



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal to SRI VENKATESWARA 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

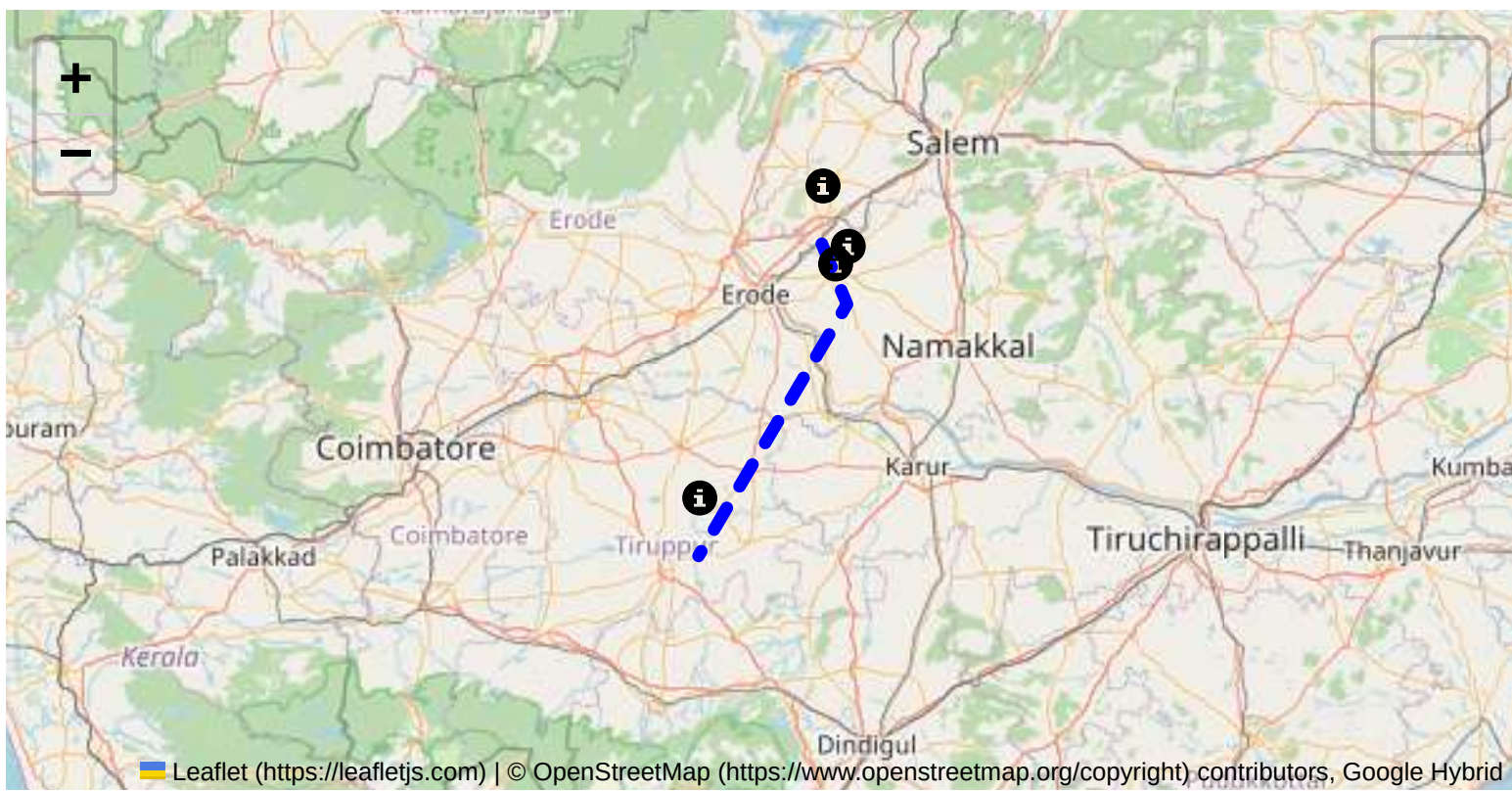
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

