



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

### Salem Terminal to SRI SENNI ANDAVAR AGENCIES

#### 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.

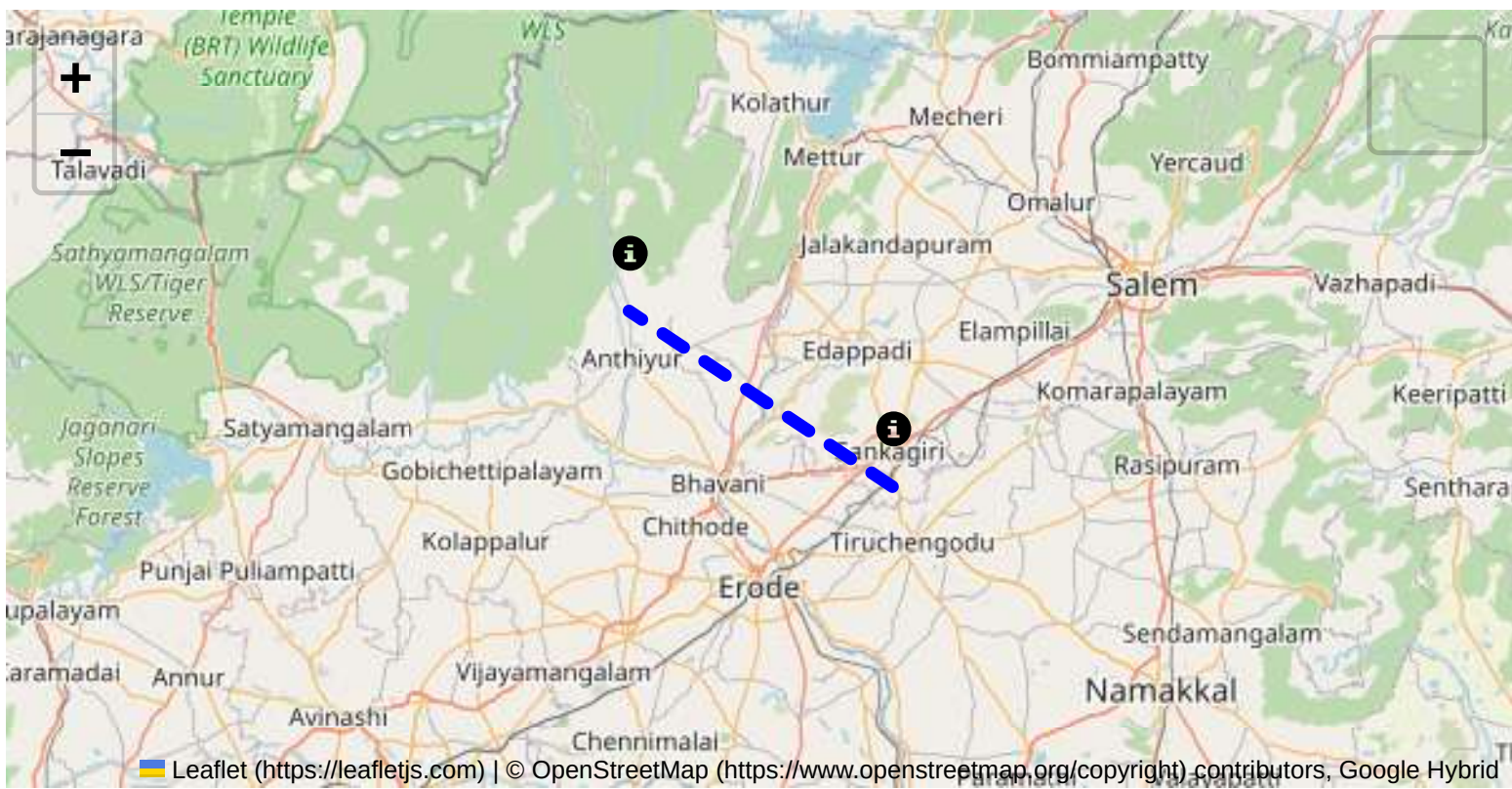
## **Journey Risk Mitigation**

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.

