



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

### Gorakhpur LPG BP to UTTAMA 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

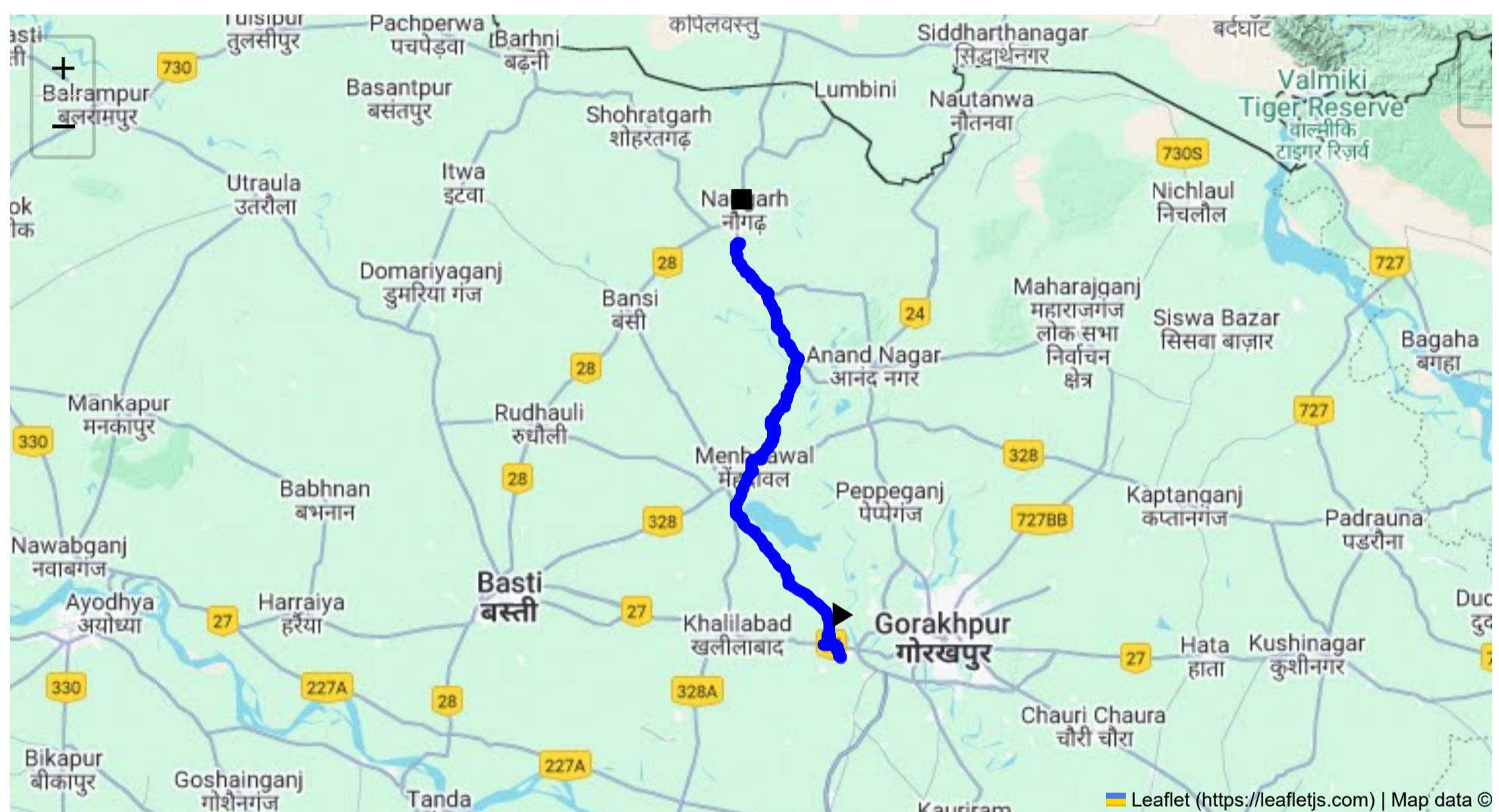
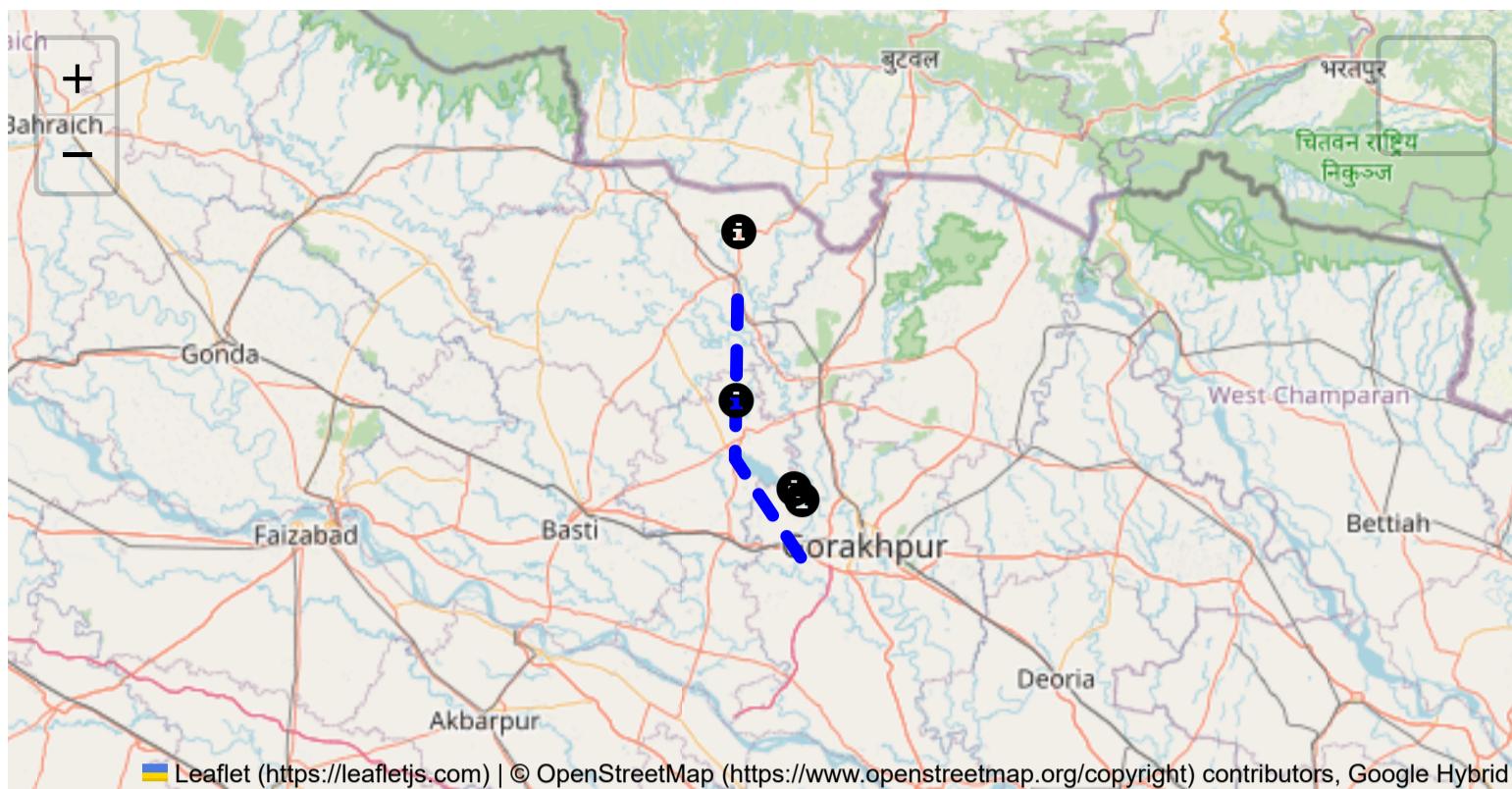
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 75.57 km**  
**Estimated Duration: 2.3 hours**  
**Adjusted Duration (Heavy Vehicle): 2.8 hours**  
**Start: (26.735959, 83.229398)**  
**End: (27.256666, 83.086948)**

