



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

IOCL Coimbatore Terminal to Sre Muthukumaran 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

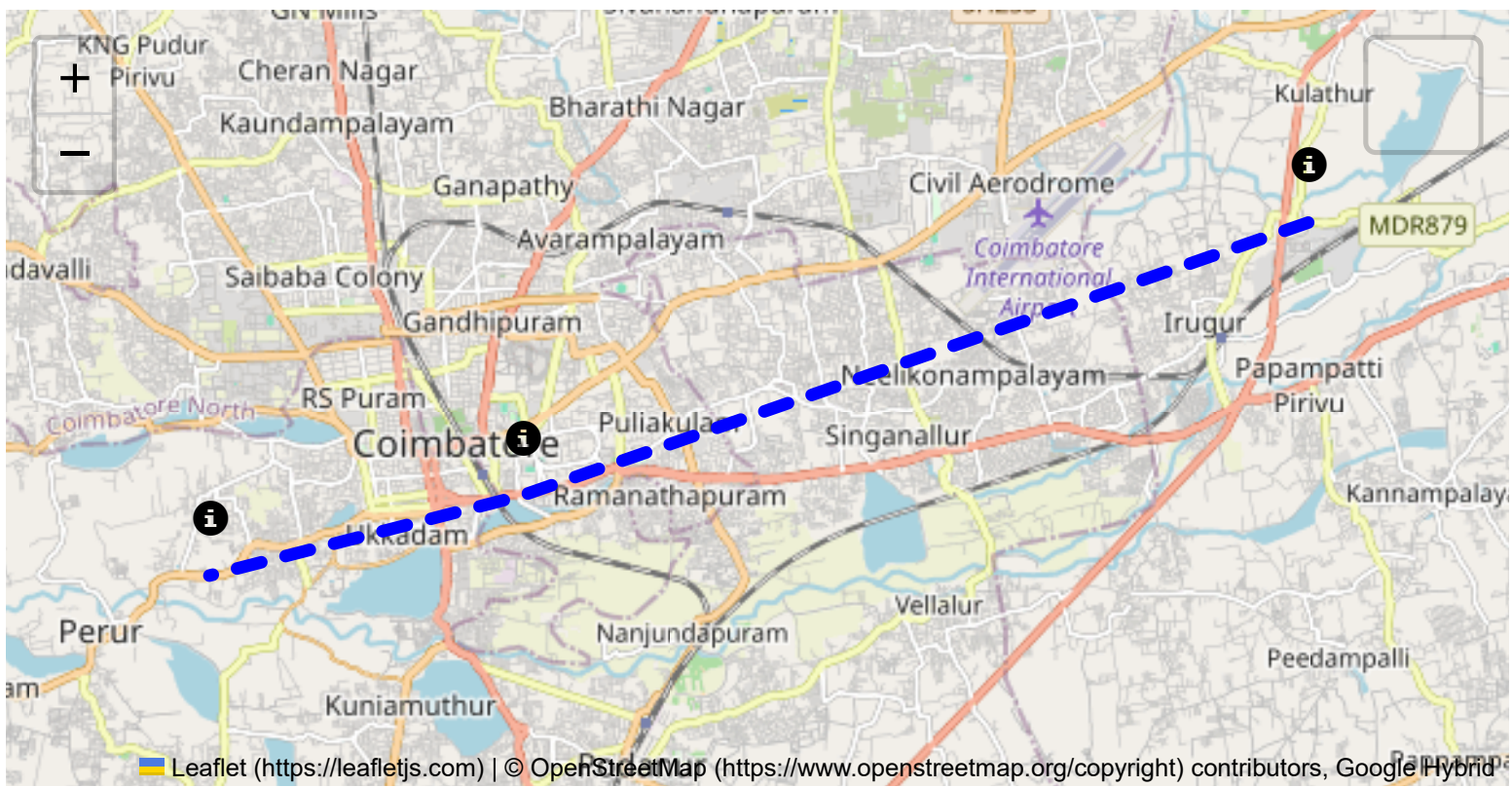
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

