



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal to SRI SELVA NITHI 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

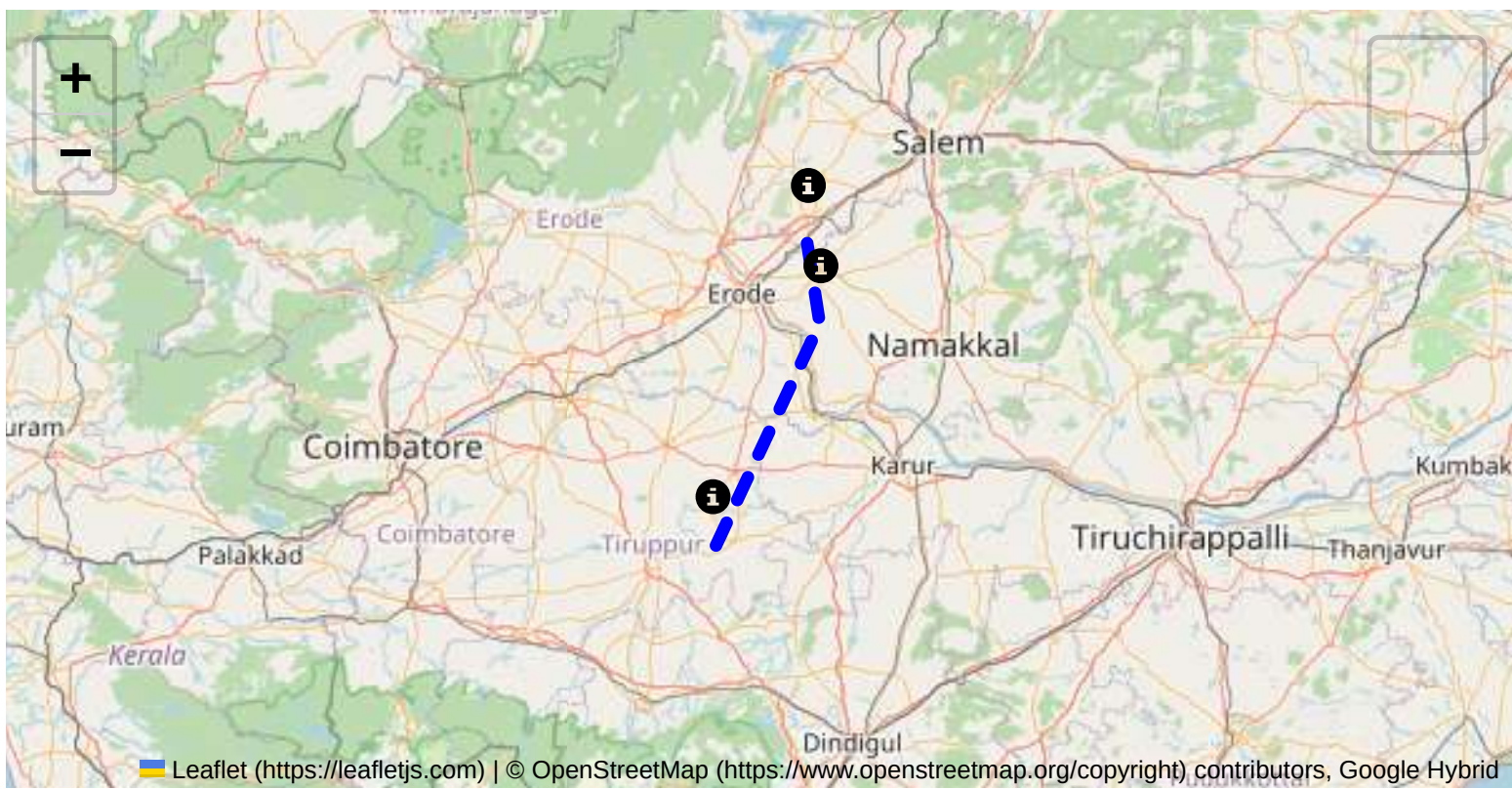
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