## Welcome to the Journey Risk Management Study

### 1. Overview of the Route Map

The route spans approximately 75.57 kilometers through the following key points:

- Starting at GIDA Industrial Area Phase 1, Sahjanwa
- Passing through Sahjanwa (Q647+67G)

- Proceeding via Mehdawal Rd, Dhodhaya (W3GJ+RR4)
- Ending at Pokhar Bhitawa

The journey weaves through industrial areas, rural landscapes, and small towns, primarily on rural roads that might intersect with local traffic routes.

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

- **Seasonal Variability:** The region experiences extreme temperatures, with hot summers (up to 45°C) and cool winters (down to 5°C).
- **Monsoon Season:** Heavy rainfall from June to September can lead to localized flooding and slippery road conditions.
- **Fog:** During winter months, dense fog can reduce visibility significantly, affecting travel times and road safety.

## 3. Analysis of Traffic Patterns

- **Peak Hours:** Traffic congestion is typically highest during morning (8-10 AM) and evening (5-7 PM) due to local commuting.
- **Congestion-Prone Areas:** Sahjanwa and neighboring town centers can experience bottlenecks due to narrow roads and mixed traffic (including pedestrians and bicycles).

## 4. Assessment of Road Quality and Infrastructure

- **Road Quality:** Varies along the route. Urban areas might have better-maintained roads, while rural segments may have potholes and narrow lanes.
- **Infrastructure:** Limited facilities for truck stops, rest areas, and emergency services, especially in rural stretches.

## 5. Suggestions for Alternative Routes for Emergencies

- An alternative route may involve taking a bypass or larger state highways if accessible, though these should be assessed for distance and road quality.
- Keeping updated maps and a GPS device is advisable to make quick detours if necessary.

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

- **Permits and Regulations:** Ensure compliance with local laws, which might include specific permits for transporting hazardous materials.
- **Restrictions:** Some areas might have restrictions on the timing of heavy vehicle movement; night times are often restricted.

## 7. Overview of Historical Incidents

- **Accidents:** Historical data suggests occasional incidents related to vehicle breakdowns and rollovers due to narrow roads and sharp turns.
- **Hazardous Materials:** Limited information available on recent incidents involving hazardous materials; prevention is key.

## 8. Environmental Considerations and Sensitive Areas

- **Environmental Impact:** The route passes through agricultural zones, which require minimizing contamination risks during transport.
- **Wildlife Areas:** Be aware of any wildlife crossings, especially in rural sections to avoid accidents.

## 9. Analysis of Communication Coverage

- **Mobile Network:** Generally stable in urban areas but can face disruptions or weak signals in remote rural parts.
- **Potential Dead Zones:** Be prepared for limited connectivity, especially on forested or open highway stretches.

## 10. Estimated Emergency Response Times

- **Urban Areas:** Response time can be within 30 minutes to an hour due to proximity to hospitals and emergency services.
- **Rural Areas:** May extend beyond an hour depending on the terrain and road accessibility.

## 11. Overall Summary of Risk Assessment

- **Primary Risks:** Weather-related hazards, road quality variance, and limited emergency services on rural stretches.