Journey Risk Mitigation

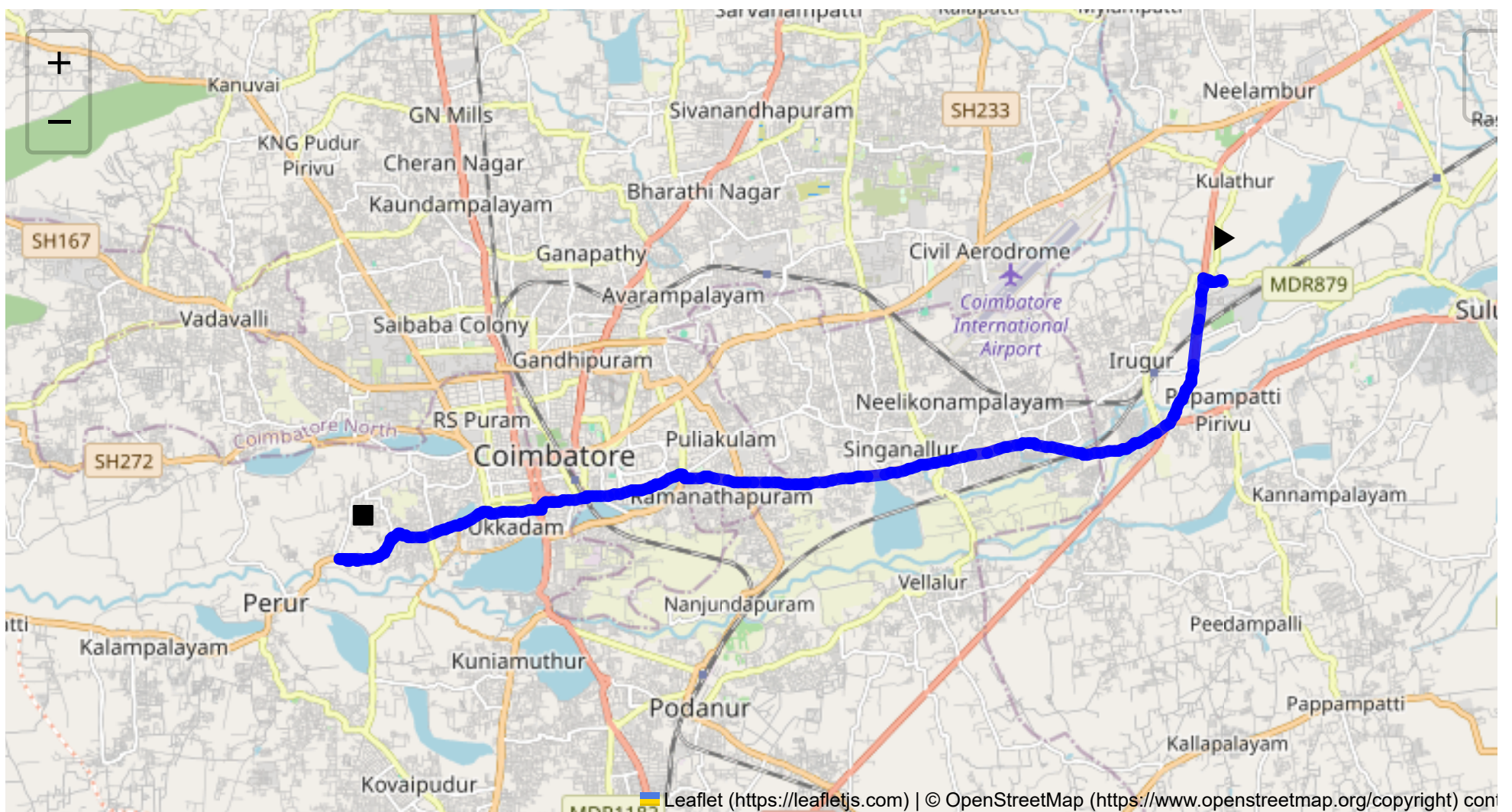
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 20.31 km
Estimated Duration: 0.7 hours
Adjusted Duration (Heavy Vehicle): 0.9 hours
Start: (11.0315, 77.0797)
End: (10.984058, 76.928846)



Welcome to the Journey Risk Management Study

1. Overview of the Route Map:

The route from Athappagoundenpudur to Velumani Road, via Rainbow and Trichy Road in Coimbatore, runs primarily through urban and semi-urban areas. Starting at Athappagoundenpudur, the route passes through industrial and residential zones, joining Trichy Road, a major thoroughfare leading into central Coimbatore before reaching Kumara Palayam. The entire route is approximately 20.31 kilometers.

