



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal TO P K 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

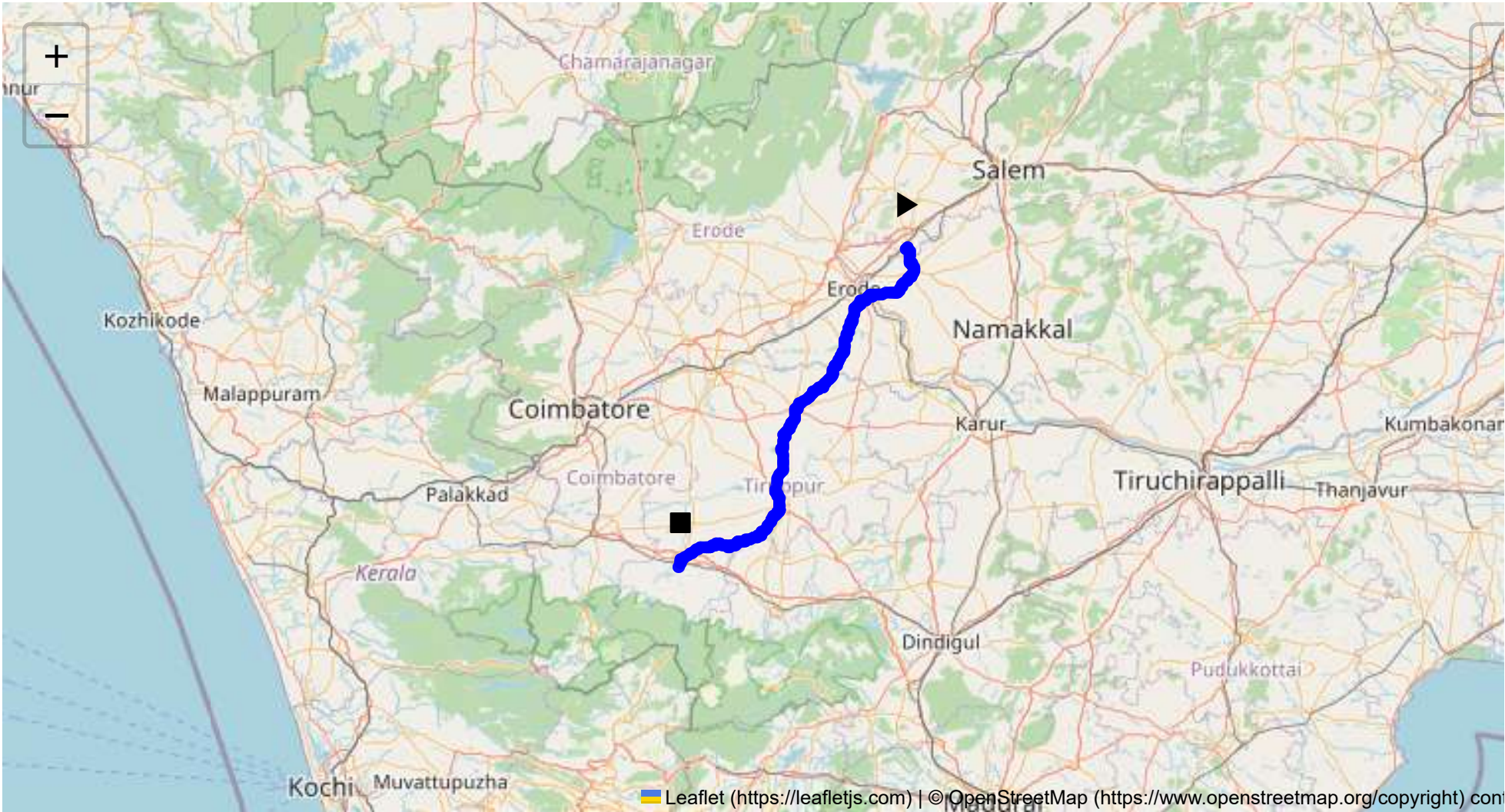
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 142.47 km
Estimated Duration: 3.2 hours
Adjusted Duration (Heavy Vehicle): 4.0 hours
Start: (11.4381, 77.8734)
End: (10.569015, 77.23829)



Risk Spots

	RiskSpotType	Coordinates	Speed Limit	Distance from Start
4	Turn	11.43961, 77.87341	15 KM/Hr	0.08 km
5	Turn	11.44029, 77.87544	15 KM/Hr	0.28 km
6	Turn	11.43111, 77.88170	15 KM/Hr	1.51 km