Journey Risk Mitigation

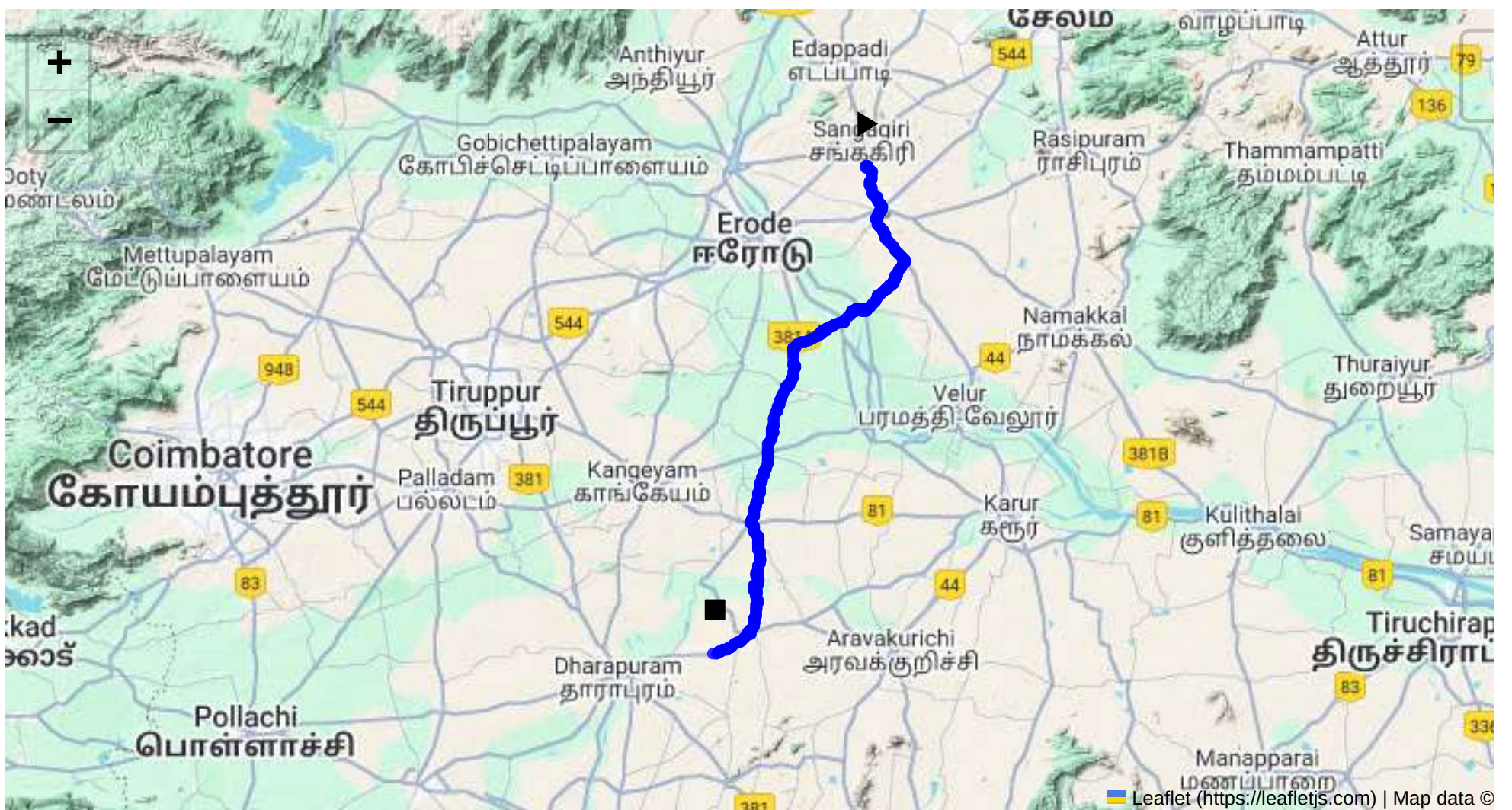
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 94.98 km
Estimated Duration: 2.2 hours
Adjusted Duration (Heavy Vehicle): 2.7 hours
Start: (11.4381, 77.8734)
End: (10.767561, 77.660116)



Welcome to the Journey Risk Management Study

Route Safety Analysis

1. Overview of the Route Map

The route from CVQF+23W, Sangagiri, Tamil Nadu to QM96+22, Polarai, Tamil Nadu, via MDR854 covers approximately 95 kilometers. Starting from Sangagiri, the route travels northeast through Sullipalayam

before reaching the final destination in Polarai. The primary sections include a mixture of state highways and minor roads, with key segments traversing through rural and semi-urban areas.

