



## JOURNEY RISK MANAGEMENT (JRM) STUDY

### Gorakhpur LPG BP TO NAGCHAURI INDANE GRA

#### 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

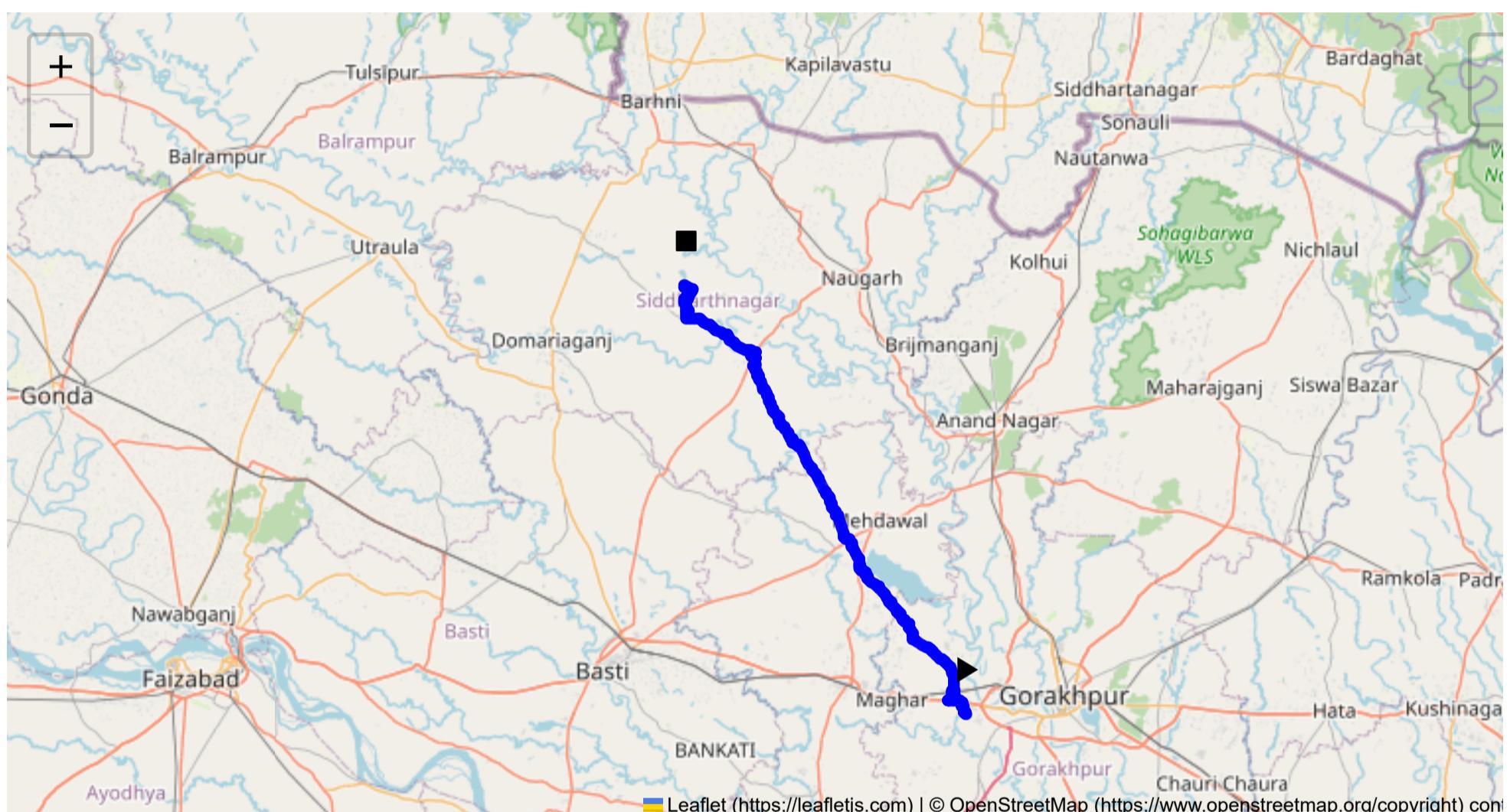
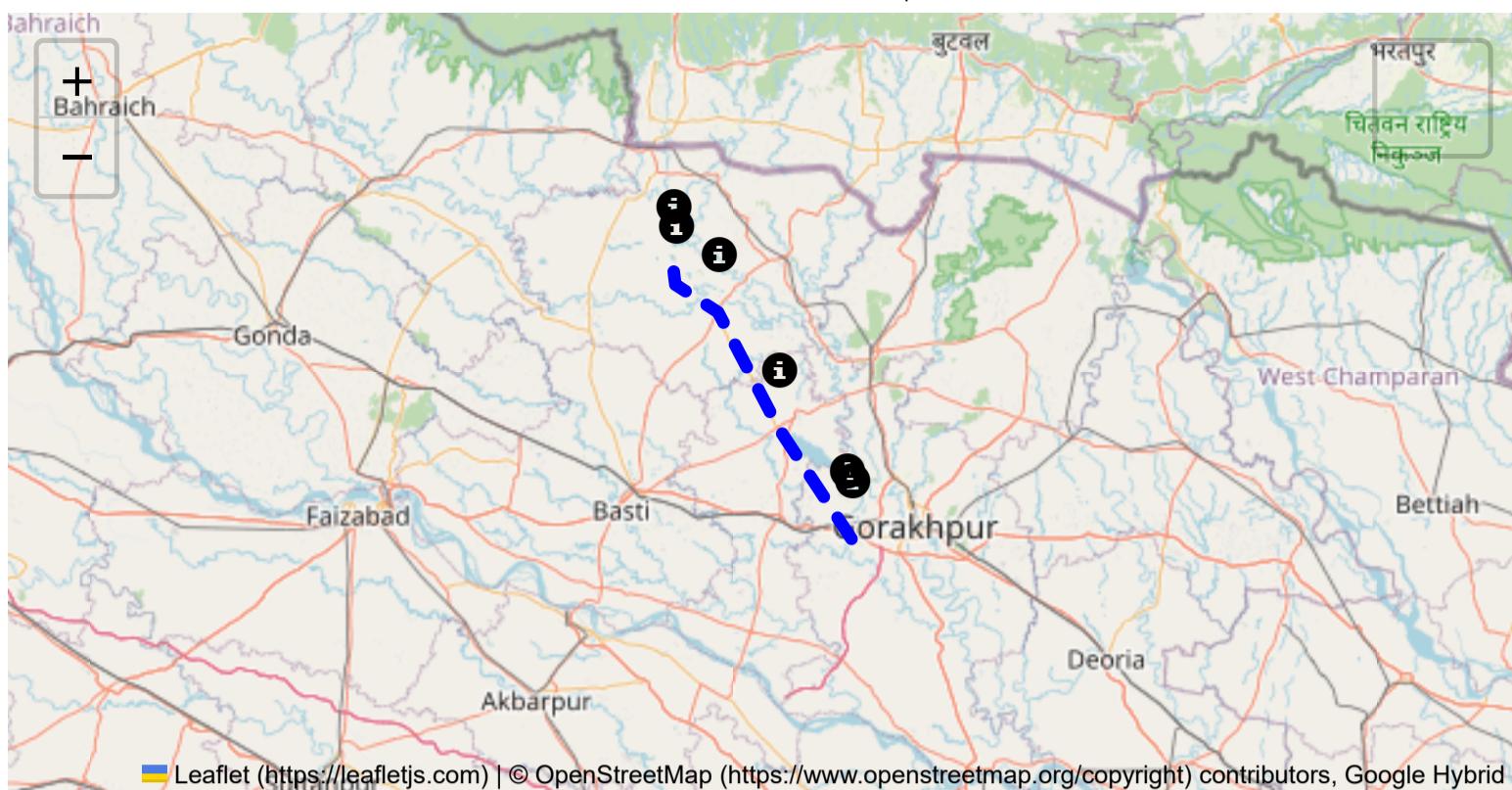
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 81.96 km**  
**Estimated Duration: 2.3 hours**  
**Adjusted Duration (Heavy Vehicle): 2.9 hours**  
**Start: (26.735959, 83.229398)**  
**End: (27.26889, 82.83619)**

