JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP to SINGHESHWARI INDANE GAS SERVIC

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

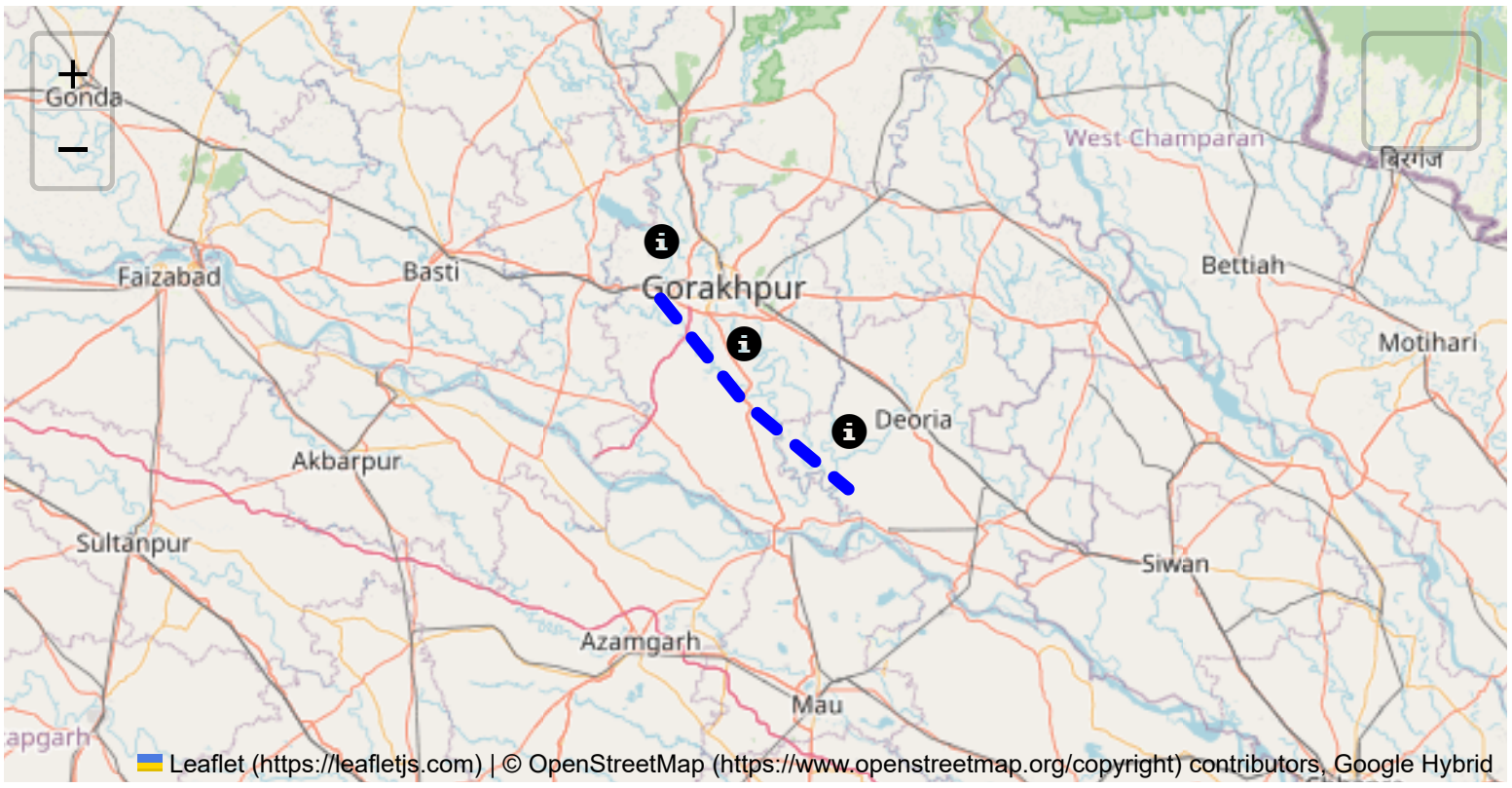
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental impacts during transport.