2. Typical Weather Conditions and Potential Hazards

Tamil Nadu generally experiences tropical weather with hot summers, monsoon rains from June to September, and relatively cooler winters. The monsoon season may pose significant hazards such as road flooding and reduced visibility due to heavy rain. Fog can also be an issue during the early mornings in the cooler months.

3. Traffic Patterns

Traffic congestion is typically observed during morning hours (8 AM - 10 AM) and evening hours (5 PM - 7 PM) near village centers and towns, particularly in Sullipalayam. The roads, while generally not overly congested outside peak hours, do see an increase in traffic due to agricultural transport activities.

4. Assessment of Road Quality and Infrastructure

The MDR854 is a two-lane road without dividers, which can lead to unsafe overtaking practices. Some portions of the route may have potholes and occasional maintenance work causing disruptions. Signage is limited in rural areas, which can be challenging during night-time travel.

5. Suggestions for Alternative Routes

For emergencies, consider the state highway options around larger towns that may offer more reliable road conditions and easier access to services. Specifically, detouring through major towns like Erode could provide better infrastructure and support.

6. Local Regulations for Hazardous Material Transport

Transporting hazardous materials requires adherence to Tamil Nadu's state regulations and compliance with safety protocols. This includes ensuring proper labeling, safe handling, and obtaining necessary permits for passage through populated areas.

7. Historical Incidents Involving Heavy Vehicles

While there are no major historical incidents specifically noted for this route, general caution is advised due to narrow roads and sharp bends, which have historically been problematic for oversized and heavy vehicles in rural Tamil Nadu.

8. Environmental Considerations and Sensitive Areas

The route passes through agricultural zones, which necessitate careful navigation to avoid disrupting local ecosystems and farmland. Any spillage of hazardous materials could have significant impacts on these areas.

9. Communication Coverage

Mobile signal coverage is generally consistent along highways but can be patchy between towns, particularly in rural stretches. It is advisable to use navigation tools that offer offline maps and communication devices independent of cellular networks.

10. Estimated Emergency Response Times

Emergency services in this region could take 30-60 minutes to reach more remote sections of the route due to limited infrastructure. Proximity to towns like Sullipalayam may offer more rapid response times.

