



JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal To SREE KANISHKA AGENCY

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

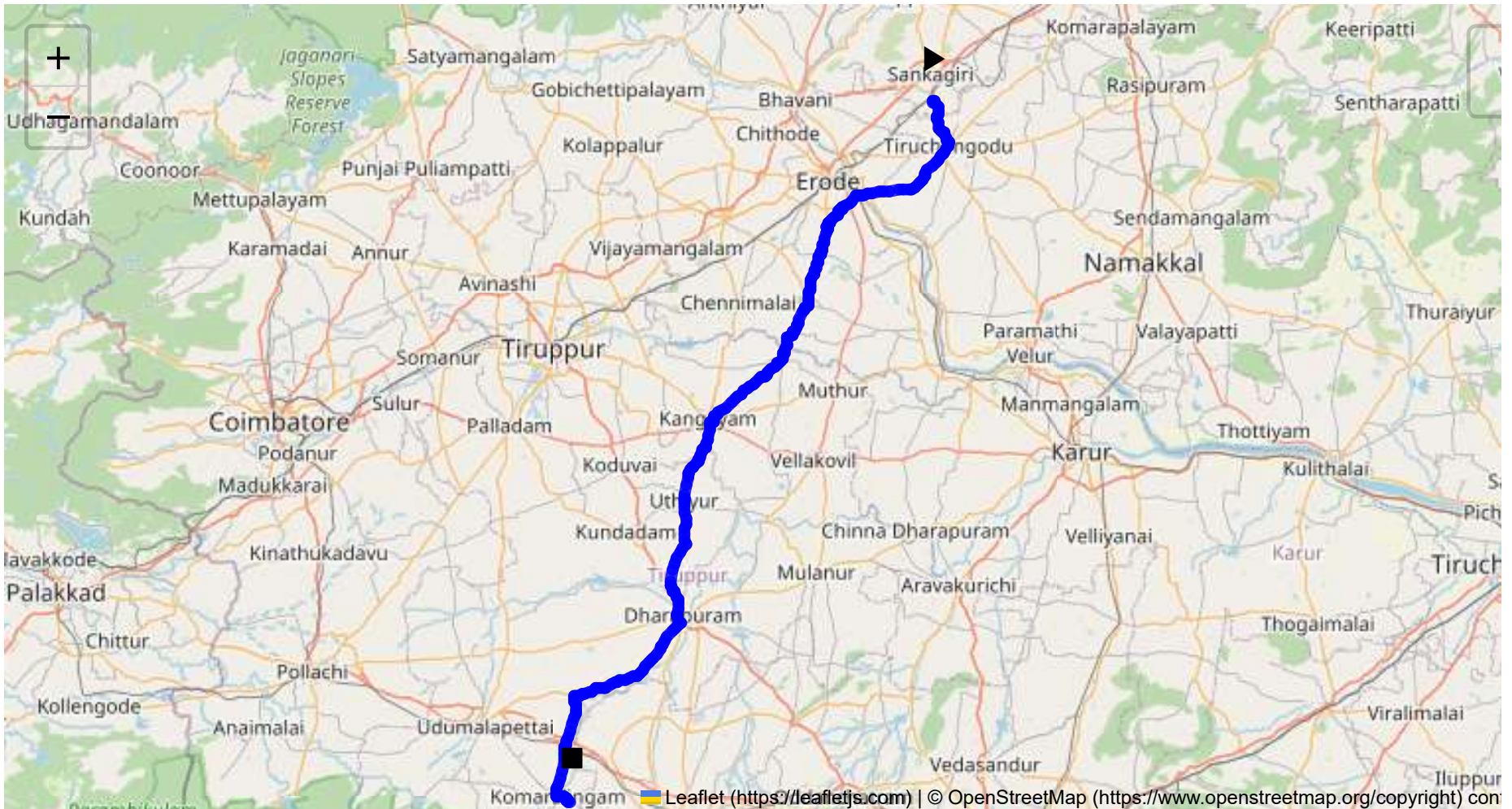
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 143.42 km
Estimated Duration: 3.3 hours
Adjusted Duration (Heavy Vehicle): 4.1 hours
Start: (11.4381, 77.8734)
End: (10.48035, 77.369806)



Welcome to the Journey Risk Management Study

Route Overview

The route from Sangagiri to Kolumam via Kaspapettai, Kangeyam, and Dharapuram covers approximately 143 kilometers through the state of Tamil Nadu, India. It passes through a variety of terrains, including rural areas and small towns, as well as major highways such as the Nagapattinam-Coimbatore-Gundlupet Highway.

Weather Conditions

Typical Weather:

- The region generally experiences a tropical climate with hot summers (March to June) and moderate to heavy rainfall during monsoons (July to September).
- Cooler temperatures prevail from November to February.

Weather-Related Hazards:

- Monsoon rains can lead to flooding or water-logging, particularly on smaller roads.
- Reduced visibility due to fog in the early mornings during the winter months.

