



## JOURNEY RISK MANAGEMENT (JRM) STUDY

### Gorakhpur LPG BP TO BHARTI INDANE SERVICE

#### 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

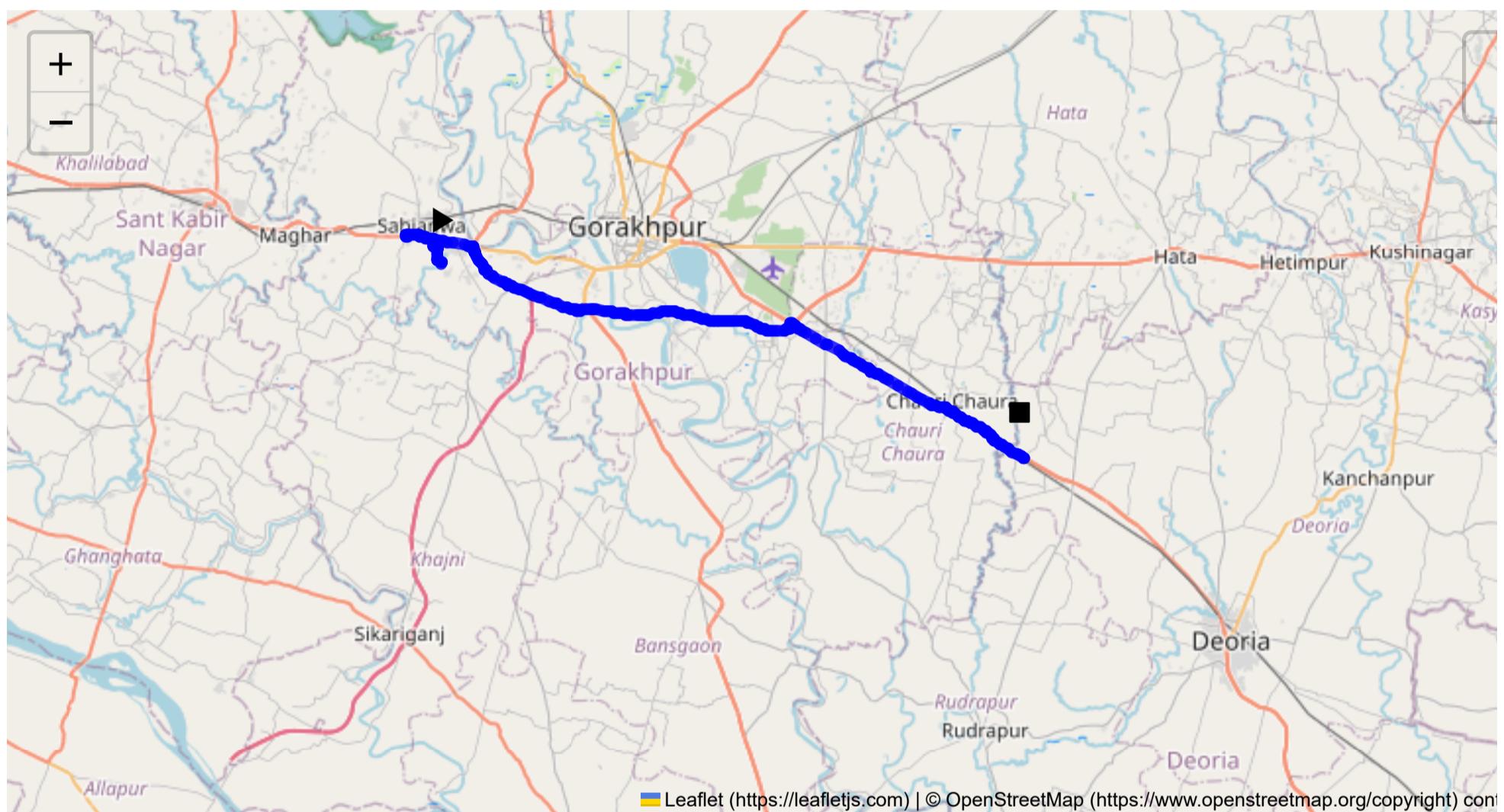
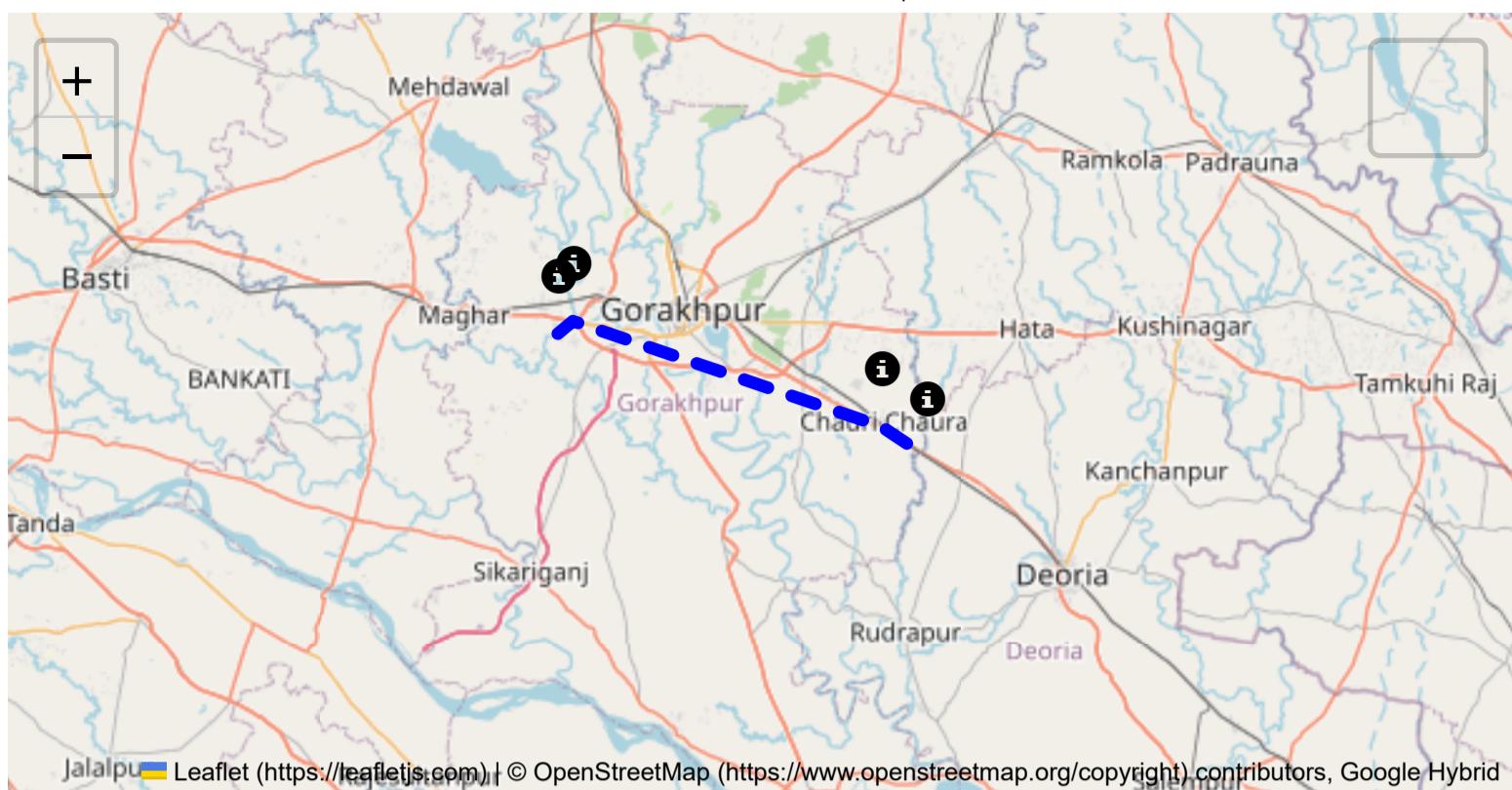
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 53.06 km**  
**Estimated Duration: 1.2 hours**  
**Adjusted Duration (Heavy Vehicle): 1.5 hours**  
**Start: (26.735959, 83.229398)**  
**End: (26.61599, 83.63293)**

