



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

### Gorakhpur LPG BP TO JONHA INDANE GAS SER

#### 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

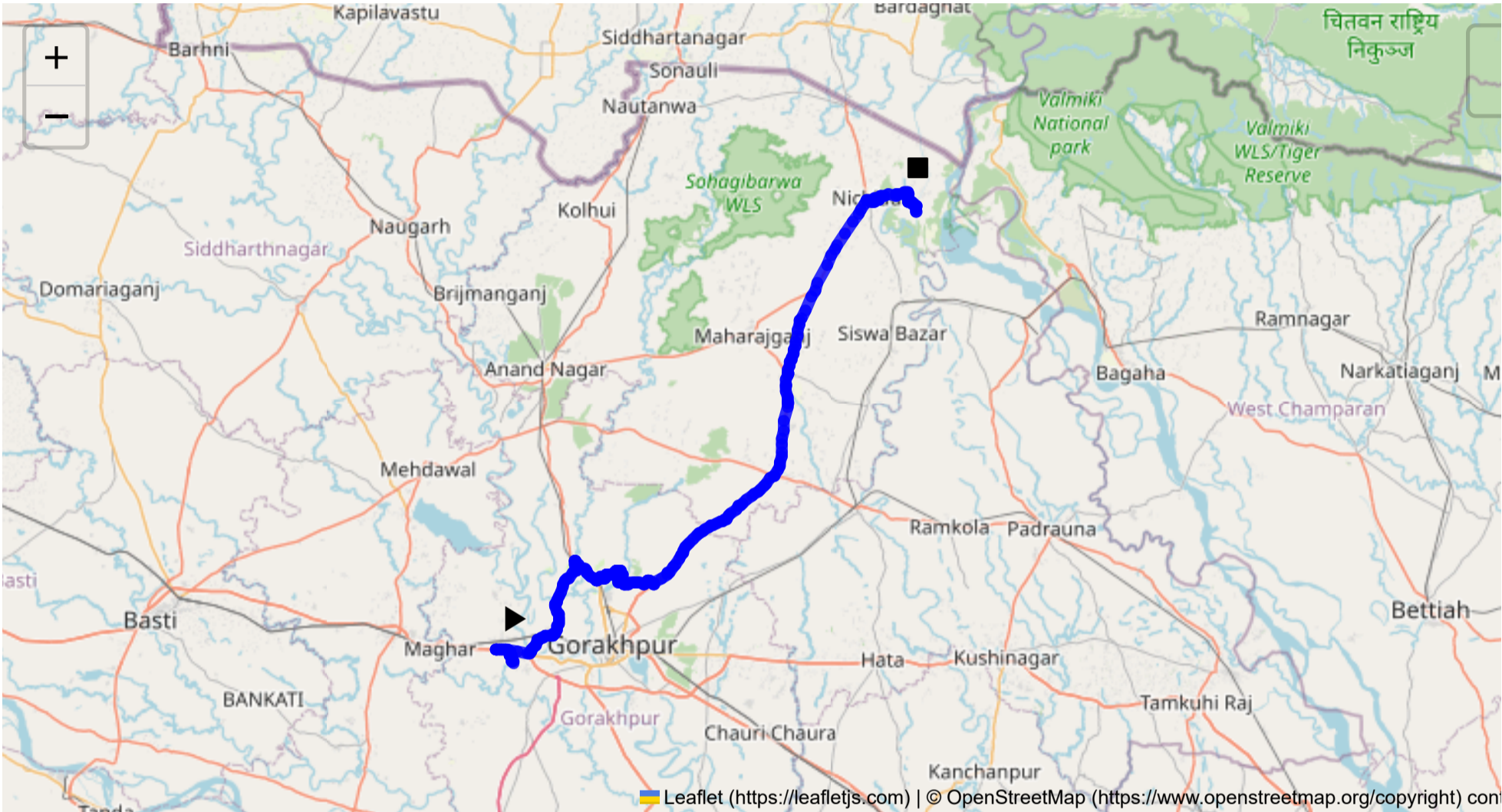
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 114.56 km**  
**Estimated Duration: 2.9 hours**  
**Adjusted Duration (Heavy Vehicle): 3.6 hours**  
**Start: (26.735959, 83.229398)**  
**End: (27.295171, 83.789156)**

Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route begins at the GIDA Industrial Area Phase 1 in Sahjanwa and proceeds towards Doma Khas, Vajaha via key points such as Zero Point, Kaalesar, and Mithaura, Bhagatar. This route spans approximately 114.56 kilometers and encompasses both rural and semi-urban regions of Uttar Pradesh.

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

The area experiences a humid subtropical climate with high temperatures during the summer (April to June). The monsoon season (July to September) brings substantial rainfall, which can lead to flooding and slippery road conditions. Fog is common in the winter months (December to February), which may reduce visibility and pose risks for driving.

## 3. Analysis of Traffic Patterns

Traffic congestion can typically be expected during school hours and evenings, particularly near urban centers like Gorakhpur. Industrial traffic and local commerce can also contribute to congestion. The road quality varies, and some narrow sections may experience bottlenecks, particularly where there is a lack of proper traffic management systems.

