



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO CHATURVEDI INDANE GR

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

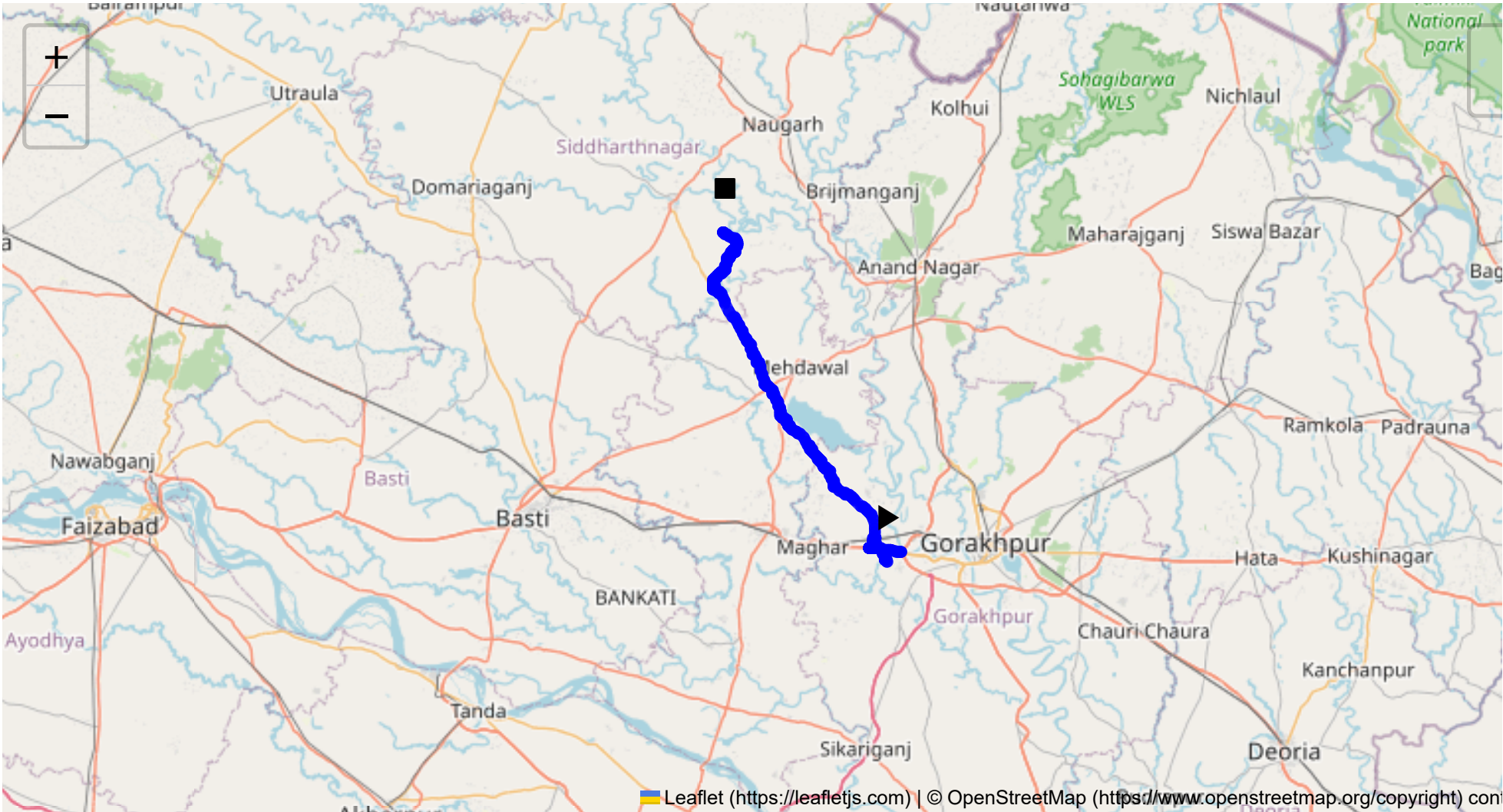
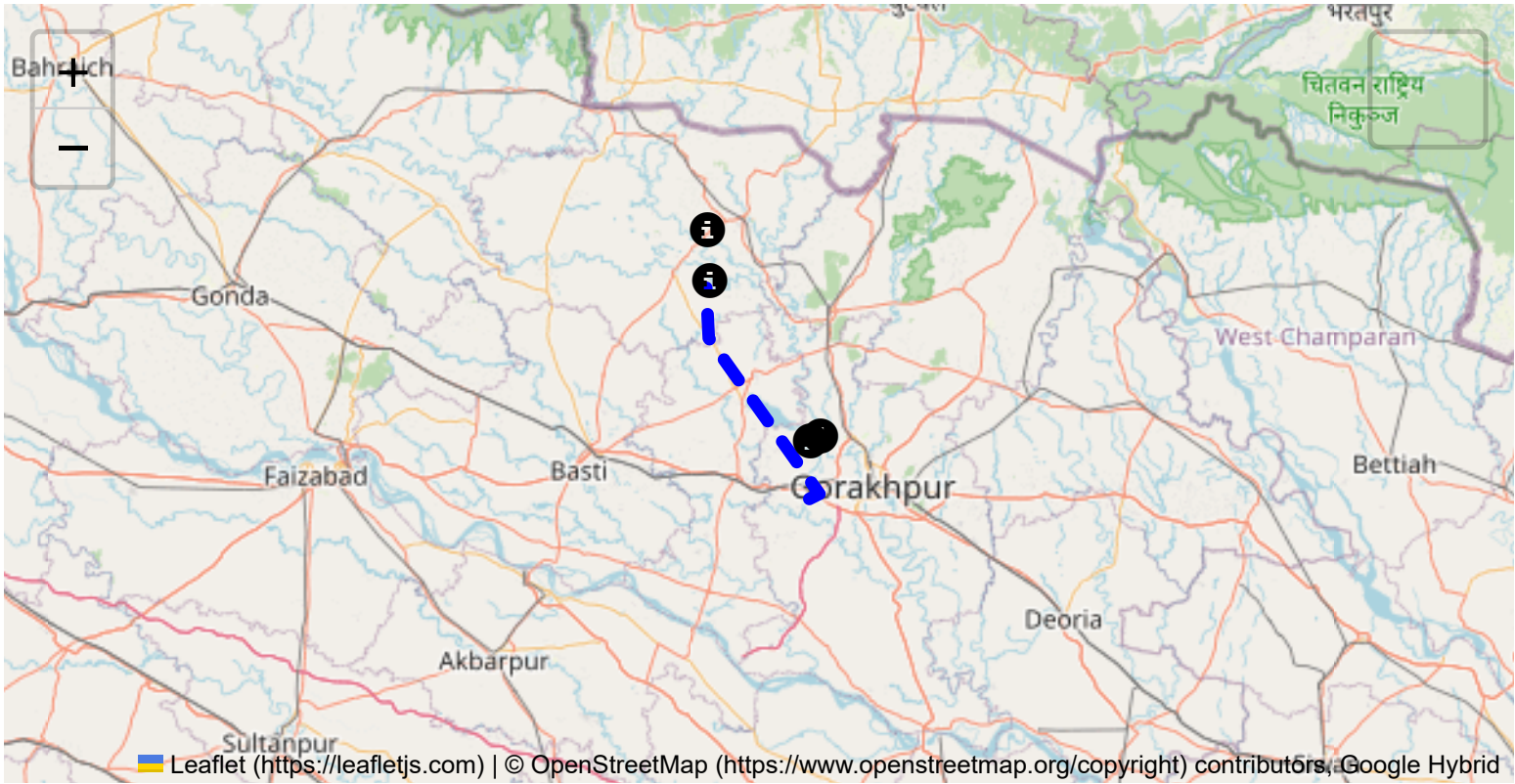
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 70.70 km
Estimated Duration: 1.9 hours
Adjusted Duration (Heavy Vehicle): 2.4 hours
Start: (26.735959, 83.229398)
End: (27.14554, 83.00161)

Welcome to the Journey Risk Management Study

1. Overview of the Route Map:

The route begins at GIDA Industrial Area Phase 1 in Sahjanwa, Uttar Pradesh, and ends at Bisunpur Mustahkam, Uttar Pradesh, with key stops at Zero Point in Kaalesar and Mehmua. The total distance is approximately 70.70 kilometers, following regional roads that are typical for industrial and rural areas in northern India.