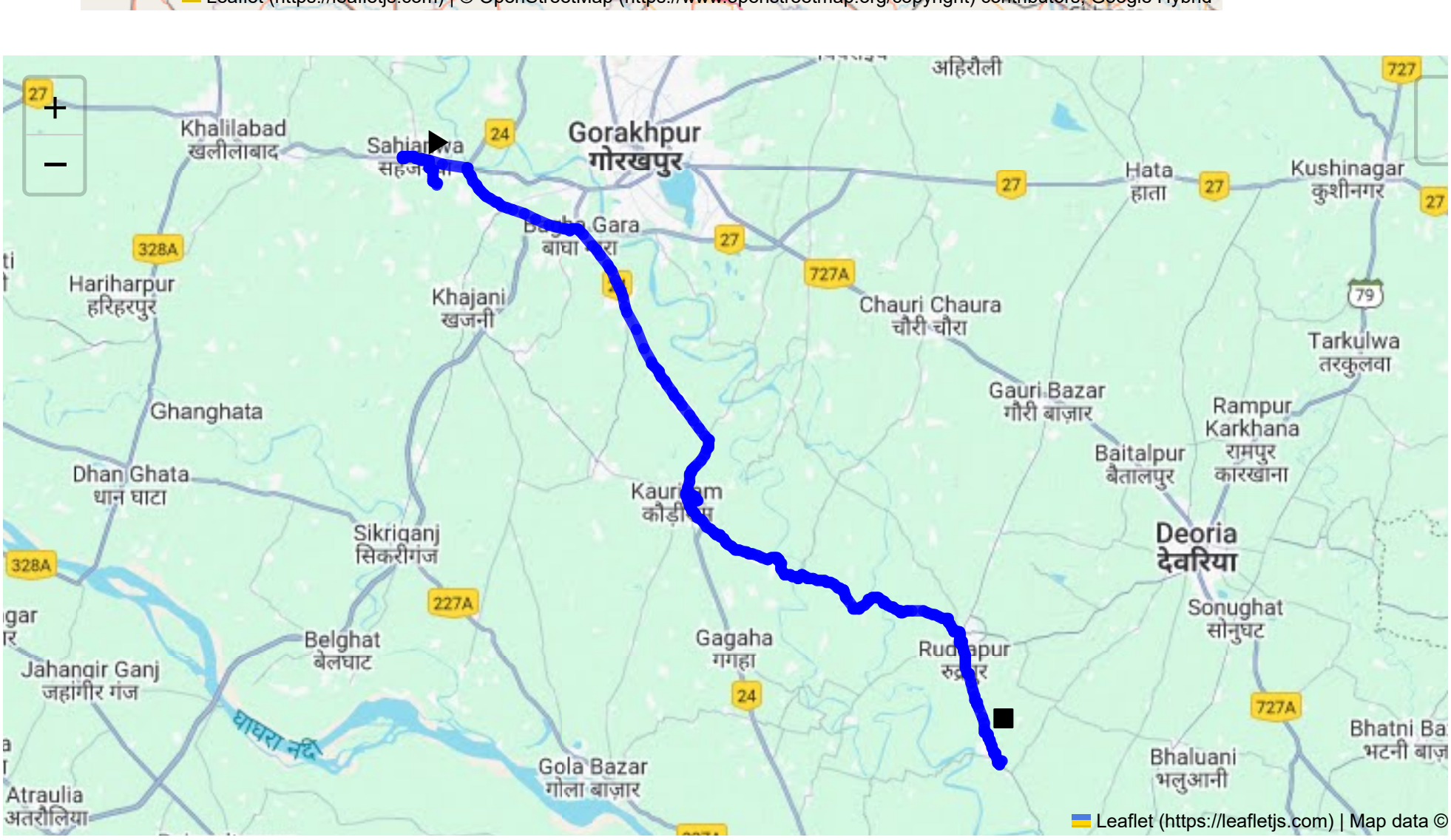
Journey Risk Mitigation

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: 78.77 km

Estimated Duration: 2.0 hours

Adjusted Duration (Heavy Vehicle): 2.4 hours

Start: (26.735959, 83.229398)

End: (26.36362, 83.63726)

Welcome to the Journey Risk Management Study

1. Overview of the Route Map: The route travels from GIDA Industrial Area Phase 1 in Sahjanwa to Ganiyari, Kampura, via the Azamgarh - Dohrighat - Gorakhpur Road. The route spans approximately 78.77 kilometers and primarily uses regional roads that connect industrial and rural areas in Uttar Pradesh, India.