## 4. Assessment of Road Quality and Infrastructure

The primary roads are generally in fair condition, but local roads, especially through rural and less-developed areas, may have a poor surface and lack of proper signage. Potholes and unpaved stretches might present additional hazards.

## 5. Suggestions for Alternative Routes for Emergencies

In case of emergencies, returning to major highways like NH27 is advisable, which offers better road conditions and infrastructure for assistance. Detours through larger towns can sometimes circumvent severely congested or damaged road sections.

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

Transportation of hazardous materials in Uttar Pradesh requires adherence to the Central Motor Vehicle Rules, 1989, especially concerning vehicle conditions and driver qualifications. Local authorities may impose specific restrictions during peak traffic hours or through sensitive areas.

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

There have been occasional but critical incidents involving heavy vehicles, mainly attributed to driver fatigue, poor road conditions, or adverse weather. There are also reports of local protests or road blockages affecting timely transport.

## 8. Environmental Considerations and Sensitive Areas

Environmental sensitivity is high around water bodies and agricultural zones. Pollution and spillage risks are heightened in these areas, necessitating cautious driving and strict adherence to environmental regulations.

## 9. Analysis of Communication Coverage

The region is moderately covered by major mobile networks, but rural stretches could have spotty coverage, leading to communication dead zones. It's crucial for drivers to have reliable radios or offline navigation systems.

## 10. Estimated Emergency Response Times

Emergency services in urban and semi-urban areas might take approximately 15-30 minutes for initial response, while in rural areas, response times could be longer depending on the distance from service points.

## 12. Overall Summary of Risk Assessment

The route is manageable with medium to high risks depending on environmental conditions and road quality. The most significant concerns involve weather-related challenges and infrastructure limitations in rural stretches. With adherence to regulations and preparedness for varying conditions, the transport of hazardous materials can be conducted safely, assuming contingencies for detours and communication fail-safes are in place.

### Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
1	Turn	High	26.73746, 83.22938	15 KM/Hr	0.08 km
2	Turn	High	26.73788, 83.22642	15 KM/Hr	0.32 km
3	Turn	Medium	26.73812, 83.22630	30 KM/Hr	0.48 km
4	Turn	High	26.74524, 83.22746	15 KM/Hr	1.14 km
5	Turn	High	26.74654, 83.22390	15 KM/Hr	1.63 km
6	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.15 km
7	Blind Spot	Blind Spot	26.75353, 83.20457	10 KM/Hr	4.21 km
8	Turn	High	26.75377, 83.20465	15 KM/Hr	4.26 km
9	Turn	High	26.74707, 83.25103	15 KM/Hr	8.89 km
0	Roundabout	High	26.86209, 83.31517	15 KM/Hr	24.78 km
10	Turn	Medium	26.85447, 83.32397	30 KM/Hr	25.83 km
11	Turn	Medium	26.85341, 83.32905	30 KM/Hr	26.58 km
12	Turn	Medium	26.85218, 83.32994	30 KM/Hr	26.75 km
13	Turn	Medium	26.84956, 83.33038	30 KM/Hr	26.98 km
14	Turn	Medium	26.84027, 83.34347	30 KM/Hr	28.66 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
15	Blind Spot	Blind Spot	26.83891, 83.34443	10 KM/Hr	28.96 km
16	Turn	High	26.84330, 83.35026	15 KM/Hr	29.59 km
17	Turn	High	26.84096, 83.35590	15 KM/Hr	30.32 km
18	Turn	High	26.84705, 83.35919	15 KM/Hr	31.07 km
19	Turn	Medium	26.84713, 83.36051	30 KM/Hr	31.22 km
20	Turn	High	26.84552, 83.36726	15 KM/Hr	31.89 km
21	Turn	Medium	26.84777, 83.36867	30 KM/Hr	32.12 km
22	Turn	High	26.85147, 83.37258	15 KM/Hr	32.75 km
23	Turn	Medium	26.85060, 83.37818	30 KM/Hr	33.31 km
24	Turn	High	26.85014, 83.37853	15 KM/Hr	33.40 km
25	Turn	High	26.84911, 83.37817	15 KM/Hr	33.49 km
26	Turn	High	26.84876, 83.37876	15 KM/Hr	33.59 km
27	Turn	High	26.84744, 83.37825	15 KM/Hr	33.70 km
28	Turn	High	26.84692, 83.37966	15 KM/Hr	33.90 km
29	Turn	High	26.83692, 83.37645	15 KM/Hr	35.08 km
30	Turn	Medium	26.83396, 83.38358	30 KM/Hr	35.86 km
31	Turn	High	26.83442, 83.38852	15 KM/Hr	36.29 km
32	Turn	High	26.83506, 83.38895	15 KM/Hr	36.43 km
33	Turn	Medium	26.83539, 83.41331	30 KM/Hr	38.83 km
34	Turn	Medium	26.83718, 83.41535	30 KM/Hr	39.17 km
35	Turn	High	26.83805, 83.41571	15 KM/Hr	39.25 km
36	Turn	High	26.83460, 83.42408	15 KM/Hr	40.20 km
37	Turn	High	27.09551, 83.61073	15 KM/Hr	77.27 km
38	Turn	High	27.09564, 83.61129	15 KM/Hr	77.40 km
39	Turn	High	27.31143, 83.72156	15 KM/Hr	103.98 km
40	Turn	Medium	27.31014, 83.72674	30 KM/Hr	104.39 km
41	Turn	Medium	27.30929, 83.72744	30 KM/Hr	104.64 km
42	Turn	Medium	27.30859, 83.73077	30 KM/Hr	104.98 km
43	Turn	Medium	27.30916, 83.73171	30 KM/Hr	105.09 km
44	Turn	Medium	27.31134, 83.73264	30 KM/Hr	105.28 km
45	Turn	Medium	27.31203, 83.73367	30 KM/Hr	105.47 km
46	Turn	High	27.31160, 83.73702	15 KM/Hr	105.83 km
47	Turn	High	27.31666, 83.74000	15 KM/Hr	106.45 km
48	Turn	Medium	27.31676, 83.76211	30 KM/Hr	108.20 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
49	Turn	Medium	27.31764, 83.76403	30 KM/Hr	108.86 km
50	Blind Spot	Blind Spot	27.31926, 83.77935	10 KM/Hr	110.43 km
51	Turn	Medium	27.30910, 83.77870	30 KM/Hr	111.52 km
52	Turn	Medium	27.30872, 83.77912	30 KM/Hr	111.64 km
53	Blind Spot	Blind Spot	27.30695, 83.78617	10 KM/Hr	112.31 km
54	Blind Spot	Blind Spot	27.30548, 83.78555	10 KM/Hr	112.48 km
55	Turn	High	27.30413, 83.79089	15 KM/Hr	113.09 km
56	Turn	High	27.29523, 83.78972	15 KM/Hr	113.86 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:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 8.89 km

