



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal to SUMEDHA 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

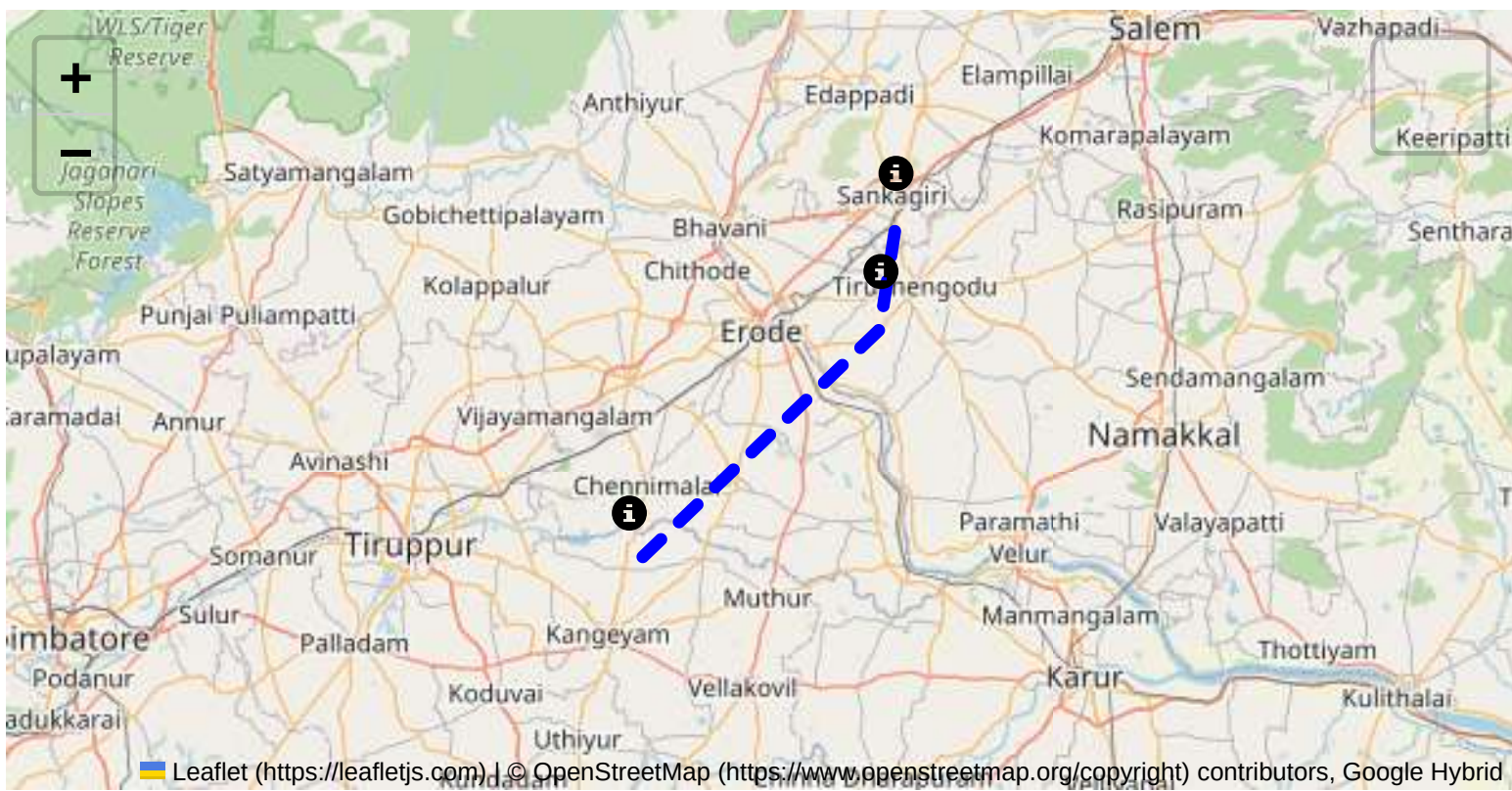
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