2. Typical Weather Conditions and Potential Weather-Related Hazards: Uttar Pradesh generally experiences a humid subtropical climate. The region can face heavy monsoon rains from July to September, causing waterlogging and reduced visibility. In the summer months (April to June), high temperatures can lead to road surface damage, while fog is a common issue in winter months, particularly in December and January, potentially reducing visibility.

3. Analysis of Traffic Patterns: Peak Hours and Congestion-Prone Areas:

- Morning hours (7:00 AM - 9:00 AM) and evening hours (5:00 PM - 7:00 PM) typically experience higher traffic volumes.
- Congestion can be anticipated near market areas and major intersections in Gorakhpur and along the Azamgarh - Dohrighat Road, particularly in urban centers.

4. Assessment of Road Quality and Infrastructure:

- Road conditions are generally mixed, with some sections well-paved while others may have potholes and poor markings.
- The infrastructure includes several sharp turns and narrow bridges, which require careful navigation, especially for heavy vehicles.

5. Suggestions for Alternative Routes for Emergencies: In case of an emergency or road blockages:

- Consider taking the NH27 and NH24 routes as major alternative highways with potentially better facilities for heavy vehicles, albeit at an increased travel distance.

6. Summary of Local Regulations Affecting Hazardous Material Transport:

- There are specific timings when the transport of hazardous materials is restricted within local urban limits, typically during peak traffic times.
- Permits and escorts may be required for certain classes of hazardous materials.

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

- Historical data indicates a higher frequency of minor road accidents involving heavy vehicles around the intersections and congested market areas. No major hazardous material spills have been recorded, but caution is advised.

8. Environmental Considerations and Sensitive Areas:

- The route passes near several agricultural areas. Care should be taken to prevent spillage of hazardous materials which could affect crop land and water bodies.
- Nearby wildlife in certain rural sections requires cautious driving to prevent accidents.

9. Analysis of Communication Coverage:

- Communication coverage is generally reliable near urban areas but can have dead zones in more rural sections, particularly between Kauriram and Badauli.
- Drivers should ensure communication devices are fully charged, and alternative communication options like satellite phones can be considered.

10. Estimated Emergency Response Times:

- Urban areas such as Gorakhpur may have faster response times (20-30 minutes) due to the proximity of emergency services.
- In rural segments, expect delays in response time, which can range from 45 minutes to over an hour due to distance and road quality issues.

12. Overall Summary of Risk Assessment:

- The route has a mixed risk profile mainly due to variable road conditions, potential weather hazards, and moderate congestion levels.
- Proper trip planning is essential to avoid peak hours and adverse weather.
- Drivers should exercise heightened caution and practice defensive driving, especially in rural areas and around sharp turns or narrow sections.
- There should be a focus on maintaining clear communication and emergency preparedness given potential coverage gaps.

