



# IndianOil

## **JOURNEY RISK MANAGEMENT (JRM) STUDY**

### **Salem Terminal to SRI MURUGAN 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.

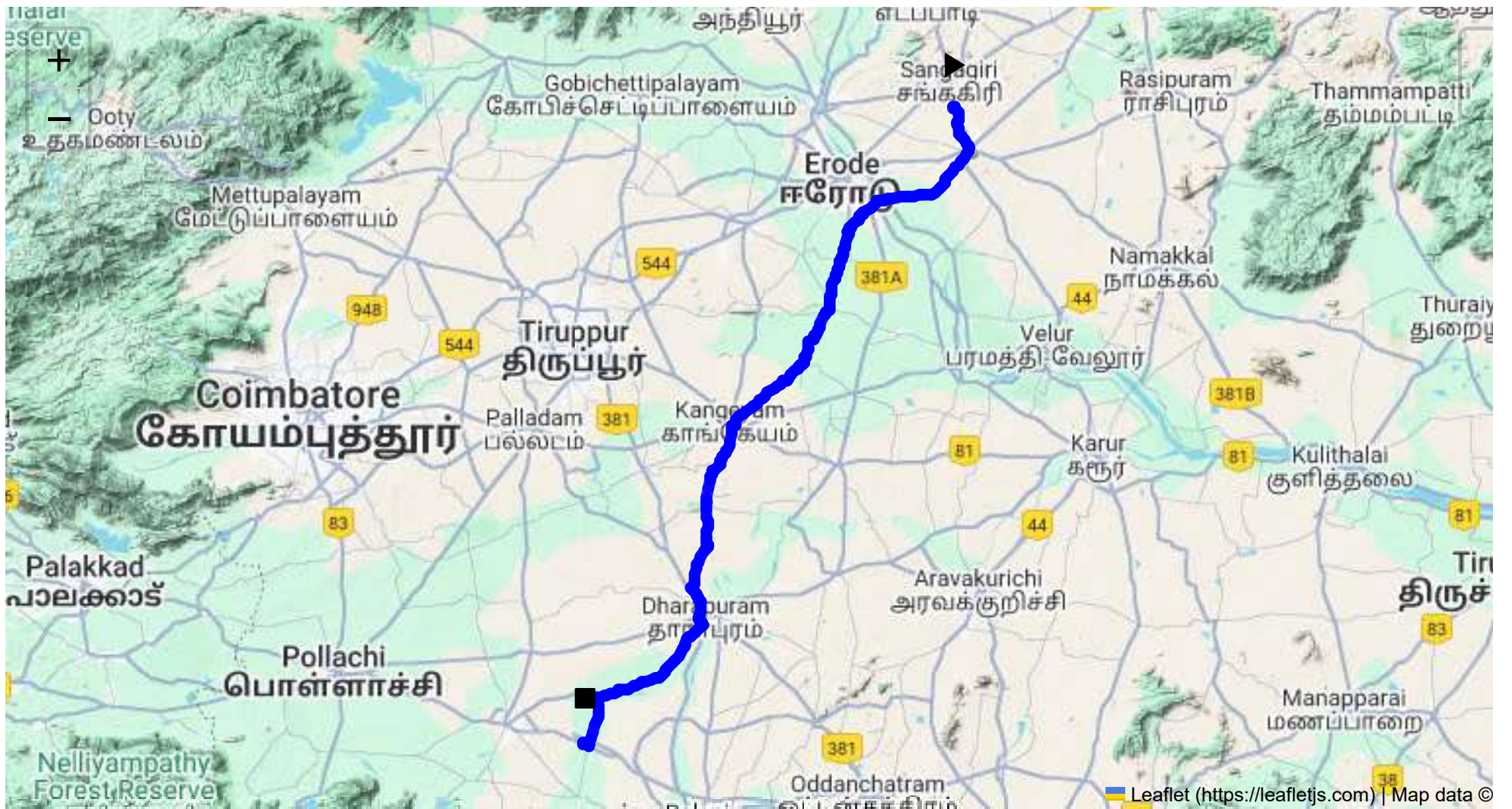
## **Compliance with Government Directives**

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: 133.28 km**  
**Estimated Duration: 3.0 hours**  
**Adjusted Duration (Heavy Vehicle): 3.8 hours**  
**Start: (11.4381, 77.8734)**  
**End: (10.563015, 77.354462)**