Journey Risk Mitigation

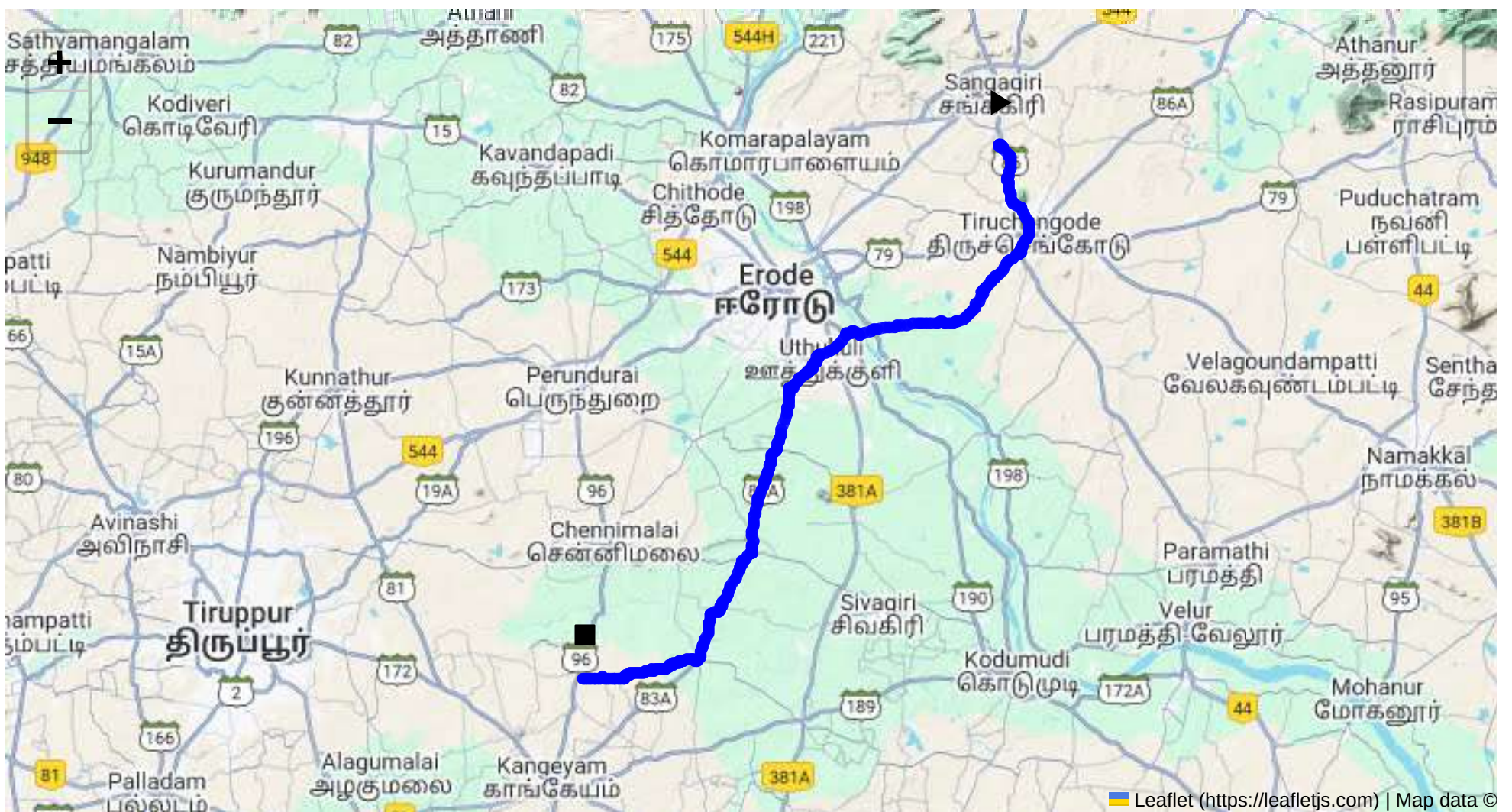
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 64.40 km
Estimated Duration: 1.6 hours
Adjusted Duration (Heavy Vehicle): 2.0 hours
Start: (11.4381, 77.8734)
End: (11.07368, 77.582997)



Welcome to the Journey Risk Management Study

Route Overview

The route from CVQF+23W, Sangagiri to 3HFJ+RRC, Naalroad via Tiruchengode spans approximately 64.4 kilometers. It navigates through the western part of Tamil Nadu, characterized by a mix of urban and rural settings. The route includes NH 544H and a network of state highways and local roads, passing through moderately populated areas.

Weather Conditions

Tamil Nadu experiences a tropical climate, with the region along the route commonly facing hot temperatures and dry conditions. The monsoon season (June to September) can bring heavy rainfall, leading to potential flooding and slick road conditions. Drivers should be cautious of reduced visibility and hydroplaning during this period.

Traffic Patterns

The areas around major towns such as Sangagiri and Tiruchengode may experience moderate congestion, particularly during morning (8-10 AM) and evening (5-7 PM) peak hours. Traffic can be heavier during local festivals and market days. Congestion-prone areas are primarily around town centers and intersections.

Road Quality and Infrastructure

The major highways, like NH 544H, are generally well-maintained, providing a good quality drive for heavy vehicles. However, some local roads might have uneven surfaces and narrower lanes, which require careful navigation, especially with large trucks.

Alternative Routes

In case of emergencies, an alternative route could involve taking NH 544 to connect with other major highways, though this may increase travel time. Additionally, local roads can offer diversions but may not be suitable for heavy vehicles due to weight restrictions or road conditions.

Hazardous Material Transport Regulations

Transporting hazardous materials in Tamil Nadu requires adherence to the Motor Vehicles Act and hazardous materials guidelines, which include proper labeling, emergency information provision, and driver training. Local police checkpoints may enforce regulations sporadically along the route.

Historical Incidents

There have been a few historical incidents involving heavy vehicles, mainly due to overloading or brake failure. No major incidents involving hazardous materials are reported on this specific route, but caution is advised due to mixed vehicle types and typical road conditions.