Traffic Patterns

Peak Hours and Congestion:

- Morning (7-10 AM) and evening (5-8 PM) are peak hours, particularly around towns such as Kangeyam and Dharapuram.
- Congestion is common near marketplaces, schools, and industrial areas.

Road Quality and Infrastructure

Assessment:

- Roads vary in quality. Major highways are well-paved but secondary roads may have potholes and uneven surfaces.
- Limited signage and lighting in rural segments.
- Narrow roads in towns may pose a challenge for larger vehicles.

Alternative Routes for Emergencies

- **Alternative Route 1:** If facing issues on the primary route, consider taking the Erode-Coimbatore Road, which though longer, is broader and better maintained.
- **Alternative Route 2:** Via Karur could offer a detour with less traffic, especially if there's congestion or a blockade on the primary path.

Local Regulations on Hazardous Materials

- Transport of hazardous materials requires adherence to local and national transportation guidelines, including proper labeling, documentation, and safety measures.
- Certain areas may restrict hazardous transports during peak traffic hours or through densely populated regions.

Historical Incidents

- Historically, there have been incidents due to poor road conditions and reckless driving. Though specific data on hazardous material accidents are sparse, caution is advised.

Environmental Considerations

- The route passes through agricultural areas, requiring careful handling of materials to avoid contamination.
- Adjacent water bodies, like rivers and canals, necessitate adherence to strict safety protocols to prevent leaks or spills.

Communication Coverage

Dead Zones:

- Mobile network coverage is generally good along major highways.
- Potential coverage issues may arise in rural or sparsely populated areas, especially near forests or hilly regions.

Emergency Response Times

- **Sangagiri to Kaspapettai:** Approximately 30 minutes for emergency services due to its proximity to urban areas.
- **Kaspapettai to Kangeyam:** Could see 45 minutes to 1 hour given limited facilities.
- **Kangeyam to Dharapuram:** Around 45 minutes, services moderately accessible.
- **Dharapuram to Kolumam:** Approximately 1 hour due to rural nature and distance from major towns.