- **Mitigation Tips:** Plan travel times to avoid peak congestion, monitor weather forecasts, ensure vehicle maintenance, and adhere strictly to all regulations for transporting hazardous materials.

Overall, while the route presents moderate risks, careful planning and preparation can mitigate the dangers associated with transporting hazardous materials. Constant vigilance and adherence to local guidelines are imperative for the safety of the transport and surrounding environments.

### Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
0	Turn	High	26.73746, 83.22938	15 KM/Hr	0.08 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
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	5.41 km
11	Blind Spot	Blind Spot	26.76132, 83.21435	10 KM/Hr	5.92 km
12	Turn	High	26.76131, 83.21143	15 KM/Hr	6.29 km
13	Turn	Medium	26.76403, 83.21129	30 KM/Hr	6.61 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	26.81740, 83.18022	30 KM/Hr	13.84 km
17	Turn	Medium	26.83008, 83.15664	30 KM/Hr	16.69 km
18	Turn	Medium	26.86197, 83.13749	30 KM/Hr	20.70 km
19	Turn	High	26.91597, 83.08449	15 KM/Hr	29.01 km
20	Blind Spot	Blind Spot	26.91433, 83.08351	10 KM/Hr	29.19 km
21	Turn	High	26.91843, 83.08101	15 KM/Hr	29.60 km
22	Turn	Medium	26.92258, 83.08191	30 KM/Hr	30.18 km
23	Turn	Medium	26.92506, 83.08135	30 KM/Hr	30.46 km
24	Blind Spot	Blind Spot	26.97088, 83.10494	10 KM/Hr	36.15 km
25	Turn	High	26.97107, 83.10468	15 KM/Hr	36.19 km
26	Blind Spot	Blind Spot	26.97072, 83.10317	10 KM/Hr	36.32 km
27	Turn	Medium	26.98542, 83.10690	30 KM/Hr	38.06 km
28	Turn	Medium	26.98458, 83.11467	30 KM/Hr	38.87 km
29	Turn	Medium	26.98527, 83.11575	30 KM/Hr	39.01 km
30	Turn	Medium	26.98855, 83.11710	30 KM/Hr	39.37 km
31	Turn	Medium	26.98873, 83.11748	30 KM/Hr	39.47 km
32	Turn	Medium	26.99036, 83.11818	30 KM/Hr	39.63 km
33	Blind Spot	Blind Spot	27.01133, 83.13472	10 KM/Hr	42.51 km
34	Turn	High	27.01200, 83.13313	15 KM/Hr	42.72 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
35	Turn	Medium	27.02052, 83.13520	30 KM/Hr	43.62 km
36	Turn	High	27.02127, 83.13464	15 KM/Hr	43.76 km
37	Turn	High	27.02508, 83.13542	15 KM/Hr	44.19 km
38	Turn	Medium	27.02956, 83.13058	30 KM/Hr	44.89 km
39	Turn	Medium	27.03226, 83.13079	30 KM/Hr	45.16 km
40	Turn	High	27.03521, 83.13374	15 KM/Hr	45.62 km
41	Turn	Medium	27.03525, 83.13427	30 KM/Hr	45.72 km
42	Turn	Medium	27.04739, 83.14161	30 KM/Hr	47.28 km
43	Turn	Medium	27.05263, 83.14922	30 KM/Hr	48.23 km
44	Turn	High	27.06083, 83.15347	15 KM/Hr	49.19 km
45	Turn	High	27.06114, 83.15291	15 KM/Hr	49.31 km
46	Turn	Medium	27.06266, 83.15298	30 KM/Hr	49.42 km
47	Turn	Medium	27.06344, 83.15374	30 KM/Hr	49.57 km
48	Turn	Medium	27.06534, 83.15419	30 KM/Hr	49.73 km
49	Turn	Medium	27.06677, 83.15376	30 KM/Hr	49.92 km
50	Turn	Medium	27.08430, 83.16344	30 KM/Hr	52.11 km
51	Turn	Medium	27.08553, 83.16377	30 KM/Hr	52.25 km
52	Turn	Medium	27.08786, 83.16341	30 KM/Hr	52.53 km
53	Turn	High	27.08885, 83.16236	15 KM/Hr	52.71 km
54	Turn	High	27.09732, 83.16481	15 KM/Hr	53.65 km
55	Turn	High	27.09838, 83.16398	15 KM/Hr	53.86 km
56	Turn	High	27.10534, 83.16686	15 KM/Hr	54.42 km
57	Turn	High	27.10571, 83.16655	15 KM/Hr	54.72 km
58	Turn	Medium	27.11140, 83.16853	30 KM/Hr	55.37 km
59	Turn	High	27.11353, 83.16881	15 KM/Hr	55.62 km
60	Turn	Medium	27.14436, 83.14840	30 KM/Hr	59.79 km
61	Turn	Medium	27.18519, 83.12717	30 KM/Hr	64.98 km
62	Turn	Medium	27.19483, 83.12666	30 KM/Hr	66.08 km
63	Turn	Medium	27.19571, 83.12588	30 KM/Hr	66.20 km
64	Blind Spot	Blind Spot	27.25635, 83.08275	10 KM/Hr	74.71 km
65	Turn	High	27.25581, 83.08616	15 KM/Hr	75.06 km
66	Blind Spot	Blind Spot	27.25663, 83.08635	10 KM/Hr	75.18 km