## Welcome to the Journey Risk Management Study

### 1. Overview of the Route Map

The route from GIDA Industrial Area Phase 1 in Sahjanwa to Subhash Chandra Bose Nagar in Bhatauli Buzurg, advances through significant urban and semi-urban areas. The key points include 01 Zero Point in Kaalesar and the Gorakhpur-Deoria Highway through Bhopa Bazar. The route involves traversing state highways and local roads with varying traffic densities.

## 2. Typical Weather Conditions and Potential Weather-Related Hazards

The weather in this region typically features a humid subtropical climate with hot summers and cold winters. The monsoon season, from June to September, can cause heavy rainfall leading to waterlogged roads and reduced visibility. Dense fog is common in the winter months, particularly December and January, which could severely affect visibility and traction.

## 3. Analysis of Traffic Patterns

Traffic congestion is a significant issue in urban sections like Gorakhpur, especially during the morning (8:00 AM - 10:00 AM) and evening (5:00 PM - 7:00 PM) rush hours. Highway sections may experience delays due to construction or maintenance work. The route's critical congestion-prone areas include the city limits near Gorakhpur and intersections along the Gorakhpur-Deoria Highway.

## 4. Assessment of Road Quality and Infrastructure

The road quality varies across the route. Urban roads in and around Gorakhpur are generally paved but can be pot-holed or uneven. Rural sections might have narrow lanes lacking proper signage and lighting, which could pose a risk of accidents, particularly at night or during adverse weather conditions.

## 5. Suggestions for Alternative Routes for Emergencies

In case of emergencies or severe congestion, an alternative could bypass major urban centers by taking smaller state highways or rural roads. For instance, diverting straight to Bhatauli Buzurg via Faizabad Road and connecting through local bypasses, though checking the current road conditions is advisable.

## 6. Summary of Local Regulations Affecting Hazardous Material Transport

Transporting hazardous materials requires compliance with national safety standards and acquiring necessary permits. Transporters must follow specific routes allowed for hazardous material trucks and adhere to designated travel times to minimize risk in densely populated areas.

## 7. Overview of Historical Incidents

While specific data may be limited, the region has had incidents involving heavy vehicles due to road quality and congestion. Past incidents include overturning due to abrupt stoppages and collisions at high-traffic intersections.

## 8. Environmental Considerations and Sensitive Areas

The route does not cross major environmentally sensitive zones, but proximity to populated areas demands cautious transport of hazardous materials to prevent potential environmental contamination from spills or leaks.

## 9. Analysis of Communication Coverage

Generally, the mobile network coverage is robust in urban and semi-urban areas but can thin out in rural segments, creating potential communication dead zones. It is advisable to equip vehicles with satellite communication tools for emergencies.

## 10. Estimated Emergency Response Times

Emergency response could vary significantly based on the location. Urban areas like Gorakhpur might see response times as low as 15-30 minutes, while rural areas might experience delays reaching up to an hour or more.

## 11. Overall Summary of Risk Assessment

The route poses various challenges, including congestion, variable road conditions, and limited emergency response capabilities in rural areas. Proactive risk management, including monitoring weather forecasts, maintaining communication tools, and preparing alternative routes, is critical for effective transportation of hazardous materials along this route. Regular contact with local authorities for real-time updates and strict adherence to regulations will further mitigate potential risks.

### Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
5	Turn	High	26.73690, 83.22947	15 KM/Hr	0.05 km
6	Turn	High	26.73697, 83.22939	15 KM/Hr	0.11 km
7	Turn	High	26.73746, 83.22938	15 KM/Hr	0.15 km
8	Blind Spot	Blind Spot	26.73791, 83.22625	10 KM/Hr	0.48 km
9	Turn	Medium	26.74524, 83.22746	30 KM/Hr	1.30 km
10	Turn	Medium	26.74532, 83.22740	30 KM/Hr	1.32 km
11	Turn	High	26.74654, 83.22390	15 KM/Hr	1.65 km
12	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.17 km
13	Blind Spot	Blind Spot	26.75353, 83.20457	10 KM/Hr	4.23 km
14	Turn	High	26.75381, 83.20466	15 KM/Hr	4.30 km
0	Roundabout	High	26.74681, 83.25111	15 KM/Hr	8.97 km
15	Turn	Medium	26.74658, 83.25155	30 KM/Hr	9.05 km
16	Turn	Medium	26.74646, 83.25151	30 KM/Hr	9.07 km
17	Turn	Medium	26.74310, 83.25343	30 KM/Hr	9.49 km
18	Turn	Medium	26.74298, 83.25343	30 KM/Hr	9.50 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
19	Turn	High	26.69632, 83.47492	15 KM/Hr	33.15 km
20	Turn	High	26.69640, 83.47492	15 KM/Hr	33.17 km
21	Turn	Medium	26.69835, 83.47489	30 KM/Hr	33.41 km
1	U-Turn	High	26.698439, 83.4747268	10 KM/Hr	33.44 km
22	Blind Spot	Blind Spot	26.69844, 83.47473	10 KM/Hr	33.44 km
23	Turn	High	26.69857, 83.47481	15 KM/Hr	33.46 km
2	U-Turn	High	26.645316, 83.5838546	10 KM/Hr	45.79 km
24	Blind Spot	Blind Spot	26.64532, 83.58385	10 KM/Hr	45.79 km
25	Turn	High	26.64525, 83.58378	15 KM/Hr	45.87 km
26	Turn	High	26.64578, 83.58271	15 KM/Hr	45.95 km
3	U-Turn	High	26.645776, 83.5827146	10 KM/Hr	45.95 km
27	Blind Spot	Blind Spot	26.64586, 83.58274	10 KM/Hr	46.00 km
28	Turn	Medium	26.63992, 83.59284	30 KM/Hr	47.21 km
29	Blind Spot	Blind Spot	26.61456, 83.63777	10 KM/Hr	52.48 km
4	U-Turn	High	26.6145638, 83.6377715	10 KM/Hr	52.48 km
30	Turn	High	26.61450, 83.63770	15 KM/Hr	52.55 km

