



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

### Gorakhpur LPG BP TO HARSHIT INDANE GAS S

#### 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

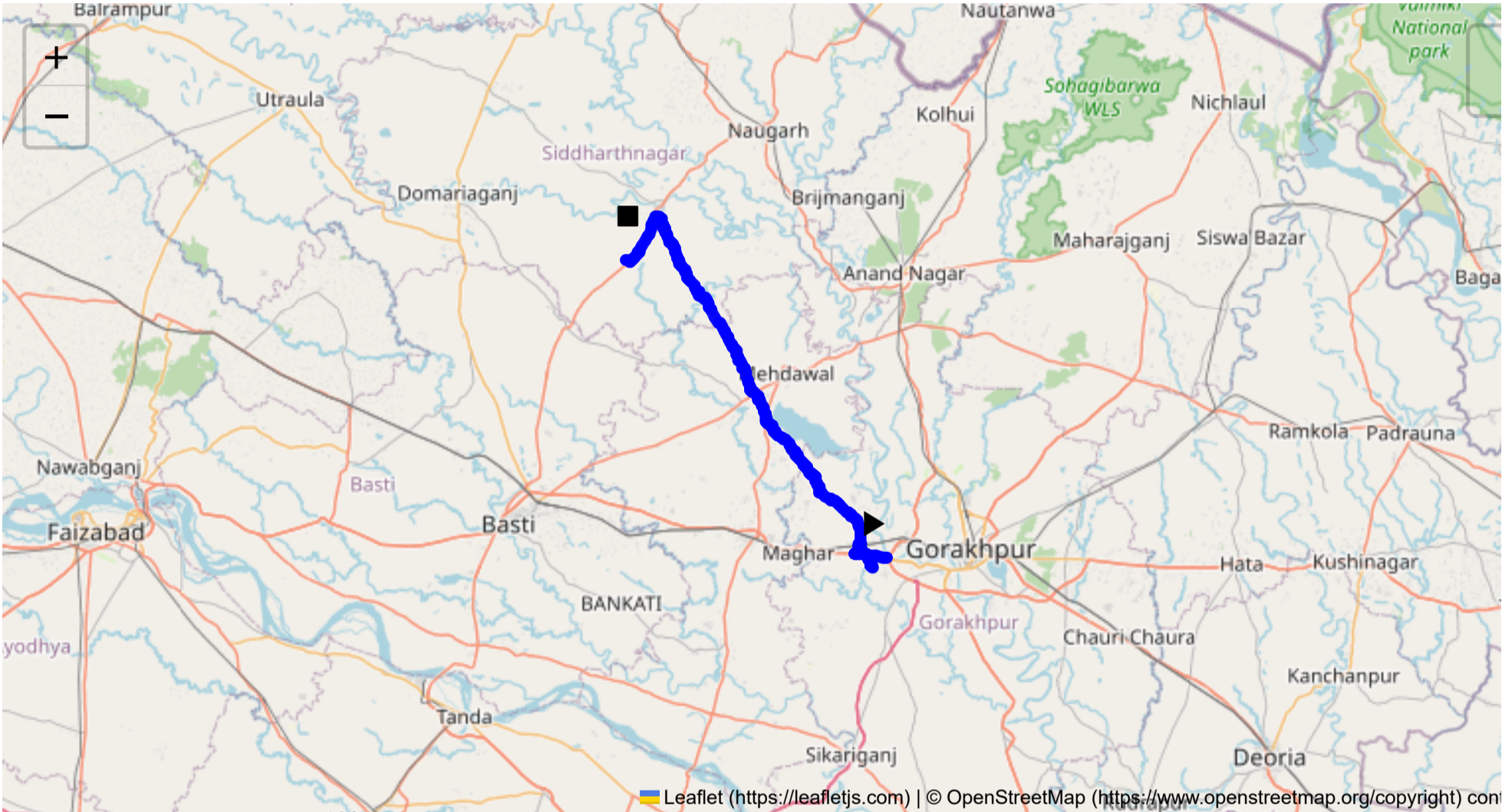
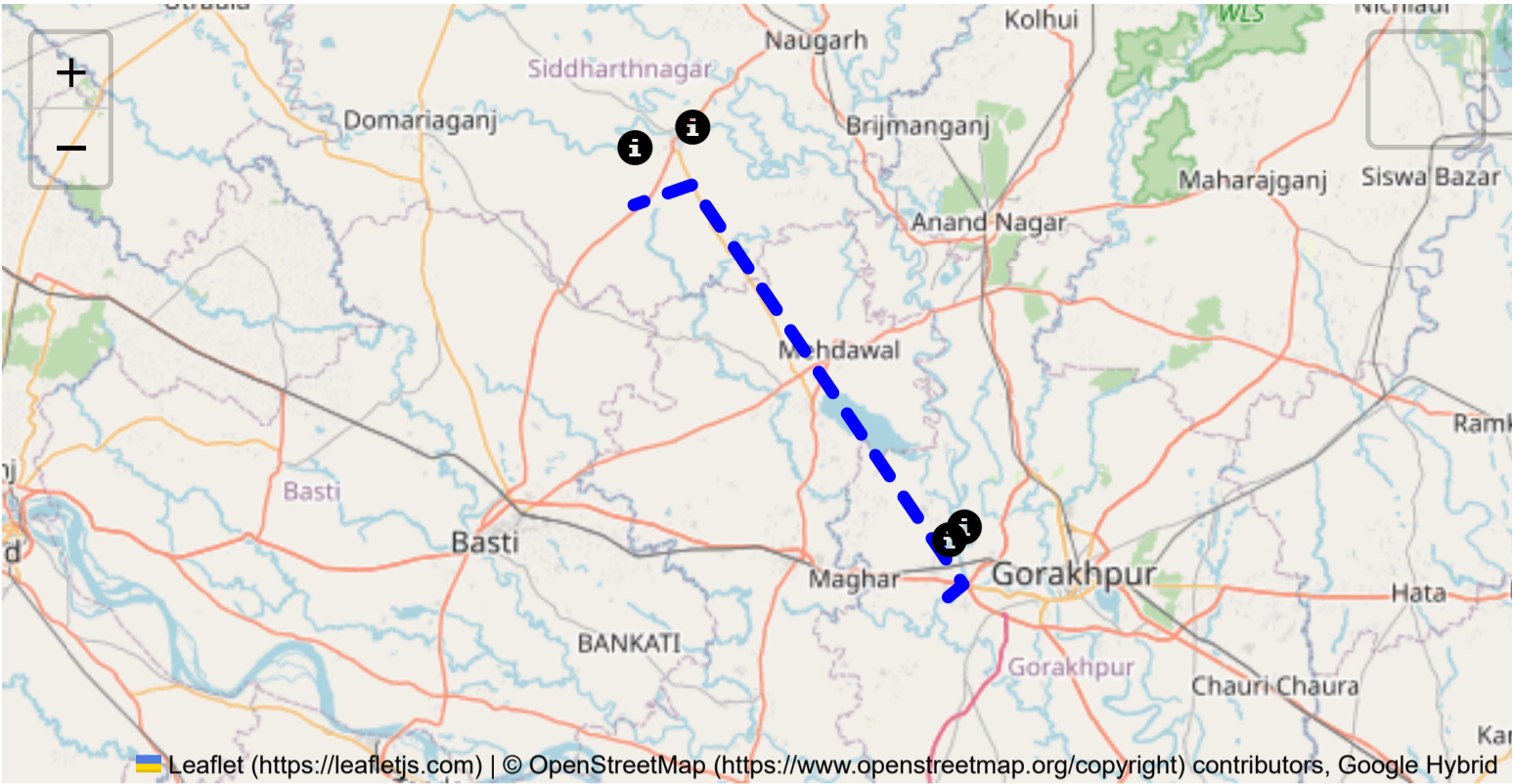
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 79.67 km**  
**Estimated Duration: 2.1 hours**  
**Adjusted Duration (Heavy Vehicle): 2.6 hours**  
**Start: (26.735959, 83.229398)**  
**End: (27.116925, 82.887177)**

Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route from GIDA Industrial Area Phase 1 to Danokuiyan, Tillauli covers approximately 79.67 kilometers. The journey includes several segment transitions, majorly traveling along Gorakhpur Road, passing through both urban and rural sectors.

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

Uttar Pradesh experiences a subtropical climate. The route is subject to:

- **Summer Heat:** Temperatures can reach up to 40°C or higher, risking overheating of vehicle engines.
- **Monsoon Season (June to September):** Heavy rainfall can lead to waterlogged roads and reduced visibility.
- **Winter Fog (December to January):** Dense fog can cause delays and increase the risk of accidents.

## 3. Analysis of Traffic Patterns

- **Peak Hours:** Morning (8-10 AM) and evening (5-7 PM) can have increased traffic, especially near Gorakhpur and other densely populated areas.
- **Congestion-Prone Areas:** Kaalesar and approach to Dewaria could see traffic congestion due to market activities and local commuting.

## 4. Assessment of Road Quality and Infrastructure

- **Road Quality:** Varies along the route. While major highways are well-maintained, rural connectors may have potholes and narrower lanes.
- **Bridges and Intersections:** Inspect points before travel for stability, particularly post-monsoon.

## 5. Suggestions for Alternative Routes for Emergencies

- **Via NH 27 and NH 28:** Redirecting through major highways can provide quicker detour options but check for size and weight restrictions applicable to hazardous material carriers.

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

- **Permits:** Ensure proper documentation and permits for transporting hazardous materials.
- **Time Restrictions:** Certain urban areas may restrict truck movements during peak hours.

## 7. Overview of Historical Incidents Involving Heavy Vehicles or Hazardous Materials

- **Accidents Reports:** Have included skidding during monsoons and jack-knifing in fog conditions. Proper tire checks and speed regulation are crucial.

## 8. Environmental Considerations and Sensitive Areas

- **Proximity to Villages and Markets:** Dewaria, for instance, requires careful navigation to avoid local pedestrian traffic.
- **Natural Reserves:** Avoid contamination near sensitive environmental zones.

## 9. Analysis of Communication Coverage

- Potential Dead Zones:** Some rural stretches between Dewaria and Danokuiyan may have spotty mobile coverage. Equip vehicles with robust communication tools like satellite phones or radio.

## 10. Estimated Emergency Response Times for Different Route Segments

- Urban Areas (Kaalesar, Gorakhpur):** Quick response within 20-30 minutes.
- Rural Segments (Dewaria to Danokuiyan):** Longer response times, possibly exceeding 45 minutes.

## 11. Overall Summary of Risk Assessment

- Key Risks:** Weather-related visibility issues, traffic congestion, road quality deterioration, and communication dead zones.
- Risk Mitigation:** Pre-travel briefings, dynamic routing tools, robust communication equipment, and adherence to traffic laws.

By understanding these potential hazards and taking preventive measures, the risk associated with transporting hazardous materials along this route can be significantly mitigated.

### Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
1	Turn	High	26.73746, 83.22938	15 KM/Hr	0.14 km
2	Blind Spot	Blind Spot	26.73791, 83.22625	10 KM/Hr	0.47 km
3	Turn	High	26.74524, 83.22746	15 KM/Hr	1.16 km
4	Turn	High	26.74654, 83.22390	15 KM/Hr	1.65 km
5	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.16 km
6	Blind Spot	Blind Spot	26.75353, 83.20457	10 KM/Hr	4.22 km
9	Blind Spot	Blind Spot	26.75353, 83.20457	10 KM/Hr	4.22 km
7	Turn	High	26.75377, 83.20465	15 KM/Hr	4.27 km
0	U-Turn	High	26.7471208, 83.2490873	10 KM/Hr	8.75 km
8	Blind Spot	Blind Spot	26.74712, 83.24909	10 KM/Hr	8.75 km
10	Turn	High	26.75381, 83.20466	15 KM/Hr	13.31 km
11	Blind Spot	Blind Spot	26.75377, 83.21355	10 KM/Hr	14.18 km
12	Turn	Medium	26.75640, 83.21275	30 KM/Hr	14.46 km
13	Turn	High	26.76132, 83.21435	15 KM/Hr	14.97 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
14	Turn	Medium	26.76119, 83.21159	30 KM/Hr	15.33 km
15	Turn	High	26.76131, 83.21143	15 KM/Hr	15.36 km
16	Turn	Medium	26.76403, 83.21129	30 KM/Hr	15.67 km
17	Turn	Medium	26.76555, 83.21385	30 KM/Hr	15.91 km
18	Turn	Medium	26.76593, 83.21408	30 KM/Hr	16.01 km
19	Turn	Medium	26.83008, 83.15664	30 KM/Hr	25.75 km
20	Turn	High	26.91597, 83.08449	15 KM/Hr	38.07 km
21	Blind Spot	Blind Spot	26.91433, 83.08351	10 KM/Hr	38.25 km
22	Turn	Medium	26.91843, 83.08101	30 KM/Hr	38.74 km
23	Turn	Medium	26.92258, 83.08191	30 KM/Hr	39.25 km
24	Turn	Medium	26.94829, 83.07156	30 KM/Hr	42.29 km
25	Turn	Medium	26.98320, 83.05060	30 KM/Hr	46.88 km
26	Turn	Medium	26.98358, 83.04980	30 KM/Hr	47.00 km
27	Turn	Medium	27.07127, 82.99573	30 KM/Hr	58.13 km
28	Turn	Medium	27.07135, 82.99500	30 KM/Hr	58.27 km
29	Turn	Medium	27.07060, 82.99359	30 KM/Hr	58.44 km
30	Turn	Medium	27.17093, 82.93246	30 KM/Hr	71.35 km
31	Turn	High	27.17161, 82.92867	15 KM/Hr	71.75 km
32	Turn	Medium	27.17130, 82.92833	30 KM/Hr	71.82 km
33	Turn	High	27.11607, 82.89160	15 KM/Hr	79.01 km
34	Turn	High	27.11729, 82.88717	15 KM/Hr	79.51 km

Route Photos of Risky Spots



**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Distance from Start:** 2.16 km  
**Coordinates:** 26.75126, 83.22476



**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Distance from Start:** 4.22 km  
**Coordinates:** 26.75353, 83.20457



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 4.22 km

**Coordinates:** 26.75353, 83.20457



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 4.27 km

**Coordinates:** 26.75377, 83.20465



**Risk Type:** U-Turn

**Risk Level:** High

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 8.75 km

**Coordinates:** 26.7471208, 83.2490873



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 8.75 km

**Coordinates:** 26.74712, 83.24909



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Distance from Start:** 13.31 km  
**Coordinates:** 26.75381, 83.20466



**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Distance from Start:** 14.18 km  
**Coordinates:** 26.75377, 83.21355



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 14.46 km

**Coordinates:** 26.75640, 83.21275



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 14.97 km

**Coordinates:** 26.76132, 83.21435



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 15.33 km

**Coordinates:** 26.76119, 83.21159



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 15.36 km

**Coordinates:** 26.76131, 83.21143



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Distance from Start:** 15.67 km  
**Coordinates:** 26.76403, 83.21129



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Distance from Start:** 15.91 km  
**Coordinates:** 26.76555, 83.21385



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 16.01 km

**Coordinates:** 26.76593, 83.21408



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 25.75 km

**Coordinates:** 26.83008, 83.15664



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 38.07 km

Coordinates: 26.91597, 83.08449



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 38.25 km

Coordinates: 26.91433, 83.08351



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Distance from Start:** 38.74 km  
**Coordinates:** 26.91843, 83.08101



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Distance from Start:** 39.25 km  
**Coordinates:** 26.92258, 83.08191



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Distance from Start:** 42.29 km  
**Coordinates:** 26.94829, 83.07156



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Distance from Start:** 46.88 km  
**Coordinates:** 26.98320, 83.05060



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Distance from Start:** 47.00 km  
**Coordinates:** 26.98358, 83.04980



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Distance from Start:** 58.13 km  
**Coordinates:** 27.07127, 82.99573



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 58.27 km

**Coordinates:** 27.07135, 82.99500



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 58.44 km

**Coordinates:** 27.07060, 82.99359



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 71.35 km

**Coordinates:** 27.17093, 82.93246



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 71.75 km

**Coordinates:** 27.17161, 82.92867



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Distance from Start:** 71.82 km  
**Coordinates:** 27.17130, 82.92833



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Distance from Start:** 79.01 km  
**Coordinates:** 27.11607, 82.89160



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 79.51 km

**Coordinates:** 27.11729, 82.88717

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