This assessment should provide a comprehensive understanding to aid in the safe and efficient transport of goods along this route in Uttar Pradesh.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
2	Turn	High	26.73746, 83.22938	15 KM/Hr	0.14 km
3	Blind Spot	Blind Spot	26.73791, 83.22625	10 KM/Hr	0.47 km
4	Turn	High	26.74524, 83.22746	15 KM/Hr	1.16 km
5	Turn	High	26.74654, 83.22390	15 KM/Hr	1.65 km
6	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.16 km
7	Blind Spot	Blind Spot	26.75353, 83.20457	10 KM/Hr	4.22 km
8	Turn	High	26.75377, 83.20465	15 KM/Hr	4.27 km
0	Roundabout	High	26.74681, 83.25111	15 KM/Hr	8.13 km
9	Turn	High	26.70798, 83.33175	15 KM/Hr	18.54 km
10	Turn	Medium	26.53252, 83.41829	30 KM/Hr	41.47 km
1	U-Turn	High	26.5324639, 83.4183761	10 KM/Hr	41.47 km
11	Blind Spot	Blind Spot	26.53237, 83.41832	10 KM/Hr	41.79 km
12	Blind Spot	Blind Spot	26.53847, 83.41056	10 KM/Hr	42.78 km
13	Turn	Medium	26.53830, 83.41034	30 KM/Hr	42.85 km
14	Turn	Medium	26.52883, 83.41170	30 KM/Hr	43.75 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
15	Turn	Medium	26.52532, 83.41370	30 KM/Hr	44.28 km
16	Turn	Medium	26.49363, 83.46886	30 KM/Hr	51.08 km
17	Turn	Medium	26.49535, 83.47366	30 KM/Hr	51.60 km
18	Turn	High	26.49395, 83.47530	15 KM/Hr	51.83 km
19	Turn	Medium	26.49284, 83.47751	30 KM/Hr	52.05 km
20	Turn	Medium	26.48411, 83.48129	30 KM/Hr	53.15 km
21	Turn	Medium	26.48430, 83.48193	30 KM/Hr	53.20 km
22	Turn	Medium	26.48208, 83.49105	30 KM/Hr	54.15 km
23	Turn	Medium	26.48395, 83.49297	30 KM/Hr	54.42 km
24	Turn	Medium	26.47874, 83.51310	30 KM/Hr	56.51 km
25	Turn	Medium	26.47463, 83.52277	30 KM/Hr	57.57 km
26	Turn	Medium	26.46679, 83.55273	30 KM/Hr	61.74 km
27	Turn	Medium	26.46566, 83.55285	30 KM/Hr	61.88 km
28	Turn	Medium	26.46532, 83.55311	30 KM/Hr	61.93 km
29	Turn	Medium	26.46037, 83.56317	30 KM/Hr	63.00 km
30	Turn	Medium	26.45524, 83.59861	30 KM/Hr	66.74 km
31	Turn	Medium	26.44780, 83.60323	30 KM/Hr	67.68 km
32	Turn	High	26.44700, 83.60659	15 KM/Hr	68.04 km
33	Blind Spot	Blind Spot	26.44045, 83.60720	10 KM/Hr	68.75 km
34	Turn	High	26.44048, 83.60900	15 KM/Hr	68.96 km
35	Turn	Medium	26.38029, 83.62727	30 KM/Hr	75.88 km
36	Turn	Medium	26.36270, 83.63490	30 KM/Hr	78.04 km
37	Blind Spot	Blind Spot	26.36108, 83.63659	10 KM/Hr	78.27 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: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 4.27 km

Coordinates: 26.75377, 83.20465

Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 8.13 km

Coordinates: 26.74681, 83.25111

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 18.54 km

Coordinates: 26.70798, 83.33175

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 41.47 km

Coordinates: 26.53252, 83.41829

Risk Type: U-Turn

Risk Level: High

Speed Limit: 10 KM/Hr

Distance from Start: 41.47 km

Coordinates: 26.5324639, 83.4183761

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 41.79 km

Coordinates: 26.53237, 83.41832

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 42.78 km

Coordinates: 26.53847, 83.41056

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 42.85 km

Coordinates: 26.53830, 83.41034

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 43.75 km

Coordinates: 26.52883, 83.41170

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 44.28 km

Coordinates: 26.52532, 83.41370

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 51.08 km

Coordinates: 26.49363, 83.46886

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 51.60 km

Coordinates: 26.49535, 83.47366

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 51.83 km

Coordinates: 26.49395, 83.47530

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 52.05 km

Coordinates: 26.49284, 83.47751

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 54.15 km

Coordinates: 26.48208, 83.49105

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 54.42 km

Coordinates: 26.48395, 83.49297

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 56.51 km

Coordinates: 26.47874, 83.51310

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 57.57 km

Coordinates: 26.47463, 83.52277

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 61.74 km

Coordinates: 26.46679, 83.55273

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 61.88 km

Coordinates: 26.46566, 83.55285

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 61.93 km

Coordinates: 26.46532, 83.55311

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 63.00 km

Coordinates: 26.46037, 83.56317

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 66.74 km

Coordinates: 26.45524, 83.59861

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 67.68 km

Coordinates: 26.44780, 83.60323

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 68.04 km

Coordinates: 26.44700, 83.60659

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 68.75 km

Coordinates: 26.44045, 83.60720

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 68.96 km

Coordinates: 26.44048, 83.60900

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 75.88 km

Coordinates: 26.38029, 83.62727

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 78.04 km

Coordinates: 26.36270, 83.63490

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 78.27 km

Coordinates: 26.36108, 83.63659

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