## Risk Spots

	RiskSpotType	Coordinates	Speed Limit	Distance from Start
3	Turn	11.43968, 77.87345	15 KM/Hr	0.09 km
4	Turn	11.44022, 77.87546	15 KM/Hr	0.29 km
5	Turn	11.43107, 77.88171	15 KM/Hr	1.51 km



	RiskSpotType	Coordinates	Speed Limit	Distance from Start
6	Turn	11.39976, 77.88382	15 KM/Hr	5.05 km
7	Turn	11.39690, 77.88852	15 KM/Hr	5.64 km
0	Roundabout	11.38395, 77.89480	15 KM/Hr	7.29 km
8	Turn	11.36593, 77.88847	15 KM/Hr	9.55 km
9	Turn	11.33561, 77.86176	15 KM/Hr	13.97 km
10	Turn	11.31777, 77.84310	15 KM/Hr	16.95 km
11	Turn	11.30952, 77.77587	15 KM/Hr	24.36 km
12	Turn	11.31111, 77.77178	15 KM/Hr	24.82 km
13	Turn	11.30973, 77.76712	15 KM/Hr	25.36 km
14	Turn	11.29490, 77.74685	15 KM/Hr	28.34 km
15	Turn	11.29125, 77.74646	15 KM/Hr	28.74 km
16	Turn	11.29076, 77.74528	15 KM/Hr	28.85 km
17	Turn	11.28844, 77.74319	15 KM/Hr	29.09 km
18	Turn	11.28518, 77.74231	15 KM/Hr	29.56 km
19	Turn	11.27307, 77.72916	15 KM/Hr	31.56 km
20	Blind Spot	11.27330, 77.72715	10 KM/Hr	31.81 km
21	Turn	11.23054, 77.71796	15 KM/Hr	36.67 km
22	Turn	11.22949, 77.71670	15 KM/Hr	36.84 km
23	Turn	11.15942, 77.70068	15 KM/Hr	44.94 km
24	Turn	11.12102, 77.67919	15 KM/Hr	49.87 km
25	Turn	11.11932, 77.67786	15 KM/Hr	50.11 km
26	Turn	11.11763, 77.67232	15 KM/Hr	50.71 km
27	Turn	11.09491, 77.66603	15 KM/Hr	53.45 km
28	Turn	11.08696, 77.66407	15 KM/Hr	54.28 km
29	Turn	11.08296, 77.65857	15 KM/Hr	55.13 km
30	Turn	11.06183, 77.63924	15 KM/Hr	58.36 km
31	Turn	11.00826, 77.56962	15 KM/Hr	68.02 km
32	Blind Spot	11.00058, 77.56882	10 KM/Hr	69.07 km
1	Roundabout	11.00172, 77.56268	15 KM/Hr	69.69 km
33	Turn	10.94862, 77.54680	15 KM/Hr	76.05 km
34	Turn	10.94722, 77.54709	15 KM/Hr	76.28 km
35	Turn	10.93765, 77.53710	15 KM/Hr	77.74 km
36	Turn	10.93135, 77.53302	15 KM/Hr	78.53 km
37	Turn	10.89213, 77.52646	15 KM/Hr	83.10 km

	RiskSpotType	Coordinates	Speed Limit	Distance from Start
38	Turn	10.83409, 77.52932	15 KM/Hr	89.67 km
39	Turn	10.77642, 77.50712	15 KM/Hr	96.49 km
40	Turn	10.75864, 77.51918	15 KM/Hr	98.98 km
41	Turn	10.75722, 77.51935	15 KM/Hr	99.17 km
42	Turn	10.73670, 77.51731	15 KM/Hr	101.20 km
2	Roundabout	10.72668, 77.52217	15 KM/Hr	102.78 km
43	Turn	10.63682, 77.41748	15 KM/Hr	118.23 km
44	Turn	10.63707, 77.40481	15 KM/Hr	119.99 km
45	Turn	10.63096, 77.39875	15 KM/Hr	120.75 km
46	Turn	10.62891, 77.38675	15 KM/Hr	121.96 km
47	Turn	10.62501, 77.37810	15 KM/Hr	123.02 km
48	Turn	10.62530, 77.37509	15 KM/Hr	123.59 km
49	Blind Spot	10.55909, 77.36238	10 KM/Hr	131.47 km
50	Turn	10.56289, 77.35441	15 KM/Hr	132.39 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
3	clinic	Kongu Nursing Home	11.3783065, 77.8961134	Driver's Side
4	hospital	T.C.A Hospital Tiruchengode	11.3791885, 77.8965774	Driver's Side
5	hospital	Soorya Multispecialty Hospital	11.3786429, 77.8931912	Opposite Side
6	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
9	police	Kangeyam Police Station	11.0011411, 77.562688	Opposite Side
13	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