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

- **Weather Patterns:** The region experiences extremes typical of northern India, with hot summers, monsoon rains, and cool winters.
- **Potential Hazards:**
 - **Monsoon Season (June to September):** Sudden heavy rains leading to flooding and reduced visibility. Roads can become slippery and prone to erosion.
 - **Winter (December to February):** Fog can significantly reduce visibility, affecting travel time and safety.
 - **Summer (April to June):** High temperatures can cause heat stress and increase the risk of tire blowouts.

3. Analysis of Traffic Patterns:

- **Peak Hours:** Typically, the heaviest traffic is observed in the morning (7:00 to 10:00 AM) and evening (5:00 to 8:00 PM) as people commute for work.
- **Congestion-Prone Areas:** Urban sections, particularly near town centers like Sahjanwa and Kaalesar, and any construction or market areas can have dense traffic.

4. Assessment of Road Quality and Infrastructure:

- **Road Quality:** The main segments consist of regional highways usually maintained but may have sections with potholes, narrow lanes, or lack clear road signage.
- **Infrastructure:** Bridges and barricade conditions should be checked for structural integrity, especially during or after monsoons.

5. Suggestions for Alternative Routes for Emergencies:

- Depending on the severity of the blockage or emergency, consider rural back roads that connect to NH28 for more accessible exits.
- GPS systems can provide up-to-date information to reroute effectively.

6. Summary of Local Regulations Affecting Hazardous Material Transport:

- **Permitting:** Transport of hazardous materials requires specific permits. Ensure all documentation is current.
- **Time Restrictions:** Restrictions on traversing certain areas during peak hours to minimize risk in densely populated areas.
- **Loading and Unloading:** Must be done at designated spots with safety measures adhered to avoid spillage or exposure.

7. Overview of Historical Incidents:

- Past incidents have typically involved minor road accidents due to speed breaches, poor visibility, or road conditions rather than specific hazardous material spills, highlighting driving attentiveness and road recognition as crucial for safety.

8. Environmental Considerations and Sensitive Areas:

- **Sensitive Areas:** Agricultural fields, water bodies, and populated villages are considered sensitive areas that might be affected by contamination.
- **Environmental Protocols:** Follow strict containment protocols while transporting hazardous materials to avoid environmental damage.

9. Analysis of Communication Coverage:

- **Potential Dead Zones:** Rural areas may encounter sporadic mobile and internet signals, particularly around agricultural expanses and certain forested patches.
- **Recommendations:** Equip vehicles with satellite phones or radios for emergency communication.

10. Estimated Emergency Response Times:

- Urban areas like Sahjanwa have faster emergency response times (approx. 30-45 minutes) due to proximity to services.
- More remote areas could experience delays upwards of one hour or more, necessitating vehicle self-sufficiency in emergencies.

12. Overall Summary of Risk Assessment:

This route does present moderate risks typical for the region, including weather-related challenges, road quality, and traffic congestion. The most significant concerns for hazardous material transport include ensuring compliance with local regulations and maintaining a high alert level due to potential environmental impacts and reduced communication ability in certain rural areas. Training for drivers should prioritize weather readiness, emergency response preparation, and familiarity with alternative routes and local road conditions. Implementing real-time monitoring and communication systems will further mitigate travel risks along this route.