2. Typical Weather Conditions and Potential Weather-Related Hazards:

Coimbatore generally experiences a tropical wet and dry climate. The summer months can reach high temperatures, while the monsoon season (June to September) brings significant rainfall, which could lead to slippery roads and reduced visibility. Occasional heavy rains may cause waterlogging, especially in low-lying areas.

3. Traffic Patterns, Highlighting Peak Hours and Congestion-Prone Areas:

Traffic congestion is common during weekday peak hours, roughly from 8:00 AM to 10:00 AM and 5:00 PM to 8:00 PM. Trichy Road, being a main arterial route, tends to experience high traffic volumes and potential bottlenecks, particularly near commercial zones and junctions. The road near Highways Colony can be particularly congested.

4. Assessment of Road Quality and Infrastructure:

Road quality along this route is generally good; however, urban sections may have frequent traffic lights and pedestrian crossings. Some sections may be under maintenance, which can exacerbate traffic congestion. Watch for minor potholes during the rainy season.

5. Suggestions for Alternative Routes for Emergencies:

In case of congestion or emergencies, an alternative route could be via Peelamedu - Sulur – Kalapatti Main Road, although this might add to the travel distance. This alternative runs parallel to the primary route but allows bypassing central Coimbatore's congestion.

6. Local Regulations Affecting Hazardous Material Transport:

Transport of hazardous materials in Coimbatore is subject to strict regulations, including requirements for clear labeling and adherence to permissible transit timings. Some parts of Coimbatore may have restrictions during the day, especially in densely populated areas.

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

While major incidents are rare, minor accidents involving heavy vehicles are not uncommon, primarily due to congestion and erratic driving behaviors. However, there have been occasional reports of chemical spills primarily related to inadequate securing of cargo.

8. Environmental Considerations and Sensitive Areas:

Environmental concerns include air and noise pollution. Sensitive areas include residential neighborhoods, schools, and hospitals, which are to be bypassed or traversed with care to minimize noise and exhaust emission impact.

9. Analysis of Communication Coverage, Noting Potential Dead Zones:

The route generally has good mobile network coverage throughout, with minimal dead zones, being in an urban setting. However, minor connectivity issues might occur in isolated industrial areas.

10. Estimated Emergency Response Times for Different Route Segments:

Given the proximity to Coimbatore, emergency response times, including fire, medical, and police services, are estimated to be within 15 to 30 minutes across most of the route. However, in peak traffic conditions, this could extend.

12. Overall Summary of Risk Assessment:

Overall, this route presents moderate risk, primarily due to high traffic congestion, especially near urban centers. Adverse weather conditions during monsoons can also increase risks. Regulatory compliance is critical for hazardous materials. Regular route checks and updated traffic information are recommended to mitigate potential hazards effectively. Constant vigilance is required to navigate peak traffic hours and variable weather conditions safely.

Risk Assessment - Turns

| | Risk Type | Risk Level | Coordinates | Speed Limit |
|----|------------|------------|------------------------|-------------|
| 0 | U-Turn | High | 10.9924704, 76.9606424 | 10 KM/Hr |
| 1 | U-Turn | High | 10.9840022, 76.9252982 | 10 KM/Hr |
| 2 | Blind Spot | Blind Spot | 11.03211, 77.07640 | 10 KM/Hr |
| 3 | Turn | Medium | 11.00873, 77.07114 | 30 KM/Hr |
| 4 | Turn | Medium | 11.00737, 77.07049 | 30 KM/Hr |
| 5 | Turn | High | 10.99353, 76.96082 | 15 KM/Hr |
| 6 | Turn | High | 10.99247, 76.96064 | 15 KM/Hr |
| 7 | Turn | High | 10.99240, 76.96003 | 15 KM/Hr |
| 8 | Turn | High | 10.99247, 76.96001 | 15 KM/Hr |
| 9 | Turn | Medium | 10.99220, 76.95053 | 30 KM/Hr |
| 10 | Turn | Medium | 10.98807, 76.93652 | 30 KM/Hr |
| 11 | Turn | Medium | 10.98812, 76.93646 | 30 KM/Hr |
| 12 | Turn | High | 10.98400, 76.92530 | 15 KM/Hr |
| 13 | Blind Spot | Blind Spot | 10.98406, 76.92530 | 10 KM/Hr |