Overall Risk Assessment Summary

The main risks on this route involve weather-related challenges during the monsoon season, variable road quality, and potential traffic congestion during peak hours. It's crucial for drivers to be well-prepared for adverse weather, ensure compliance with local hazardous material transport regulations, and maintain contact with dispatch to coordinate emergency support. Continual monitoring of weather updates and traffic conditions, coupled with a strong emphasis on safety protocols, can mitigate many of the risks associated with 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	11.00172, 77.56268	15 KM/Hr
2	Roundabout	High	10.72668, 77.52217	15 KM/Hr
3	Turn	High	11.43961, 77.87341	15 KM/Hr
4	Turn	High	11.44029, 77.87544	15 KM/Hr
5	Turn	Medium	11.43111, 77.88170	30 KM/Hr
6	Turn	Medium	11.39983, 77.88377	30 KM/Hr
7	Turn	Medium	11.39706, 77.88825	30 KM/Hr
8	Turn	Medium	11.37862, 77.89488	30 KM/Hr
9	Turn	Medium	11.36595, 77.88853	30 KM/Hr
10	Turn	Medium	11.33865, 77.86216	30 KM/Hr
11	Turn	Medium	11.33699, 77.86218	30 KM/Hr
12	Turn	Medium	11.31790, 77.84330	30 KM/Hr
13	Turn	Medium	11.30951, 77.77598	30 KM/Hr
14	Turn	Medium	11.31109, 77.77183	30 KM/Hr
15	Turn	Medium	11.30911, 77.76654	30 KM/Hr
16	Turn	High	11.29496, 77.74717	15 KM/Hr
17	Turn	High	11.29128, 77.74656	15 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
18	Turn	Medium	11.28859, 77.74323	30 KM/Hr
19	Turn	Medium	11.28533, 77.74247	30 KM/Hr
20	Turn	Medium	11.27310, 77.72938	30 KM/Hr
21	Blind Spot	Blind Spot	11.27328, 77.72705	10 KM/Hr
22	Turn	Medium	11.23073, 77.71802	30 KM/Hr
23	Turn	Medium	11.15943, 77.70068	30 KM/Hr
24	Turn	Medium	11.11942, 77.67798	30 KM/Hr
25	Turn	Medium	11.11770, 77.67249	30 KM/Hr
26	Turn	Medium	11.11679, 77.67167	30 KM/Hr
27	Turn	Medium	11.10466, 77.67057	30 KM/Hr
28	Turn	Medium	11.09500, 77.66607	30 KM/Hr
29	Turn	Medium	11.08712, 77.66422	30 KM/Hr
30	Turn	Medium	11.08264, 77.65828	30 KM/Hr
31	Turn	Medium	11.08104, 77.65762	30 KM/Hr
32	Turn	Medium	11.06233, 77.63989	30 KM/Hr
33	Turn	Medium	11.00840, 77.56963	30 KM/Hr
34	Blind Spot	Blind Spot	11.00074, 77.56886	10 KM/Hr
35	Turn	Medium	10.94891, 77.54680	30 KM/Hr
36	Turn	Medium	10.94754, 77.54710	30 KM/Hr
37	Turn	Medium	10.93787, 77.53749	30 KM/Hr
38	Turn	Medium	10.92992, 77.53264	30 KM/Hr
39	Turn	Medium	10.89428, 77.52791	30 KM/Hr
40	Turn	Medium	10.89286, 77.52686	30 KM/Hr
41	Turn	Medium	10.83402, 77.52928	30 KM/Hr
42	Turn	Medium	10.77664, 77.50719	30 KM/Hr
43	Turn	Medium	10.77576, 77.50728	30 KM/Hr
44	Turn	High	10.75782, 77.51939	15 KM/Hr
45	Turn	Medium	10.70650, 77.50213	30 KM/Hr
46	Turn	High	10.63684, 77.40450	15 KM/Hr
47	Turn	High	10.62884, 77.38638	15 KM/Hr
48	Turn	High	10.62510, 77.37461	15 KM/Hr
49	Turn	Medium	10.49036, 77.34925	30 KM/Hr
50	Turn	High	10.48865, 77.34817	15 KM/Hr
51	Turn	High	10.48802, 77.34876	15 KM/Hr
52	Turn	Medium	10.48748, 77.36067	30 KM/Hr
53	Turn	High	10.48516, 77.36352	15 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
54	Turn	High	10.48229, 77.36278	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
10	hospital	Krishna Hospital, Namakkal	11.3754811, 77.8931817	30 km/h	Medium
11	hospital	Government Hospital	11.2343326, 77.719226	30 km/h	Medium
14	police	Kangeyam Police Station	11.0011411, 77.562688	30 km/h	Medium
15	hospital	J K Hospital	11.0042298, 77.5603345	30 km/h	Medium
18	hospital	Sri Balaji Surya Hospital	10.735518, 77.5185388	30 km/h	Medium
19	hospital	Ramana Hospital, Dharapuram	10.7351092, 77.517107	30 km/h	Medium
22	hospital	Janani Hospital, Dharapuram	10.7294033, 77.5210119	30 km/h	Medium
23	clinic	Punitha Nursing Home	10.72901, 77.520148	30 km/h	Medium
24	hospital	Ponnaiah Hospital, Dharapuram	10.72916, 77.520131	30 km/h	Medium
25	hospital	Government Hospital, Komaralingam	10.48788, 77.349253	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
9	school	KSR Educational institution	11.3772013, 77.8908807	30 km/h	Medium
12	college	Government Arts and Science College, Kangeyam	11.0626738, 77.636227	30 km/h	Medium
13	school	Carmel Girls Higher Secondary School	11.0009019, 77.5710182	30 km/h	Medium
16	school	Global Matriculation Higher Secondary School	10.965994, 77.5591898	30 km/h	Medium
17	college	Maharani College	10.7625655, 77.5157126	30 km/h	Medium
20	school	Vishnu Lakshmi Matriculation Higher Secondary School	10.7340392, 77.5164506	30 km/h	Medium
21	school	Thenmalar Higher Secondary School	10.7333748, 77.5166481	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: 11.00172, 77.56268



Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.72668, 77.52217



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: 11.43111, 77.88170



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.39983, 77.88377



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.39706, 77.88825



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.37862, 77.89488



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.36595, 77.88853



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.33865, 77.86216



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.33699, 77.86218



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.31790, 77.84330



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: 11.31109, 77.77183



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.30911, 77.76654



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.29496, 77.74717



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: 11.28859, 77.74323



Risk Type: Turn
Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.28533, 77.74247



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.27310, 77.72938



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.27328, 77.72705



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.23073, 77.71802



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.15943, 77.70068



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.11942, 77.67798



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.11770, 77.67249



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.11679, 77.67167



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.10466, 77.67057



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.09500, 77.66607



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.08712, 77.66422



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.08264, 77.65828



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.08104, 77.65762



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.06233, 77.63989



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 11.00840, 77.56963



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Coordinates: 11.00074, 77.56886



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.94891, 77.54680



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.94754, 77.54710



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.93787, 77.53749



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.92992, 77.53264



Risk Type: Turn
Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.89428, 77.52791



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.89286, 77.52686



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.83402, 77.52928



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.77664, 77.50719



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.77576, 77.50728



Risk Type: Turn
Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.75782, 77.51939



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.70650, 77.50213



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.63684, 77.40450



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.62884, 77.38638



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.62510, 77.37461



Risk Type: Turn
Risk Level: Medium

Speed Limit: 30 KM/Hr

Coordinates: 10.49036, 77.34925



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.48865, 77.34817



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 10.48802, 77.34876



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Coordinates: 10.48748, 77.36067



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Coordinates: 10.48516, 77.36352



Risk Type: Turn
Risk Level: High

Speed Limit: 15 KM/Hr
Coordinates: 10.48229, 77.36278