## Welcome to the Journey Risk Management Study

- Overview of the Route Map:** The route from GIDA Industrial Area Phase 1, Sahjanwa to Bankata spans approximately 82 kilometers. Starting from Sahjanwa, it winds through the towns of Nandaur, Mahdewa, and Bansi, finally reaching Pachhari Khas and then Bankata. The path mainly follows regional highways and local roads without significant expressway segments.

**2. Typical Weather Conditions and Potential Weather-Related Hazards:** Uttar Pradesh experiences a humid subtropical climate with extremes of heat in summer (April to June) and cold in winter (December to February). Monsoons hit around July to September, causing heavy rainfall which can lead to flooding and waterlogging on roads. Thus, reduced visibility and slippery road conditions could be significant hazards during monsoon season.

**3. Analysis of Traffic Patterns:** Traffic typically peaks during morning (8-10 AM) and evening (5-7 PM) as locals commute for work. The congested areas on this route are major junctions and town entries/exits, particularly around Sahjanwa and Bansi. These can cause delays and increased risk of accidents, especially for larger vehicles.

**4. Assessment of Road Quality and Infrastructure:** The road quality varies along the route. Main roads are generally in good condition, but some stretches near smaller villages might have potholes and narrower lanes. Signage may be inadequate in rural segments, and street lighting can be poor at night.

**5. Suggestions for Alternative Routes:** For emergencies requiring evacuation or detours, it may be feasible to take alternative local roads parallel to the route. However, connectivity and road conditions on these secondary roads should be verified beforehand for suitability of large vehicles.

**6. Summary of Local Regulations Affecting Hazardous Material Transport:** Transporting hazardous materials requires compliance with state and national regulations, including obtaining necessary permits, adherence to road usage timing restrictions, and ensuring that safety protocols are in place as prescribed by the Petroleum and Explosives Safety Organization (PESO) in India.

**7. Overview of Historical Incidents:** There have been incidents involving heavy vehicles in Uttar Pradesh, primarily due to road conditions, driver fatigue, and lack of compliance with traffic regulations. However, specific data for this exact route would need local law enforcement records for accuracy.

**8. Environmental Considerations and Sensitive Areas:** Sensitive environmental areas include agricultural lands and water bodies near the route. Spillage from hazardous materials could affect these zones critically. Awareness of wildlife crossings and protected areas should also be maintained.

**9. Analysis of Communication Coverage:** Mobile network coverage is generally reliable in towns and along main highways, but certain rural stretches may experience weaker signal or dead zones. Using a satellite communication device as backup could be advisable.

**10. Estimated Emergency Response Times:** Emergency response times can vary; on main highways or near towns, expect a response within 30 minutes to 1 hour. In more remote or rural areas, it might increase to over 1 hour, contingent on local infrastructure.

**11. Overall Summary of Risk Assessment:** The route poses moderate risk primarily due to occasional poor road conditions, varying traffic density, and potential weather impacts. Compliance with transportation regulations is crucial to minimize hazards. Emergency preparedness and adherence to safety protocols are essential for ensuring the safety of the driver, public, and environment. Regular route assessments and updates on road and weather conditions can enhance the safety and efficiency of transporting hazardous materials along this path.

## Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
0	Turn	High	26.73746, 83.22938	15 KM/Hr	0.14 km
1	Turn	High	26.73788, 83.22642	15 KM/Hr	0.32 km
2	Turn	Medium	26.73812, 83.22630	30 KM/Hr	0.48 km
3	Turn	High	26.74524, 83.22746	15 KM/Hr	1.14 km
4	Turn	High	26.74654, 83.22390	15 KM/Hr	1.63 km
5	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.15 km
6	Blind Spot	Blind Spot	26.75353, 83.20457	10 KM/Hr	4.21 km
7	Turn	High	26.75377, 83.20465	15 KM/Hr	4.26 km
8	Turn	Medium	26.75378, 83.21338	30 KM/Hr	5.12 km
9	Turn	High	26.75386, 83.21352	15 KM/Hr	5.15 km
10	Turn	Medium	26.75640, 83.21275	30 KM/Hr	5.42 km
11	Blind Spot	Blind Spot	26.76132, 83.21435	10 KM/Hr	5.93 km
12	Turn	High	26.76131, 83.21143	15 KM/Hr	6.29 km
13	Turn	Medium	26.76403, 83.21129	30 KM/Hr	6.62 km
14	Turn	Medium	26.76555, 83.21385	30 KM/Hr	6.86 km
15	Turn	Medium	26.76593, 83.21408	30 KM/Hr	6.96 km
16	Turn	Medium	26.83008, 83.15664	30 KM/Hr	16.69 km
17	Turn	High	26.91597, 83.08449	15 KM/Hr	29.01 km
18	Blind Spot	Blind Spot	26.91433, 83.08351	10 KM/Hr	29.19 km
19	Turn	Medium	26.91843, 83.08101	30 KM/Hr	29.61 km
20	Turn	Medium	26.92258, 83.08191	30 KM/Hr	30.19 km
21	Turn	Medium	26.94829, 83.07156	30 KM/Hr	33.23 km
22	Turn	Medium	26.98317, 83.05063	30 KM/Hr	37.50 km
23	Turn	Medium	27.07125, 82.99577	30 KM/Hr	49.06 km
24	Turn	Medium	27.07137, 82.99515	30 KM/Hr	49.20 km
25	Turn	High	27.07059, 82.99365	15 KM/Hr	49.37 km
26	Turn	High	27.16975, 82.93429	15 KM/Hr	62.10 km
27	Turn	High	27.17966, 82.93498	15 KM/Hr	63.20 km
28	Turn	Medium	27.17992, 82.93461	30 KM/Hr	63.26 km
29	Turn	High	27.18005, 82.93461	15 KM/Hr	63.28 km
30	Turn	High	27.18194, 82.93124	15 KM/Hr	63.66 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
31	Turn	Medium	27.18212, 82.93129	30 KM/Hr	63.70 km
32	Turn	Medium	27.18395, 82.93294	30 KM/Hr	63.92 km
33	Turn	High	27.18423, 82.93398	15 KM/Hr	64.02 km
34	Turn	Medium	27.18658, 82.93553	30 KM/Hr	64.34 km
35	Turn	High	27.18690, 82.93552	15 KM/Hr	64.40 km
36	Turn	Medium	27.18968, 82.92508	30 KM/Hr	65.44 km
37	Blind Spot	Blind Spot	27.22814, 82.84014	10 KM/Hr	75.11 km
38	Blind Spot	Blind Spot	27.23236, 82.84178	10 KM/Hr	75.81 km
39	Blind Spot	Blind Spot	27.23309, 82.83969	10 KM/Hr	75.96 km
40	Turn	High	27.23751, 82.84137	15 KM/Hr	76.55 km
41	Turn	Medium	27.23780, 82.84115	30 KM/Hr	76.58 km
42	Turn	Medium	27.23839, 82.83985	30 KM/Hr	76.72 km
43	Turn	High	27.24362, 82.83951	15 KM/Hr	77.28 km
44	Turn	High	27.24819, 82.83613	15 KM/Hr	77.93 km
45	Turn	High	27.25422, 82.83867	15 KM/Hr	78.64 km
46	Turn	High	27.25335, 82.84148	15 KM/Hr	78.94 km
47	Turn	Medium	27.26095, 82.84570	30 KM/Hr	79.89 km
48	Turn	High	27.26373, 82.84775	15 KM/Hr	80.28 km
49	Turn	High	27.26780, 82.83866	15 KM/Hr	81.14 km
50	Turn	High	27.26703, 82.83825	15 KM/Hr	81.36 km
51	Turn	High	27.26815, 82.83582	15 KM/Hr	81.65 km