Emergency Locations

| | type | name | coordinates | speed_limit | risk_level |
|----|----------|------------------------------------------------------------------------------------------------------------|---------------------------|-------------|------------|
| 0 | hospital | Saraswathi Hospital | 11.0069868, 77.071368 | 30 km/h | Medium |
| 2 | hospital | Dr. Muthu's Ortho Centre-Coimbatore | 11.0026291, 77.0406497 | 30 km/h | Medium |
| 3 | hospital | Singanallur Government Hospital | 11.0011, 77.033733 | 30 km/h | Medium |
| 4 | hospital | Dr. Felix Hospital | 11.0044086, 77.0348661 | 30 km/h | Medium |
| 5 | hospital | Ortho One | 11.0018351, 77.0328061 | 30 km/h | Medium |
| 6 | hospital | Vela Hospital, Singanallur, Coimbatore | 11.0017873, 77.0300545 | 30 km/h | Medium |
| 7 | clinic | Nalam Child Care | 11.0006287, 77.0306011 | 30 km/h | Medium |
| 8 | police | E1 Singanallur Police Station | 11.0003996, 77.0296891 | 30 km/h | Medium |
| 9 | police | Out Post Police Station - Singanallur | 11.0025957, 77.0288423 | 30 km/h | Medium |
| 10 | hospital | AB Child Care Hospital | 11.0006913, 77.028744 | 30 km/h | Medium |
| 11 | hospital | Coimbatore Child Trust Hospital | 10.9978875, 77.0170667 | 30 km/h | Medium |
| 12 | hospital | VGM Hospital | 10.9986666, 77.0143291 | 30 km/h | Medium |
| 13 | hospital | VGM Hospital, Coimbatore | 10.99819, 77.014447 | 30 km/h | Medium |
| 14 | hospital | Ortho One Orthopaedic Speciality Center(A Unit Of Spine Arthroscopic and Joint Replacement Center Pvt Ltd) | 10.9962048, 77.0082217 | 30 km/h | Medium |
| 15 | hospital | Narmada Hospital | 10.9967758, 77.0071075 | 30 km/h | Medium |
| 16 | hospital | Medwin Hospital, Coimbatore | 10.9972946, 77.0051728 | 30 km/h | Medium |
| 17 | hospital | Deepam Hospital, Ramanathapuram | 10.9965453, 77.0039274 | 30 km/h | Medium |
| 19 | pharmacy | Prakash medicals | 10.9969248, 77.0008135 | 30 km/h | Medium |
| 20 | hospital | Sathyan Eye Care Hospital & Coimbatore Glaucoma Foundation | 10.9980405, 77.0009615 | 30 km/h | Medium |