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

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
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	Blind Spot	Blind Spot	26.76132, 83.21435	10 KM/Hr	14.97 km
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	25.74 km
20	Turn	High	26.91597, 83.08449	15 KM/Hr	38.06 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	39.24 km
24	Turn	Medium	26.94829, 83.07156	30 KM/Hr	42.28 km
25	Turn	Medium	26.98320, 83.05060	30 KM/Hr	46.88 km
26	Turn	Medium	26.98358, 83.04980	30 KM/Hr	46.99 km
27	Turn	Medium	27.07125, 82.99577	30 KM/Hr	58.11 km
28	Turn	Medium	27.07137, 82.99515	30 KM/Hr	58.25 km
29	Turn	High	27.07059, 82.99365	15 KM/Hr	58.43 km
30	Turn	High	27.07787, 82.98734	15 KM/Hr	59.53 km
31	Turn	High	27.07936, 82.98889	15 KM/Hr	59.77 km
32	Turn	High	27.07935, 82.98912	15 KM/Hr	59.79 km
33	Turn	High	27.07963, 82.98936	15 KM/Hr	59.82 km
34	Turn	High	27.09444, 82.99561	15 KM/Hr	61.72 km
35	Turn	Medium	27.09401, 82.99914	30 KM/Hr	62.12 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
36	Turn	Medium	27.09763, 83.00326	30 KM/Hr	62.66 km
37	Turn	Medium	27.09798, 83.00409	30 KM/Hr	62.79 km
38	Turn	Medium	27.10059, 83.00514	30 KM/Hr	62.96 km
39	Turn	High	27.10076, 83.00511	15 KM/Hr	63.13 km
40	Turn	High	27.10117, 83.00410	15 KM/Hr	63.24 km
41	Turn	High	27.11229, 83.00821	15 KM/Hr	64.51 km
42	Turn	High	27.11211, 83.00924	15 KM/Hr	64.65 km
43	Turn	High	27.11323, 83.00969	15 KM/Hr	64.75 km
44	Turn	High	27.11349, 83.00938	15 KM/Hr	64.83 km
45	Turn	High	27.11575, 83.01058	15 KM/Hr	65.07 km
46	Turn	Medium	27.11580, 83.01094	30 KM/Hr	65.13 km
47	Turn	High	27.11769, 83.01247	15 KM/Hr	65.39 km
48	Turn	High	27.11807, 83.01217	15 KM/Hr	65.44 km
49	Turn	High	27.12122, 83.01426	15 KM/Hr	65.85 km
50	Turn	High	27.12135, 83.01418	15 KM/Hr	65.88 km
51	Turn	High	27.12242, 83.01460	15 KM/Hr	65.98 km
52	Turn	High	27.12112, 83.01840	15 KM/Hr	66.40 km
53	Turn	Medium	27.13064, 83.02020	30 KM/Hr	67.48 km
54	Blind Spot	Blind Spot	27.13276, 83.02186	10 KM/Hr	67.75 km
55	Turn	Medium	27.13388, 83.01985	30 KM/Hr	67.97 km
56	Blind Spot	Blind Spot	27.14587, 83.00066	10 KM/Hr	70.37 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: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 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: 25.74 km

Coordinates: 26.83008, 83.15664



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 38.06 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: 39.24 km
Coordinates: 26.92258, 83.08191



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 42.28 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: 46.99 km
Coordinates: 26.98358, 83.04980



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 58.11 km
Coordinates: 27.07125, 82.99577



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 58.25 km
Coordinates: 27.07137, 82.99515



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 58.43 km
Coordinates: 27.07059, 82.99365



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 59.53 km

Coordinates: 27.07787, 82.98734



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 59.77 km

Coordinates: 27.07936, 82.98889



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 59.79 km
Coordinates: 27.07935, 82.98912



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 59.82 km
Coordinates: 27.07963, 82.98936



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 67.48 km

Coordinates: 27.13064, 83.02020



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 67.75 km

Coordinates: 27.13276, 83.02186



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 67.97 km
Coordinates: 27.13388, 83.01985



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Distance from Start: 70.37 km
Coordinates: 27.14587, 83.00066

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