## Route Photos of Risky Spots



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 2.15 km

**Coordinates:** 26.75126, 83.22476



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 4.21 km

**Coordinates:** 26.75353, 83.20457



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 4.26 km

**Coordinates:** 26.75377, 83.20465



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 5.12 km

**Coordinates:** 26.75378, 83.21338



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**Risk Type: Turn****Risk Level: High****Speed Limit: 15 KM/Hr****Distance from Start: 5.15 km****Coordinates: 26.75386, 83.21352**

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**Risk Type: Turn****Risk Level: Medium****Speed Limit: 30 KM/Hr****Distance from Start: 5.42 km****Coordinates: 26.75640, 83.21275**



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 5.93 km

**Coordinates:** 26.76132, 83.21435



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 6.29 km

**Coordinates:** 26.76131, 83.21143



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 6.62 km

**Coordinates:** 26.76403, 83.21129



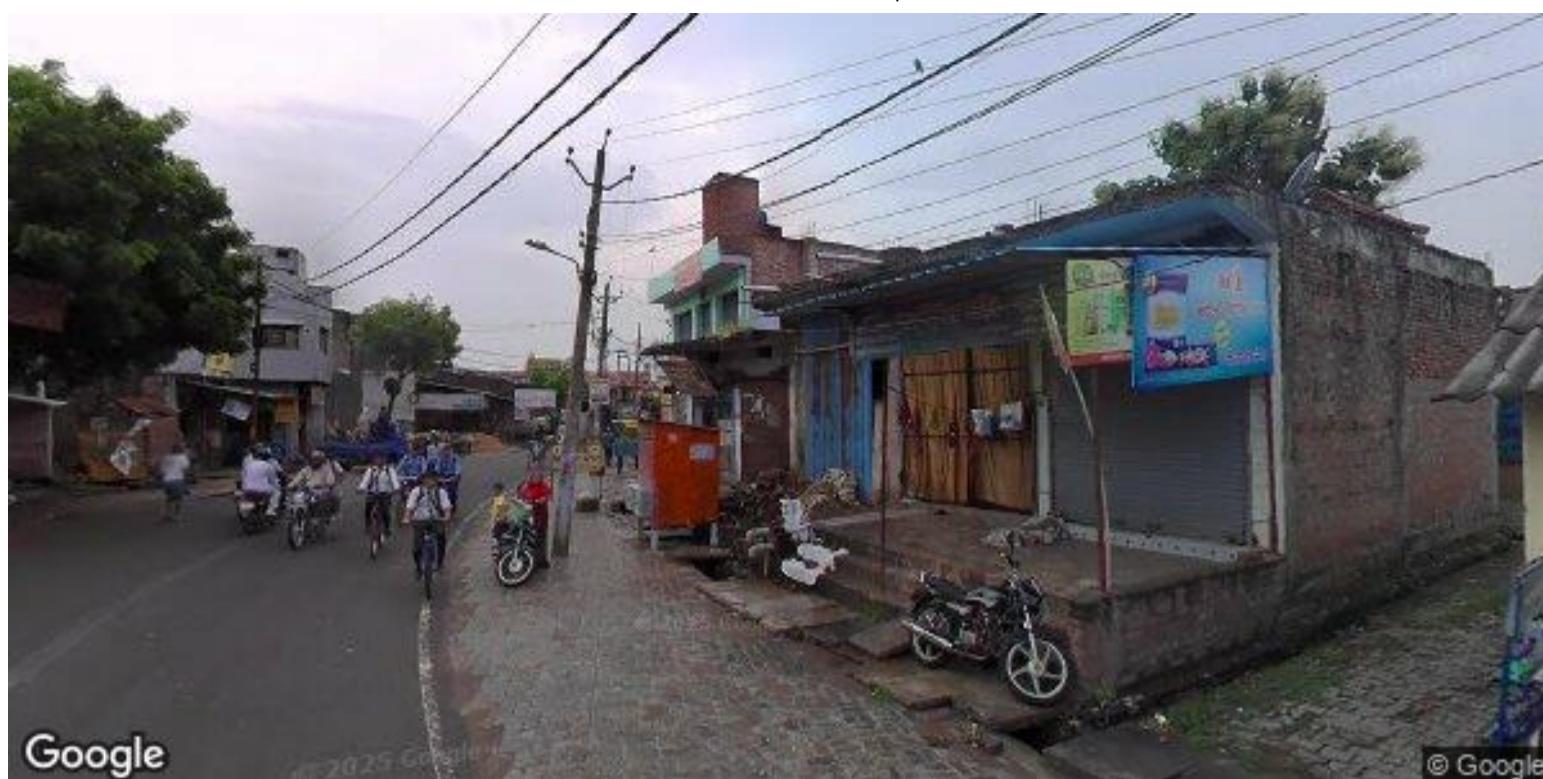
**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 6.86 km