Journey Risk Mitigation

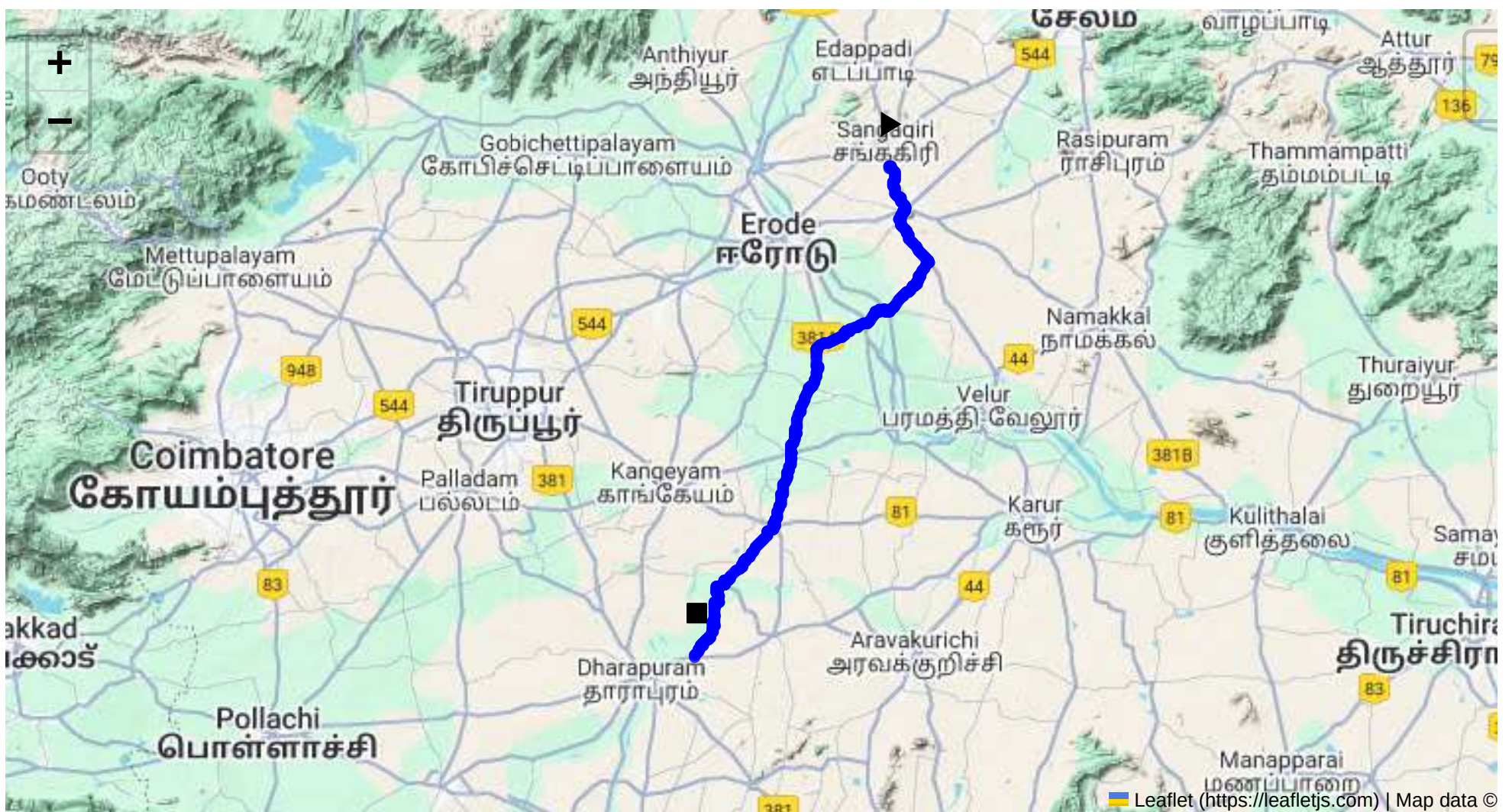
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 95.94 km
Estimated Duration: 2.2 hours
Adjusted Duration (Heavy Vehicle): 2.8 hours
Start: (11.4381, 77.8734)
End: (10.766133, 77.602046)