## Rest Stops

	type	name	coordinates	side_of_road
2	restaurant	Lijo	11.3805115, 77.8946385	Opposite Side
10	restaurant	Hotel Surya Pure Veg	11.0016663, 77.5638487	Driver's Side
11	fuel	Bharat Petroleum	11.0017719, 77.5629134	Driver's Side
12	fuel	Hindustan Petroleum	11.001711, 77.565054	Opposite Side
14	fuel	Bharat Petroleum	10.9903599, 77.5638924	Opposite Side
17	restaurant	Amaravathi Lodge	10.7341612, 77.5177641	Opposite Side

## Welcome to the Journey Risk Management Study

### Route Safety Analysis: CVQF+23W, Sangagiri to H973+6PX, Tiruppur, Madathukulam

#### 1. Overview of the Route Map

The route from Sangagiri to Tiruppur, Madathukulam spans approximately 133.28 kilometers. It primarily follows National Highway 544 (NH 544), transitioning to regional roads as you approach Tiruppur. The route covers varying terrain, including urban sections, rural stretches, and some industrial areas.

#### 2. Typical Weather Conditions

- Climate:** Tamil Nadu experiences a tropical climate. Common weather includes hot and humid conditions with occasional monsoons.
- Weather-Related Hazards:** During monsoon (June to September), heavy rainfall can cause road flooding and reduced visibility. Dry conditions may contribute to dust, affecting driver visibility.

#### 3. Traffic Patterns

- Peak Hours:** Expect increased traffic during morning hours (7:00 - 9:00 AM) and evening rush (5:00 - 8:00 PM), particularly near city limits.
- Congestion-Prone Areas:** Major congestion is likely around Coimbatore, a key junction before Tiruppur. Heavy vehicle traffic is common due to industrial activities.

#### 4. Assessment of Road Quality and Infrastructure

- NH 544:** Well-maintained, suitable for heavy vehicles with regular signage. Provides essential amenities such as fuel stations and rest areas.

- **Regional Roads:** Varying conditions; some sections may be narrower with higher wear, requiring caution to manage potential potholes and uneven surfaces.

## 5. Alternative Route Suggestions

- **Via NH 81 and SH 19:** This alternative bypasses major urban centers, useful during emergencies or severe congestion.
- **Local Routes:** In case of road closures, local roads connecting through smaller towns may offer relief but require updated navigation tools for accurate routing.

## 6. Local Regulations for Hazardous Material Transport

- **Permits:** Ensure compliance with state regulations requiring permits for transporting hazardous materials.
- **Time Restrictions:** Certain districts may restrict movement of heavy vehicles during peak hours; check local rules.

## 7. Historical Incidents

- Notable high-profile incidents involving heavy vehicles include overturned trucks primarily due to speeding or evasive maneuvers avoiding obstacles.
- Hazardous material spills are not frequent but pose significant environmental risks, particularly near Coimbatore.

## 8. Environmental Considerations

- **Sensitive Areas:** The route passes through agricultural and some ecologically sensitive areas. Care should be taken to avoid spills near these zones to prevent contamination.
- **Waste Management:** Follow protocols for waste disposal and emergency containment to protect local ecosystems.

## 9. Communication Coverage

- Generally good coverage with major telecom providers, though some rural stretches may experience brief dead zones. Essential to maintain a satellite phone for emergencies.

## 10. Estimated Emergency Response Times

- **Urban Areas:** Within the range of 30-45 minutes due to proximity to services.
- **Rural Stretches:** Could extend to 60-90 minutes due to distance from major towns.

## 11. Summary of Risk Assessment

Overall, this route involves a medium risk level fueled by weather events and peak urban congestion. Adequate preparation, combined with compliance with local transport regulations, can mitigate most



risks. Due diligence in vehicle maintenance, awareness of alternative routes, and strict adherence to road safety rules are imperative.

The route is generally safe for use by experienced heavy vehicle operators familiar with regional road conditions, mindful of variable weather impacts, and capable of safely transporting hazardous materials. Regular updates from traffic management systems and weather forecasts are essential for ongoing risk management during the journey.