	RiskSpotType	Coordinates	Speed Limit	Distance from Start
7	Turn	11.39983, 77.88377	15 KM/Hr	5.04 km
8	Turn	11.39706, 77.88825	15 KM/Hr	5.62 km
0	Roundabout	11.38395, 77.89480	15 KM/Hr	7.41 km
9	Turn	11.37868, 77.89498	15 KM/Hr	7.78 km
10	Turn	11.36602, 77.88875	15 KM/Hr	9.44 km
11	Turn	11.33882, 77.86218	15 KM/Hr	13.35 km
12	Turn	11.33713, 77.86222	15 KM/Hr	13.91 km
13	Turn	11.31747, 77.84240	15 KM/Hr	17.10 km
14	Turn	11.30951, 77.77608	15 KM/Hr	24.34 km
15	Turn	11.31096, 77.77049	15 KM/Hr	25.00 km
16	Turn	11.30938, 77.76674	15 KM/Hr	25.36 km
17	Turn	11.29473, 77.74685	15 KM/Hr	28.33 km
18	Turn	11.29133, 77.74660	15 KM/Hr	28.69 km
19	Turn	11.28890, 77.74349	15 KM/Hr	29.04 km
20	Turn	11.28558, 77.74271	15 KM/Hr	29.52 km
21	Turn	11.27314, 77.72962	15 KM/Hr	31.54 km
22	Blind Spot	11.27330, 77.72711	10 KM/Hr	31.81 km
23	Turn	11.23090, 77.71808	15 KM/Hr	36.65 km
24	Turn	11.15943, 77.70068	15 KM/Hr	44.89 km
25	Turn	11.11943, 77.67799	15 KM/Hr	50.06 km
26	Turn	11.11783, 77.67283	15 KM/Hr	50.63 km
27	Turn	11.11680, 77.67167	15 KM/Hr	50.88 km
28	Turn	11.10471, 77.67058	15 KM/Hr	52.22 km
29	Turn	11.09508, 77.66612	15 KM/Hr	53.42 km
30	Turn	11.08722, 77.66431	15 KM/Hr	54.25 km
31	Turn	11.08274, 77.65832	15 KM/Hr	54.99 km
32	Turn	11.06187, 77.63939	15 KM/Hr	58.33 km
33	Turn	11.06173, 77.63591	15 KM/Hr	58.62 km
34	Turn	11.00847, 77.56981	15 KM/Hr	67.92 km
35	Turn	11.00090, 77.56888	15 KM/Hr	68.98 km
1	Roundabout	11.00172, 77.56268	15 KM/Hr	69.53 km
36	Turn	10.94900, 77.54681	15 KM/Hr	75.93 km
37	Turn	10.94764, 77.54709	15 KM/Hr	76.19 km
38	Turn	10.93853, 77.53921	15 KM/Hr	77.51 km

	RiskSpotType	Coordinates	Speed Limit	Distance from Start
39	Turn	10.93794, 77.53764	15 KM/Hr	77.70 km
40	Turn	10.93006, 77.53262	15 KM/Hr	78.73 km
41	Turn	10.89465, 77.52809	15 KM/Hr	82.72 km
42	Turn	10.89185, 77.52641	15 KM/Hr	83.11 km
43	Turn	10.83431, 77.52934	15 KM/Hr	89.34 km
44	Turn	10.77602, 77.50716	15 KM/Hr	96.66 km
45	Turn	10.75794, 77.51938	15 KM/Hr	99.01 km
46	Turn	10.72791, 77.52050	15 KM/Hr	102.11 km
2	Roundabout	10.72668, 77.52217	15 KM/Hr	102.68 km
47	Turn	10.63694, 77.40463	15 KM/Hr	119.80 km
48	Turn	10.62887, 77.38647	15 KM/Hr	122.28 km
49	Turn	10.62275, 77.30111	15 KM/Hr	131.92 km
3	Roundabout	10.58763, 77.24722	15 KM/Hr	139.14 km
50	Turn	10.58787, 77.24608	15 KM/Hr	139.27 km