Welcome to the Journey Risk Management Study

Route Overview

The route from Sangagiri to Karaiyur passing through Sullipalayam and along MDR854 is approximately 95.94 kilometers. Starting at Sangagiri, you travel through rural areas and small towns in Tamil Nadu, mainly on state and district roads.

Weather Conditions

Tamil Nadu experiences a tropical climate with hot and humid conditions for most of the year. Monsoon season, from June to September, can bring heavy rainfall leading to potential flooding and reduced visibility. The months of March to May can have high temperatures, affecting engine performance.

Traffic Patterns

The route sees moderate traffic with potential congestion near market areas and towns, especially in the mornings (8-10 AM) and evenings (5-8 PM). Sullipalayam is particularly prone to congestion due to local activities.

Road Quality and Infrastructure

The roads vary in quality; some sections are well-paved, while others may have potholes, especially after monsoon rains. MDR854 is generally maintained but can have narrow sections that are less accommodating for heavy vehicles.

Emergency Alternative Routes

In the event of a blockage, you might consider detouring through national highways or larger state roads, which are typically in better condition and have higher emergency response capability.

Local Regulations on Hazardous Material Transport

Transporting hazardous materials requires adherence to specific regulations such as securing proper permits, adhering to weight limits, and ensuring all safety equipment is up to standards.

Historical Incidents

In the past decade, a few incidents involving heavy vehicles due to brake failures and overturning have occurred, generally attributed to poor road conditions and vehicle maintenance.

Environmental Considerations

The route passes through agricultural zones and small forest patches. It's crucial to prevent spillage and contamination, particularly near water bodies or agricultural lands.

Communication Coverage

There are potential communication dead zones in rural sections. Sullipalayam and other towns generally have stable mobile coverage, but the stretches of road between these areas may lack signal strength.

Emergency Response Times

Response times can vary, likely 30 minutes to an hour near towns like Sullipalayam, but potentially longer in more remote areas. Proximity to larger towns often results in quicker access to emergency services.