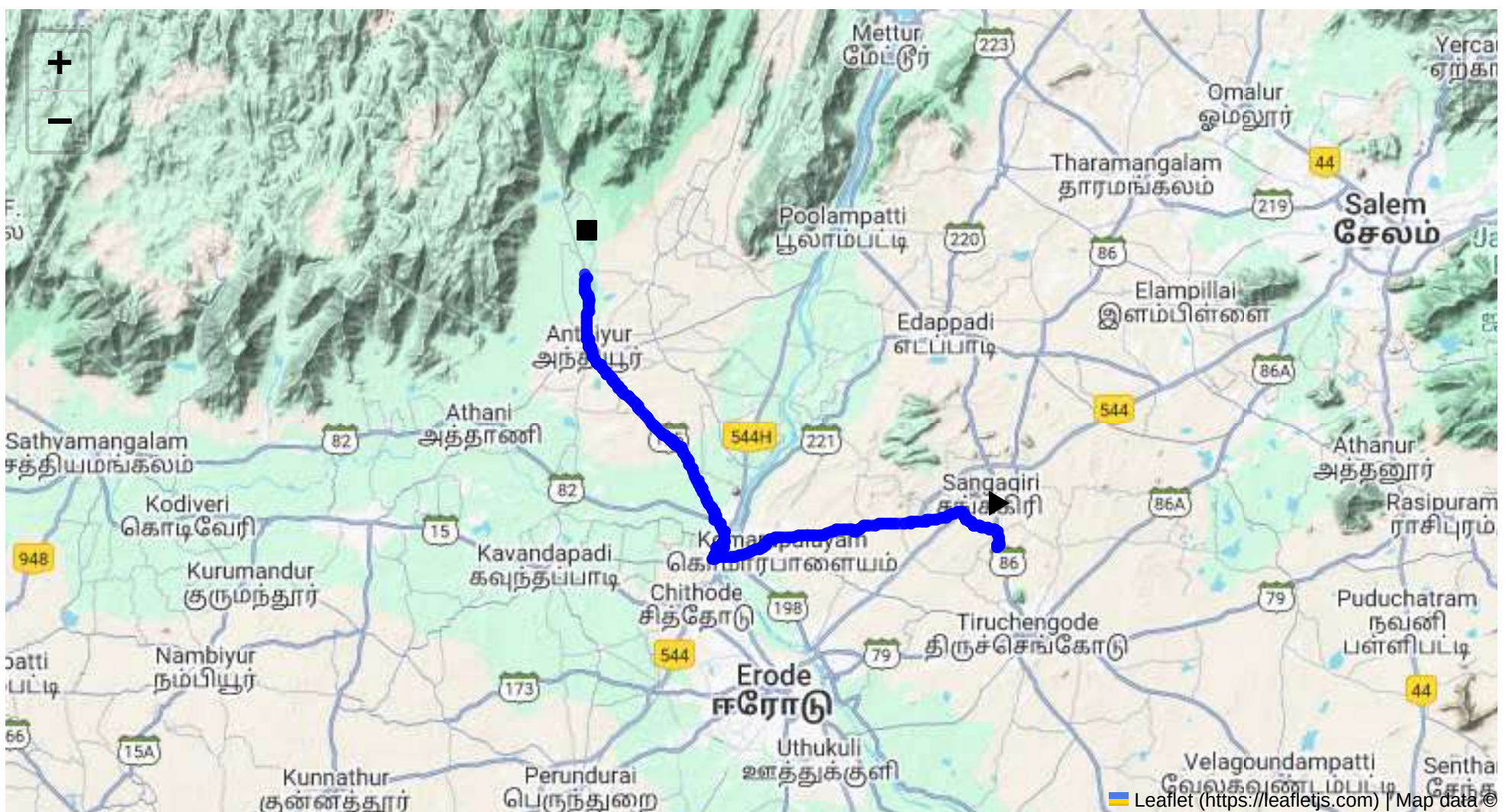
## **Compliance with Government Directives**

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: 51.10 km**  
**Estimated Duration: 1.2 hours**  
**Adjusted Duration (Heavy Vehicle): 1.5 hours**  
**Start: (11.4381, 77.8734)**  
**End: (11.625355, 77.585655)**



## Welcome to the Journey Risk Management Study

To provide a comprehensive analysis of the route from CVQF+23W, Sangagiri, Tamil Nadu 637301, to 37/3, Sankarapalayam kaspas Burgur, main road, Anthiyur, Tamil Nadu 638501, I will address each point as requested for a thorough risk assessment.

### 1. Overview of the Route Map



The route spans approximately 51.10 kilometers, taking roughly 1.21 hours to traverse under typical conditions for heavy vehicles. The journey begins in Sangagiri and generally moves eastwards, passing through various rural and semi-urban areas with alternating two-lane and single-lane roads. The terrain is mostly flat but may include some minor elevation changes and curves.