## Emergency Locations

Found: 1 clinic(s)

	type	name	coordinates	speed_limit	risk_level	Distance from Start
0	clinic	CHC HOSPITAL, Mehdawal	26.9722141, 83.1048173	30 km/h	Medium	36.49 km

## Crowded Spots

## Route Photos of Risky Spots



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 2.15 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



**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:** 5.41 km

**Coordinates:** 26.75640, 83.21275



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**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 5.92 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:** 6.61 km

**Coordinates:** 26.76403, 83.21129



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**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



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 13.84 km

**Coordinates:** 26.81740, 83.18022



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 16.69 km

**Coordinates:** 26.83008, 83.15664



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 20.70 km

**Coordinates:** 26.86197, 83.13749



**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:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 29.60 km

**Coordinates:** 26.91843, 83.08101



Google

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**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 30.18 km

**Coordinates:** 26.92258, 83.08191



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**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 30.46 km

**Coordinates:** 26.92506, 83.08135



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 36.15 km

**Coordinates:** 26.97088, 83.10494



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 36.19 km

**Coordinates:** 26.97107, 83.10468



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 36.32 km

**Coordinates:** 26.97072, 83.10317



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 38.06 km

**Coordinates:** 26.98542, 83.10690



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**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 38.87 km

**Coordinates:** 26.98458, 83.11467



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**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 39.01 km

**Coordinates:** 26.98527, 83.11575



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**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 39.37 km

**Coordinates:** 26.98855, 83.11710



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**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 39.47 km

**Coordinates:** 26.98873, 83.11748



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**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 39.63 km

**Coordinates:** 26.99036, 83.11818



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**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 42.51 km

**Coordinates:** 27.01133, 83.13472



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 42.72 km

**Coordinates:** 27.01200, 83.13313



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 43.62 km

**Coordinates:** 27.02052, 83.13520



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 43.76 km

**Coordinates:** 27.02127, 83.13464



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 44.19 km

**Coordinates:** 27.02508, 83.13542



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**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 44.89 km

**Coordinates:** 27.02956, 83.13058



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**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 55.37 km

**Coordinates:** 27.11140, 83.16853



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**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 55.62 km

**Coordinates:** 27.11353, 83.16881



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**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 59.79 km

**Coordinates:** 27.14436, 83.14840

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