**Coordinates:** 26.76555, 83.21385



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**Risk Type:** Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 6.96 km**Coordinates:** 26.76593, 83.21408

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**Risk Type:** Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 16.69 km**Coordinates:** 26.83008, 83.15664



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**Risk Type: Turn****Risk Level: High****Speed Limit: 15 KM/Hr****Distance from Start: 29.01 km****Coordinates: 26.91597, 83.08449**

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**Risk Type: Blind Spot****Risk Level: Blind Spot****Speed Limit: 10 KM/Hr****Distance from Start: 29.19 km****Coordinates: 26.91433, 83.08351**



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**Risk Type:** Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 29.61 km**Coordinates:** 26.91843, 83.08101

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**Risk Type:** Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 30.19 km**Coordinates:** 26.92258, 83.08191



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 33.23 km

**Coordinates:** 26.94829, 83.07156



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 37.50 km

**Coordinates:** 26.98317, 83.05063



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 49.06 km

**Coordinates:** 27.07125, 82.99577



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 49.20 km

**Coordinates:** 27.07137, 82.99515



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 49.37 km

**Coordinates:** 27.07059, 82.99365



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 62.10 km

**Coordinates:** 27.16975, 82.93429



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**Risk Type:** Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 63.20 km**Coordinates:** 27.17966, 82.93498

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**Risk Type:** Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 63.26 km**Coordinates:** 27.17992, 82.93461



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**Risk Type:** Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 63.28 km**Coordinates:** 27.18005, 82.93461

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**Risk Type:** Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 63.66 km**Coordinates:** 27.18194, 82.93124



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**Risk Type:** Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 63.92 km**Coordinates:** 27.18395, 82.93294

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**Risk Type:** Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 64.02 km**Coordinates:** 27.18423, 82.93398



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**Risk Type:** Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 65.44 km**Coordinates:** 27.18968, 82.92508

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**Risk Type:** Blind Spot**Risk Level:** Blind Spot**Speed Limit:** 10 KM/Hr**Distance from Start:** 75.11 km**Coordinates:** 27.22814, 82.84014



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**Risk Type: Turn****Risk Level: High****Speed Limit: 15 KM/Hr****Distance from Start: 76.55 km****Coordinates: 27.23751, 82.84137**

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**Risk Type: Turn****Risk Level: Medium****Speed Limit: 30 KM/Hr****Distance from Start: 76.58 km****Coordinates: 27.23780, 82.84115**



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 76.72 km

**Coordinates:** 27.23839, 82.83985



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 77.93 km

**Coordinates:** 27.24819, 82.83613



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**Risk Type:** Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 78.64 km**Coordinates:** 27.25422, 82.83867

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**Risk Type:** Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 79.89 km**Coordinates:** 27.26095, 82.84570



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**Risk Type: Turn****Risk Level: High****Speed Limit: 15 KM/Hr****Distance from Start: 80.28 km****Coordinates: 27.26373, 82.84775**

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**Risk Type: Turn****Risk Level: High****Speed Limit: 15 KM/Hr****Distance from Start: 81.14 km****Coordinates: 27.26780, 82.83866**



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 81.65 km

**Coordinates:** 27.26815, 82.83582

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