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

Tamil Nadu typically experiences a tropical climate. Key weather challenges include:

- **Summer (March-June):** High temperatures, potentially affecting vehicle performance.
- **Monsoon (June-September):** Heavy rainfall can lead to flooding, causing road damage or temporary closures.
- **Post-Monsoon (October-December):** Occasional cyclonic activity, possibly causing severe weather conditions. Regular updates from weather services are recommended, especially during monsoon.

## 3. Analysis of Traffic Patterns

- **Peak Hours:** Expect increased traffic during morning (8:00 AM - 10:00 AM) and evening (5:00 PM - 7:00 PM) hours due to local commuting.
- **Congestion-Prone Areas:** The journey can encounter congestion near market areas and town centers, particularly at Sangagiri and Anthiyur.

## 4. Assessment of Road Quality and Infrastructure

- **General Conditions:** Roads range from good to moderate, with potential for potholes and uneven surfaces during monsoon.
- **Bridges and flyovers:** Ensure weight restrictions are adhered to, especially in older structures.

## 5. Suggestions for Alternative Routes for Emergencies

Considering local road networks and elevations, potential alternative routes include bypassing heavier traffic areas or utilizing side roads during emergencies, though these may increase travel distance and time.

## 6. Summary of Local Regulations Affecting Hazardous Material Transport

- **Permits:** Ensure all required permits for hazardous materials are in order.
- **Time Restrictions:** Review any local ordinances that may restrict heavy vehicle operations during peak times.
- **Speed Limits:** Adhere to default state speed regulations (60 km/h for commercial vehicles unless otherwise posted).

## 7. Overview of Historical Incidents

Consult local police or transport authorities for records, as public databases may have limited data on hazardous materials incidents. Regular incidents may occur around congested areas, necessitating cautious navigation.

## 8. Environmental Considerations and Sensitive Areas

- **Populated Areas:** Approach villages and towns with reduced speeds to minimize dust and disruption.
- **Agricultural Land:** Watch for active farm equipment entering roads.
- **Wildlife Crossings:** The area may have designated wildlife crossings; remain vigilant in less populated segments.

## 9. Analysis of Communication Coverage

- **Coverage:** Major mobile networks cover most of the route, but dead zones may exist in rural segments.
- **Alternatives:** Equipping CB radios or satellite phones in areas with unreliable mobile signals is advisable.

## 10. Estimated Emergency Response Times

- **Urban Segments (Sangagiri & Anthiyur):** 20-30 minutes.
- **Rural Areas:** Up to 60 minutes due to distance from emergency facilities and potential road obstructions.

## 11. Overall Summary of Risk Assessment

- **Primary Risks:** Weather-related impacts, potential road damages, and communications in dead zones.
- **Mitigation Strategies:** Adequate pre-trip planning, ensuring vehicle readiness for adverse conditions, real-time traffic updates, and maintaining communication regardless of expected coverage.

In conclusion, the journey from Sangagiri to Anthiyur is fairly typical for Tamil Nadu, with consideration necessary for weather and road conditions, especially during monsoon seasons. Proper preparation and adherence to regulations are crucial to ensure a safe and compliant transit of hazardous materials.

### Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.56355, 77.59597	15 KM/Hr
1	Roundabout	High	11.57607, 77.58841	15 KM/Hr
2	Turn	Medium	11.43822, 77.87348	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
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	11.46048, 77.85036	30 KM/Hr
9	Turn	Medium	11.46303, 77.84945	30 KM/Hr
10	Turn	Medium	11.46318, 77.84913	30 KM/Hr
11	Turn	Medium	11.45509, 77.81383	30 KM/Hr
12	Turn	High	11.43001, 77.67575	15 KM/Hr
13	Turn	Medium	11.43003, 77.67551	30 KM/Hr
14	Turn	High	11.43026, 77.67525	15 KM/Hr
15	Turn	Medium	11.43769, 77.67810	30 KM/Hr
16	Turn	High	11.43863, 77.68223	15 KM/Hr
17	Turn	Medium	11.43871, 77.68228	30 KM/Hr
18	Turn	Medium	11.43965, 77.68224	30 KM/Hr
19	Turn	Medium	11.43997, 77.68198	30 KM/Hr
20	Turn	High	11.44105, 77.68187	15 KM/Hr
21	Turn	High	11.44119, 77.68217	15 KM/Hr
22	Turn	Medium	11.44295, 77.68261	30 KM/Hr
23	Turn	High	11.44300, 77.68275	15 KM/Hr
24	Turn	High	11.44853, 77.68331	15 KM/Hr
25	Turn	High	11.45649, 77.67621	15 KM/Hr
26	Turn	Medium	11.57510, 77.58991	30 KM/Hr
27	Turn	Medium	11.58062, 77.58804	30 KM/Hr
28	Turn	Medium	11.58078, 77.58788	30 KM/Hr
29	Turn	High	11.58101, 77.58707	15 KM/Hr
30	Turn	Medium	11.60732, 77.58846	30 KM/Hr
31	Turn	Medium	11.60831, 77.58782	30 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
13	hospital	Maha Hospital	11.4372003, 77.6781345	30 km/h	Medium
14	hospital	Jothikumar Hospital	11.43687, 77.678407	30 km/h	Medium
15	hospital	Sutha Hospital	11.4365526, 77.6796472	30 km/h	Medium
16	clinic	Velavan Homoeo Clinic	11.4367087, 77.6761472	30 km/h	Medium
17	hospital	SKMH Hospital	11.4379787, 77.6780268	30 km/h	Medium
18	clinic	Sri Dharshan Diabetes Care	11.437649, 77.6778126	30 km/h	Medium
19	hospital	Kavin Hospital	11.4399114, 77.6838194	30 km/h	Medium
20	clinic	Thangam Acupuncture	11.4418816, 77.6832318	30 km/h	Medium
21	hospital	Sumangali Hospital	11.4427668, 77.6827131	30 km/h	Medium
22	hospital	Annusiya Hospital	11.4432777, 77.6813562	30 km/h	Medium
23	hospital	Kandasamy Hospital	11.4450062, 77.6832304	30 km/h	Medium
24	hospital	Ashok Krishna Hospital	11.4483344, 77.6856579	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
25	hospital	Senthil Hospital	11.4475854, 77.6844482	30 km/h	Medium
26	hospital	S.N.A. Siddha Hospital	11.44704, 77.682877	30 km/h	Medium
27	hospital	Shri Mani Hospital	11.44771, 77.6838471	30 km/h	Medium
28	clinic	Sri Hari Clinic	11.4483503, 77.6850963	30 km/h	Medium
29	hospital	Immiaditya Hospital	11.4501276, 77.6836088	30 km/h	Medium
30	hospital	Sri Saravana Hospital	11.4506202, 77.6829676	30 km/h	Medium
31	hospital	Government Hospital	11.45112, 77.682149	30 km/h	Medium
32	hospital	Vijay Hospital	11.45091, 77.682019	30 km/h	Medium
33	hospital	Anbe Sivam Hospital	11.4508139, 77.6854947	30 km/h	Medium
34	clinic	Kalyani Nursing Home	11.452097, 77.6808974	30 km/h	Medium
35	hospital	Government Hospital	11.4519113, 77.6819742	30 km/h	Medium
36	hospital	Sindhu Hospital	11.57417, 77.590371	30 km/h	Medium
37	hospital	Arun Gowri Hospital	11.57659, 77.588756	30 km/h	Medium
38	clinic	P G K Nursing Home	11.5785675, 77.5891802	30 km/h	Medium
39	hospital	Annai Hospital	11.57992, 77.588319	30 km/h	Medium
40	hospital	Rani Hospital	11.5810663, 77.5879236	30 km/h	Medium
41	hospital	Government Hospital, Anthiyur	11.5813367, 77.5862689	30 km/h	Medium
42	hospital	Surya Hospital	11.58091, 77.58527	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



	type	name	coordinates	speed_limit	risk_level
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:** 11.56355, 77.59597



**Risk Type:** Roundabout

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.57607, 77.58841





**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:** 11.46048, 77.85036





**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:** 11.45509, 77.81383



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.43001, 77.67575



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.43003, 77.67551





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.43026, 77.67525



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.43769, 77.67810





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.43863, 77.68223



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.43871, 77.68228



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.43965, 77.68224





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.43997, 77.68198



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.44105, 77.68187





**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.44119, 77.68217



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.44295, 77.68261



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.44300, 77.68275





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.44853, 77.68331



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.45649, 77.67621





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.57510, 77.58991



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.58062, 77.58804



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.58078, 77.58788





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.58101, 77.58707



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.60732, 77.58846





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.60831, 77.58782

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