
**Speed Limit: 30 KM/Hr**  
**Coordinates: 11.45357, 77.85789**





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.45352, 77.85698



**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: 11.46318, 77.84913**



**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.46312, 77.84886**



**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.36622, 77.74789**





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.34493, 77.73032



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.34487, 77.73024





**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.34470, 77.73018**



**Risk Type: Blind Spot**

**Risk Level: Blind Spot**

**Speed Limit: 10 KM/Hr**

**Coordinates: 11.33920, 77.72902**



**Risk Type: Blind Spot**

**Risk Level: Blind Spot**

**Speed Limit: 10 KM/Hr**

**Coordinates: 11.34068, 77.71709**





**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Coordinates:** 11.34097, 77.71715



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.34166, 77.71442

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