11. Overall Summary of Risk Assessment

This route traverses a blend of semi-urban and rural areas, presenting typical challenges of road quality and weather-related hazards. Peak traffic times may affect transit time, and infrastructure quality is an area of primary concern. Adequate preparations, including awareness of alternative routes and understanding local regulations, can mitigate several of these risks. Maintaining open communication lines and having contingency plans for environmental hazards and emergencies is crucial for safe passage of hazardous materials along this route.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.38395, 77.89480	15 KM/Hr
1	Roundabout	High	11.04637, 77.73761	15 KM/Hr
2	U-Turn	High	10.7948656, 77.7097512	10 KM/Hr
3	Turn	High	11.43968, 77.87345	15 KM/Hr
4	Turn	High	11.44022, 77.87546	15 KM/Hr
5	Turn	Medium	11.39976, 77.88382	30 KM/Hr
6	Turn	Medium	11.39690, 77.88852	30 KM/Hr
7	Turn	Medium	11.34135, 77.90145	30 KM/Hr
8	Turn	High	11.30849, 77.92910	15 KM/Hr
9	Turn	Medium	11.27824, 77.91270	30 KM/Hr
10	Turn	Medium	11.24409, 77.87526	30 KM/Hr
11	Turn	Medium	11.24172, 77.87357	30 KM/Hr
12	Turn	High	11.24000, 77.87363	15 KM/Hr
13	Turn	Medium	11.24041, 77.86919	30 KM/Hr
14	Turn	High	11.24159, 77.86874	15 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
15	Turn	High	11.24170, 77.86842	15 KM/Hr
16	Turn	High	11.24248, 77.86829	15 KM/Hr
17	Turn	High	11.24257, 77.86776	15 KM/Hr
18	Blind Spot	Blind Spot	11.24384, 77.86689	10 KM/Hr
19	Turn	High	11.24103, 77.86020	15 KM/Hr
20	Turn	High	11.24200, 77.85882	15 KM/Hr
21	Turn	Medium	11.21415, 77.81760	30 KM/Hr
22	Turn	High	11.18856, 77.77110	15 KM/Hr
23	Turn	Medium	11.16441, 77.77358	30 KM/Hr
24	Turn	Medium	11.16377, 77.77421	30 KM/Hr
25	Turn	Medium	11.13664, 77.76524	30 KM/Hr
26	Turn	Medium	11.04616, 77.73711	30 KM/Hr
27	Turn	High	11.04515, 77.73621	15 KM/Hr
28	Turn	High	10.99026, 77.72511	15 KM/Hr
29	Turn	High	10.98974, 77.72388	15 KM/Hr
30	Blind Spot	Blind Spot	10.94597, 77.71319	10 KM/Hr
31	Turn	High	10.94571, 77.71574	15 KM/Hr
32	Turn	Medium	10.92251, 77.72391	30 KM/Hr
33	Turn	Medium	10.87191, 77.72259	30 KM/Hr
34	Turn	High	10.86296, 77.72154	15 KM/Hr
35	Turn	Medium	10.86198, 77.72038	30 KM/Hr
36	Turn	Medium	10.86169, 77.71783	30 KM/Hr
37	Turn	Medium	10.86129, 77.71735	30 KM/Hr
38	Turn	Medium	10.85622, 77.71783	30 KM/Hr
39	Turn	Medium	10.85474, 77.72055	30 KM/Hr
40	Turn	Medium	10.85089, 77.72068	30 KM/Hr
41	Turn	Medium	10.82293, 77.72030	30 KM/Hr
42	Turn	Medium	10.82060, 77.71866	30 KM/Hr
43	Turn	Medium	10.80297, 77.71447	30 KM/Hr
44	Turn	Medium	10.80273, 77.71333	30 KM/Hr
45	Turn	Medium	10.80127, 77.71215	30 KM/Hr
46	Turn	High	10.79654, 77.71111	15 KM/Hr
47	Turn	High	10.79642, 77.71008	15 KM/Hr
48	Turn	High	10.79721, 77.71008	15 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
49	Turn	High	10.79724, 77.70972	15 KM/Hr
50	Turn	Medium	10.79547, 77.70929	30 KM/Hr
51	Turn	High	10.79476, 77.70965	15 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	Tirukumaran Hospitals	11.3782118, 77.8914933	30 km/h	Medium
10	hospital	Krishna Hospital, Namakkal	11.3754811, 77.8931817	30 km/h	Medium
13	police	கரட்டுப்பாளையம் காவல் நிலையம்	11.357586, 77.8922539	30 km/h	Medium
14	hospital	Government Hospital, Elumathur	11.18533, 77.772496	30 km/h	Medium
15	hospital	Malar Hospital, Muthur	11.0438049, 77.7361156	30 km/h	Medium
16	hospital	SIBI Hospital, Vellakoil	10.9569141, 77.7160216	30 km/h	Medium
17	hospital	KG Hospital, Vellakoil	10.9511, 77.714116	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

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: 11.04637, 77.73761



Risk Type: U-Turn

Risk Level: High

Speed Limit: 10 KM/Hr

Coordinates: 10.7948656, 77.7097512



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.44022, 77.87546



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.39976, 77.88382



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.39690, 77.88852



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.34135, 77.90145



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.30849, 77.92910



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.27824, 77.91270



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.24409, 77.87526



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.24172, 77.87357



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.24000, 77.87363



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.24041, 77.86919



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.24159, 77.86874



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.24170, 77.86842



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.24248, 77.86829



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.24257, 77.86776



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.24384, 77.86689



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.24103, 77.86020



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.24200, 77.85882



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.21415, 77.81760



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.18856, 77.77110



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.16441, 77.77358



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.16377, 77.77421



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.13664, 77.76524



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.04616, 77.73711



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.04515, 77.73621



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.99026, 77.72511



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.98974, 77.72388



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Coordinates: 10.94597, 77.71319



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.94571, 77.71574



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.92251, 77.72391



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.87191, 77.72259



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.86296, 77.72154



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.86198, 77.72038



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.86169, 77.71783



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.86129, 77.71735



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.85622, 77.71783



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.85474, 77.72055



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.85089, 77.72068



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.82293, 77.72030



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.82060, 77.71866



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.80297, 77.71447



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.80273, 77.71333



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.80127, 77.71215



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.79654, 77.71111



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.79642, 77.71008



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.79721, 77.71008



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.79724, 77.70972



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.79547, 77.70929



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.79476, 77.70965