## Route Photos of Risky Spots



**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 0.29 km

**Coordinates:** 11.44022, 77.87546



**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 1.51 km

**Coordinates:** 11.43107, 77.88171





**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 5.05 km

**Coordinates:** 11.39976, 77.88382



**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 5.64 km

**Coordinates:** 11.39690, 77.88852





**Risk Type:** Roundabout  
**Speed Limit:** 15 KM/Hr  
**Distance from Start:** 7.29 km  
**Coordinates:** 11.38395, 77.89480



**Risk Type:** Turn  
**Speed Limit:** 15 KM/Hr  
**Distance from Start:** 9.55 km  
**Coordinates:** 11.36593, 77.88847





**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 13.97 km**

**Coordinates: 11.33561, 77.86176**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 16.95 km**

**Coordinates: 11.31777, 77.84310**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 24.36 km**

**Coordinates: 11.30952, 77.77587**





**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 24.82 km

**Coordinates:** 11.31111, 77.77178



**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 25.36 km

**Coordinates:** 11.30973, 77.76712





**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 28.34 km**

**Coordinates: 11.29490, 77.74685**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 28.74 km**

**Coordinates: 11.29125, 77.74646**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 28.85 km**

**Coordinates: 11.29076, 77.74528**





**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 29.09 km**

**Coordinates: 11.28844, 77.74319**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 29.56 km**

**Coordinates: 11.28518, 77.74231**





**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 31.56 km**

**Coordinates: 11.27307, 77.72916**



**Risk Type: Blind Spot**

**Speed Limit: 10 KM/Hr**

**Distance from Start: 31.81 km**

**Coordinates: 11.27330, 77.72715**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 36.67 km**

**Coordinates: 11.23054, 77.71796**





**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 36.84 km

**Coordinates:** 11.22949, 77.71670



**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 44.94 km

**Coordinates:** 11.15942, 77.70068





**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 49.87 km**

**Coordinates: 11.12102, 77.67919**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 50.11 km**

**Coordinates: 11.11932, 77.67786**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 50.71 km**

**Coordinates: 11.11763, 77.67232**





**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 53.45 km

**Coordinates:** 11.09491, 77.66603



**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 54.28 km

**Coordinates:** 11.08696, 77.66407





**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 55.13 km**

**Coordinates: 11.08296, 77.65857**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 58.36 km**

**Coordinates: 11.06183, 77.63924**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 68.02 km**

**Coordinates: 11.00826, 77.56962**





**Risk Type:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 69.07 km

**Coordinates:** 11.00058, 77.56882



**Risk Type:** Roundabout

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 69.69 km

**Coordinates:** 11.00172, 77.56268





**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 76.05 km**

**Coordinates: 10.94862, 77.54680**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 76.28 km**

**Coordinates: 10.94722, 77.54709**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 77.74 km**

**Coordinates: 10.93765, 77.53710**





**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 78.53 km

**Coordinates:** 10.93135, 77.53302



**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 83.10 km

**Coordinates:** 10.89213, 77.52646





**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 89.67 km**

**Coordinates: 10.83409, 77.52932**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 96.49 km**

**Coordinates: 10.77642, 77.50712**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 98.98 km**

**Coordinates: 10.75864, 77.51918**





**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 99.17 km**

**Coordinates: 10.75722, 77.51935**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 101.20 km**

**Coordinates: 10.73670, 77.51731**





**Risk Type:** Roundabout  
**Speed Limit:** 15 KM/Hr  
**Distance from Start:** 102.78 km  
**Coordinates:** 10.72668, 77.52217



**Risk Type:** Turn  
**Speed Limit:** 15 KM/Hr  
**Distance from Start:** 118.23 km  
**Coordinates:** 10.63682, 77.41748



**Risk Type:** Turn  
**Speed Limit:** 15 KM/Hr  
**Distance from Start:** 119.99 km  
**Coordinates:** 10.63707, 77.40481





**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 120.75 km

**Coordinates:** 10.63096, 77.39875



**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 121.96 km

**Coordinates:** 10.62891, 77.38675





**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 123.02 km**

**Coordinates: 10.62501, 77.37810**



**Risk Type: Turn**

**Speed Limit: 15 KM/Hr**

**Distance from Start: 123.59 km**

**Coordinates: 10.62530, 77.37509**



**Risk Type: Blind Spot**

**Speed Limit: 10 KM/Hr**

**Distance from Start: 131.47 km**

**Coordinates: 10.55909, 77.36238**





**Risk Type:** Turn

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 132.39 km

**Coordinates:** 10.56289, 77.35441

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