Emergency Services

	type	name	coordinates	side_of_road
0	hospital	Tiruchengode, Goverment Hospital	11.3903328, 77.8920627	Opposite Side
1	hospital	SPM Medical Centre,Tiruchengode	11.3881331, 77.8931963	Opposite Side
2	clinic	Kongu Nursing Home	11.3783065, 77.8961134	Driver's Side
3	hospital	T.C.A Hospital Tiruchengode	11.3791885, 77.8965774	Driver's Side
4	hospital	Soorya Multispecialty Hospital	11.3786429, 77.8931912	Opposite Side
5	hospital	Tiruchengode Government Hospital	11.37645, 77.89426	Opposite Side
7	hospital	Krishna Hospital, Namakkal	11.3754811, 77.8931817	Opposite Side
8	hospital	Government Hospital	11.2343326, 77.719226	Driver's Side
10	police	Kangeyam Police Station	11.0011411, 77.562688	Opposite Side
11	hospital	J K Hospital	11.0042298, 77.5603345	Opposite Side
15	hospital	Sri Balaji Surya Hospital	10.735518, 77.5185388	Driver's Side
16	hospital	Ramana Hospital, Dharapuram	10.7351092, 77.517107	Opposite Side
18	hospital	Janani Hospital, Dharapuram	10.7294033, 77.5210119	Driver's Side
19	clinic	Punitha Nursing Home	10.72901, 77.520148	Driver's Side
20	hospital	Ponnaiah Hospital, Dharapuram	10.72916, 77.520131	Driver's Side
21	pharmacy	Apollo Pharmacy	10.5860212, 77.2456546	Driver's Side

	type	name	coordinates	side_of_road
23	hospital	Anitha Hospital	10.58568, 77.248727	Driver's Side
24	hospital	ARVI Hospital	10.58528, 77.249095	Driver's Side
25	hospital	Government Hospital, Udumalpet	10.5836488, 77.247474	Driver's Side
26	hospital	Dr.Sivakani Hospital Pvt Ltd	10.5809554, 77.2461377	Driver's Side

Rest Stops

	type	name	coordinates	side_of_road
6	restaurant	Lijo	11.3805115, 77.8946385	Opposite Side
9	fuel	Hindustan Petroleum	11.001711, 77.565054	Opposite Side
12	restaurant	Hotel Surya Pure Veg	11.0016663, 77.5638487	Driver's Side
13	fuel	Bharat Petroleum	11.0017719, 77.5629134	Driver's Side
14	fuel	Bharat Petroleum	10.9903599, 77.5638924	Opposite Side
17	restaurant	Amaravathi Lodge	10.7341612, 77.5177641	Opposite Side
22	restaurant	sri saravana	10.5881218, 77.2478941	Driver's Side

Welcome to the Journey Risk Management Study

Certainly! Below is a detailed safety analysis of the specified route from Sangagiri to Udumalaipettai via the mentioned waypoints.

1. Overview of the Route Map

- The route spans approximately 142.47 kilometers, winding through urban, semi-urban, and rural areas of Tamil Nadu. The journey starts in Sangagiri and passes through Puthur, Tiruchengode, Lakkapuram, Erode, Kangeyam, Uthiyur, and finally Udumalaipettai.
- The routing involves state highways and local roads.

2. Typical Weather Conditions and Potential Weather-Related Hazards

- **Climate:** Tropical, with hot summers (March to June), a monsoon season (July to September), and mild winters (November to February).
- **Hazards:** During the monsoon, heavy rains can cause slippery roads and increased chances of landslides or flooding, particularly in low-lying areas and near rivers.

3. Analysis of Traffic Patterns

- **Peak Hours:** Mornings (8:00-10:00 AM) and evenings (5:00-7:00 PM) see heightened traffic, especially near towns like Erode and Tiruchengode.
- **Congestion-Prone Areas:** Urban centers and school zones, particularly near Erode and Tiruchengode, often experience bottlenecks.

4. Assessment of Road Quality and Infrastructure

- Roads are generally well-paved along state highways but might degrade on some rural stretches. Watch for potholes, especially during post-monsoon periods.
- Road signs and lighting can be sparse in certain rural areas, increasing night-time navigation difficulty.

5. Suggestions for Alternative Routes for Emergencies

- **Via NH 81:** For faster travel in emergencies, consider using NH 81 connecting to nearby urban centers, though it may not pass precisely through all designated points.

6. Summary of Local Regulations Affecting Hazardous Material Transport

- **Permits:** Ensure that the vehicle has a permit for hazardous materials.
- **Curfews and Restrictions:** Check for any local restrictions on timing or route changes, particularly through densely populated or sensitive areas.

7. Overview of Historical Incidents

- Heavy vehicles carrying hazardous materials have occasionally faced mishaps, primarily due to road conditions and mechanical failures. Most incidents documented involve minor spills with no major environmental impacts.

8. Environmental Considerations and Sensitive Areas

- Pass near agricultural lands, requiring adherence to strict spill prevention measures to avoid contamination.
- Proximity to water bodies, particularly during monsoon, necessitates enhanced caution to prevent spillage into streams or rivers.

9. Analysis of Communication Coverage

- Cellular service is generally reliable but expect potential dead zones in rural areas such as Uthiyur. Equip drivers with emergency communication devices where necessary.