| | type | name | coordinates | speed_limit | risk_level |
|----|----------|-----------------------------------------------------|---------------------------|-------------|------------|
| 21 | pharmacy | Revathi medicals | 10.9972171, 77.0003871 | 30 km/h | Medium |
| 22 | clinic | Sri Durga Poly Clinic | 10.9980729, 77.0001926 | 30 km/h | Medium |
| 23 | clinic | Dr. Karthikeyan Clinic | 10.9969119, 76.9995376 | 30 km/h | Medium |
| 24 | hospital | Leo Ortho care Hospital | 10.9969428, 76.9993022 | 30 km/h | Medium |
| 25 | hospital | N.M. Hospital | 10.9981558, 76.9994865 | 30 km/h | Medium |
| 26 | police | Ramanathapuram police station | 10.9975827, 76.997871 | 30 km/h | Medium |
| 28 | hospital | Bala Hospital | 10.9969296, 76.995705 | 30 km/h | Medium |
| 29 | pharmacy | Dheepmeena pharmacy | 10.9969617, 76.9956179 | 30 km/h | Medium |
| 30 | hospital | Sri Bala Medical Centre Hospital | 10.9967187, 76.9954568 | 30 km/h | Medium |
| 31 | hospital | Ramvel Hospital | 10.9958212, 76.9963939 | 30 km/h | Medium |
| 32 | clinic | Lakshmi ENT Clinic | 10.9973118, 76.9963622 | 30 km/h | Medium |
| 33 | hospital | Gem Hospital, Coimbatore | 10.9996629, 76.9953933 | 30 km/h | Medium |
| 35 | hospital | Arya Vaidya Pharmacy | 10.995609, 76.9917076 | 30 km/h | Medium |
| 36 | hospital | R. A. Hospital | 10.998556, 76.9918562 | 30 km/h | Medium |
| 37 | hospital | The Arya Vaidya Chikitsalayam and Research Institue | 10.9958401, 76.9915813 | 30 km/h | Medium |
| 38 | hospital | Clinic - Dr.Rajashree | 10.9978977, 76.9893923 | 30 km/h | Medium |
| 40 | clinic | Karthick Polyclinic | 10.9957861, 76.9876988 | 30 km/h | Medium |
| 43 | hospital | Masonic Medical Centre For Children | 10.9997961, 76.9799441 | 30 km/h | Medium |
| 44 | hospital | Richmond Hospital | 10.9946605, 76.9793813 | 30 km/h | Medium |
| 45 | hospital | Thayarammal poly clinic | 10.9935069, 76.9756194 | 30 km/h | Medium |

| | type | name | coordinates | speed_limit | risk_level |
|----|----------|----------------------------------------------------|---------------------------|-------------|------------|
| 46 | clinic | Sri Rani Poly Clinic | 10.9949528, 76.9755752 | 30 km/h | Medium |
| 47 | hospital | Santhiya Hospital | 10.9950877, 76.9746602 | 30 km/h | Medium |
| 49 | hospital | Coimbatore Medical College Hospital | 10.9964129, 76.9702365 | 30 km/h | Medium |
| 50 | hospital | Moses Eye Hospital | 10.9943793, 76.9664663 | 30 km/h | Medium |
| 55 | hospital | Immaculate Conception Convent Hospital | 10.9943683, 76.9642074 | 30 km/h | Medium |
| 56 | hospital | I.C.C Hospital For Women & Children, Coimbatore | 10.9958251, 76.9634777 | 30 km/h | Medium |
| 60 | pharmacy | Ganesh Medicals | 10.9922978, 76.9598791 | 30 km/h | Medium |
| 61 | police | B1 POLICE STATION | 10.9924847, 76.9591307 | 30 km/h | Medium |
| 63 | pharmacy | Chitra pharmacy | 10.9905526, 76.9607735 | 30 km/h | Medium |
| 64 | clinic | Shajitha Anwaruddin Clinic | 10.9905191, 76.9592219 | 30 km/h | Medium |
| 66 | hospital | Sri Guru Hospital | 10.9920855, 76.9574858 | 30 km/h | Medium |
| 67 | hospital | Nataraj Medical Care Center Private Limited | 10.994101, 76.9569379 | 30 km/h | Medium |
| 68 | hospital | Rajagambiram Dental Hospital | 10.9923475, 76.9559691 | 30 km/h | Medium |
| 69 | hospital | Vasavi Hospital | 10.9927872, 76.9550228 | 30 km/h | Medium |
| 70 | clinic | Karthic Nursing Home | 10.99135, 76.95416 | 30 km/h | Medium |
| 71 | clinic | Karthic Nursing Home Pvt. Ltd. | 10.9909191, 76.9529521 | 30 km/h | Medium |
| 72 | clinic | Annai Nursing Home | 10.99386, 76.951744 | 30 km/h | Medium |
| 73 | clinic | G.K.P Clinics | 10.9922284, 76.9516612 | 30 km/h | Medium |
| 74 | hospital | Subu Hospital | 10.9920096, 76.9520898 | 30 km/h | Medium |
| 75 | hospital | Vennila Hospital | 10.9901191, 76.9421502 | 30 km/h | Medium |