**Coordinates:** 26.74707, 83.25103



**Risk Type:** Roundabout

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 24.78 km

**Coordinates:** 26.86209, 83.31517



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Distance from Start:** 25.83 km  
**Coordinates:** 26.85447, 83.32397



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Distance from Start:** 26.58 km  
**Coordinates:** 26.85341, 83.32905



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Distance from Start:** 26.75 km  
**Coordinates:** 26.85218, 83.32994



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Distance from Start:** 26.98 km  
**Coordinates:** 26.84956, 83.33038



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 28.66 km

**Coordinates:** 26.84027, 83.34347



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 28.96 km

**Coordinates:** 26.83891, 83.34443



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Distance from Start:** 29.59 km  
**Coordinates:** 26.84330, 83.35026



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Distance from Start:** 30.32 km  
**Coordinates:** 26.84096, 83.35590



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Distance from Start:** 31.07 km  
**Coordinates:** 26.84705, 83.35919



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Distance from Start:** 31.22 km  
**Coordinates:** 26.84713, 83.36051



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Distance from Start:** 31.89 km  
**Coordinates:** 26.84552, 83.36726



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Distance from Start:** 32.12 km  
**Coordinates:** 26.84777, 83.36867



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Distance from Start:** 32.75 km  
**Coordinates:** 26.85147, 83.37258



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Distance from Start:** 33.31 km  
**Coordinates:** 26.85060, 83.37818



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 33.40 km

**Coordinates:** 26.85014, 83.37853



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 33.49 km

**Coordinates:** 26.84911, 83.37817



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Distance from Start:** 33.59 km  
**Coordinates:** 26.84876, 83.37876



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Distance from Start:** 33.70 km  
**Coordinates:** 26.84744, 83.37825



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Distance from Start:** 33.90 km  
**Coordinates:** 26.84692, 83.37966



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Distance from Start:** 35.08 km  
**Coordinates:** 26.83692, 83.37645



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 35.86 km

**Coordinates:** 26.83396, 83.38358



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 36.29 km

**Coordinates:** 26.83442, 83.38852



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Distance from Start:** 36.43 km  
**Coordinates:** 26.83506, 83.38895



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Distance from Start:** 38.83 km  
**Coordinates:** 26.83539, 83.41331



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 39.17 km

**Coordinates:** 26.83718, 83.41535



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 39.25 km

**Coordinates:** 26.83805, 83.41571



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 40.20 km

Coordinates: 26.83460, 83.42408



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 77.27 km

Coordinates: 27.09551, 83.61073



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Distance from Start:** 77.40 km  
**Coordinates:** 27.09564, 83.61129



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Distance from Start:** 103.98 km  
**Coordinates:** 27.31143, 83.72156



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 104.39 km

**Coordinates:** 27.31014, 83.72674



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 104.64 km

**Coordinates:** 27.30929, 83.72744



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Distance from Start:** 104.98 km  
**Coordinates:** 27.30859, 83.73077



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Distance from Start:** 105.09 km  
**Coordinates:** 27.30916, 83.73171



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 105.28 km

**Coordinates:** 27.31134, 83.73264



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 105.47 km

**Coordinates:** 27.31203, 83.73367

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