10. Estimated Emergency Response Times

- Urban areas like Erode have faster response times (20-30 minutes), while rural stretches could take significantly longer, up to 1-2 hours.

11. An Overall Summary of Risk Assessment

- **Low-Medium Risk:** While most of the route goes through well-trafficked and maintained areas, caution is advised during monsoon times and in lesser-developed segments. Proper pre-trip inspections and adherence to traffic norms can significantly mitigate risks.

In conclusion, the safety of this route for hazardous materials transport can be managed effectively with proper planning, adherence to regulations, and by staying informed about local weather and traffic conditions. It is imperative for drivers to be trained in emergency response and to have contingency plans and communication systems in place.

Route Photos of Risky Spots



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 0.28 km

Coordinates: 11.44029, 77.87544



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 1.51 km

Coordinates: 11.43111, 77.88170



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 5.04 km

Coordinates: 11.39983, 77.88377



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 5.62 km

Coordinates: 11.39706, 77.88825



Risk Type: Roundabout

Speed Limit: 15 KM/Hr

Distance from Start: 7.41 km

Coordinates: 11.38395, 77.89480



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 7.78 km

Coordinates: 11.37868, 77.89498



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 9.44 km

Coordinates: 11.36602, 77.88875



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 13.35 km

Coordinates: 11.33882, 77.86218



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 13.91 km

Coordinates: 11.33713, 77.86222



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 17.10 km

Coordinates: 11.31747, 77.84240



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 24.34 km

Coordinates: 11.30951, 77.77608



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 25.00 km

Coordinates: 11.31096, 77.77049



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 25.36 km

Coordinates: 11.30938, 77.76674



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 28.33 km

Coordinates: 11.29473, 77.74685



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 28.69 km

Coordinates: 11.29133, 77.74660



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 29.04 km

Coordinates: 11.28890, 77.74349



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 29.52 km

Coordinates: 11.28558, 77.74271



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 31.54 km

Coordinates: 11.27314, 77.72962



Risk Type: Blind Spot
Speed Limit: 10 KM/Hr
Distance from Start: 31.81 km
Coordinates: 11.27330, 77.72711



Risk Type: Turn
Speed Limit: 15 KM/Hr
Distance from Start: 36.65 km
Coordinates: 11.23090, 77.71808



Risk Type: Turn
Speed Limit: 15 KM/Hr
Distance from Start: 44.89 km
Coordinates: 11.15943, 77.70068



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 50.06 km

Coordinates: 11.11943, 77.67799



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 50.63 km

Coordinates: 11.11783, 77.67283



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 50.88 km

Coordinates: 11.11680, 77.67167



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 52.22 km

Coordinates: 11.10471, 77.67058



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 53.42 km

Coordinates: 11.09508, 77.66612



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 54.25 km

Coordinates: 11.08722, 77.66431



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 54.99 km

Coordinates: 11.08274, 77.65832



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 58.33 km

Coordinates: 11.06187, 77.63939



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 58.62 km

Coordinates: 11.06173, 77.63591



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 67.92 km

Coordinates: 11.00847, 77.56981



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 68.98 km

Coordinates: 11.00090, 77.56888



Risk Type: Roundabout

Speed Limit: 15 KM/Hr

Distance from Start: 69.53 km

Coordinates: 11.00172, 77.56268



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 75.93 km

Coordinates: 10.94900, 77.54681



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 76.19 km

Coordinates: 10.94764, 77.54709



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 77.51 km

Coordinates: 10.93853, 77.53921



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 77.70 km

Coordinates: 10.93794, 77.53764



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 78.73 km

Coordinates: 10.93006, 77.53262



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 82.72 km

Coordinates: 10.89465, 77.52809



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 83.11 km

Coordinates: 10.89185, 77.52641



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 89.34 km

Coordinates: 10.83431, 77.52934



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 96.66 km

Coordinates: 10.77602, 77.50716



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 99.01 km

Coordinates: 10.75794, 77.51938



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 102.11 km

Coordinates: 10.72791, 77.52050



Risk Type: Roundabout

Speed Limit: 15 KM/Hr

Distance from Start: 102.68 km

Coordinates: 10.72668, 77.52217



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 119.80 km

Coordinates: 10.63694, 77.40463



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 122.28 km

Coordinates: 10.62887, 77.38647



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 131.92 km

Coordinates: 10.62275, 77.30111



Risk Type: Roundabout

Speed Limit: 15 KM/Hr

Distance from Start: 139.14 km

Coordinates: 10.58763, 77.24722



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 139.27 km

Coordinates: 10.58787, 77.24608

[Download Interactive Map](#)