| | type | name | coordinates | speed_limit | risk_level |
|----|----------|----------------------------------------------|---------------------------|-------------|------------|
| 76 | hospital | Revathi Hospital, Selvapuram | 10.9882483, 76.9400963 | 30 km/h | Medium |
| 77 | hospital | Rani Nursing Home, Selvapuram, Coimbatore | 10.9871756, 76.9392029 | 30 km/h | Medium |
| 78 | hospital | Snekaram Multi Specality Hospital | 10.987562, 76.9358088 | 30 km/h | Medium |
| 79 | hospital | Snekaram Hospital | 10.9873439, 76.9357994 | 30 km/h | Medium |
| 80 | hospital | Seetharam Hospital | 10.9868836, 76.9335496 | 30 km/h | Medium |
| 81 | hospital | Dr. Arjun Hospital | 10.9843661, 76.930203 | 30 km/h | Medium |
| 82 | hospital | Telugupalayam Hospital | 10.9842757, 76.9297655 | 30 km/h | Medium |

Crowded Spots

| | type | name | coordinates | speed_limit | risk_level |
|----|---------|--------------------------------------------------------|---------------------------|-------------|------------|
| 1 | school | Kadri Mills Higher Secondary School | 11.0058181, 77.0664118 | 30 km/h | Medium |
| 18 | school | Alvernia Higher Secondary Matriculation School | 10.9981807, 77.0027548 | 30 km/h | Medium |
| 27 | school | Trinity Boys High school | 10.9976249, 76.9971414 | 30 km/h | Medium |
| 34 | school | Corporation Boys High School | 10.9964338, 76.9941036 | 30 km/h | Medium |
| 39 | school | Carmel Garden Matriculation Higher Secondary School | 10.9993669, 76.9876201 | 30 km/h | Medium |
| 41 | school | Bishop Ambrose College | 10.9955885, 76.9844758 | 30 km/h | Medium |
| 42 | college | Niramla College for Women | 11.0000423, 76.9837036 | 30 km/h | Medium |
| 48 | college | Government Arts College Campus | 10.9985728, 76.9726412 | 30 km/h | Medium |
| 51 | school | St.Michaels School | 10.9945881, 76.9658375 | 30 km/h | Medium |

| | type | name | coordinates | speed_limit | risk_level |
|----|-------------|---------------------------------------------------------|---------------------------|-------------|------------|
| 52 | school | CSI(Church of South India) Boys Higher Secondary School | 10.9968977, 76.9648158 | 30 km/h | Medium |
| 53 | school | Presentation convent | 10.9945514, 76.9648609 | 30 km/h | Medium |
| 54 | school | St.Fathima's School | 10.9944145, 76.9639944 | 30 km/h | Medium |
| 57 | college | Govt.Womens Arts College | 10.9932946, 76.9630147 | 30 km/h | Medium |
| 58 | school | corporation Girls High school | 10.9955422, 76.9601082 | 30 km/h | Medium |
| 62 | marketplace | Uppukinar Lane | 10.9940372, 76.9589209 | 30 km/h | Medium |
| 65 | school | VASAVI VIDYALAYA | 10.9925558, 76.9578433 | 30 km/h | Medium |
| 83 | college | SMS College of Arts & Science | 10.9819257, 76.9225488 | 30 km/h | Medium |

Route Photos of Risky Spots



Risk Type: U-Turn

Risk Level: High

Speed Limit: 10 KM/Hr

Coordinates: 10.9924704, 76.9606424



Risk Type: U-Turn

Risk Level: High

Speed Limit: 10 KM/Hr

Coordinates: 10.9840022, 76.9252982



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.03211, 77.07640



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.00873, 77.07114



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.00737, 77.07049



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.99353, 76.96082



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.99247, 76.96064



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.99240, 76.96003



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.99247, 76.96001



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.99220, 76.95053



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.98807, 76.93652



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.98812, 76.93646



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.98400, 76.92530



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Coordinates: 10.98406, 76.92530