Overall Risk Assessment

This route poses several risks, including weather-related hazards, variable road conditions, and possible communication dropouts. These challenges necessitate stringent adherence to safety protocols, route planning, and contingency strategies for emergencies. Prioritizing maintenance of vehicles and ensuring effective communication and training will mitigate several risks, enhancing the safety of transporting hazardous materials on 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	Turn	High	11.43968, 77.87345	15 KM/Hr
3	Turn	High	11.44022, 77.87546	15 KM/Hr
4	Turn	Medium	11.39976, 77.88382	30 KM/Hr
5	Turn	Medium	11.39690, 77.88852	30 KM/Hr
6	Turn	Medium	11.34135, 77.90145	30 KM/Hr
7	Turn	High	11.30859, 77.92918	15 KM/Hr
8	Turn	Medium	11.27840, 77.91284	30 KM/Hr
9	Turn	Medium	11.24421, 77.87541	30 KM/Hr
10	Turn	Medium	11.24192, 77.87363	30 KM/Hr
11	Turn	High	11.24001, 77.87368	15 KM/Hr
12	Turn	High	11.24061, 77.86899	15 KM/Hr
13	Turn	High	11.24157, 77.86876	15 KM/Hr
14	Turn	High	11.24167, 77.86843	15 KM/Hr
15	Turn	High	11.24242, 77.86833	15 KM/Hr
16	Turn	Medium	11.24252, 77.86780	30 KM/Hr
17	Blind Spot	Blind Spot	11.24384, 77.86689	10 KM/Hr
18	Turn	High	11.24101, 77.86023	15 KM/Hr
19	Turn	High	11.24198, 77.85893	15 KM/Hr
20	Turn	Medium	11.21416, 77.81761	30 KM/Hr
21	Turn	High	11.18850, 77.77113	15 KM/Hr
22	Turn	Medium	11.16450, 77.77357	30 KM/Hr
23	Turn	Medium	11.16380, 77.77417	30 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
24	Turn	Medium	11.16294, 77.77438	30 KM/Hr
25	Turn	Medium	11.13667, 77.76526	30 KM/Hr
26	Turn	Medium	11.04618, 77.73719	30 KM/Hr
27	Turn	High	11.04528, 77.73627	15 KM/Hr
28	Turn	High	10.99029, 77.72513	15 KM/Hr
29	Turn	High	10.98982, 77.72400	15 KM/Hr
30	Turn	Medium	10.96598, 77.71682	30 KM/Hr
31	Turn	High	10.94591, 77.71309	15 KM/Hr
32	Turn	High	10.94582, 77.71257	15 KM/Hr
33	Turn	Medium	10.93825, 77.70342	30 KM/Hr
34	Turn	High	10.87230, 77.64948	15 KM/Hr
35	Turn	Medium	10.87221, 77.64501	30 KM/Hr
36	Turn	Medium	10.87174, 77.64440	30 KM/Hr
37	Turn	High	10.86454, 77.64346	15 KM/Hr
38	Turn	Medium	10.86372, 77.63528	30 KM/Hr
39	Turn	Medium	10.86166, 77.63330	30 KM/Hr
40	Turn	High	10.85787, 77.63357	15 KM/Hr
41	Turn	High	10.85690, 77.63240	15 KM/Hr
42	Turn	Medium	10.85361, 77.63320	30 KM/Hr
43	Turn	Medium	10.85261, 77.63402	30 KM/Hr
44	Turn	Medium	10.84944, 77.63434	30 KM/Hr
45	Turn	Medium	10.84093, 77.63410	30 KM/Hr
46	Turn	High	10.83987, 77.62957	15 KM/Hr
47	Turn	Medium	10.83842, 77.62941	30 KM/Hr
48	Turn	High	10.83784, 77.62873	15 KM/Hr
49	Turn	Medium	10.81721, 77.62884	30 KM/Hr
50	Turn	Medium	10.80997, 77.62851	30 KM/Hr
51	Turn	Medium	10.78968, 77.61905	30 KM/Hr
52	Turn	Medium	10.78308, 77.61275	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
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
18	hospital	Vellakoil Government Hospital	10.9410661, 77.7110372	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

	type	name	coordinates	speed_limit	risk_level
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: 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: 11.30859, 77.92918



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.27840, 77.91284



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.24421, 77.87541



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 11.24192, 77.87363



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.24001, 77.87368



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 11.24061, 77.86899



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.24157, 77.86876



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.24167, 77.86843



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.24242, 77.86833



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.24252, 77.86780



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: 11.24101, 77.86023



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.24198, 77.85893



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.21416, 77.81761



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.18850, 77.77113



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.16450, 77.77357



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.16380, 77.77417



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.16294, 77.77438



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.13667, 77.76526



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.04618, 77.73719



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.04528, 77.73627



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.99029, 77.72513



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.98982, 77.72400



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.96598, 77.71682



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.94591, 77.71309



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.94582, 77.71257



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.93825, 77.70342



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.87230, 77.64948



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.87221, 77.64501



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.87174, 77.64440



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.86454, 77.64346



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.86372, 77.63528



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.86166, 77.63330



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.85787, 77.63357



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.85690, 77.63240



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.85361, 77.63320



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.85261, 77.63402



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.84944, 77.63434



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.84093, 77.63410



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.83987, 77.62957



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.83842, 77.62941



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.83784, 77.62873



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.81721, 77.62884



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.80997, 77.62851



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.78968, 77.61905



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.78308, 77.61275