Environmental Considerations

Sensitive areas include agricultural fields and residential zones close to roads, where accidents could lead to environmental damage. Preservation of these areas is critical, necessitating careful driving and adherence to speed and weight limits.

Communication Coverage

Most of the route offers reliable mobile connectivity, but potential dead zones might exist in rural stretches between towns. It is advised to be prepared for possible communication interruptions in

isolated areas.

Emergency Response Times

Emergency response times can vary. Urban areas like Sangagiri and Tiruchengode may see faster response times (15-20 minutes), while more rural sections could experience delays up to 45 minutes. Awareness of the nearest hospitals and fire stations is recommended.

Risk Assessment Summary

Overall, the route presents moderate risks primarily from weather conditions during the monsoon and potential road quality issues on minor roads. Drivers should be vigilant of traffic patterns and ensure communication devices are charged and operational. Proper planning and adherence to regulations can mitigate many potential risks encountered along the route.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.38395, 77.89480	15 KM/Hr
1	Turn	Medium	11.43822, 77.87348	30 KM/Hr
2	Turn	High	11.43968, 77.87345	15 KM/Hr
3	Turn	High	11.44022, 77.87546	15 KM/Hr
4	Turn	High	11.37868, 77.89498	15 KM/Hr
5	Turn	Medium	11.37842, 77.89452	30 KM/Hr
6	Turn	Medium	11.36616, 77.88885	30 KM/Hr
7	Turn	Medium	11.36602, 77.88875	30 KM/Hr
8	Turn	Medium	11.34067, 77.86347	30 KM/Hr
9	Turn	Medium	11.33854, 77.86216	30 KM/Hr
10	Turn	Medium	11.33778, 77.86236	30 KM/Hr
11	Turn	Medium	11.31746, 77.84231	30 KM/Hr
12	Turn	Medium	11.30951, 77.77598	30 KM/Hr
13	Turn	Medium	11.30968, 77.76701	30 KM/Hr
14	Turn	High	11.29490, 77.74685	15 KM/Hr
15	Turn	High	11.29128, 77.74656	15 KM/Hr
16	Turn	Medium	11.29051, 77.74482	30 KM/Hr
17	Turn	Medium	11.28859, 77.74323	30 KM/Hr
18	Turn	Medium	11.28588, 77.74287	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
19	Turn	High	11.27326, 77.72991	15 KM/Hr
20	Blind Spot	Blind Spot	11.27330, 77.72711	10 KM/Hr
21	Turn	Medium	11.23062, 77.71799	30 KM/Hr
22	Turn	Medium	11.22395, 77.71387	30 KM/Hr
23	Turn	Medium	11.15951, 77.70067	30 KM/Hr
24	Turn	High	11.15942, 77.70068	15 KM/Hr
25	Turn	Medium	11.12126, 77.67929	30 KM/Hr
26	Turn	Medium	11.11716, 77.67178	30 KM/Hr
27	Turn	Medium	11.09494, 77.66604	30 KM/Hr
28	Turn	Medium	11.08499, 77.66196	30 KM/Hr
29	Turn	Medium	11.08497, 77.66170	30 KM/Hr
30	Turn	Medium	11.08671, 77.65529	30 KM/Hr
31	Turn	Medium	11.08594, 77.65198	30 KM/Hr
32	Turn	Medium	11.08501, 77.65091	30 KM/Hr
33	Turn	Medium	11.08411, 77.64613	30 KM/Hr
34	Turn	Medium	11.08016, 77.64039	30 KM/Hr
35	Turn	High	11.08011, 77.63502	15 KM/Hr
36	Turn	Medium	11.07494, 77.61236	30 KM/Hr
37	Turn	Medium	11.07378, 77.61177	30 KM/Hr
38	Turn	Medium	11.07352, 77.61121	30 KM/Hr
39	Turn	Medium	11.07311, 77.60692	30 KM/Hr
40	Turn	Medium	11.07405, 77.59599	30 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

	type	name	coordinates	speed_limit	risk_level
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	hospital	Government Hospital	11.2343326, 77.719226	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: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.44022, 77.87546



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.37868, 77.89498



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.37842, 77.89452



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.36616, 77.88885



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.36602, 77.88875



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.34067, 77.86347



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.33854, 77.86216



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.33778, 77.86236



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.31746, 77.84231



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.30951, 77.77598



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.30968, 77.76701



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.29490, 77.74685



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.29128, 77.74656



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.29051, 77.74482



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.28859, 77.74323



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.28588, 77.74287



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.27326, 77.72991



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Coordinates: 11.27330, 77.72711



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.23062, 77.71799



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.22395, 77.71387



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.15951, 77.70067



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.15942, 77.70068



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.12126, 77.67929



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.11716, 77.67178



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.09494, 77.66604



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.08499, 77.66196



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.08497, 77.66170



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.08671, 77.65529



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.08594, 77.65198



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.08501, 77.65091



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.08411, 77.64613



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.08016, 77.64039



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.08011, 77.63502



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.07494, 77.61236



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.07378, 77.61177



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07352, 77.61121



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07311, 77.60692



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.07405, 77.59599