## Emergency Locations

Found: 1 hospital(s)

	type	name	coordinates	speed_limit	risk_level	Distance from Start
0	hospital	Prakash Hospital	26.6957341, 83.4807387	30 km/h	Medium	34.12 km

## Crowded Spots

## Route Photos of Risky Spots



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 2.17 km

**Coordinates:** 26.75126, 83.22476



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 4.23 km

**Coordinates:** 26.75353, 83.20457



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**Risk Type: Turn****Risk Level: High****Speed Limit: 15 KM/Hr****Distance from Start: 4.30 km****Coordinates: 26.75381, 83.20466**

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**Risk Type: Roundabout****Risk Level: High****Speed Limit: 15 KM/Hr****Distance from Start: 8.97 km****Coordinates: 26.74681, 83.25111**



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 9.05 km

**Coordinates:** 26.74658, 83.25155



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 9.07 km

**Coordinates:** 26.74646, 83.25151



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**Risk Type:** Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 9.49 km**Coordinates:** 26.74310, 83.25343

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**Risk Type:** Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 9.50 km**Coordinates:** 26.74298, 83.25343



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 33.15 km

**Coordinates:** 26.69632, 83.47492



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 33.17 km

**Coordinates:** 26.69640, 83.47492



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**Risk Type:** Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 33.41 km**Coordinates:** 26.69835, 83.47489

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**Risk Type:** U-Turn**Risk Level:** High**Speed Limit:** 10 KM/Hr**Distance from Start:** 33.44 km**Coordinates:** 26.698439, 83.4747268



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**Risk Type:** Blind Spot**Risk Level:** Blind Spot**Speed Limit:** 10 KM/Hr**Distance from Start:** 33.44 km**Coordinates:** 26.69844, 83.47473

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**Risk Type:** Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 33.46 km**Coordinates:** 26.69857, 83.47481



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**Risk Type: U-Turn****Risk Level: High****Speed Limit: 10 KM/Hr****Distance from Start: 45.79 km****Coordinates: 26.645316, 83.5838546**

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**Risk Type: Blind Spot****Risk Level: Blind Spot****Speed Limit: 10 KM/Hr****Distance from Start: 45.79 km****Coordinates: 26.64532, 83.58385**



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**Risk Type: Turn****Risk Level: High****Speed Limit: 15 KM/Hr****Distance from Start: 45.87 km****Coordinates: 26.64525, 83.58378**

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**Risk Type: Turn****Risk Level: High****Speed Limit: 15 KM/Hr****Distance from Start: 45.95 km****Coordinates: 26.64578, 83.58271**



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**Risk Type: U-Turn****Risk Level: High****Speed Limit: 10 KM/Hr****Distance from Start: 45.95 km****Coordinates: 26.645776, 83.5827146**

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**Risk Type: Blind Spot****Risk Level: Blind Spot****Speed Limit: 10 KM/Hr****Distance from Start: 46.00 km****Coordinates: 26.64586, 83.58274**



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**Risk Type:** Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 47.21 km**Coordinates:** 26.63992, 83.59284

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**Risk Type:** Blind Spot**Risk Level:** Blind Spot**Speed Limit:** 10 KM/Hr**Distance from Start:** 52.48 km**Coordinates:** 26.61456, 83.63777



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**Risk Type: U-Turn****Risk Level: High****Speed Limit: 10 KM/Hr****Distance from Start: 52.48 km****Coordinates: 26.6145638, 83.6377715**

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**Risk Type: Turn****Risk Level: High****Speed Limit: 15 KM/Hr****Distance from Start: 52.55 km****Coordinates: 26.61450, 83.63770**

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